

A MASTER'S PROJECT
ON
COMPARATIVE ANALYSIS OF INSURANCE POLICIES AND
ADVISING SYSTEM FOR THE PROSPECTIVE PUBLIC

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OF THE DEGREE
OF

M.Sc. In Technical Teachers Education in Information Technology Management

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We hereby declare that the work which is being presented in this project “**Comparative Analysis of Insurance Policies and Advising System for the Prospective Public**” in partial fulfillment of therequirements for the award of the degree of master of science in Information TechnologyTeachers Education is an authentic record of our own work carried out from February 2015 to June 2015 under the supervision of Dr Prathap Mani, Department of Computing, Adama Science and Technology University, Ethiopia.

The matter embodied in this project has not been submitted by any other for the award of any otherDegree or diploma. All relevant resources of information used in this project have been dulyacknowledged

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Abstract

Insurance is the equitable transfer of the risk of a loss, from one entity to another in exchange for payment. It is a form of risk management primarily used to hedge against the risk of a contingent, uncertain loss. It involves the insured assuming a guaranteed and known relatively small loss in the form of payment to the insurer in exchange for the insurer's promise to compensate (indemnify) the insured in the case of a financial (personal) loss. The insured receives a contract, called the insurance policy, which details the conditions and circumstances under which the insured will be financially compensated. The comparative analysis of insurance policies and advising system for the prospective public is crucial for countries like Ethiopia that have a number of insurance companies with different service products. However, in Ethiopia, until now there is no such kind of system offered because it was considered to be too difficult of a risk to be carried by the insurance industry. The project has three modules namely admin, officer and customer. This system helps for all the prospective public to get guidance and advice on how to have policies contracts on on-line to be and renew their policy Holderness. Furthermore the prospective public can compare different service products from different companies which is better and convenient for them from the companies on hand.

Keywords: Policyholder, insurer, insured, insurance, policy, Ethiopia, company, etc.

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List of Abbreviations

UML:	- unified model language
RAM:	- Random Access Memory
OS:	- Operating System
CPU:	- Central Processing Unit
EIC:	Ethiopian Insurance Corporation
GB:	Giga Byte
TRAs:	Third-Party Administrators
EC:	Electronic Commerce
ASP:	Application Service Provider
MIS:	Management Information System
SRS:	System Requirements Specification
UTP:	Unshielded Twisted Pair
GHz:	Giga Hertz
UC:	Use Case
ER:	Entity Relation
TC:	Test Case
USA:	United State Of America
UK:	United Kingdom
D&O:	Directors and Officers
E&O:	Errors and Omissions
PI:	Professional Indemnity
CSRs:	Customers Service Representatives
MB:	Mega Byte
GUI:	Graphical User Interface
CIPA:	Comparative Insurance Policies Analysis
ODD:	Object Design Document.
API:	Application Program Interface
JS:	JavaScript
AIPCS:	Analysis of Insurance Companies and Advising System

CHAPTER ONE

1. Introduction

Various online systems make the life of human very comfortable. By some clicks only, you can get whatever you want at home. As the result of this, the online insurance System is the online facility to buy policies online within few clicks only. The online system implementation provide and support the customers for registration, assist staff in knowing customer who are registered and buy a policies at a specified time, to process transactions, which supports satisfactory service to customers and support the company's operational processes.

Insurance is a promise of compensation for specific potential future losses in exchange for a periodic payment. And also it's an important area of the business service industry. According to any insurance information or newsletter, it has been always providing full insurance services to the public. There are many insurance companies in Ethiopia such as- Awash Insurance, Global Insurance, Lion Insurance, National Insurance, Nile Insurance, Nyala Insurance ,African Insurance, and United Insurance Company - were established and they are currently operating along with the three state owned banks and the insurance corporation. In turn, there are many types of insurance services given by an insurance company, such as Car insurance, accident insurance, investment insurance, health insurance, home insurance, car insurance, farm insurance, medical insurance and others.

1.1. Background

The Ethiopian insurance corporation (EIC) was established in 1976 by proclamation No.68/1975. The corporation came in to existence by taking over all the assets and liabilities of the thirteen nationalized private insurance companies with Birr 11 million paid up capital aiming the following objectives. Engage in all classes of insurance business in Ethiopia. Ensure the insurance services reach the broad mass of the people.

Subject to the provision of Article 18 of the Housing and Saving Bank establishment proclamation 60/1975, promote efficient utilization of both materials and financial resources. EIC was operating the business for about nineteen years under protected monopolistic system as

state owned-sole insurer. After the demise of the Marxist regime in mid-1991 a fundamental change has taken place and there was a shift in political, economic and social orientation from totalitarianism to that of liberalism. Therefore, EIC was re-established as public enterprises under proclamation number 201/94 with Birr 61 million paid up capital. Upon re-establishment of the corporation in 1994 as state owned enterprise, the law covers the following new objectives to the Corporation: Engage in the business of rendering insurance service; and engage in any other related activities conducive to the attainment of its purposes.

Therefore, the life insurance department and division, is one of the major sections dealing with the provision of different types of life insurance policy including endowment, term, and whole life and other types to the market.

1.2. Purpose and Description of the Project

The main purpose of the project is to do comparative analysis of different insurance policies, check the awareness level and perception of insurance by the individuals. The project would also help in understanding preference of people regarding different insurance policies provided by different companies.

The project intends to computerize the existing system and developing an integrated, dynamic and online web site for different insurance companies in Ethiopia. Specifically, Comparative Analysis of Insurance Policies and Advising System for the Prospective Public is able to reduce the existing problems of the day to day activities within the companies, as well as using confidential file handling mechanisms of data, sharing intelligence, good security, making fast and reliable service for the prospective public. The project accomplishes the following:

- ✓ Design and develop web based system that would serve as repository of insurance policies information
- ✓ The system captures detailed information about insurance policies suspect right from the time the insurance policies bought by the customer and sold by the specific company was reported on their home page.
- ✓ The system possesses features that enable insurance policies information to be removed from the system, updated and queried.

Implementation of a comparative analysis of insurance policies and advising system on Ethiopia insurance companies helps the officer, administrator and the prospective public to get useful information on insurance policies with individual's insurance policies records.

1.3. Statement of the Problem

Currently companies perform activities such as customer registration, officer registration, and calculating premium is performed manually. Due to the manual method of accomplishing activities the company cannot satisfy the customer and faces the following difficulties:

Data Growth:-As we know, data increase day to day. So, it is very difficult to store and maintain all the data manually. Therefore, proper and systematic database must be used to afford these data growth and to allow user to update or maintain data efficiently.

No Computerized System:-This system is developing to 'upgrade' the manual system into computerized system. Currently, there are insurance companies that are still using manual system in recording any data. If the data are not managed carefully and efficiently, it will cause problems to that company where the loss of data and data redundancies may occur.

Data security is not assured:-This is due to the manual way of recording the data. As we know, in manual way, data are being stored by recording it on paper. Therefore, it may easily get damage or misplace that will lead to data loss.

No database to store information:-By using manual system, data are only being stored in files. Therefore, the potential of data loss is high since the file may easily get damage or lost if it is not being taken good Care of. Furthermore, there is no integrated insurance company in Ethiopia (and also they don't have dynamic website to visit the individual companies' services), users do not have awareness of all insurance companies' policies; users don't have an option to choose the best policy and least cost by visiting and comparing in a single website, the companies provide services only during office hour, knowing the policies details and purchasing them is through direct visit of the insurance office, any premium related policy will be intimated to the customer through post or phone call, customers are limited to get current information about the companies' services and have limited time to make any registration or payment transactions, service is limited for local users, difficult for promotion and advertising, new policy arrivals are not intimated to the customer in time, and difficult for searching the existing data.

1.4. Objective of the project

1.4.1. General objective

The main aim of the project is to develop an integrated and comparative analysis system for insurance companies

1.4.2. Specific objective

The specific objectives that will enable us to achieve the general objective:

- ✓ To compare the policies of the insurance companies to choose the best and least cost.
- ✓ To ensure effective insurance service communication around the globe from a remote location using the web application.
- ✓ To promote growth and financial stability of insurance companies and effectively enable policy holders monitor their service around the globe.
- ✓ To professionalize insurance services and develop insurance Consciousness among the general public.
- ✓ To establish a sound national insurance market and also add speed to their data processing and retrieving.
- ✓ To provide effective and efficient service time and to broadcast news about companies and deliver new arrivals of policies to customer in time using SMS or Email
- ✓ To purchase policies directly from online service

1.5. Scope and Limitations of the project

1.5.1. Scope of the project

The scope of the project was covered the development of the integrated application to compare a policy which is capable of providing insurance to policy holders' and easy to access any kind of service provided by their insurance companies from anywhere. Also certain notification, messaging, news about the companies, update and customer suggestion was implemented.

The proposed system can easily find the customer record needed by searching the database. This system will calculate the insurance premium for a particular customer based on insurance package the customer chooses. The System automatically informs the customer regarding customer premium due date, expired date, renewal date, amounts of premium and premium discount so that the company is not forgotten to collect the premium from their customers. This system can also generated a monthly analysis report for the insurance, thus they can monitor their monthly business. Renewal of the insurance was made once per a year. The update, delete, and insert record function were also available. The scope of the proposed system was covered three companies: Nib insurance company, Oromiya insurance company and Lion insurance company.

1.5.2. Limitations of the Project

As the result of the current real situation of the country Ethiopia that does not support any Credit Card or Debit Card, it was impossible to make the payment system online. But it was possible to simulate the system as is. And also due to shortage of budget (for transportation to visit each insurance company and their branches and also to get SMS service) and time constraint to gather all the relevant information on all insurance companies was not included.

1.6. Significance of The project

The system has its own significance to its users. Using this system, it helped the customer to choose best insurance policy, saving time and online payment easier and faster and also customers easily identify the company which is better for them. Therefore, it overcomes the problem faced by the current system. Using this system, it helped the company to keep track of the entire customer records and its policies. Therefore, all processes regarding with integrated service operation handled easily and this give a lot of benefits to the customers and companies.

1.7. Methodology

1.7.1. Data Collection Methodology:

It is the means by which necessary information about the project was gathered and collected. These are using the following methods:

Document Observation:

Using this method information related to the project was gathered from the company. This allowed us to get useful information about insurance system by observing different documents of the company.

Interview

Prepared oral questions on the current system implementation of company and asking those questions to different customers and staff members of the company in order to get valid information about the system.

Questionnaire

Questionnaires were prepared related to the current way of doing activities of company for the purpose of evaluating the current system of the company and the challenges that affect the current services of the company was identified and provided possible solution for those problems and made the system that satisfy customers and economically feasible. Those questions required were filled by experts and customers.

1.7.2. System methodology

1.7.2.1. System Development tools:

In order to complete the project successfully different resources or requirements was needed to provide better service for the given company. These resources were:

Hardware Requirement

- a) Processor: Intel Pentium Dual Core CPU 2.16GHz
- b) 500GB Hard Disk Space
- c) Physical Memory (RAM) 1.00 GB
- d) Any types of PC

Software Requirement

- a) Wamp Server
- b) Any windows OS(such as XP,Lastxp,Windows7,Windows8)
- c) Macromedia Dreamweaver
- d) Visio 2003/2007
- e) Microsoft 2007/2010 enterprise edition
- f) PHP to write the code
- g) MYSQL for the database
- h) HTML,CSS

1.7.2.2. System Design Methodology

The Unified Modeling Language (UML) is an industry standard for modeling object-oriented systems. Unified modeling language (UML) includes:-

- ✓ **Use case diagram:** - represent the functionality of the system from a user's point of view .They define the boundaries of the system.
- ✓ **Sequence diagram:** - represent the system's behavior in terms of interactions among a set of objects.
- ✓ **Activity diagram:** - Will be followed diagrams used to represent the data flow or the control flow through a system.

1.7.2.3. System Implementation Methodology

In order to effectively implement a solution, HTML and PHP to develop front end of the system, MYSQL and Wamp server to develop back end of the system was selected and different slide show maker software to make the system more attractive.

1.8. Feasibility Study

Examine how the project was potentially and specially capable to achieve easily or convenient or fitting well with a person's need, activities and how it satisfies the customers. The feasibility study can be categorized in to the following sections.

1.8.1. Technical Feasibility

The proposed system was confidentially solving the problems within the current system and satisfies the customer. To solve those problems the proposed system was come with more flexible and technically simple system to use. This allows the company performs activities within short period of time without any difficulties and complexities. Generally the implementation of online insurance service system was technically feasible and easily accessible.

1.8.2. Economic Feasibility

The proposed system reduced the costs incurred in relation with conducting the activities such as application form, Registration form, insurance policies agreement form, and all other paper works. Such costs may include the cost needed for printing the Registration form, transportation cost, etc. the system was economically feasible for customer by minimizing the cost incurred for transportation, costs for gathering information and insurance service over the phone and other related costs. Not only this but also the system was economically feasible for the company by reducing the costs incurred related to materials like stationeries.

1.8.3. Operational Feasibility

The current system was tedious since each and every activity should be performed by hand as well as it was mandatory to attend physically for the accomplishment of essential tasks. The proposed systems came up with the solution for the difficulties observed within the current system and was focused on the way in which these problems were eliminated. So the new system is provided the way in which each and every task is operated easily and successfully by using online system.

1.9. Existing System Vs. Proposed System

1.9.1. Existing System:

Previously most of the insurance companies in Ethiopia didn't have an integrated, dynamic and online web site to give service to the prospective public. As the result of this the prospective publics were enforced only to visit the static sites of the companies. Previously the companies were given non-life and life insurance service for only local customers, but now. These companies were carried out their daily works by providing their service to the customers using standalone data management software which was not capable of online service. The companies was used a manual system for registration, payment, calling customers through phone to renew their insurance and to pay expected payment. The existing system functions and problems are listed as follows: -

- ✓ There is no integrated website that leads the prospective public to compare and know best policies among companies
- ✓ Users does not have awareness of all insurance companies policy
- ✓ The users doesn't have an option to choose the best policy and least cost
- ✓ Both new and active customers expected to go to the companies' office to make registration and pay respectively.
- ✓ Agreement between customers and companies is made in person or by the agent of the customer
- ✓ Depending on the agreement the customer expected to go to the companies to pay in cash either monthly or annually.

1.9.2. Proposed System

The proposed system was designed to provide a permanent solution to the problems. The primary aim of the new system was to integrate, compare and analyze three insurance companies and then gave advice for the prospective public. The integrated Insurance Services were provided different policies for the customers through internet, so that the customer could view all the policy, complete details and benefits about the policy. This system saved time and money of clients/customers of insurance companies and at the same time improved their decision-making towards a policy which was eventually led to lower risks.

1.10. Project outcome

The new system was designed as per the user requirements so as to fulfill all the following expected outcomes:-

- Quick access store information: Quick access of store information from remotely as compared to the existing system.
- Easy to compare and Retrieve Information: The new system makes it easy to rating and retrieve information and policy as required
- Cost Effective: the new system will be cost effective.
- Enhance Business Processes
- Stronger marketing, including advertising and promotion
- A registration portal to hold customer's details, monitor their transaction and used same to offer better and improve services to them.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1. Overview

To support the idea of the project, related works on the area have been assessed from foreign countries about insurance system as well as insurance management system and insurance portal. The objective of the project is compare and analyzing of insurance policies of Oromiya, NIB and Lion insurance and to develop the comparative new system which allows customers online Registration for booking insurance, follow up personal details, calculate premium, making payment online and generate different reports.

2.2. Theoretical Background

2.2.1. What Is Insurance?

Insurance is the equitable transfer of the risk of a loss, from one entity to another in exchange for payment. It is a form of risk management primarily used to hedge against the risk of a contingent, uncertain loss.

An insurer, or insurance Carrier, is a company selling the insurance; the **insured**, or **policyholder**, is the person or entity buying the insurance policy. The amount of money to be charged for a certain amount of insurance coverage is called the **premium**. Risk management, the practice of appraising and controlling risk, has evolved as a discrete field of study and practice.

The transaction involves the insured assuming a guaranteed and known relatively small loss in the form of payment to the insurer in exchange for the insurer's promise to compensate (indemnify) the insured in the case of a financial (personal) loss. The insured receives a contract, called the insurance policy, which details the conditions and circumstances under which the insured will be financially compensated.

2.2.2. Types of Insurance

Any risk that can be quantified can potentially be insured. Specific kinds of risk that may give rise to claims are known as perils. An insurance policy will set out in detail which perils are covered by the policy and which is not. Below are non-exhaustive lists of the many different types of insurance that exist. A single policy may cover risks in one or more of the categories set out below.

Car insurance:-

You need car insurance when you buy a car vehicle. Car insurance covers your vehicle, be it a car, a cycle, a Car or a lorry, in case of accidents or theft.

There are three common types of car insurance available: third party; third party, fire and theft; and comprehensive cover. The level of your coverage dictates what you can claim if your vehicle sustains loss or damages.

- ✓ Coverage typically includes:
- ✓ Property coverage, for damage to or theft of the Car
- ✓ Liability coverage, for the legal responsibility to others for bodily injury or property damage
- ✓ Medical coverage, for the cost of treating injuries, rehabilitation and sometimes lost wages and funeral expenses
- ✓ Most countries, such as the United Kingdom, require drivers to buy some, but not all, of these coverage's. When a Car is used as collateral for a loan the lender usually requires specific coverage.

Travel insurance:-

Travel insurance coverage is usually limited to the period of your travel. However, some insurance companies may offer various combinations of protection to cater to the specific needs of customers, including long-term annual policies for a frequent traveller.

Travel insurance can be purchased for you and/or your family to insure against travel-related accidents, losses or interruptions, such as: Personal accident, medical-related expenses, loss of travel or accommodation expenses due to cancellation or curtailment of the journey, losing your baggage, belongings and money, losing your passport, personal liability, delayed baggage, travel delays, hijacking and repatriation.

Fire/ House Owners/ Householders insurance:-

Home Insurance, or House owner / Householder Insurance as it is also known, is one of the most important insurance policies you can buy in your adult life. Your home is one of the largest financial investment you've made, and that's why it's so important to protect it. There are three main types of policies which you can buy to protect your home. **Three types of Policies:**

Basic Fire Policy:- This policy provides you with coverage against loss or damage to insured property (i.e. house, shop and factory) caused by fire, lightning or explosion.

House Owners Policy:- This policy provides additional coverage compared to the basic fire policy. It may include loss or damage due to flood, burst pipes, etc.

House Holders Policy:- This is a policy which covers your household contents and includes coverage for fatal injury to you as the insured. This policy does not cover damage to the house itself.

Personal accident insurance:-

Personal Accident insurance or PA insurance is an annual policy which provides compensation in the event of injuries, disability or death caused solely by violent, accidental, external and visible events. It is different from life insurance and medical & health insurance.

You can either take a PA policy for yourself or a group policy for your family, protecting you and them anywhere in the world, anytime of the day. PA insurance provides 24-hour worldwide insurance protection.

The scope of cover and scale of benefits differ between insurance companies and you should therefore ensure that you purchase a policy which meets your requirements. The types of coverage normally provided under a PA policy include: Accidental death, Permanent disablement, temporary total or partial disablement, Medical expenses, Corrective surgery, Hospitalization benefits and Funeral expenses

Health insurance

Health insurance policies cover the cost of medical treatments. Dental insurance, like medical insurance protects policyholders for dental costs. In the US and Canada, dental insurance is often part of an employer's benefits package, along with health insurance.

LifeInsurance

Life insurance provides a monetary benefit to a decedent's family or other designated beneficiary, and may specifically provide for income to an insured person's family, burial, funeral and other final expenses. Life insurance policies often allow the option of having the proceeds paid to the beneficiary either in a lump sum cash payment or an annuity. In most states, a person cannot purchase a policy on another person without their knowledge.

Annuities provide a stream of payments and are generally classified as insurance because they are issued by insurance companies, are regulated as insurance, and require the same kinds of actuarial and investment management expertise that life insurance requires. Annuities and pensions that pay a benefit for life are sometimes regarded as insurance against the possibility that a retiree will outlive his or her financial resources. In that sense, they are the complement of life insurance and, from an underwriting perspective, are the mirror image of life insurance.

Term insurance:-

This is a product of life insurance which offers insurance protection for a limited period only whereby the money is paid up if you pass away or if you suffer total and permanent disability.

Property Insurance

- Property insurance provides protection against risks to property, such as fire, theft or weather damage. This may include specialized forms of insurance such as fire insurance, flood insurance, earthquake insurance, home insurance, inland marine insurance or boiler insurance. The term property insurance may, like casualty insurance, be used as a broad category of various subtypes of insurance, some of which are listed below:
- Aviation insurance protects aircraft hulls and spares, and associated liability risks, such as passenger and third-party liability. Airports may also appear under this subcategory, including air traffic control and refueling operations for international airports through to smaller domestic exposures.
- Boiler insurance (also known as boiler and machinery insurance, or equipment breakdown insurance) insures against accidental physical damage to boilers, equipment or machinery.

- Builder's risk insurance insures against the risk of physical loss or damage to property during construction. Builder's risk insurance is typically written on an "all risk" basis covering damage arising from any cause (including the negligence of the insured) not otherwise expressly excluded. Builder's risk insurance is coverage that protects a person's or organizations insurable interest in materials, fixtures and/or equipment being used in the construction or renovation of a building or structure should those items sustain physical loss or damage from an insured peril.

2.2.3. Insurance Policies

Formal contract-document issued by an insurance company to an insured. It (1) puts an indemnity cover into effect, (2) serves as a legal evidence of the insurance agreement, (3) sets out the exact terms on which the indemnity cover has been provided, and (4) states associated information such as the (a) specific risks and perils covered, (b) duration of coverage, (c) amount of premium, (d) mode of premium payment, and (e) deductibles, if any.

2.2.4. Principles

Insurance involves pooling funds from many insured entities (known as exposures) to pay for the losses that some may incur. The insured entities are therefore protected from risk for a fee, with the fee being dependent upon the frequency and severity of the event occurring. In order to be an insurable risk, the risk insured against must meet certain characteristics. Insurance as a financial intermediary is a commercial enterprise and a major part of the financial services industry, but individual entities can also self-insure through saving money for possible future losses.

Insurability

Risk which can be insured by private companies typically shares seven common characteristics:

1. **Large number of similar exposure units:** Since insurance operates through pooling resources, the majority of insurance policies are provided for individual members of

large classes, allowing insurers to benefit from the law of large numbers in which predicted losses are similar to the actual losses. Exceptions include Lloyd's of London, which is famous for insuring the life or health of actors, sports figures, and other famous individuals. However, all exposures will have particular differences, which may lead to different premium rates.

2. **Definite loss:** The loss takes place at a known time, in a known place, and from a known cause. The classic example is death of an insured person on a life insurance policy. Fire, automobile accidents, and worker injuries may all easily meet this criterion. Other types of losses may only be definite in theory. Occupational disease, for instance, may involve prolonged exposure to injurious conditions where no specific time, place, or cause is identifiable. Ideally, the time, place, and cause of a loss should be clear enough that a reasonable person, with sufficient information, could objectively verify all three elements.
3. **Accidental loss:** The event that constitutes the trigger of a claim should be fortuitous, or at least outside the control of the beneficiary of the insurance. The loss should be pure, in the sense that it results from an event for which there is only the opportunity for cost. Events that contain speculative elements, such as ordinary business risks or even purchasing a lottery ticket, are generally not considered insurable.
4. **Large loss:** The size of the loss must be meaningful from the perspective of the insured. Insurance premiums need to cover both the expected cost of losses, plus the cost of issuing and administering the policy, adjusting losses, and supplying the capital needed to reasonably assure that the insurer will be able to pay claims. For small losses, these latter costs may be several times the size of the expected cost of losses. There is hardly any point in paying such costs unless the protection offered has real value to a buyer.
5. **Affordable premium:** If the likelihood of an insured event is so high, or the cost of the event so large, that the resulting premium is large relative to the amount of protection offered, then it is not likely that the insurance will be purchased, even if on offer. Furthermore, as the accounting profession formally recognizes in financial accounting standards, the premium cannot be so large that there is not a reasonable chance of a significant loss to the insurer. If there is no such chance of loss, then the transaction may have the form of insurance, but not the substance.

6. **Calculable loss:** There are two elements that must be at least estimable, if not formally calculable: the probability of loss, and the attendant cost. Probability of loss is generally an empirical exercise, while cost has more to do with the ability of a reasonable person in possession of a copy of the insurance policy and a proof of loss associated with a claim presented under that policy to make a reasonably definite and objective evaluation of the amount of the loss recoverable as a result of the claim.
7. **Limited risk of catastrophically large losses:** Insurable losses are ideally independent and non-catastrophic, meaning that the losses do not happen all at once and individual losses are not severe enough to bankrupt the insurer; insurers may prefer to limit their exposure to a loss from a single event to some small portion of their capital base. Capital constrains insurers' ability to sell earthquake insurance as well as wind insurance in hurricane zones. In the US, flood risk is insured by the federal government. In commercial fire insurance, it is possible to find single properties whose total exposed value is well in excess of any individual insurer's capital constraint. Such properties are generally shared among several insurers, or are insured by a single insurer who syndicates the risk into the reinsurance market.

2.2.5. Advantages of Insurance

Insurance has a number of advantages. Insurable risk should have a low probability of occurrence, yet string adverse consequences if the loss does occur. This is where risk-pooling mechanism comes into play. Since part of the individual risk is borne by the entire group of policyholders, the individual risk premium can be relatively low in relation to the size of a potential loss.

Advantages of Life Insurance

Life Insurance provides the dual benefits of savings and security. The following benefits explain why this investment tool should be an integral part of your financial plans. These include:

- ✓ Risk Cover
- ✓ Planning for life stage needs

- ✓ Protection against rising health expenses
- ✓ Builds the habit of
- ✓ Safe and profitable long-term investment
- ✓ Assured income through
- ✓ Protection plus savings over a long term
- ✓ Growth through dividends.
- ✓ Facility of loans without affecting the policy
- ✓ Tax Benefits
- ✓ Mortgage Redemption

Advantages of Non-Life Insurance:Reducing Risk

There is more to general insurance than simply compensating loss. It is one of the most effective mechanisms ever developed for assessing, managing and reducing risk.

In this way, insurance makes a major contribution to society. It drives up standards by placing pressure on the factors that generate insecurity. It breaks the spell of risk and releases us to take rational choices.

General insurance provides freedom from crushing personal and business liabilities protects against accidents, crime, fires and natural dangers and supports innovation and risk-taking. A world without insurance would be a more daunting and poorer place.

Premiums are based on the experiences of hundreds of similar policyholders. For example, car insurance is generally based on the make and model of Car, the ease with which it can be repaired, the age and sex of the driver and the number of thefts reported for that type of vehicle.

2.3. Related Literature

2.3.1. Secure Web-Based Insurance Policies

Security is a top priority in every organization. Whether you are a small business, school, university, insurance company, or large enterprise, protecting your assets and keeping individuals safe is essential in all organizations. Issuing insurance policies to employees, students, staffs, and clients is the most practical solution—but what makes the insurance secure?

2.3.2. Insurance Policies Analysis

The average person does not have the training or knowledge to analyze an insurance policy to know if it's a good deal or not. Everybody probably doesn't know what questions he/she should be asking and the information he/she's being given is coming from the person who will be paid a commission for selling him/her the policy. Don't you want to know if your insurance purchase will turn into a financial disaster before you put your money in? Protect yourself, your property and your money. Get the facts you need so you don't get burned with an insurance policy analysis. You are considering investing tens of thousands of dollars or more. What is your due diligence worth? This **Insurance policy Analysis** includes:

Background check on the agent: -Agent will run personal, business and license background checks on the agent and tell you who you're dealing with.

Policy Fees and Expenses: - The insurance industry has very few disclosure laws that they must follow. This includes loads, fees, charges, rating costs, premium payment expenses, mortality fees, and more all specific to your policy.

Policy information: - Based on your reasons for buying insurances will be told for you how well the policy will work for you. This includes death benefits, cash values, investment options, settlements, how many years you will pay the policy, and how long you want the coverage. Not how much coverage you need.

Commission: - There is no requirement for an agent to disclose their commission in the sale of an insurance policy.

Premium funding:- There are many ways in which insurance premiums can be paid; i.e. write a check, through a Trust, by a corporation, or via loans. Each has its own inherent risks.

Consultation:- Explain, in simple English, what you are buying and answer your questions.

2.3.3. Basic Legal Requirement of Insurance Companies

When a company insures an individual entity, there are basic legal requirements. Several commonly cited legal principles of insurance include.

1. Indemnity: the insurance company indemnifies, or compensates, the insured in the case losses only up to the insured's interest.
2. Insurable Interest: the insured typically must directly suffer from the loss. Insurable interest must exist whether property insurance or insurance on a person involved.
3. Utmost Good Faith: the insured and the insurer are bound by good faith, bond of honesty and fairness. Material facts must be defined.
4. Contribution: insurers which have similar obligations to the insured contribute in the indemnification, according to some method.
5. Subrogation: the insurance company acquires legal rights to pursue recoveries on behalf of the insured; for example, the insurer may sue those liable for the insured's loss.
6. Cause proximate or (proximate cause): the cause of loss (the peril) must be covered under the insuring agreement of the policy, and the dominant cause must not be excluded.
7. Mitigation: in case of any loss or casualty, the asset owner must attempt to keep loss to minimum, as if the asset was not insured.

2.3.4. Effects of Insurance Service in the Society

Insurance service can have effects on the society through the way that it changes who bears the cost of the losses and damage. On one hand it can increase fund, on the other, it can help societies and individuals prepare for catastrophes and mitigate the effects of catastrophes on both households and societies. Insurance can influence the probability of losses through moral hazard, insurance fraud, and preventive steps by the insurance company. Insurance scholars have typically used moral hazard to refer to the increase loss due to unintentional, Carelessness and moral hazard to refer to increased risk due to intentional Carelessness of difference. Insurers attempt to address Carelessness through inspections, policy provisions requiring certain types of maintenance, and possible discounts for loss mitigation. For this reason comparative analysis of insurance policies and advising system is extremely crucial for the society

2.4. Related Studies

Insurance Policies Analysis using web based application

Insurance policies analysis and advising system plays a significant role in order to justify management outcome of a customer and insurance companies as overall. Unfortunately, there is no automated web based insurance policies analysis and advising system in Malaysia's insurance companies. A preliminary study has been conducted in two of insurance companies in Selangor, Malaysia in order to understand the manual and face to face operating process. Through interview session, Insurance Policies Analysis (IPA) development team have identified that management staffs, policyholders and new customers face problems in their interaction of every activity and also in keeping their records. Therefore, IPA has been proposed and developed. Need for a tool to systematically keep the new customers and policyholders and advising them increased due to increasing number of new customers and policyholders. Upon completion of IPA, user acceptance tested among potential end users. Result of IPA shows most of the users satisfied with some minor changes required.[6]

System Development for Analysis of Insurance Companies and Advising system using web based application

The system AIPCS(Analysis of Insurance Companies and Advising System) is based on computerization of policyholder identity number generation and email address system. To develop this project front -end tool as VISUAL STUDIO 2005 and back-end tool as relational database has been used. Using this software user can easily print policyholder identity information along with a unique web based application in a uniform format. Even a user can reprint an identity number and email address instantly if needed from previously stored records. The system enables a good user-interface for the user to maintain the records. It will also provide a permanent database and this will help to store the policyholder identity information in an error free and non-redundant way along with better option for maintaining the records.[7]

Insurance Software Solutions & Policy Management

Apart from the challenges of deregulation, consolidation and convergence of financial services worldwide, Radix has oozed out an innovative system of insurance software solutions provider to the clients of multi angels , providing insurance business management at a feasible cost features according to the relevant functionalities. The online insurance management system software solution is fully automated and integrated policy processing system for both personal and commercial insurance Carriers. It is a scalable, reliable, and cost-effective solution for Carrying out all business-crucial insurance processing functions. They are leading insurance software solutions provider for all segments of the insurance management system software solutions helps to solve long-standing time-to market challenges. The web based insurance management system expertise and solution can dramatically lessen the cost of policy ownership services.[3]

Web Application and Insurance Services

According to Lamba .N. (2009) in information and Web explains that the A web application is an application that is accessed by users over a network such as the internet or an intranet. The term may also mean a computer software application that is coded in browser-supported programming language (such as java script, combined with a browser-rendered marking language like HTML) and reliant on a common web browser to render the application executable.

Web applications are popular due to ubiquity of web browser, and the convenience of using web browser as a client, sometimes called THIN CLIENT. The ability to update and maintain web applications without distributing and installing software on potentially thousands of client computers is a key reason for their popularity, as in the inherent support for cross-platform compatibility. Common web applications include web mainly online retail sales, online auctions, Wikis and many other functions.

An emerging strategy for application software companies is to provide web access to software previously distributed as local applications. Depending on the type of application; it may require the development of an entirely different browser-based interface, or merely adapting an existing application to use different presentation technology. These programs allow the user to pay monthly or yearly fee for use of a software application without having to install it on a local hard drive. A company which follows this strategy is known as an application service provider (ASP), and ASPs are currently receiving attention in the industry.

Security breaches on these kinds of applications are a major concern because it can involve both enterprise information and print customer data. Protecting these assets is an important part of any web application and there are some key operational areas that must be included in the development process. This includes the processes for authentication, authorization, asset handling, input, and logging and auditing. Building security into the applications from the beginning can be more effective and less disruptive in the long run.[3]

CHAPTER THREE:

3. System Requirements Specification

3.1. Overview

System Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The aim of this document is to gather and analyze and give an in-depth insight of the complete web based comparative analysis insurance policies by defining the statement of problem in detail. It is also concentrates on the capabilities required by customers of the organization and their needs. The detailed requirements of the insurance system are provided in this document. And also it helps us how to do the system activity sequentially, to investigate the problem deeply and used to determine the material needed to solve existing problem, the analysis document is used to identify the needs of the customer and it's also some parts of the solution, it identifies the activity of the analysis.

Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to our project. Also, we shall predict and sort out how we hope the system will be used in order to gain a better understanding of the project. The purpose of this SRS document is to provide a detailed overview of system, its parameters and goals. This document describes the project's target audience and its user interface, hardware and software requirements of the system.

3.2. Problem with the existing system

3.2.1. Existing System:

Previously most of the insurance companies in Ethiopia don't have dynamic, integrated and online web site to give service to the prospective public. As the result of this the prospective publics were enforced only to visit the static sites of the companies. Previously the companies were given non-life and life insurance service for only local customers, but now. These companies were carried out their daily works by providing their service to the customers using standalone data management software which is not capable of online service and not integrated. The companies were used a manual system for registration, payment, calling customers through phone to renew their insurance and to pay expected payment. The existing system problems were listed as follow: -

- ✓ There was no integrated website that leads the prospective public to compare and know best policies among companies
- ✓ Users did not have awareness of all insurance companies policy
- ✓ The users didn't have an option to choose the best policy and least cost
- ✓ Both new and active customers were expected to go to the companies' office to make registration and pay respectively.
- ✓ Agreement between customers and companies was made in person or by the agent of the customer
- ✓ Depending on the agreement the customer was expected to go to the companies to pay in cash either monthly or annually.
- ✓ Information transferring to perform services between branch and head office took place by hard copy these led to long delay of time to get required services. This one was potential company problem which waste big company resource such as:-
 - Many man power
 - Transportation cost
 - Time consuming
 - Paper cost and related material.

- ✓ There was no way of communication method between company's members for urgent case when one's company member phone is unavailable (not working).
- ✓ Customers were unable to get latest and reliable information due to absence of official web application. These might include news, advertisement and company information.
- ✓ As we mentioned above due to absence of web application customer was unable forward complain in any place.

3.2.2. Weakness and strength of the existing system

Weakness

- Some of the companies' members did not arrive in time for day to day work activities.

Strength

- Employers tried to perform customer services in a minimum time by working overtime.
- Because of all needed customers information was in hand and the processes proceeded in step from one center to another, easy to fix errors.

3.3. Proposed system

3.3.1. Overview

The proposed system consists of much functionality which reduces the company's problems. When customer request services or policies the system register customer information. The system provide the mechanism in which those information usable by the company for processing the services. The system integrates three insurance companies, compares and analyzes and gives advice for the prospective public. The integrated Insurance service provides different policies for the customers through internet, so that the customer can view all the policy, complete details and benefits about the policy. This system saves time and money of clients/customers of insurance companies and at the same time improves their decision-making towards a policy which leads to

lower risks. The system control policies and payment process. Customer can able to request complains and related information using interfaces. The system helps the companies' members to communicate each other any place for work staff.

3.3.2. System Requirement Of The Proposed System

System requirement is the general expression of the system performance properly. It is a term used to describe all the tasks go in to investigation scoping and definition of a new or altered system.

3.3.2.1. Functional Requirement of The Proposed System

The functional requirement explains and describes the interaction between the system and the users or in general the environment that interact with the system. So the proposed system consists of the following functional requirements:

- The system verify user to handle services.
- The system register new customer for services in well-defined interface.
- The system control policies and payment process.
- The system handles new insurance service request information. When the newcustomer makes a request for new insurance mean that they want to get insurance policy service.
 - First the customer fill contract for supply of insurance form.
 - Once contract confirmed, the customer information filled in new insurance service customer details form and will be sent.
- The system handles renewal request information.
- The customer can update their information when they want. Many reasons tend one customer to change his name to another person name. During this time there is needed to have an automated way to handle the service. During this process removed (de-enrolled) customer data and new customer data are filled.
- The system provides the communication information for company members

- Communication is the base for one organization. Company needs strong communication among company members but the company members communicate through mobile for overall activities. This way of communication sometimes unavailable when in case mobile services stop working. So that maintaining separate interface for the service is necessary.
- The system provides Customer complains service and related.
- The system provides different information.
 - ✓ News
 - ✓ advertisement and
 - ✓ Information about companies.
- The system provides a number of search methods, including search by insurance policies type, insurance policy number.
- The system provide electronic links between the web and data base

3.3.2.2. Non-Functional Requirement

Non-Functional requirement explains and describes the user visible aspects of the system. It is not directly related to the functional aspect of the system. Instead, they describe user-visible features of the system; Non-functional requirements are constraints of the system such as response times, computational accuracy, software portability, scalability, maintainability and etc. The customers, the service users and related personals mainly need system accuracy which reduces many unusual processes. In addition response time and maintainability is required from system. Due to this our team proposed to implement the following non-functional requirements.

- ✓ The system provides fastest execution speed and reliable system compared to the manual system
- ✓ The system provide well defined graphical user interface: - well defined graphical user interface helps the user, customer, system administrator and others to do their own tasks in efficient and easy way. This is also done by building manageable forms; textbox's, labels, buttons and etc.
- ✓ The system provide security mechanisms: - the security mechanisms are provided for the system to protect the system from unauthorized access. Those mechanisms are built by

assigning permissions for system users. The permissions for each user given by system administrator.

- ✓ The system provides accuracy: - when the organization performs their tasks the accuracy of the system was the main consideration. To bring accurate system implementing overall organization working logic to the right design of the system.
- ✓ The system needs minimum hardware and software requirements
- ✓ The system provide backup and recovery mechanism.
- ✓ The system helps to retrieve data efficiently

Since we store data in the database we can make fast and accurate retrieval of data either by using search attributed or by using other interfaces for different purpose.

3.3.2.2.1. User Interface And Human Factors

The system interface that has developed must be interactive and easily understandable. The system has an attractive interface and navigation button that can be easily understandable by the user. If user enters invalid inputs to the system, the system will warn the user about the problem. To make the system to be easy for the user, there is a help and guide. The system will have also main window which describes all about the system functionalities and there are three different login windows and they have their own homepages. The user interface will be user friendly.

3.3.2.2.2. Performance Characteristics

Comparative analysis of insurance policies and advising system for the prospective public is a web based application. This system provides facility for reporting complains and also any number of clients can connect to the server. Each user first makes registration and login to the server to show their availability.

3.3.2.2.3. Documentation

At the completion of the project, every activity in the development process will be documented for the user to let them easily access of the system.

3.3.2.2.4. Hardware consideration

The system have hardware compatibility that the system is to be installed should fulfill at least the following criteria's, more than 70GB hard disk, minimum 1 GB RAM, network interface Card, Intel Pentium 2.5 GHz processor on server side and operate on personal computer or laptop having more than 512MB RAM, Intel Pentium 2.5 GHz processor, network interface Card, and more than 40GB hard disk in client side and Hub or switch and Category 6e UTP cable is needed in both sides.

3.3.2.2.5. Error handling and extreme conditions

During system development process someone may face with error occurrence, so that any system developer must predict the way they handle an error. When errors (for example invalid input) can be made by users, the system will answer these errors easily. If the electricity is gone on the main server then the system will be out. For this we should use uninterrupted power supply to avoid the problem. The following are methods used to handle error which may be occurred in actual process of the system.

Error avoidance: is taken to ensure that input data remains accurate from the stage at which it is recorded up to the stage in which the data is accepted by the system. This can be achieved by means of Careful control each time when the data is handled.

Error detection: Even though every effort is made to avoid the occurrence of errors, still a small proportion of error is always likely to check the input data. Procedures are designed to detect errors in data at lower level of detail. Data validations have been included in the system in almost every area where there is possibility for the user to commit errors. The system will not accept invalid data. Whenever an invalid data is entered, the system immediately tell the user and the user has to gain re-enter in the data and the system will accept the data only if it is correct. Validation will have been included where necessary.

3.3.2.2.6. System modifications

Whenever modification necessary, the system should support such process because this system is easily modifiable to meet change requirements, rectifying a deficiency or correcting errors, change to the organization structure and adapt the change of technology and environment

3.3.2.2.7. Physical environment

This system will be deployed in the company where there is network infrastructure. The room for this system should be cold for better performance. The magnetic fields and temperature can affect the system performance. If temperature is more than 400c then it should be cooled. The system is implemented using internet and store information on the central database resides under the server. So that we must take Care for environment needed.

3.3.2.2.8. Security Issues

Security is the protection of computer based resources that includes hardware, software, data, procedures and people against unauthorized user. System security refers to various validations on data in the form of checks and controls to avoid the system from failing. It is always important to ensure that only valid data is entered and only valid operations are performed on the system.

Access control of data requires user authentication and user authorization.

User name: The user identification is required to the server for accesses to its file system. This command will normally be the first command transmitted by the user after the control connections are made.

Password: the command must be immediately preceded by the user name command and for some sites complete the user identifications for access control. Since password information is quite sensitive, it is desirable in general to "mask" it or suppress type out.

In case of any problem, in order to lose our reliability, we should better be using backup server. We may use a firewall to keep our data secure and prevent unauthorized access to our system. We may also use proxy server to control the traffic into and out of the server. Comparative analysis of insurance policies and advising system is all about insurance policies which require high security level to avoid any mistakes. The access of this system will be given to authorized

person with full responsibility and accountability. Therefore, our system has user name and password to avoid any unauthorized access. The security of the system will be given a high consideration to avoid irresponsible access.

3.3.2.2.9. Resource issues

If the record in the database is changed, the system will be backed up. Back up will be in backup server. The administrator is responsible for backup, system installation and system maintenance.

3.3.2.2.10. Quality Issues

The following are the qualities issues of our system:

- **Performance:**-The system should respond fast and store large amount of data by using MYSQL database
- **Robustness:**-The system should tolerant of misuse by validating input data using JavaScript language.
- **Security:**-The system should be secured from unauthorized users by giving special privilege for authorized users.
- **Usability:** - The system should have attractive and understandable graphical user interface.
- **Efficient:**-the system should be efficient use of memory and CPU by minimizing code using cascade style sheet.
- **Scalability:**-the Server should have spare capacity to handle larger number of clients
- **Reliability:**-the System should survive node or communication link problems

3.4. Hardware and Software Requirements Of The Proposed System

i. Hardware Consideration

The system can operate on personal computers or laptop having more than 70GB hard disk, minimum 1 GB RAM, network interface Card, Intel Pentium 2.5 GHz processor on server side and operate on personal computer or laptop having more than 512MB RAM, Intel Pentium 2.5 GHz processor, network interface Card, and more than 40GB hard disk in client side and Hub or switch and Category 6e UTP cable is needed in both sides. And also HP Laser Jet 4250 and HP Laser Jet 1100 printers are required.

ii. Software Consideration

The system runs in computers must have browser and operating system that support GUI in client side. Also it runs in computers must have browser, any operating system that support GUI and Wamp server.

3.5. Business Rules of the System

A business rule is statement that defines or constraints some aspects of the business. When systems developed, it is needed to respect organization business rules. When the users are going to use system there are rule and regulation. The followings are some of the system business rules:

- To book policies the customer must have an account
- If the system displays an error to the user, the user resubmits.
- Addition, deletion and update are allowed to the manager/administrator.
- The manager is responsible to manage all activity
- Officers have responsible for process customer order.
- Manager must give the account for officers and update his/her own account.
- If the user face problem of using the system, they have full right to send comment.

- Customers provide their full information or personal detail and payment for new insurance service processing.
- If the customer did not perform payment on time the system automatically send electronic message.
- The customer must first give all required valid information and requirement to get access from the insurance company.

3.6. Constraint and Assumption

The system provides easy links for easy navigation (browse) in the site. A user with minimum knowledge of web browsing/surfing can access the site very easily. But, due to dynamic nature of the website the user should be able to understand the system and tools provided. If a user feels any difficulty in understanding any feature, he/she can go through the help provided in different levels. Also, if any user is unable to find required information in the web site, he/she can contact with administrator email.

3.7. Software Engineering Methods and Techniques

Software engineering methods and technics are used to search for an appropriate solution, often by trial and error, evaluating alternatives empirically, with limited resources and incomplete knowledge. In its simplest form, the engineering method includes five steps:

1. Formulate the problem
2. Analyze the problem
3. Search for solutions
4. Decide on the appropriate solution
5. Specify the solution

Software engineering is an engineering, modeling and problem-solving activity. It is not algorithmic. It requires experimentation, the reuse of pattern solutions, and the incremental evolution of the system toward a solution that is acceptable to the client.

Software development typically includes five development activities: requirements elicitation, analysis, system design, object design, and implementation.

During requirements elicitation and analysis, we formulate the problem with the client and build the problem domain model. Requirements elicitation and analysis correspond to steps 1 and 2 of the engineering method. Object-oriented methods combine the problem and solution domain modeling activities into one. The problem domain is first modeled as a set of objects and relationships.

The idea of object-oriented methods is that the solution domain model is an extension of the problem domain model. Developing software translates into the activities necessary to identify and describe a system as a set of models that addresses the end user's problem. During object design, we select detail solutions for each piece and decide on the most appropriate solution.

System design and object design result in the solution domain model. System and object design correspond to steps 3 and 4 of the engineering method.

During implementation, we realize the system by translating the solution domain model into an executable representation. Implementation corresponds to step 5 of the engineering method. Generally we use UML throughout the project to represent models of the systems.

3.8. Analysis Activities

3.8.1. Use Case Identification

A use case represents a function that the system performs. Alternatively, a use case can be thought of as a goal that some actor can achieve with the system. Identifying use case uses to visualize the overall system functions and the actors interacting with use cases. By concerning this concept our team identifies the following use cases.

3.8.1.1. Use Case Diagram

Use case diagram is used to define the core elements and processes that make up a system. The key elements are termed as "actors" such as customer/policy holder, administrator, officer and the processes are called "use cases." it describe what a system does from the viewpoint of an external observer. The Use case diagram shows which actors interact with each use case. Our team designs the proposed system use case diagram in easy and understandable way.

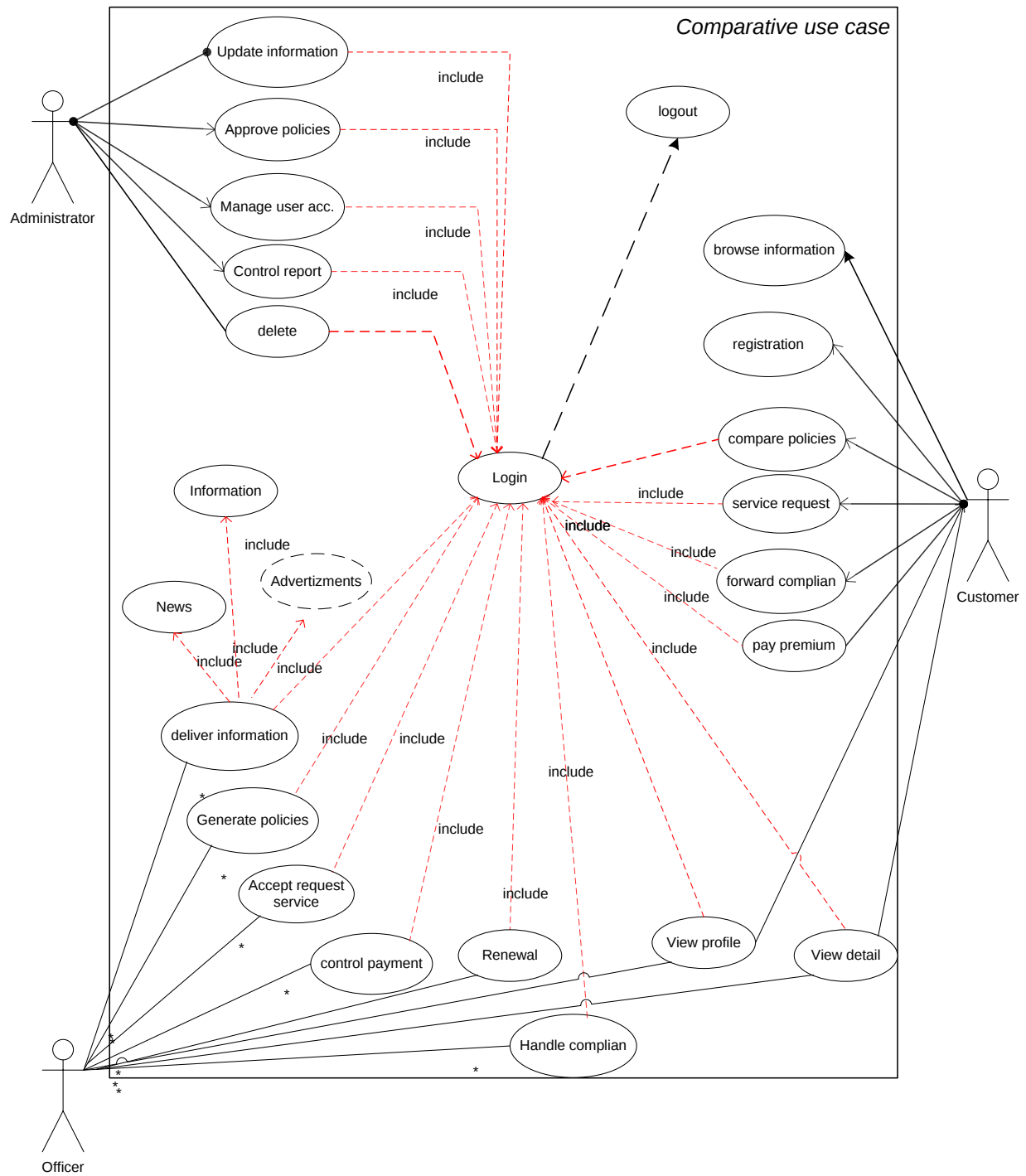


Figure 3.1 Use case diagram

3.8.1.2. Actors Specification

Actor classes are used to model and represent roles for "users" of a system, including human users and other systems. Actors are denoted as stick person icons. In our proposed system there are three actors which participating with system. The following are the actors of the proposed system.

- **Customer (Policy Holder):** - He or she can view details of the policies and they can also Calculate premium and make pay premium as well as participate in discussion forum.
- **Companyofficer:** - The company officers generate policies and give responses to the queries asked by users in the discussion forum.
- **Administrator:** - He is responsible for approval of policies generated by company officers and also updates information like new schemes policies etc.

3.8.1.3. Use Case Description

Use case description for login

Table 3.1 Use case description for login

Name	Login
ID	UC-1
Description	Authenticates and authorizes users.
Participating actor:	Officer, Administrator, customer.
Pre-condition:	✓ Users must have User name and password which means they must be registered.
Basic course of events:	The users wants to login the system. 1) The system displays login window. 2) The users' type user name and password and click submit button. 3) The system validates information.

	4) The system displays services handling separate windows. 5) Use case ends.
Alternate flow	1. incorrect user name or password 2. The system displays “Incorrect user name or password” message. 3. The users click ok. 4. Use case resume at step 2 of basic flow.
Post-condition:	Main services performing window.

Use case description for handle complain

Table 3.2. Use case description for handle complain

Name:	Handle complains.
ID:	UC-2
Description:	Accept the forwarded complain from customer and replay the response.
Actors:	Officer
Pre-condition:	✓ The officer must be logged into system ✓ Customers complain information.
Basic course of events:	✓ The officer wants to see complain of customers ✓ The officer click on complain acceptance page from the system. ✓ The system displays the complaint message. ✓ The officer replay response. ✓ Use case ends.
Post condition:	Replay for complains.

Use case description for deliver information

Table 3.3 Use case description for deliver information

Name:	Deliver information.
ID:	UC-3
Description:	Play crucial role in providing information for the users.
Actor:	Officer.
Pre-condition:	✓ officer must be logged into system ✓ Information.
Basic course of events:	1) Officer wants to provide information. 2) Officer clicks on information providing page. 3) Officer posts the information. 4) The system returns Acknowledgement. 5) Use case ends.
Post condition:	Information posting success message.

Use case description for create renewal

Table 3.4 Use case description for create renewal

Name:	Create renewal.
ID:	UC-4
Description:	The purpose of this use case is to register customer for performing re-connection services when customer needs to renewal companies services. And it is performed by retrieving information sent by officer.
Participating actor:	officer, administrator and customer
Pre-condition:	✓ Administrator and officer must be logged into system. ✓ Previously registered customer information.
Basic course of events:	1) Customer wants make registration for renewal

	2) Officer fills customer information for renewal on database. 3) Administrator clicks on renewal service information retrieval page link from service window. 4) The system Fetch information from data base and display the data. 5) administrator process and replay acknowledgment for officer and customer 6) Use case ends.
--	---

Use case description for make delete

Table 3.5 Use case description for make delete

Name:	Make delete.
ID:	UC-5
Description:	The purpose of this use case is to make cancelation of unwanted data from system. And it is performed by retrieving information sent by administrator.
Participating actor:	officer, administrator and customer
Pre-condition:	✓ Administrator and officer must be logged into system. ✓ Customer information for de-enroll.
Basic course of events:	1) The customer wants to de-enroll. 2) Officer fills customer information for delete on database. 3) Administrator clicks on delete information retrieval page link from services window. 4) The system Fetch information from data base and display the data. 5) officer cancel the customer and replay acknowledgment for officer 6) Use case ends.
Post-condition:	Customer deletes confirmation.

Use case description for browse information

Table 3.6 Use case description for browse information

Name:	Browse information.
ID:	UC-6
Description:	This use case helps the customer browse information's like news, advertisements and all information about the companies.
Actors:	Customer.
Pre-condition:	The customer must be browsing the system.
Basic course of events:	1) The customer wants to browse information 2) The customers login into the system. 3) The system fetches information from database and displays the data. 4) Use case ends.
Post condition:	Browse the required information.

Use case description for forward complain

Table 3.7 Use case description for forward complain

Name:	Forward complain.
ID:	UC-7
Description:	The purpose of this use case is forward complaining from customer when some fault is occurred related to the service given by the companies.
Actor:	Customer.
Pre-condition:	• The customer must be browsing the system. • Information about the fault.
Basic course of events:	1) The customer wants to send complain about the fault. 2) The customer click on complain page and fill customer

	detail and it's complain. 3) The customer Click on submit button. 4) The system validates the customer information. 5) The system response acknowledgement. 6) Use case ends.
Alternate event	1. Invalid customer information. 2. The system display “customer detail not found” error message. 3. The use case resume at step 1 of basic flow.
Post condition:	Success message.

Use case description for manage accounts

Table 3.8 Use case description for manage accounts

Name:	Manage accounts
ID:	UC-8
Description:	This use case helps the system administrator to change, reset, and create new accounts.
Participating actor:	Administrator.
Pre-condition:	✓ Administrator must have an account. ✓ Administrator must be logged into system.
Basic course of events:	1) Administrator clicks on manage account link. 2) Administrator fills management detail. 3) Verifies detail. 4) Use case ends.
Alternate event	✓ Invalid detail. ✓ The system displays “invalid detail” message. ✓ Use case resume at step 2 of basic flow event.
Post-condition:	Success message.

Use case description for comparing

Table 3.9 Use case description for comparing

Name	compares policies
ID	UC-9
Participate actor	Customer
Pre-condition:-	• Customer must be a member of the system to compare and buy insurance policies • Customer must log on(user name and password) to the system
Basic course of events:	1. Customer must log to personal home page 2. Chose the company service policy to compare 3. Fill the form properly 4. Click on compare button 5. The system display company list/search result 6. Customer chose the company 7. Use case end
Post condition:-	Register for the best insurance company to buy insurance policy and make payment

3.8.2. Class Diagram

Class Diagram provides an overview of the target system by describing the objects and classes inside the system and the relationships between them. It represents a relevant concept from the domain, a set of persons, objects, or ideas. Our team uses class diagram to describe the structure of the system.

The first for drawing class diagram is to identify classes. After those differentiating relationships, association, multiplicity and classes operations were the next step to proceed.

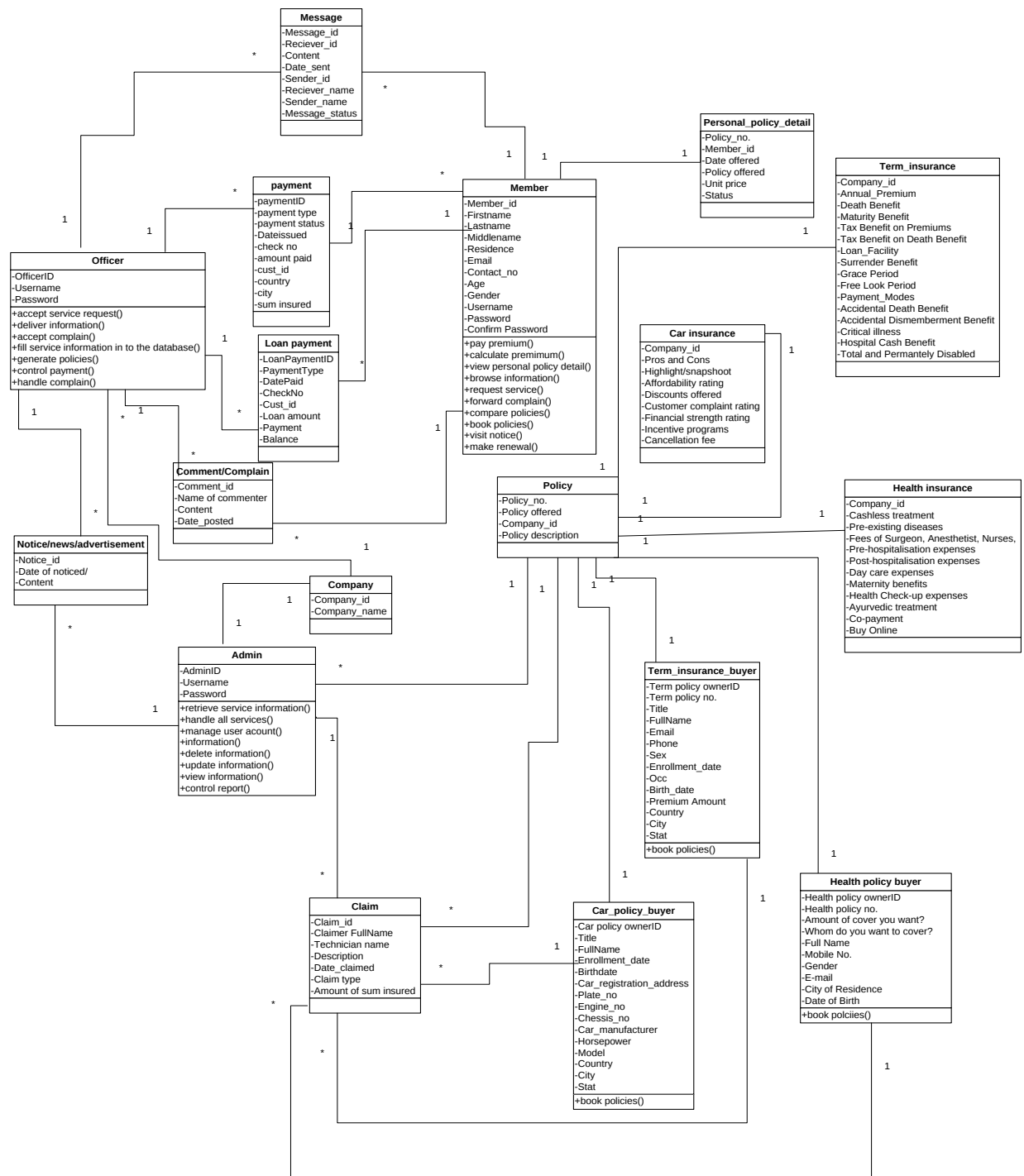


Figure.3.2. Class Diagram

3.8.3. Sequence Diagram

A sequence diagram in a Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to Carry out the functionality of the scenario. Sequence diagrams typically are associated with use case realizations in the Logical View of the system under development.

Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

1. Sequence Diagram For Customer And Officer Login

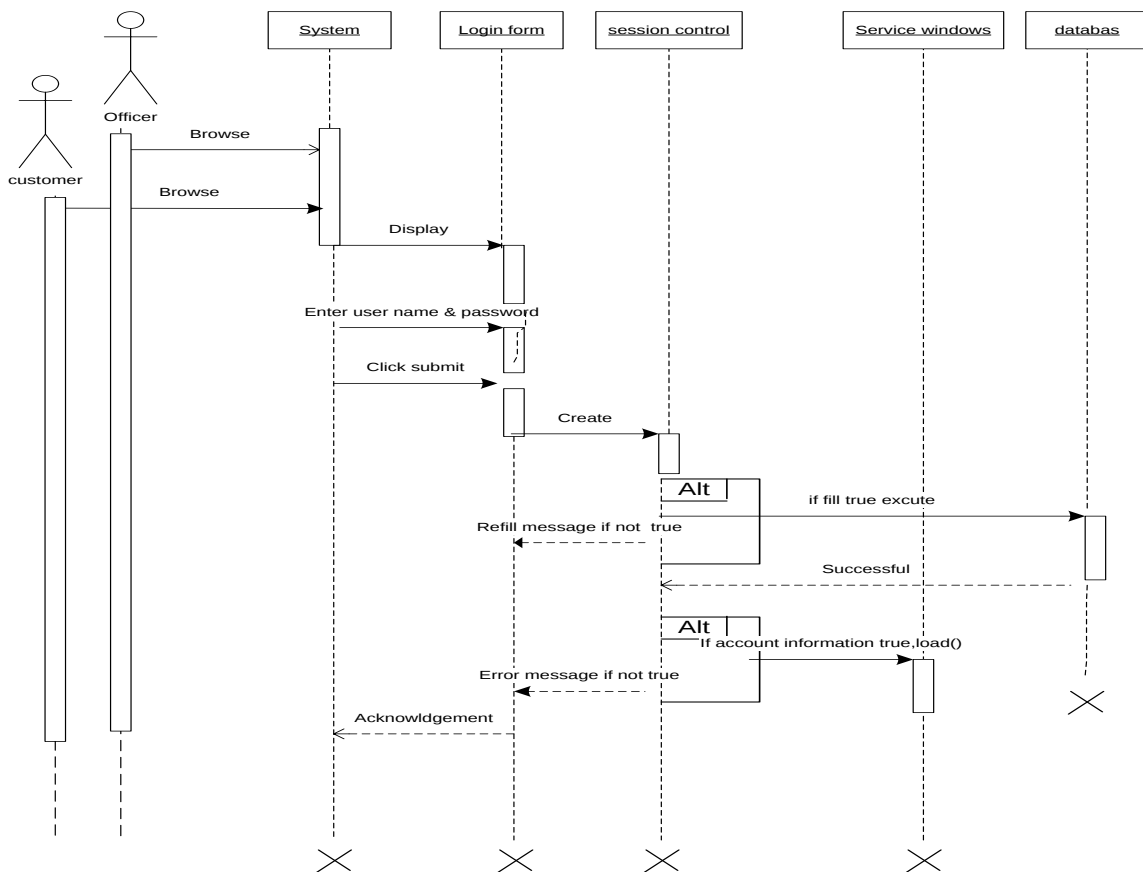


Figure 3.3

2. Sequence Diagram For Customer Registration

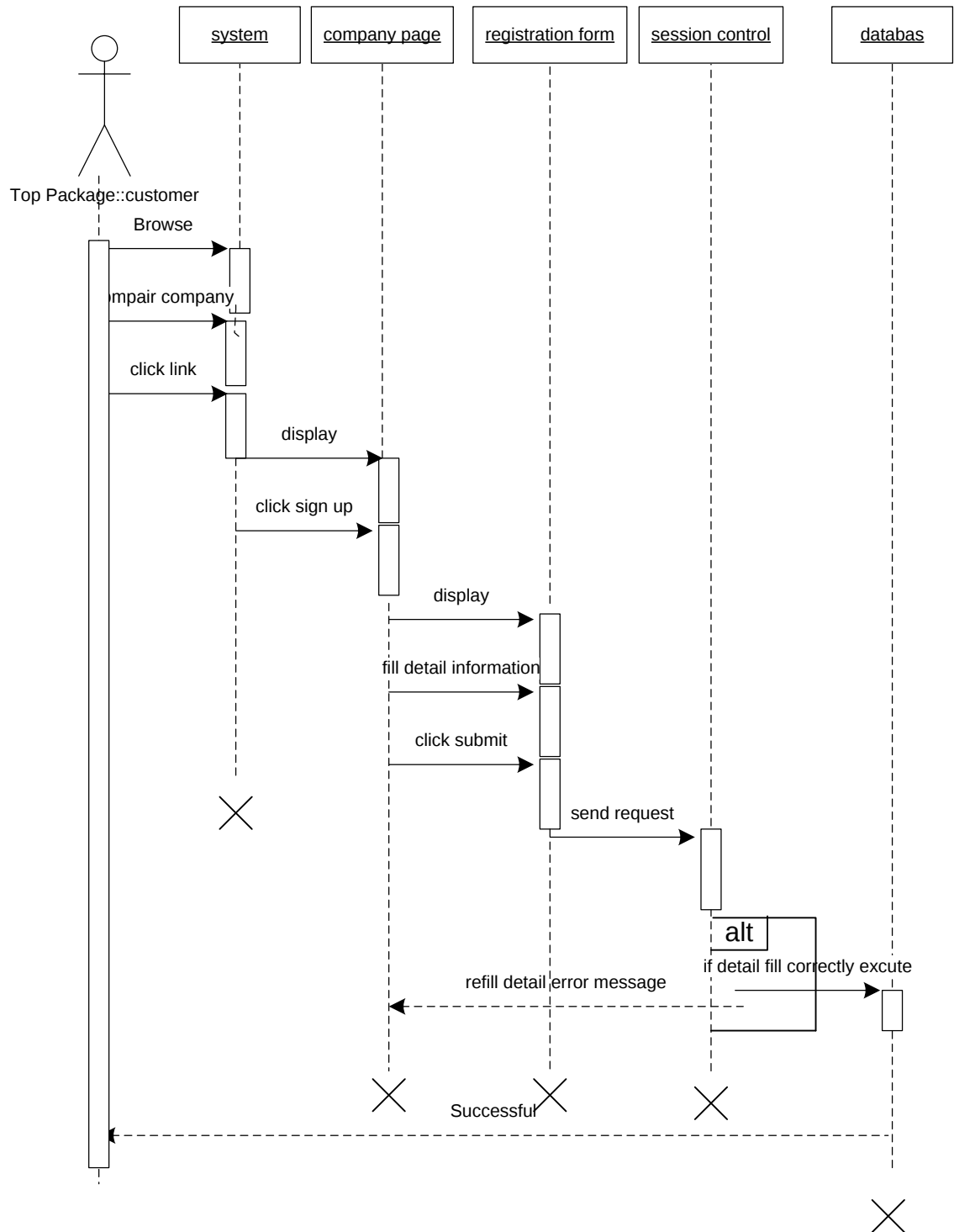


Figure 3.4

3. Sequence Diagram For Deliver Information

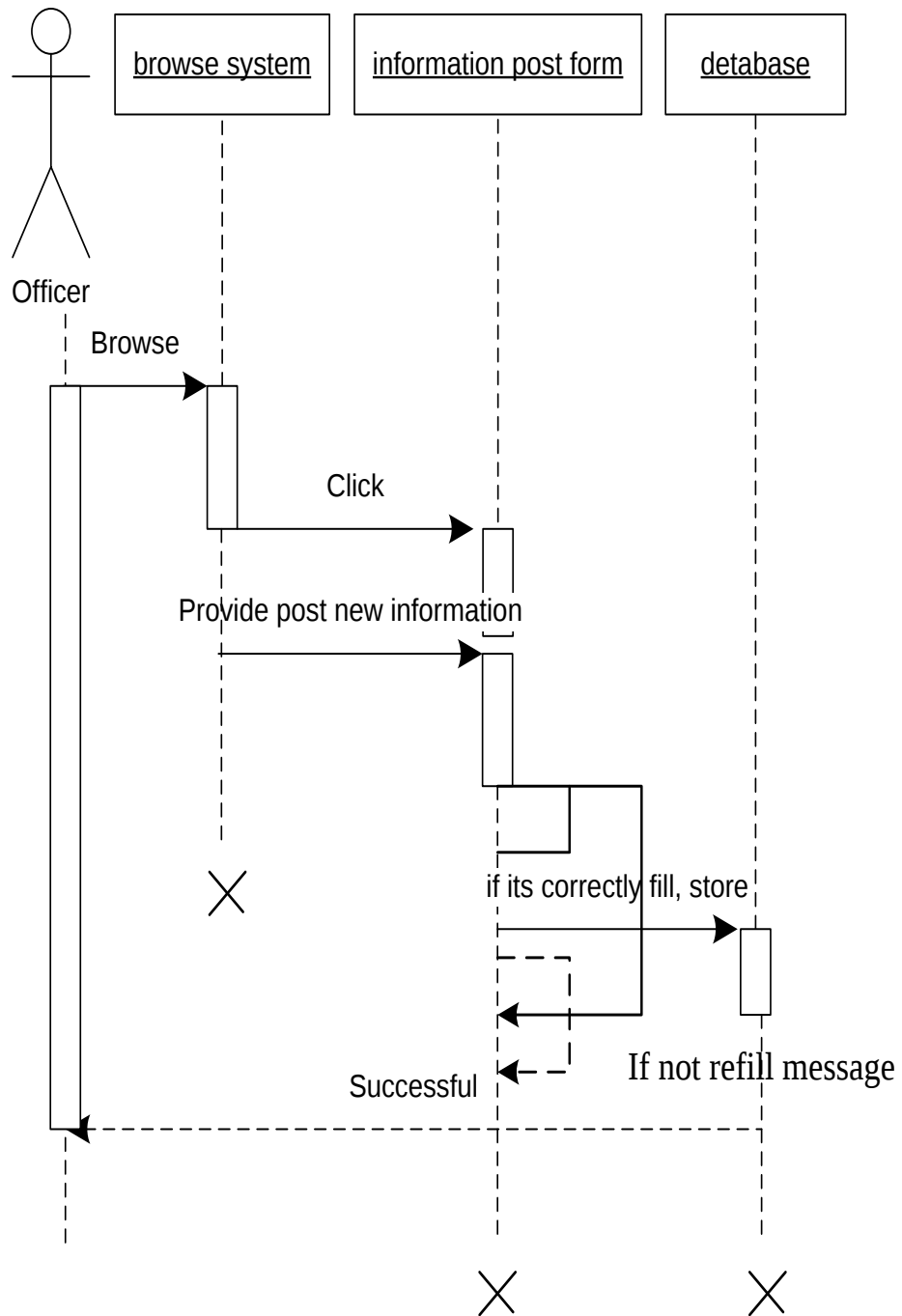


Figure 3.5

4. Sequence Diagram For Generate Report

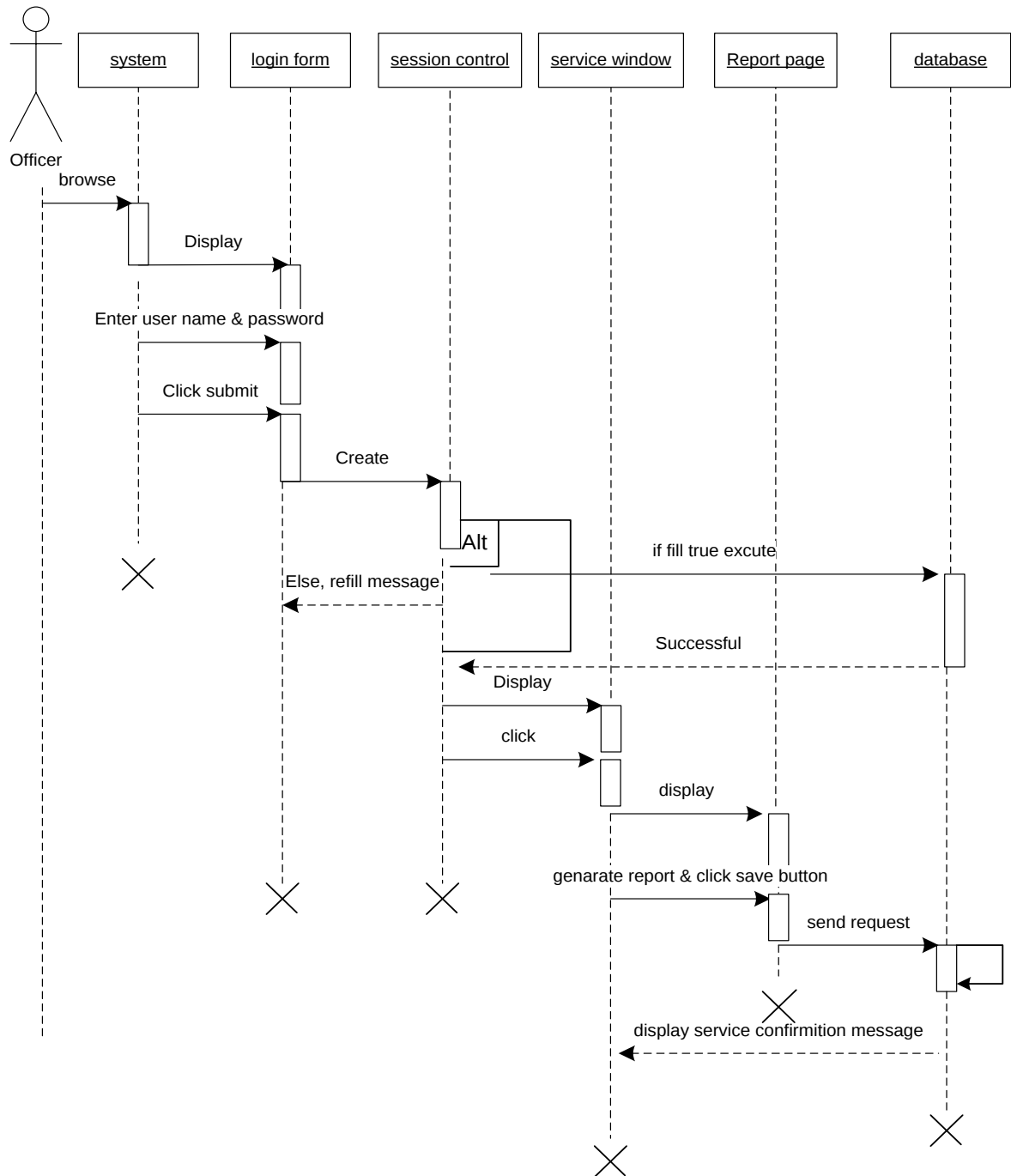


Figure 3.6

5. Sequence Diagram For Handling Complain

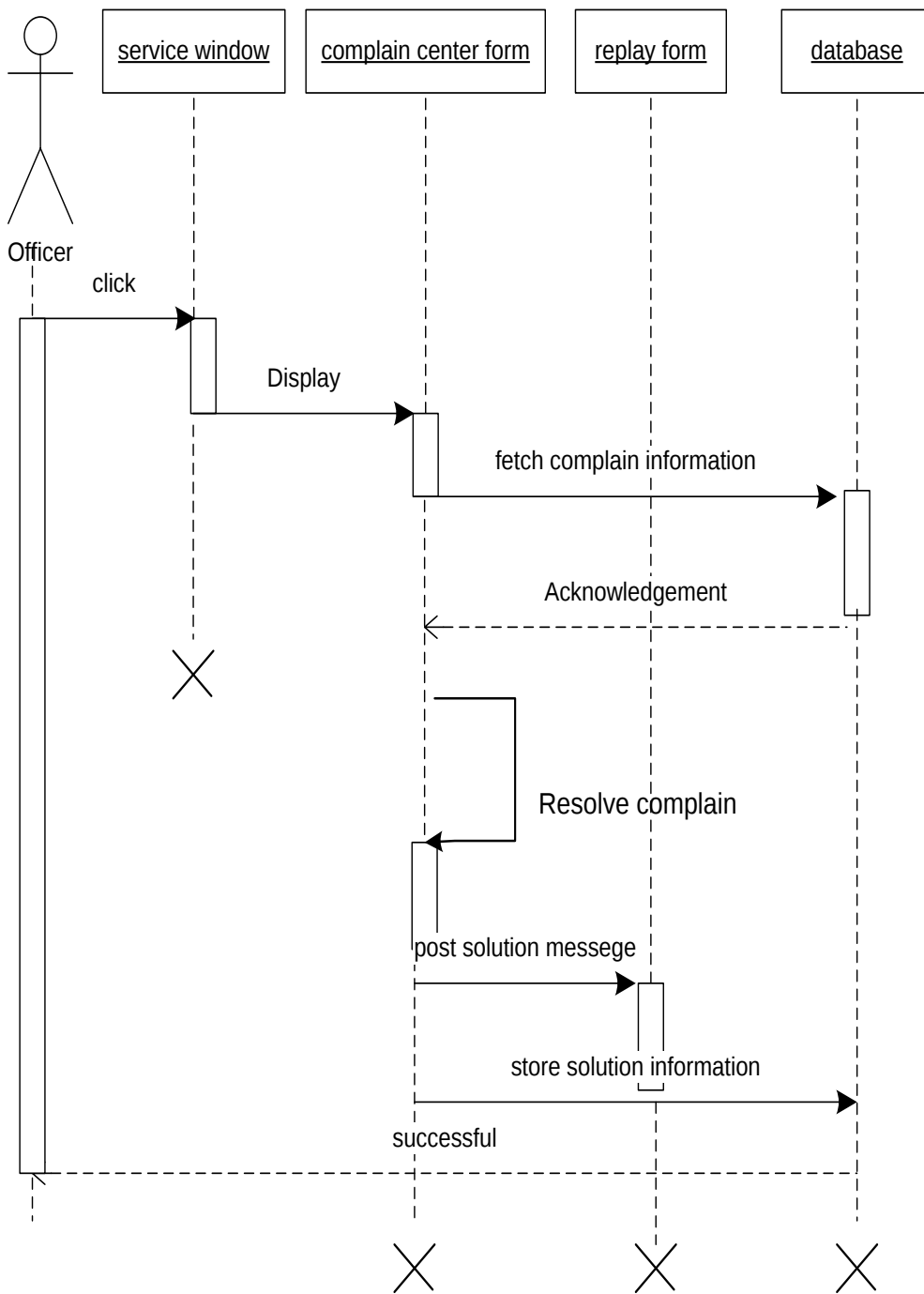


Figure 3.7

6. Sequence Diagram For Deleting

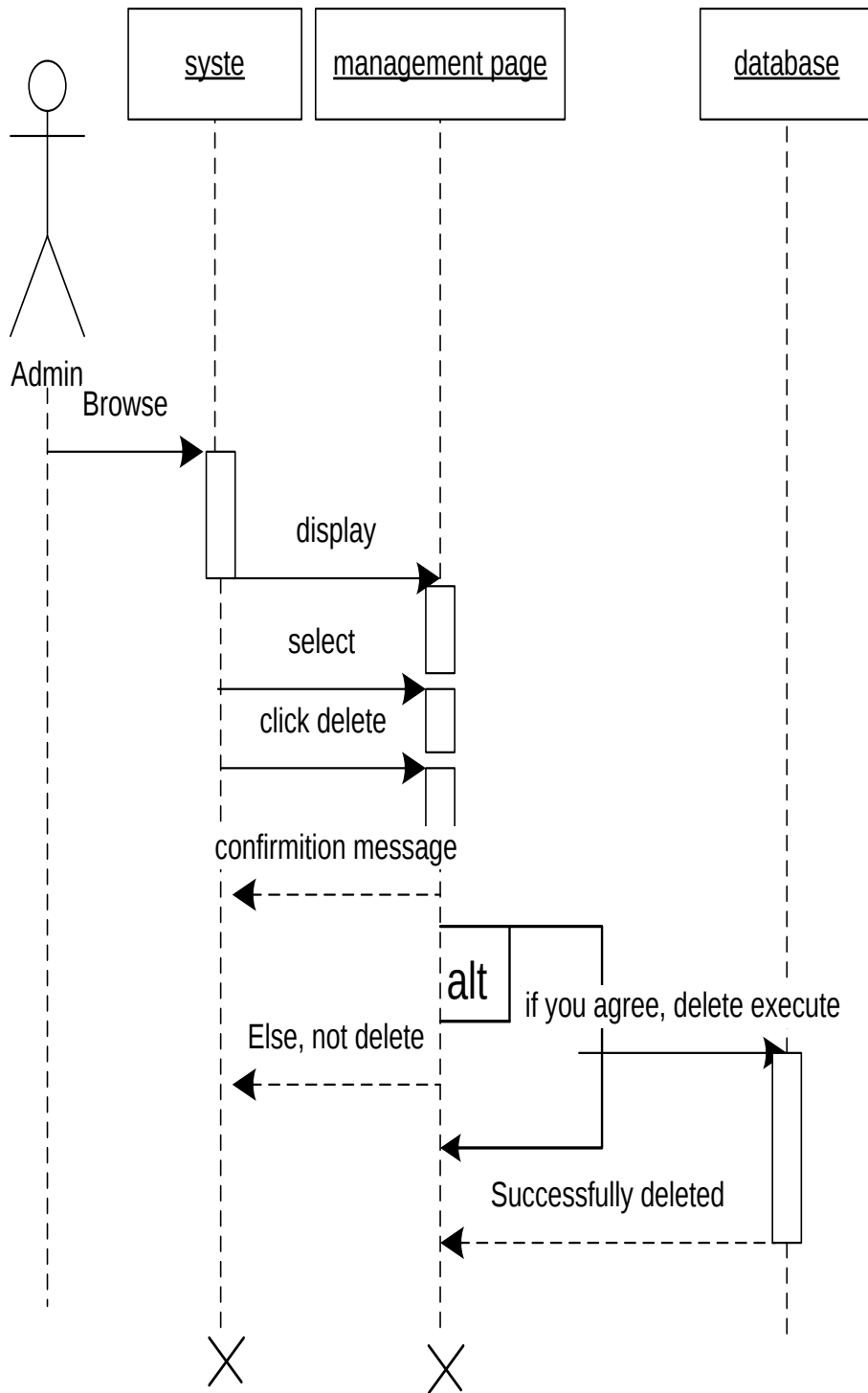


Figure 3.8

7. Sequence Diagram For Resetting Password

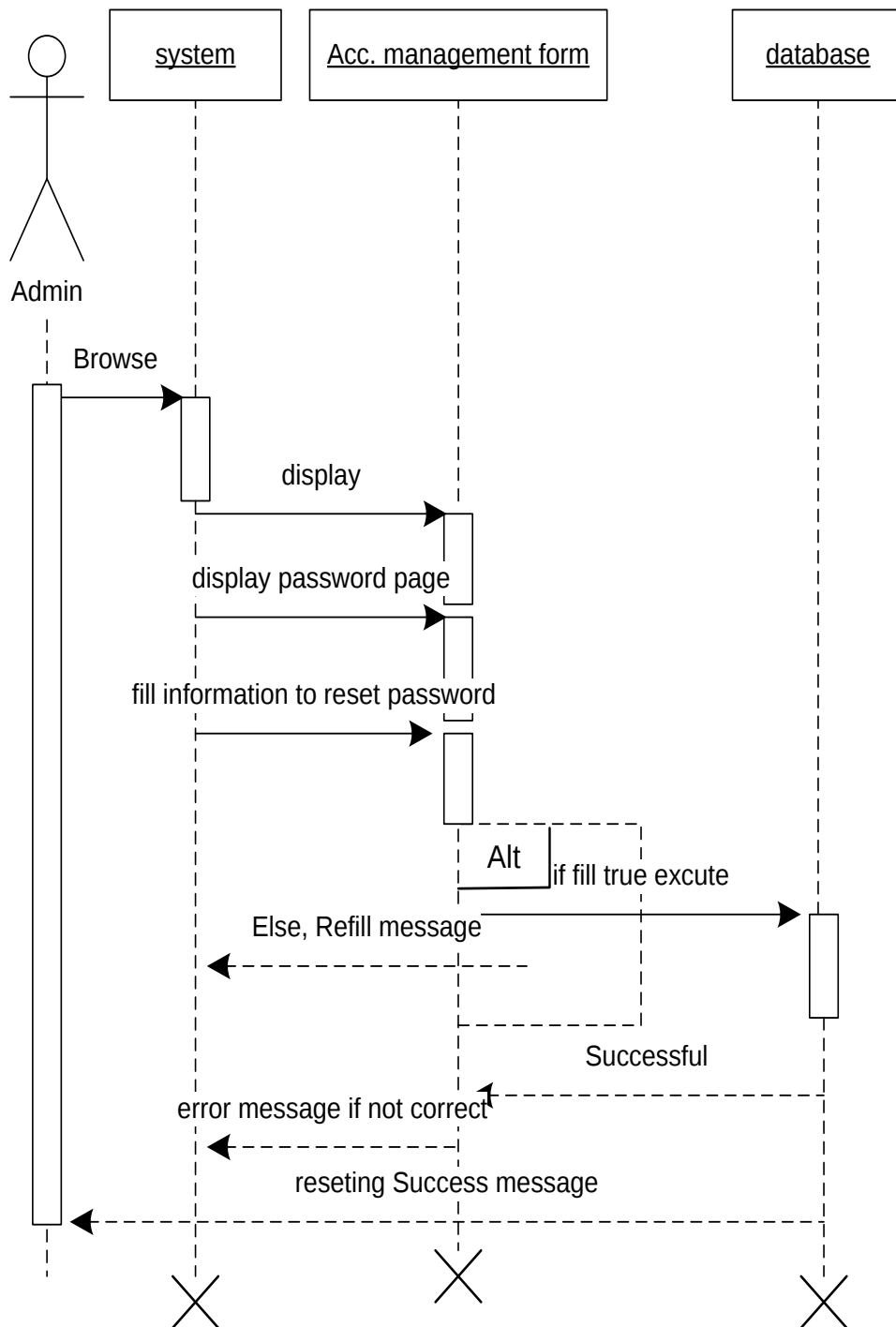


Figure 3.9

8. Sequence Diagram For Updating

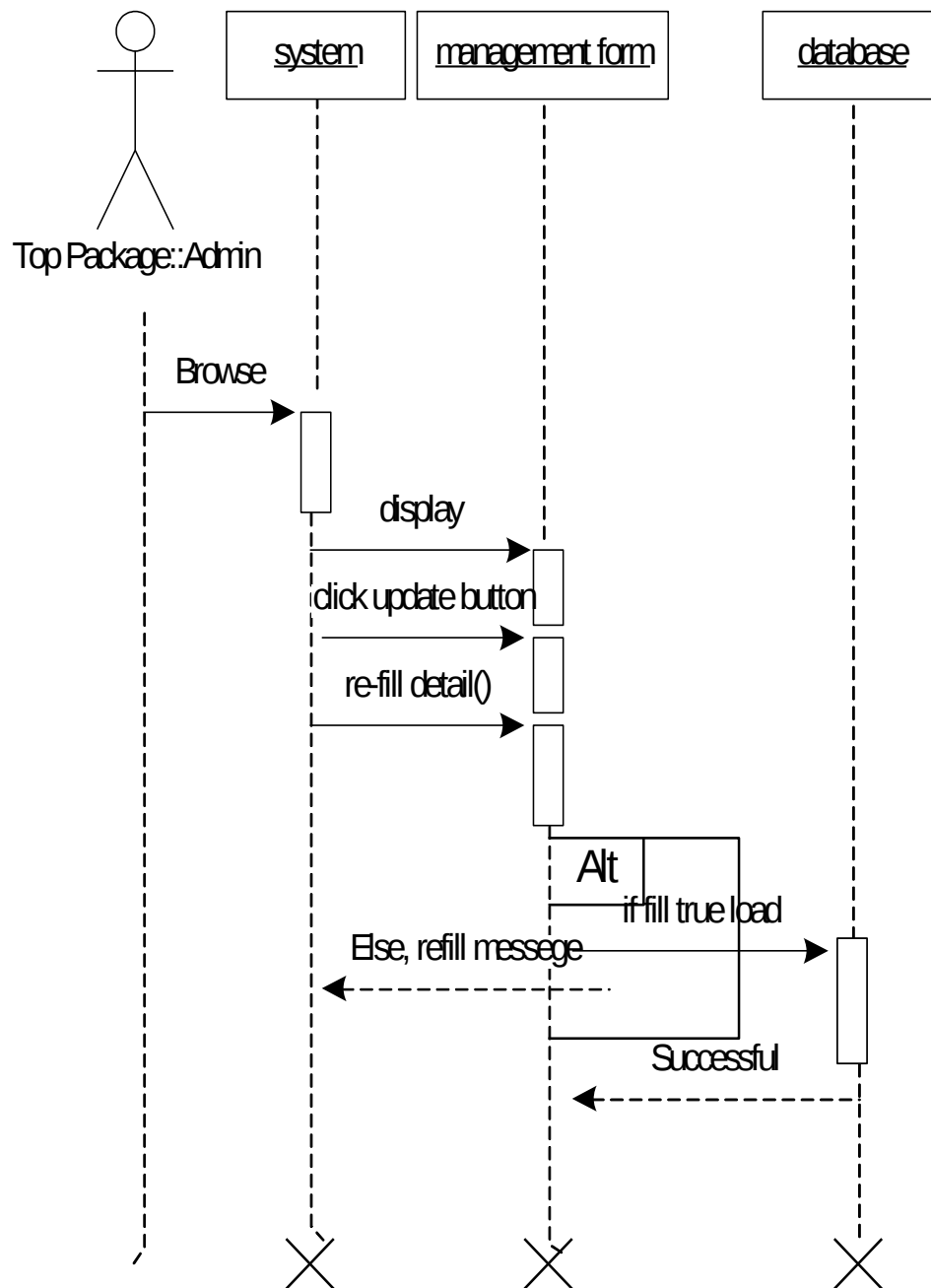


Figure 3.10

9. Sequence Diagram For Approval

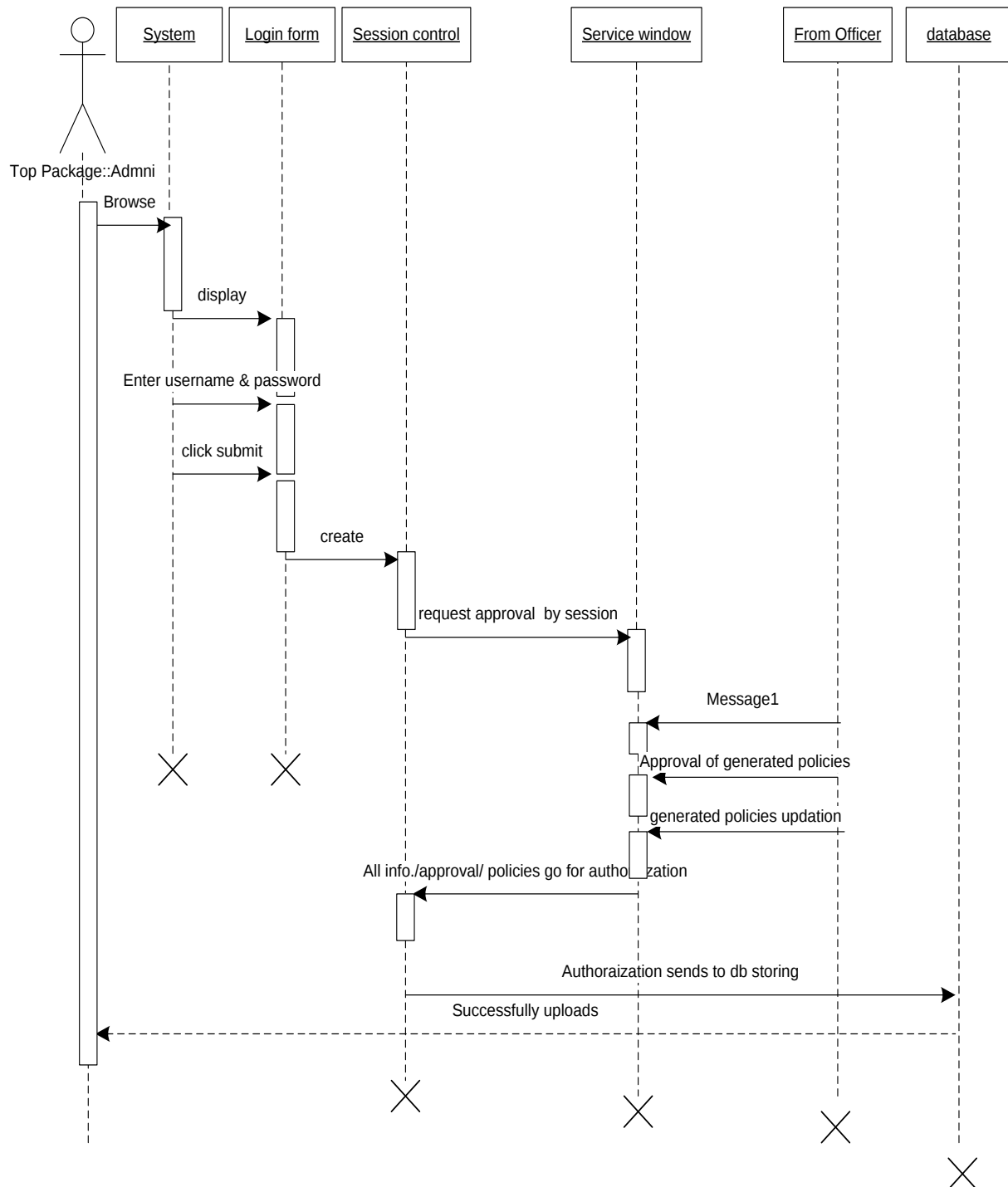


Figure 3.11

3.8.4. State Chart Diagrams

State chart diagrams describe the behavior of an individual object as a number of states and transitions between these states. A state represents a particular set of values for an object. Given a state, a transition represents a future state the object can move to and the conditions associated with the change of state. The state chart diagram focuses on the transitions between states as a result of external events for an individual object. Note that this diagram represents different information than the sequence diagram. The sequence diagram focuses on the messages exchanged between objects as a result of external events created by actors.

1. Admin State Chart Diagram

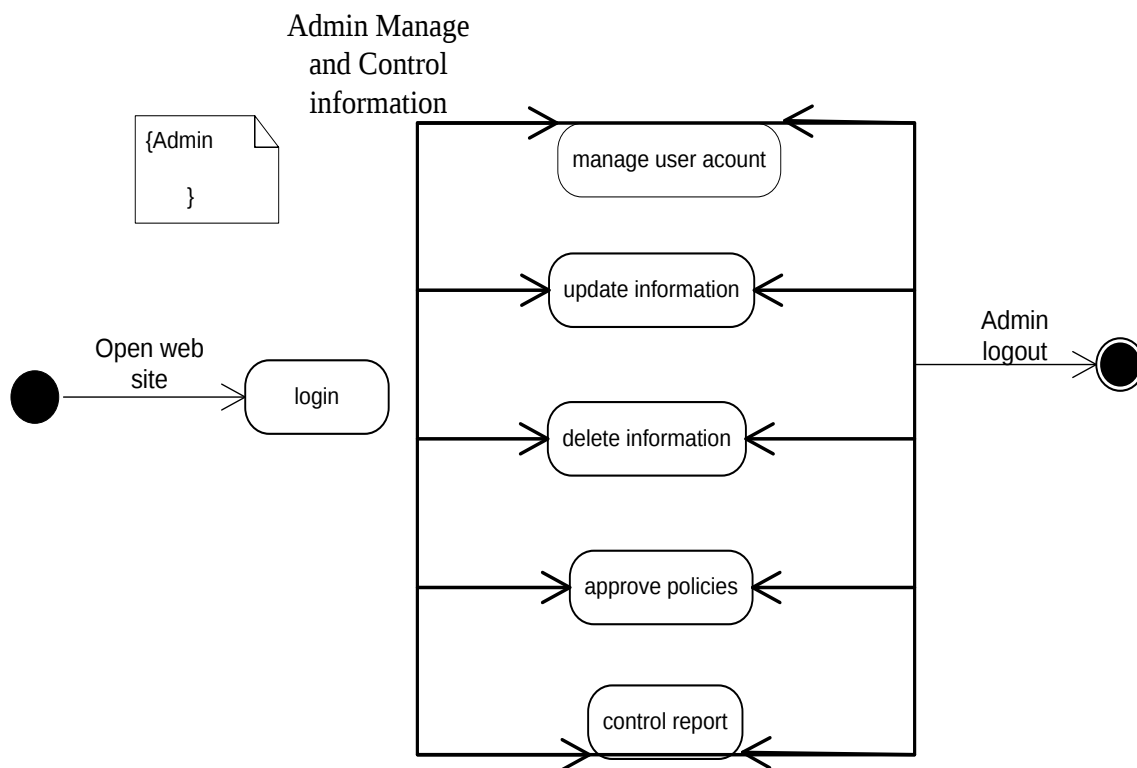


Figure 3.12 Admin state chart diagram

2. Customer State Chart Diagram

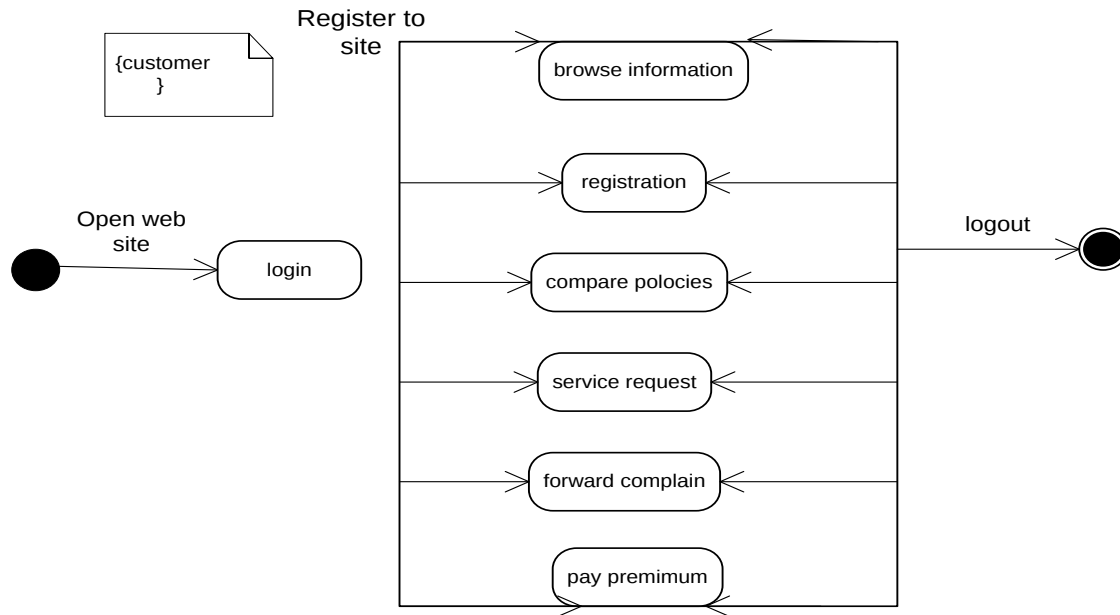


Figure 3.13 Customer state chart diagram

3. Officer State Chart Diagram

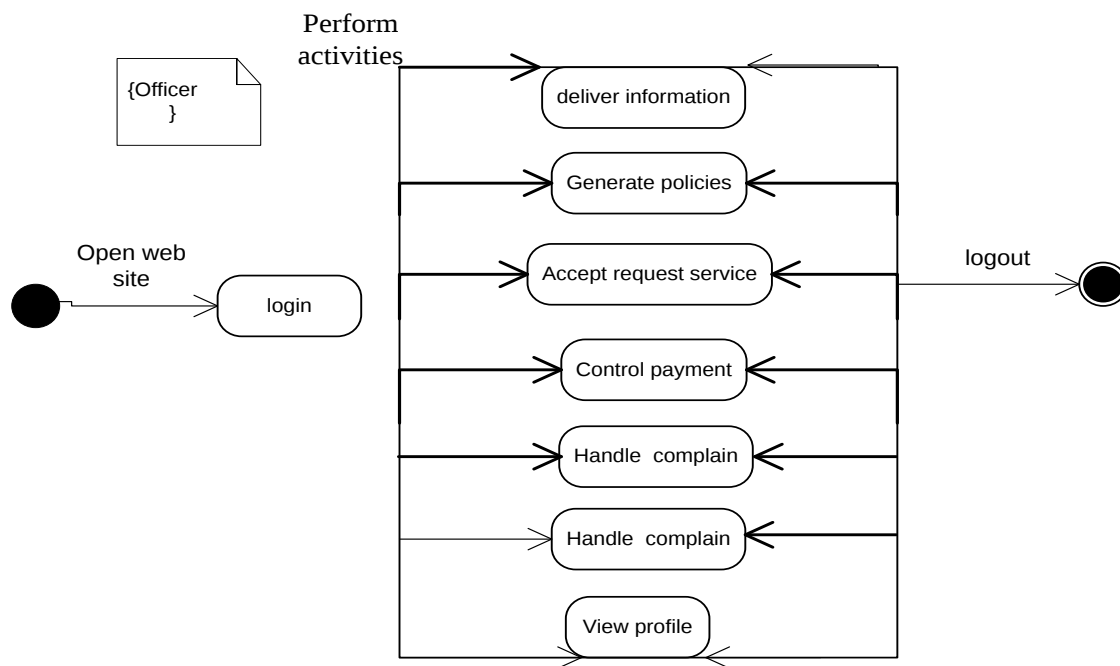


Figure 3.14 Officer state chart diagram

3.8.5. Activity Diagrams

Activity diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modeling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control. Activity diagrams are constructed from a limited number of shapes, connected with arrows. The most important shape types:

- rounded rectangles represent activities;
- diamonds represent decisions;
- bars represent the start (split) or end (join) of concurrent activities;
- a black circle represents the start (initial state) of the workflow;
- An encircled black circle represents the end (final state).

Arrows run from the start towards the end and represent the order in which activities happen. Hence they can be regarded as a form of flowchart. Typical flowchart techniques lack constructs for expressing concurrency. However, the join and split symbols in activity diagrams only resolve this for simple cases; the meaning of the model is not clear when they are arbitrarily combined with decisions or loops.

Admin and Officer Login

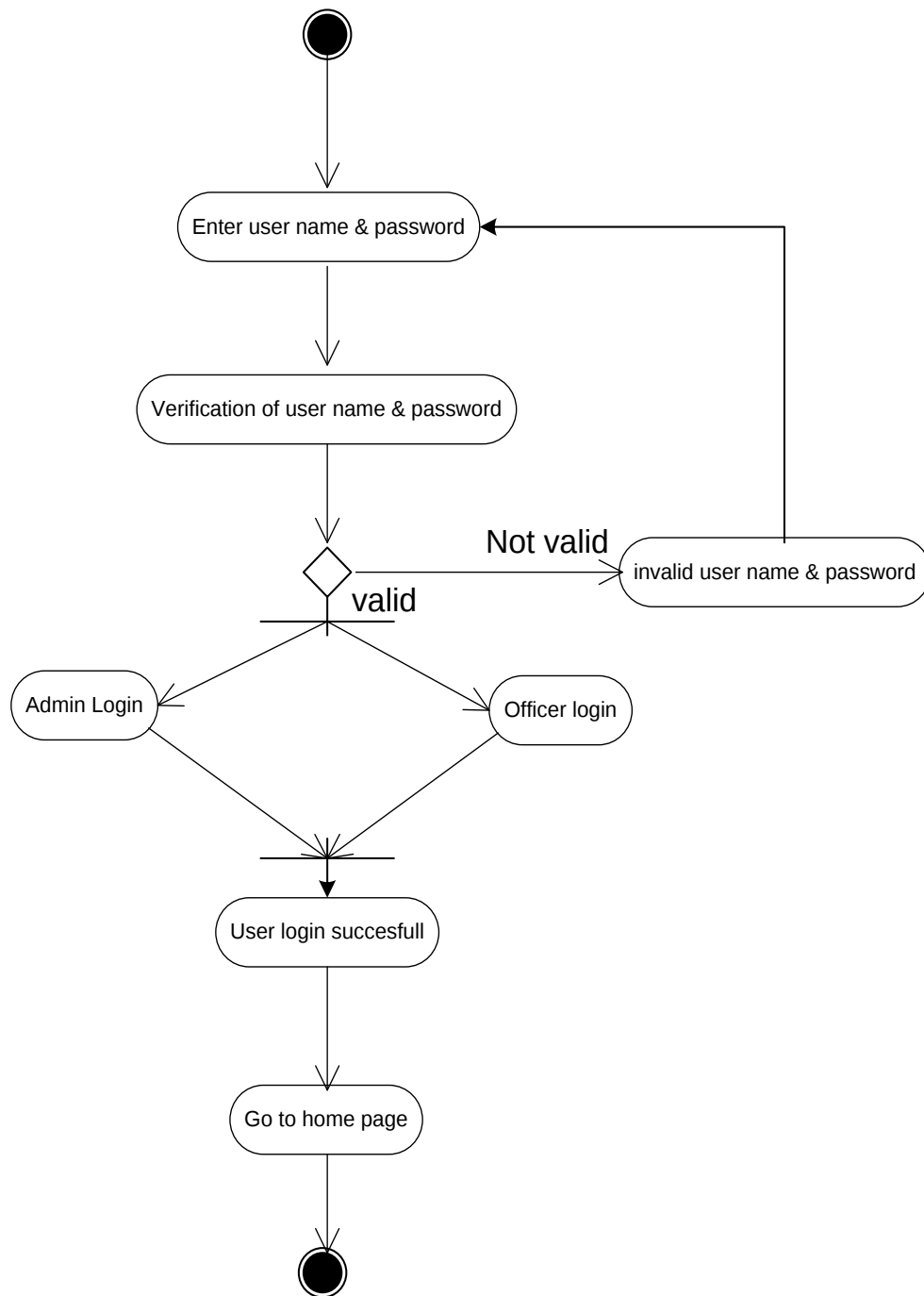


Figure 3.15 Activity diagram for Admin and Officer Login

Customer Login

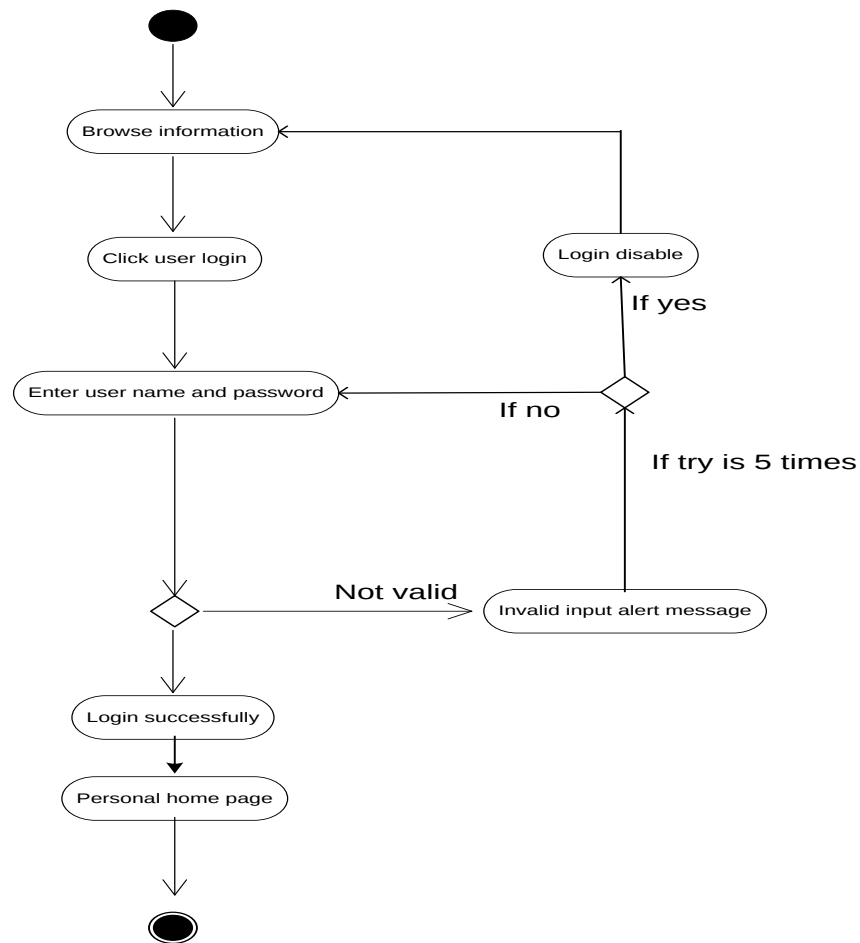


Figure.3.16 Activity diagram for Customer Login

The activities involved in the above diagram are:

1. Visit the site: Initially the user visits the site.
2. Click login button to log into the system
3. Username and Password: Then the user enters the username and password.
4. Verification: The entered username and password are verified.
5. Login successful: If the entered details are valid then login successful.
6. If the entered details are invalid then he reenters the username and password.
7. If the customer tries 5 times incorrectly the login will be disabled then after it redirects to browse information or system home page
8. Homepage: After successful login the user visits the homepage.

Activity Diagram for Update

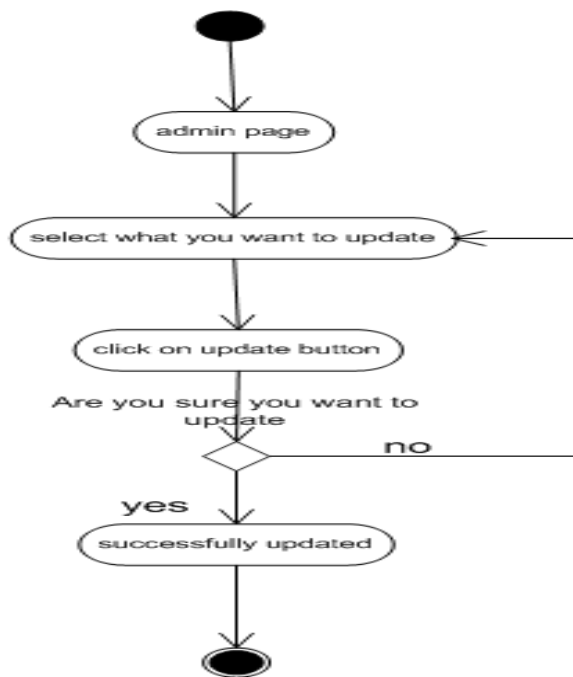


Figure.3.17 Activity Diagram for Update

Activity Diagram for Delete

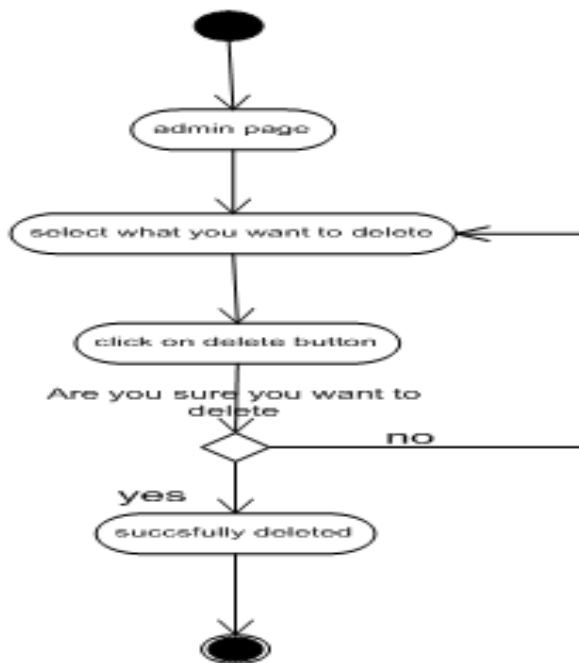


Figure 3.18 Activity Diagram for Delete

Activity Diagram for Sign Up

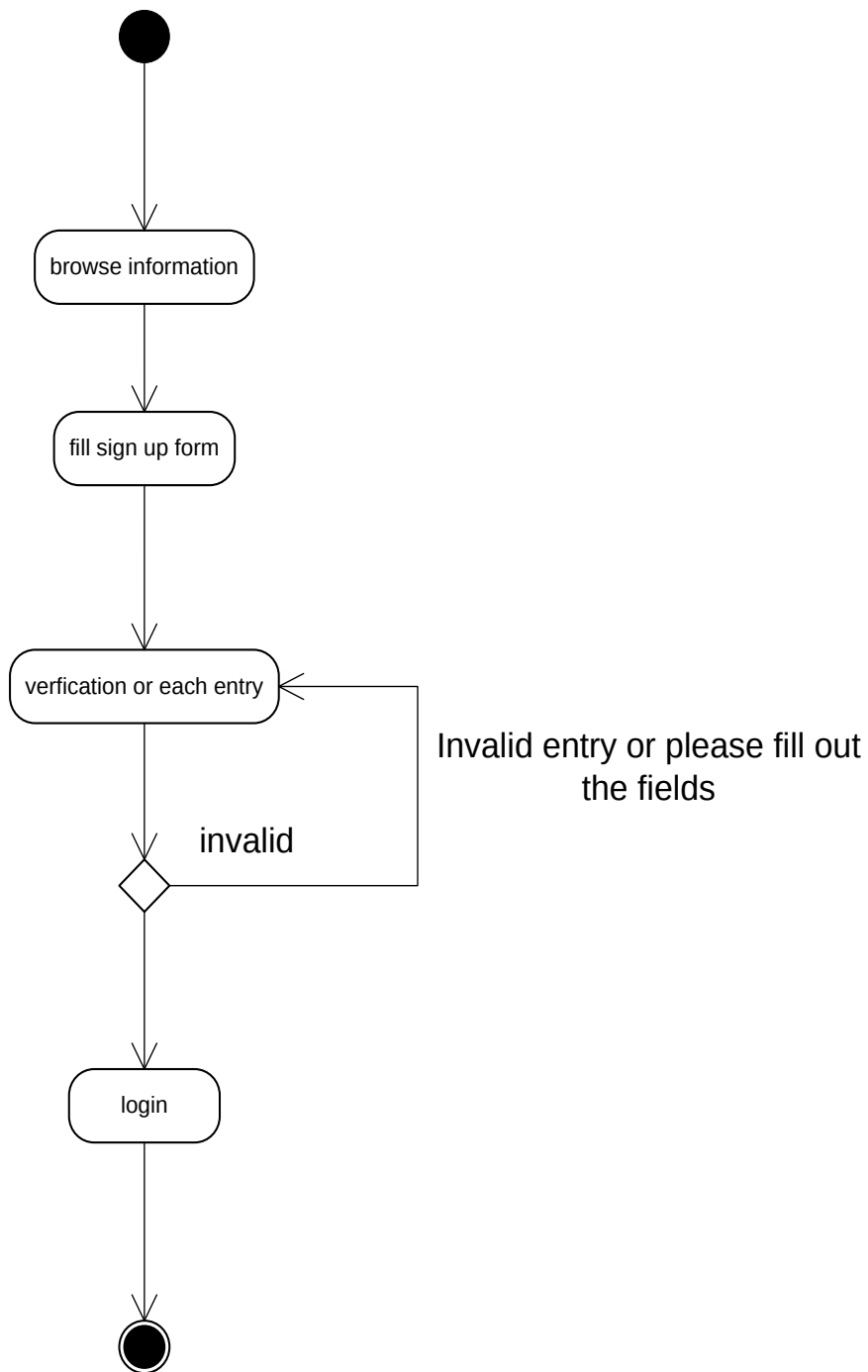


Figure 3.19 Activity Diagram for Sign Up

Activity Diagram for Deliver Information

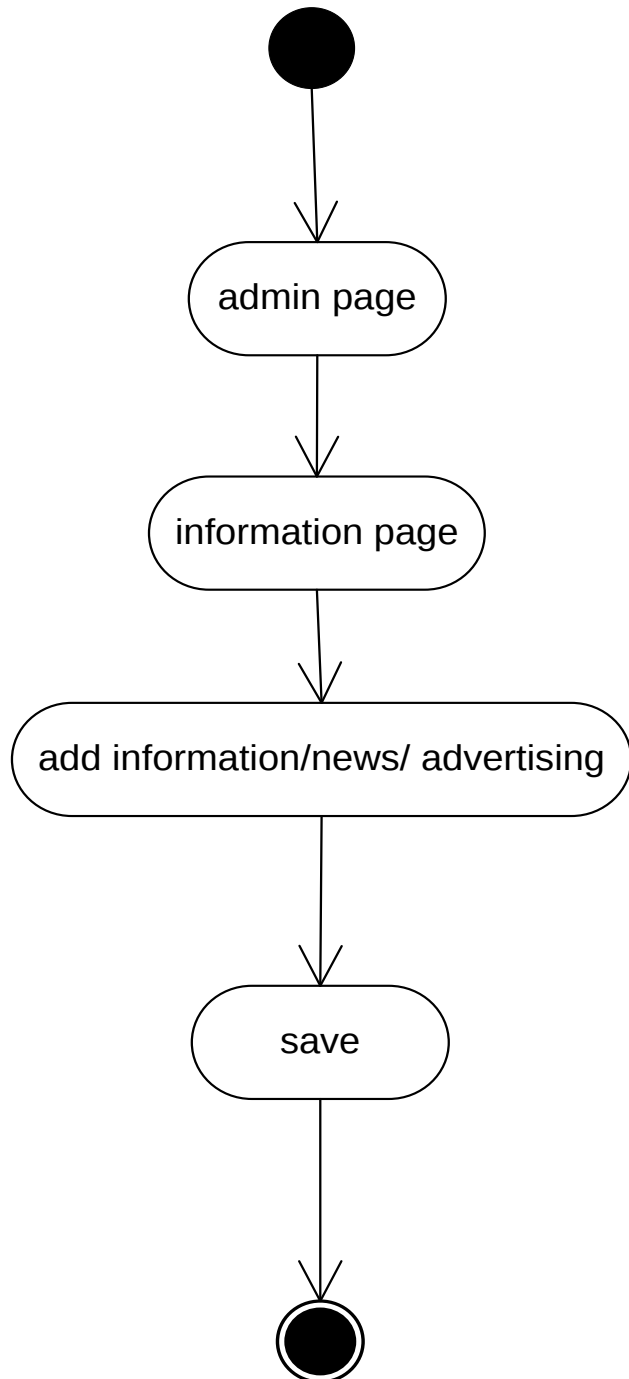


Figure 3.20 Activity Diagram for Deliver Information

Activity Diagram For Add Policies

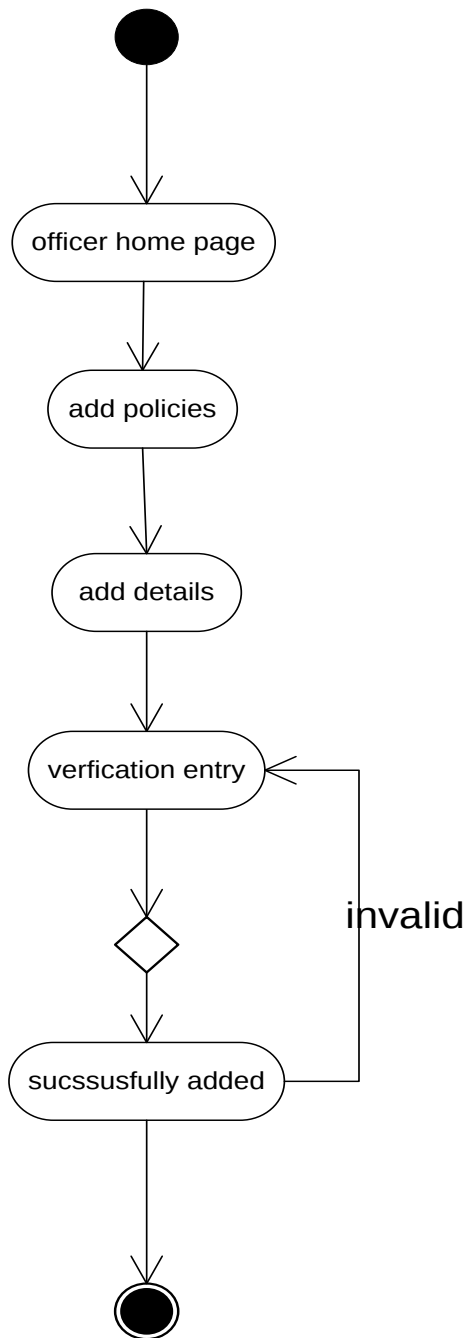


Figure 3.21 Activity Diagram For Add Policies

Activity Diagram for Compare Policies

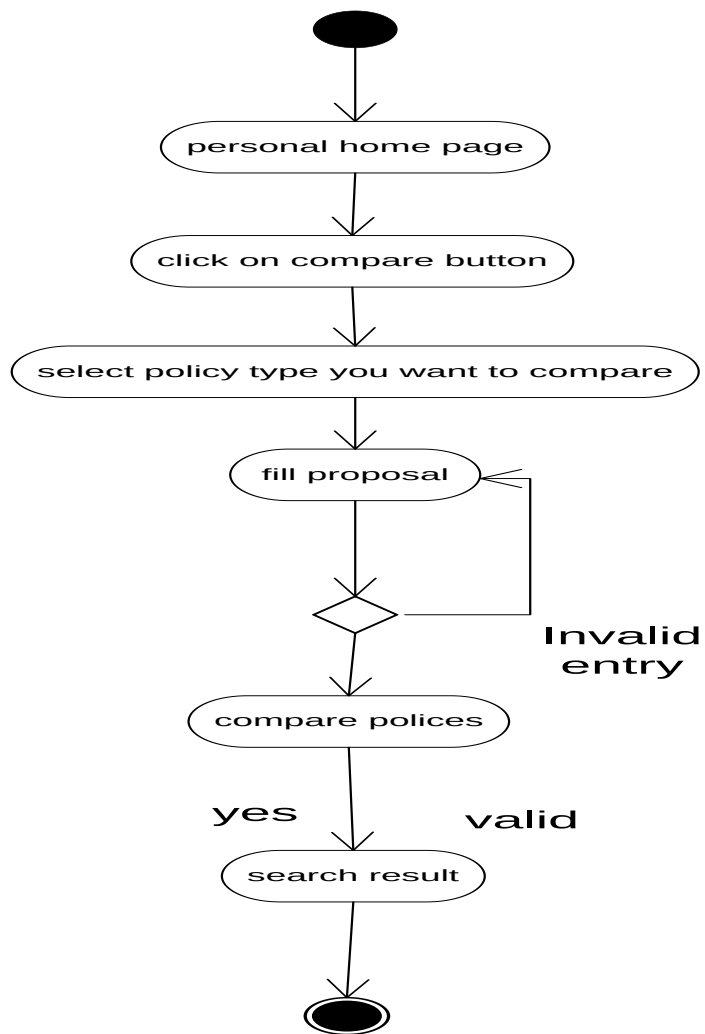


Figure 3.22 Activity Diagram for Compare Policies

3.8.6. Component Diagram

Component diagram shows component and dependencies between them. These types of diagram are used in component based development (CBD) to describe system with service oriented architecture (SOA). component based development is used on assumption that

previously constructed component could be reused and that could be replaced by some other “equivalent” or ” conformant ” component, if needed.

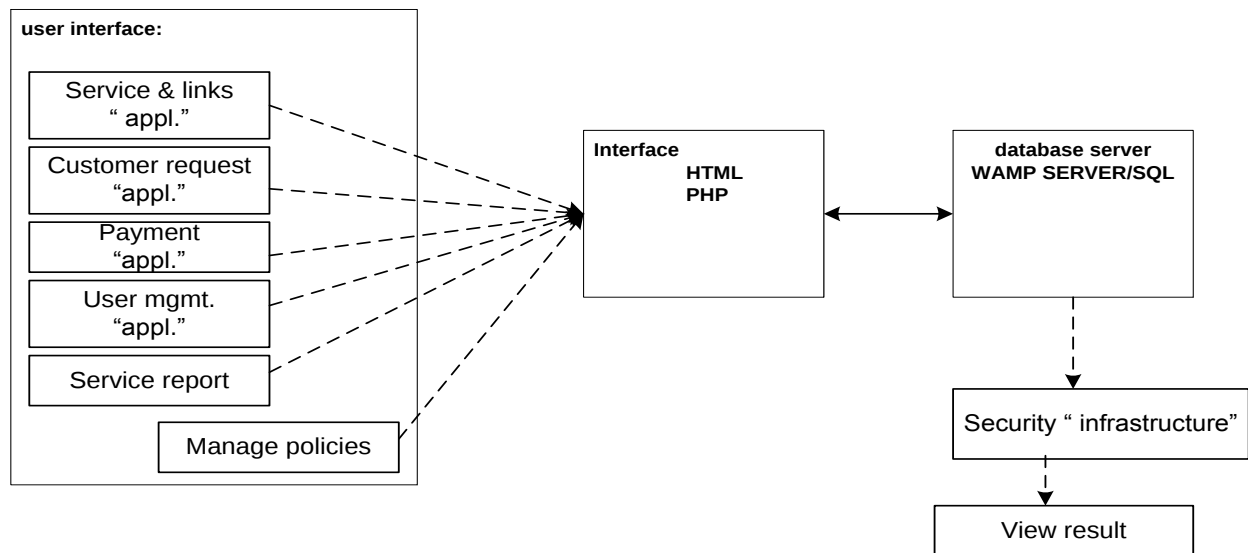


Figure 3.23.Component diagram

3.8.7. Deployment Diagram

Deployment diagram shows the execution architecture of systems. This includes nodes, either hardware or software execution environments’, as well as association that connecting them. Deployment diagram shows the physical configuration of software and hardware

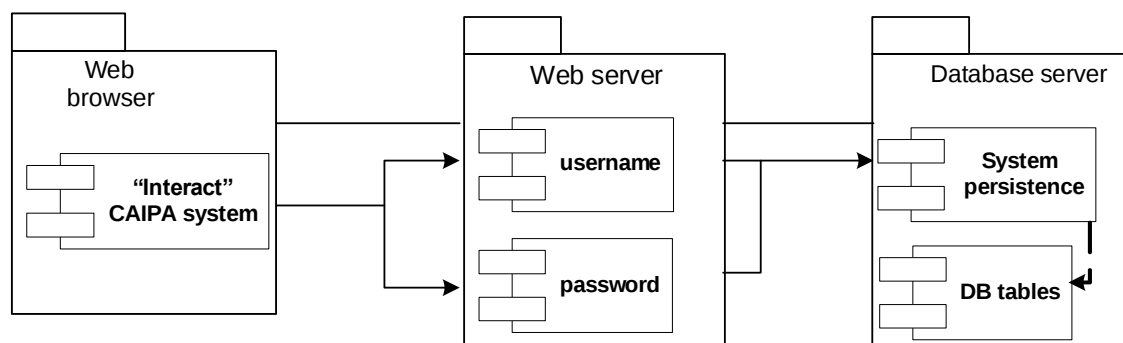


Figure 3.24. Deployment diagram

CHAPTER FOUR

4. System Design

4.1. Introduction

4.1.1. Purpose of the System

The purpose of system design is to show the direction how the web page is built and to obtain clear and enough information needed to drive the actual implementation of the web page. During system design, we define the design goals of the project and decompose the system into smaller sub systems that can be realized by individual teams. It is based on understanding of the model the web page built on. This chapter covers about comparative analysis of insurance policies and advising system for the prospective public designing which is used to transform the system requirement specification to the system design specification.

4.1. 2. Design Goals

The objectives of designing are to model a system with high quality. The field of structured design contains a number of guidelines that help designer determine which modules, and which interconnections between the modules will best implement the requirements specified in the system analysis/ Requirement gathering phase. Our system concerned with three categories of modules:

1. Administrator
2. Officer
3. Customer

1. Customer :

Customers are buyers of different insurance policies. Customer can view news, insurance status, logs in to manage his/her own personal policy and profile and the following activities:

- ✓ Making payment
- ✓ Renewal policy
- ✓ Booking policies
- ✓ Forward complain

2. Officer

Officer can perform the following activities:

- ✓ Resolve complain
- ✓ Control payment
- ✓ Generate policies

3. Administrator

Administrator can perform add/update/delete and post notices and the following modules:

- ✓ Manage account
- ✓ Manage generated report
- ✓ Report

The Design Goals describe, specify and prioritize the qualities of the system that should be achieved and addressed when the system is implemented. The design goal also defines the value of system against which options are evaluated. These goals are derived from the non-functional requirements of the system. The design goals for the system are grouped into four categories. These are End User, Dependability, Performance and Maintainability.

4.1.2.1. End User

When the system is developed societies are the main users of the system. Taking into consideration the current status of the people who use insurance companies as security and money investment, special attention has been given to make the system easier for the end users to use.

4.1.2.2. Dependability

This system is a web based application so that whenever there is an Internet connection, the system will be available to the users. System maintenance might be conducted in out of office hours (mostly up to night) so that users can access it whenever they need.

The users of the system are divided into some predefined roles such as: Administrator, officer, and customer (registered user, new customer). Each user has access only where they are privileged. To make the system more secure, password is encrypted.

4.1.2.3.Performance

This design goal depends on the speed of Internet connection. However, in the normal circumstance, the maximum average time that the server took to provide response to users request is very short period.

This system is designed to be used by more users simultaneously. To reduce the use of memory and secondary storage devices, the database is designed in the best possible manner to prevent duplicates. In login module of the system users can enter input to the system. The system handles invalid user inputs, for example; which is very important parameter.

4.1.2.4. Maintenance

❖ Modifiability

The construction of the web site involves the use of cascading style sheets which enable the system to be modified in one central place without going to the whole pages and editing contents. In the core system functions modifications to one part of the code is made not to have effect on the other subsystems.

❖ Reusability

This system is divided into subsystems that perform similar tasks. This reduces the complexity of the system to the programmer and keeps functionally related objects together. The other advantage of dividing the whole system to fine subsystems is to make the code in the system reusable for other similar systems.

❖ Readability

The codes of this system are easily readable to add new functionalities, delete or update the functionalities of the system by other programmer. To improve code readability appropriate indentation is used. The editors for the programming are Notepad++ and Dream Weaver which has a tool that automatically indents the code when the programmer writes sequence codes.

❖ **Portability**

This system is developed using the PHP programming language and the MYSQL database management system which are both open source and platform independent. This system is developed on a Windows machine but it will work on any platform.

❖ **Fault Tolerance**

This system is fault tolerant to work in the case of failure for the login module. Users can try to login again.

4.1.3. Definitions, Acronyms, and Abbreviations

The definitions, acronyms and abbreviations used in the text are as follows.

Term	Definition
------	------------

Website:	The proposed web site
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Members:	Member institutions and related persons
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Prospective public:	A non-registered person who can access only general Informationin the web site
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Policyholder:	A registered user/associate
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Web Pages:	Static or dynamic pages present in the web site
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HTML:	Hypertext Markup Language. A language used to describe the structureof documents on the web.
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Web-based:	Refers to one of the units of the whole web related technologies that is involved in a certain aspect ofthe project.
------------	--

PHP: Hyper Text Pre Processor

SQL: Sequential Query Language-- the sql database has the ability to store large database and also run very efficiently over the internet.

PC: Personal Computer

RAM: Random Access Memory

OS: Operating System

CPU: Central Processing Unit

Wamp: Windows, Apache, MYSQL and PHP

SMS: Short Message Service

CSS: Cascading Style Sheet

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17. [OMG, 1998] Object Management Group, OMG Unified Modeling Language Specification. Framingham, MA, 1998. <http://www.omg.org>.

4.1.5. Overview

System design is the transformation of the analysis model into a system design model. It is a process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. We use system design to reduce the complexity of the system by decomposing the system into subsystems.

4.2. Current Software Architecture

It is the architecture that was determining the type of interactions that the operations are going to have. The architecture that works is only data management software architecture. In this type of architecture the administrator is responsible to receive request from the officer and respond to the request, whereas the officer is responsible to interact with that of the users of the system.

The administrator of this work has two types of responsibilities. The first type is accepting request, which is sent from the officer through oral or written and responds accordingly. Whereas the second type of work is approval of the requests coming and reports sent from officers. The current system has only used data management software the rest is manual work.

4.3. Proposed Software Architecture

Software architecture, describing the subsystem decomposition in terms of subsystem responsibilities, dependencies among subsystems, subsystem mapping to hardware, and major policy decisions such as control flow, access control, and data storage. As the complexity of systems increases, the specification of the system decomposition is critical. It is difficult to modify or correct a weak decomposition once development has started, as most subsystem interfaces have to change. In recognition of the importance of this problem, the concept of software architecture has emerged. Software architecture includes the system decomposition, the global control flow, error-handling policies.

4.3.1. Overview

Comparative insurance policies and advising system for the prospective public is designed as a web based application that has main user interface. Format of main screen is standard and flexible. This system is designed as user friendly and the pages are connected each other in a consistent way. The proposed software architecture is the architecture that determines the type of interactions that the components are going to have. The architecture uses client/server architecture. In this type of architecture the server is responsible to receive request from the client and respond to the request, whereas the client is responsible to interact with that of the users of the system.

The server parts of this work are two types. The first type is a web server, which is responsible to receive browsers' request through http protocol and responds accordingly. Whereas the second type of server is a database server, which is responsible to provide the requested database services to the web server. The database server is generally responsible for modification and insertion of data to the database. It can only communicate with the web server.

The client side is a web browser which receives requests from the user of the system and responds to the request by communicating with the web server. If the user has a request on data, the browser passes the request to the web server then the web server pass the request to the database server.

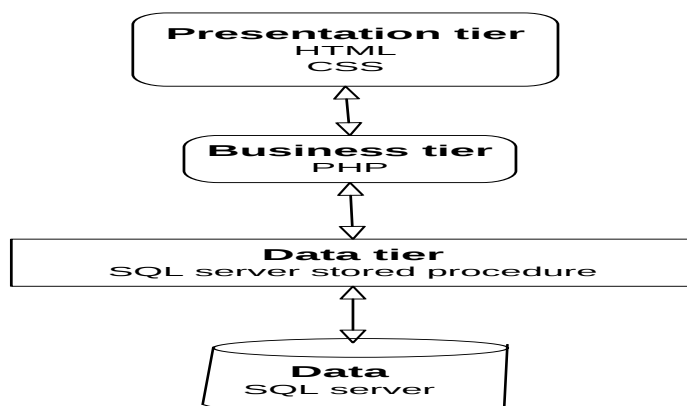


Figure 4.1Proposed Software Architecture

The comparative Insurance policies analysis and advising system uses 3-tier application is a program, which is organized into three major disjunctive tiers. These tiers are

- ❖ **Presentation Tier** (Front end) which contain the user interface elements of the site, and includes all the logic that manages the interaction between user
- ❖ **Business Tier** (Logical) which receives request from the presentation tier and return result to the presentation depending on the business logic it contain
- ❖ **Data Tier** (Backend) which is responsible for storing the application data and sending it to the business tier when requested

4.3.2. Subsystem Decomposition

Sub-system decomposing Results into a set of loosely dependent parts which make up the system. The goal of the system decomposition is to reduce the complexity of design model and to distribute the class of the system in to large scale and cohesive components. Our system is decomposing into the following subsystem.

- ✓ Officer subsystem
- ✓ Customer subsystem
- ✓ Administration subsystem

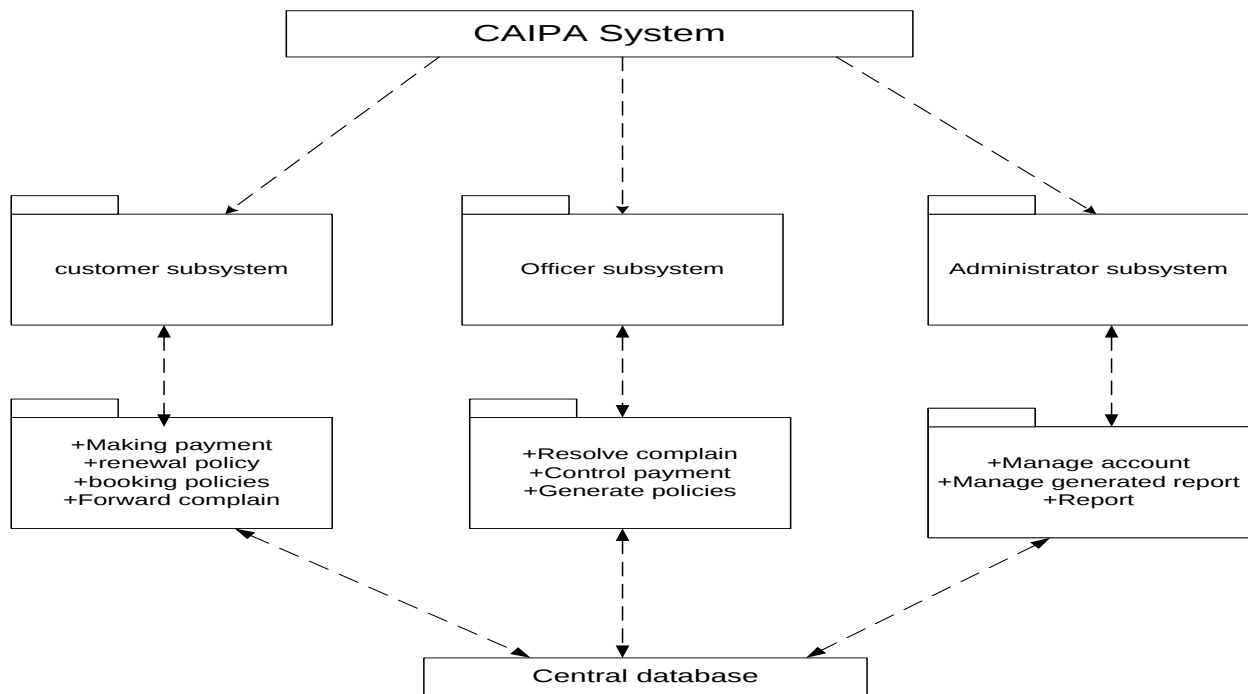


Figure4.2 Subsystem decomposition

4.3.3. Hardware/Software mapping

In this part we described the overall system software and organization. We try to see list of computer language (with description of the function). This section provide the information needed for a system development team to build and integrates software modules, interconnect the hardware and software segments into a functional product. Our system include three major components namely client, web server and database component. Clients communicate with the server via web browser and the server then communicates with the database via the application server by using HTTP protocol which allows communication between them.

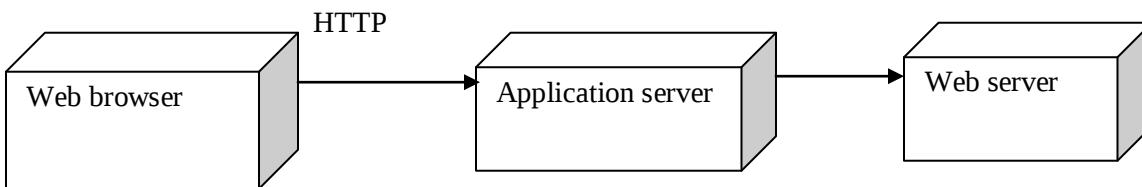


Figure 4.3 Hardware software mapping

4.3.4.Persistence Data Management

Persistent data management deals with how the system is going to handle the actual data need to be stored on the system database. There are currently realistic options for storage management such as Relational database, and Object-oriented database.

Our team selects relational database management system to store data. This is because of A relational database provides an abstraction of data that is higher than flat files. Data are stored in tables that comply with a predefined type called schema. Each column in the table represents an attribute. Each row represents a data item as a tuple of attribute values. Several tuples in different tables are used to represent the attributes of an individual object. Relational databases have been used for a while and are a mature technology.

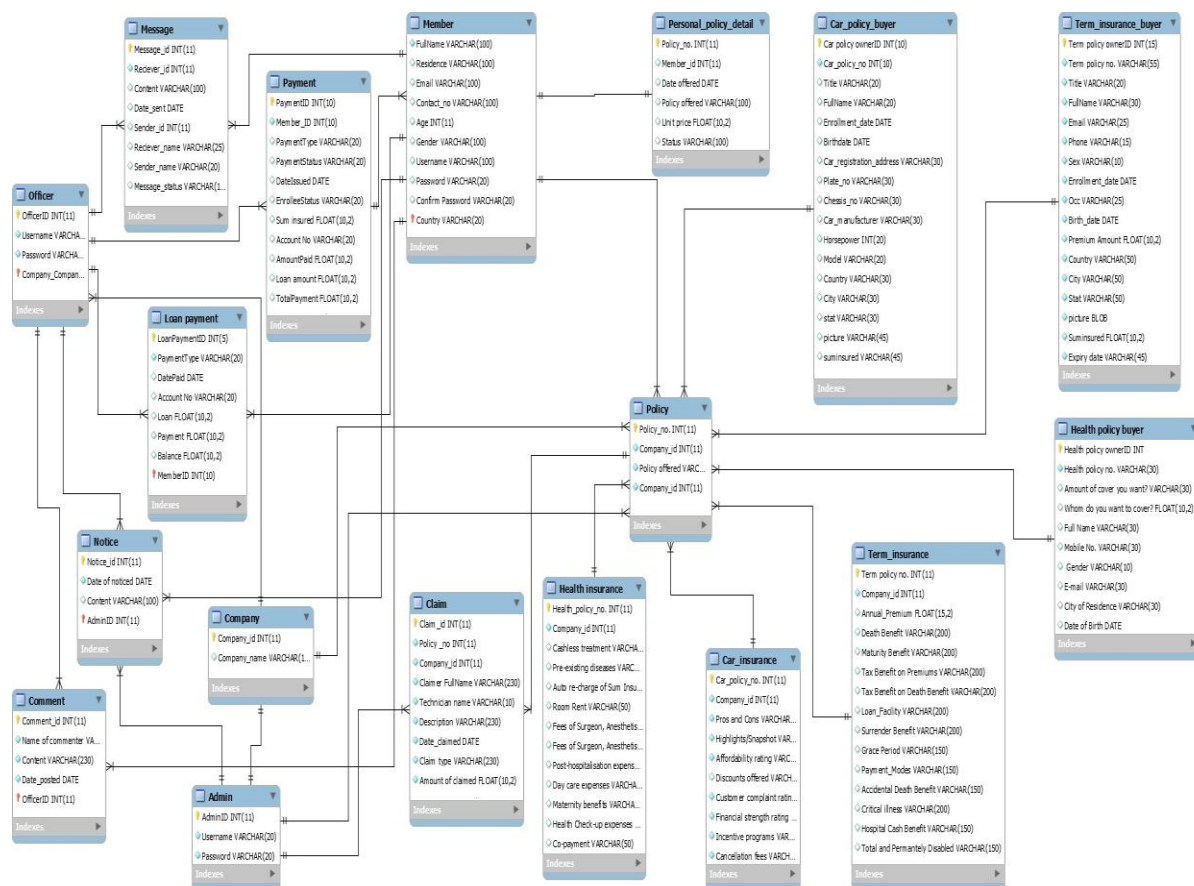


Figure 4.4: Persistence diagram

4.3.5. Access Control and Security

During system design, we model access by examining the object model, by determining which objects are shared among actors, and by defining how actors can control access. Depending on the security requirements on the system, we also define how actors are authenticated to the system (i.e., how actors prove to the system who they are) and how selected data in the system should be encrypted.

Indicates how actors are accessing the information or data from web based system .Based on this, the following actors have their own access level to interact and communicate with in the system. This is used to protect secure information and data from unauthorized user access. Generally the system does not allow non-authorized users using a form based Authentication.

1. **Administrator:** is the one who manage and control the overall activity of the system and needs to have security mechanism to protect the organization secure information from unauthorized user. To do so Administrator has user name and password to access information.

Administrator can write notices, control report, login to the system, view members of the system; update, delete, and add records as needed, view message and comment report, allow access of list of policies, view and print individual's payment and buyer report and voucher.

2. **Officer:** is the participating actor of the system and needs to have username and password as a security mechanism to protect from unauthorized user access. When someone wants to interact, the system asks to insert username and password before accessing and related information

Its privilege includes login to the system, control payment and loan payment, read/write comments and messages to/from customers and admin, generate policies, and visit notices, view members of the system, view and print individual's payment and buyer report and voucher

3. **Customer:** is the participating actor of the system, first register, compare and book policies. Furthermore, customer can login to the system, visit notices(advertisement,

news about the company), view personal policies details, edit his/her own account, change password, reset password, compare policies, make a claim, get loan payment, view and print their own payment and buyer report and voucher.

	Classes to be accessed				
Actors	Account	Information	Database	Complain	Registration
Customer	Login()	Browse()	View information()	-forward complain()	-request registration()
Administ rator	Manage accounts()	Post ()	-Control table() -Handle backup()	---	---
Officer	Login()	-provide information() -access information for()	-store information() -view information()	-view complain() -process complain()	-register new customer()

Table 4.1. Access control policy

4.3.6. Global Software Control

Describes how the global software control is implemented. The following architecture shows how requests are initiated and how subsystems are synchronize. The following picture explains the actual Work of our system.

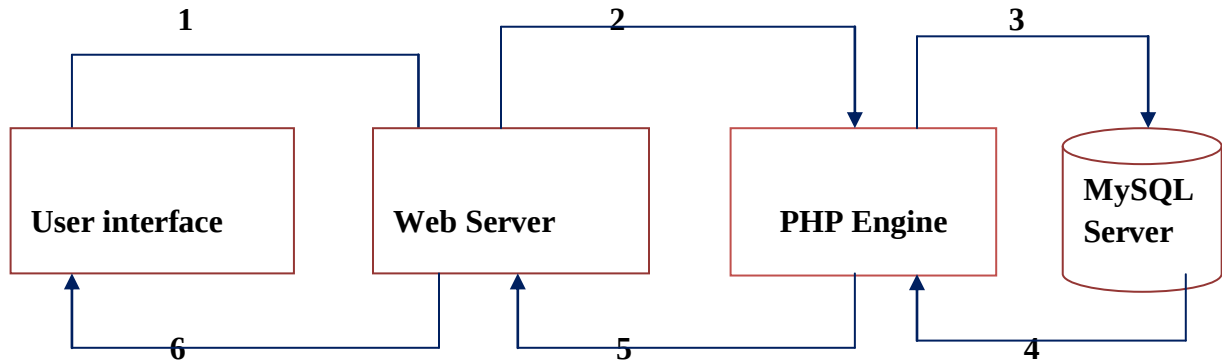


Figure 4.5 the system integration

User from the interface sends a request to the web browser to get different information and functionalities from the data base. For example, user sends a request from the user interface to find list of services. This request will be received by the web browser, and then the web browser send the requested query to MySQL data base after creating connection using PHP command. Once the MySQL received the appropriate query find list of services, it will Process it and return the list of services that found by the executed query from the database.

4.3.7. Database Tables

1. Car_insurance

Field	Type	Null	Key
Car_policy_no.	int(11)	No	Primary key
Company_id	int(11)	No	Foreign key
Pros and Cons	Varchar(230)	No	-
Highlights/Snapshot	Varchar(230)	No	-
Affordability rating	Varchar(230)	No	-
Discounts offered	Varchar(230)	No	-
Customer complaint rating	Varchar(230)	No	-
Financial strength rating	Varchar(230)	No	-
Incentive programs	Varchar(230)	No	-
Cancellation fees	Varchar(230)	No	-

Table.4.2. Car insurance table

2. Car_policy_buyer

Field	Type	Null	Key
Car policy ownerID	int(10)	No	Primary key
Car_policy_no	Int(10)	No	Foreign key
Title	varchar(20)	No	-
FullName	varchar(20)	No	-
Enrollment_date	Date	No	-

Field	Type	Null	Key
Birthdate	Date	No	-
Car_registration_address	varchar(30)	No	-
Plate_no	varchar(50)	No	-
Engine_no	varchar(20)	No	-
Chassis_no	varchar(30)	No	-
Car_manufacturer	varchar(50)	No	-
Horsepower	int(20)	No	-
Model	varchar(20)	No	-
Country	varchar(30)	No	-
City	varchar(30)	No	-
Stat	Varchar(30)	No	-
Photo	OLE	No	-
Expiry date	Date	No	-
Suminsured	Float(10,2)	No	-

Table 4.3. Car policy buyer table

3. Company

Field	Type	Null	Key
Company_id	int(11)	No	Primary key
Company_name	varchar(100)	No	-

Table 4.4. Company table

4. Term_insurance

Field	Type	Null	Key
Term policy no.	int(11)	No	Primary key
Company_id	int(11)	No	Foreign key
Annual_Premium	float(15,2)	No	-

Field	Type	Null	Key
Death Benefit	varchar(200)	No	-
Maturity Benefit	varchar(200)	No	-
Tax Benefit on Premiums	varchar(200)	No	-
Tax Benefit on Death Benefit	varchar(200)	No	-
Loan_Facility	varchar(200)	No	-
Surrender Benefit	varchar(200)	No	-
Grace Period	varchar(200)	No	-
Free Look Period	varchar(200)	No	-
Payment_Modes	varchar(200)	No	-
Accidental Death Benefit	varchar(150)	No	-
Accidental Dismemberment Benefit	varchar(150)	No	-
Critical illness	varchar(200)	No	-
Hospital Cash Benefit	varchar(150)	No	-
Total and Permantly Disabled	varchar(150)	No	-

Table 4.5. Term insurancetable

5. Term_insurance_buyer

Field	Type	Null	Key
Term policy ownerID	Int(15)	No	Primary key
Term policy no.	Int(15)	No	Foreign key
Title	varchar(20)	No	-
FullName	varchar(30)	No	-
Email	varchar(25)	No	-
Phone	varchar(15)	No	-
Sex	varchar(10)	No	-
Enrollment_date	Date	No	-
Occ	varchar(25)	No	-
Birth_date	Date	No	-

Field	Type	Null	Key
Premium Amount	float(10,2)	No	-
Country	varchar(50)	No	-
City	varchar(50)	No	-
Stat	varchar (50)	No	-
Photo	OLE	No	-
Expiry date	Date	No	-
Suminsured	Float(10,2)	No	-

Table 4.6. Term insurance buyer table

6. Health insurance

Field	Type	Null	Key
Health_policy_no.	int(11)	No	Primary key
Company_id	int(11)	No	Foreign key
Cashless treatment	varchar(50)	No	-
Pre-existing diseases	varchar(50)	No	-
Auto re-charge of Sum Insured	varchar(50)	No	-
Room Rent	varchar(50)	No	-
ICU Rent	varchar(50)	No	-
Fees of Surgeon, Anesthetist, Nurses,	varchar(50)	No	-
Pre-hospitalisation expenses	varchar(50)	No	-
Post-hospitalisation expenses	varchar(50)	No	-
Day Care expenses	varchar(50)	No	-
Maternity benefits	varchar(50)	No	-
Health Check-up expenses	varchar(50)	No	-
Ayurvedic treatment	varchar(50)	No	-
Payment status	varchar(50)	No	-
Co-payment	varchar(50)	No	-
Buy Online	char(50)	No	-

Table 4.7. Health insurance table

7. Health policy buyer

Field	Type	Null	Key
Health policy ownerID	varchar(30)	No	Primary key
Health policy no.	varchar(30)	No	Foreign key
Amount of cover you want?	float(10,2)	No	-
Premium amount	float(10,2)	No	-
Whom do you want to cover?	varchar(30)	No	-
Full Name	varchar(30)	No	-
Mobile No.	varchar(20)	No	-
Gender	varchar(10)	No	-
E-mail	varchar(30)	No	-
City of Residence	varchar(30)	No	-
Date of Birth	Date	No	-
Photo	OLE	No	-
Expiry date	Date	No	-
Suminsured	Float(10,2)	No	-

Table 4.8. Health insurance buyer table

8. Loan payment

Field	Type	Null	Key
LoanPaymentID	int(11)	No	Primary key
MemberID	Int(11)	No	Foreign key
PaymentType	varchar(20)	No	-
DatePaid	Date	No	-
Account No	varchar(20)	No	-
Loan	float(10,2)	No	-
Payment	float(10,2)	No	-
Balance	float(10,2)	No	-

Table 4.9. Loan Payment table

9. Member

Field	Type	Null	Key
Member_id	int(11)	No	Primary key
Firstname	varchar(100)	No	-
Lastname	varchar(100)	No	-
Middlename	varchar(100)	No	-
Residence	varchar(100)	No	-
Email	varchar(100)	No	-
Contact_no	varchar(100)	No	-
Age	int(11)	No	-
Gender	varchar(100)	No	-
Username	varchar(100)	No	-
Password	varchar(100)	No	-
Confirm Password	varchar(100)	No	-

Table 4.10. Member table

10. Message

Field	Type	Null	Key
Message_id	int(11)	No	Primary key
Reciever_id	int(11)	No	Foreign key
Sender_id	int(11)	No	Foreign key
Content	varchar(400)	No	-
Date_sent	Date	No	-
Reciever_name	varchar(25)	No	-
Sender_name	varchar(200)	No	-
Message_status	varchar(100)	No	-

Table 4.11. Message table

11. Notice

Field	Type	Null	Key
Notice_id	int(11)	No	Primary key
Admin_id	int(11)	No	Foreign key
Date of noticed/ Advertisement	Date	No	-
Content	varchar(100)	No	-

Table 4.12. Notice table

12. Payment

Field	Type	Null	Key
PaymentID	int(10)	No	Primary key
Member_ID	int(10)	No	Foreign key
PaymentType	varchar(20)	No	-
PaymentStatus	varchar(20)	No	-
DateIssued	Date	No	-
EnrolleeStatus	varchar(20)	No	-

Field	Type	Null	Key
Sum insured	float(10,2)	No	-
AccountNo	varchar(20)	No	-
AmountPaid	float(10,2)	No	-
Loan amount	float(10,2)	No	-
TotalPayment	float(10,2)	No	-
AmountCover	float(10,2)	No	-
Claim	varchar(100)	No	-
Country	varchar(25)	No	-
City	varchar(30)	No	-

Table 4.13. Payment table

13. Personal_policy_detail

Field	Type	Null	Key
Policy_no.	int(11)	No	Foreign key
Member_id	int(11)	No	Foreign key
Date offered	Date	No	-
Policy offered	varchar(100)	No	-
Unit price	float(10,2)	No	-
Status	varchar(100)	No	-

Table 4.14. Personal policy detail table

14. Policy

Field	Type	Null	Key
Policy_no.	int(11)	No	Primary key
Company_id	int(11)	No	Foreign key
Policy offered	varchar(30)	No	-
Company_id	int(11)	No	-
Policy description	Varchar(150)	No	-

Table 4.15. Policy table

15. Comment/Complain

Field	Type	Null	Key
Comment_id	int(11)	No	Primary key
OfficerID	int(11)	No	Foreign key
Name of commenter	varchar(30)	No	-
Content	varchar(230)	No	-
Date_posted	Date	No	-

Table 4.16. Comment/Complain table

16. Claim

Field	Type	Null	Key
Claim_id	int(11)	No	Primary key
Policy_no	int(11)	No	Foreign key
Company_id	int(11)	No	Foreign key
Claimer FullName	varchar(230)	No	-
Technician name	Varchar(10)	No	-
Description	varchar(230)	No	-
Date_claimed	Date	No	-
Claim type	varchar(230)	No	-
Amount of claimed	Float(10,2)	No	-

Table 4.17. Claim table

17. Admin

Field	Type	Null	Key
AdminID	int(11)	No	Primary key
Username	Varchar(20)	No	-
Password	Varchar(20)	No	-

Table 4.18. Admin table

18. Officer

Field	Type	Null	Key
OfficerID	int(11)	No	Primary key
Username	varchar(30)	No	-
Password	Varchar(20)	No	-

Table 4.19. Officer table

4.3.8. Entity Relationship Diagram

The ER diagram is a high level conceptual data used to facilitate database design. It describes the structure of database and associated retrieval and updated transaction on the database.

The main purpose of the ER is to represent data objects and their relationships and it is used to support users perception of the data and to conceal the more technical aspects with associated with the database design. ER diagram includes entity type, relationship type and attributes. ER diagram identifies the following components:

- ✓ Data object, relationships, attributes and
- ✓ various types of indicators

4.4. Subsystem Services

Officer Subsystem

This subsystem helps the organization to provide various services information that is accessible by customer. In the process the officer organize all services information and feed to system and the officer access this information for further processing. All services have their own interface to put the information's.

This subsystem allows the organization to perform their payment process in simple manner by setting duration of payment days. Its privilege includes login to the system, control payment and loan payment, read/write comments and messages to/from customers and admin, generate policies, and visit notices, view members of the system, view and print individual's payment and buyer report and voucher

Organization may have different types of information like news, advertisement, and events. Officers provide these information for system. This subsystem allows performing this functionality.

Customer Subsystem

This subsystem allows the customer to register online to the system and make their own page to book insurance policies, to make payment and to renew the contract online through the system. In addition to this , customer can login to the system, visit notices(advertisement, news about the company), view personal policies details, edit his/her own account, change password, reset password, compare policies, make a claim, get loan payment, view and print their own payment and buyer report and voucher.

Based on different services given to customer, it may forward complain for office. So that, this subsystem can allows the customer to forward their own complain as well as the officer to access and take an action

Administration Subsystem

This subsystem allows the administrator to authorize users based on privileges level. Admin create accounts for officers and control the overall activities of the customer and officers. In this subsystem Administrator can write notices, control report, login to the system, view members of the system; update, delete, and add records as needed, view message and comment report, allow access of list of policies, view and print individual's payment and buyer report and voucher.

CHAPTER FIVE

5. Implementation and Result

Implementation simply means convening a new system design in to operation, which is the process of converting a new revised system design into an optional one. Implementation includes all those activities that take place to convert from the existing system to the new system. The new system may be a totally new, replacing an existing manual or automated system or it may be modification to an existing system. Proper implementation is essential to provide a reliable system to meet the organization requirements. Generally this chapter covers the implementation and testing of comparative analysis of insurance policies and advising system. Our system implemented by hosting in to web server and by providing internet connection to the company.

5.1. AlgorithmUsed

For controller class member function algorithm are designed. This design enables to see every step and flow of logic in each function. This design part is important in the coding part of implementation. Some of the algorithms are:

Algorithms for log in to the admin home page

Display login page

Fill user name and password in the appropriate interface

If the field input is valid display admin home page

Else

Display error message and return to login page

End if

Algorithm for user

Open website

Click on user registration button

Fill the appropriate data in to the interface

If filled input is valid display user page

Else

Return to login interface.

End if

5.2. Methods Used

In the implementation of this project we used an object oriented methodology to divide the system in different modules and the system has three tier architectures. This architecture divide the implementation in three layers, this layers are the presentation tier contains the user interfaces elements of the site. And includes all the logic that manages the interaction between the user, the business tier receives requests from the presentation tier and returns a result to the presentation tier depending on the business logic it contains and the data tier is responsible for storing the application's data and sending it to the business tier when requested. As explained in figure 4.1.

- **The presentation tier** which contains the user interfaces elements of the site and includes all the logic that manages the interaction between the users.
- **The business tier** receives requests from the presentation tier and returns a result to the presentation tier
- **Data tier** depending on the business logic it contains and the data tier is responsible for storing the application's data and sending it to the business tier when requested.

5.3. Sample Input/output Screens

The following screen shots are some of the sample for input output of our system

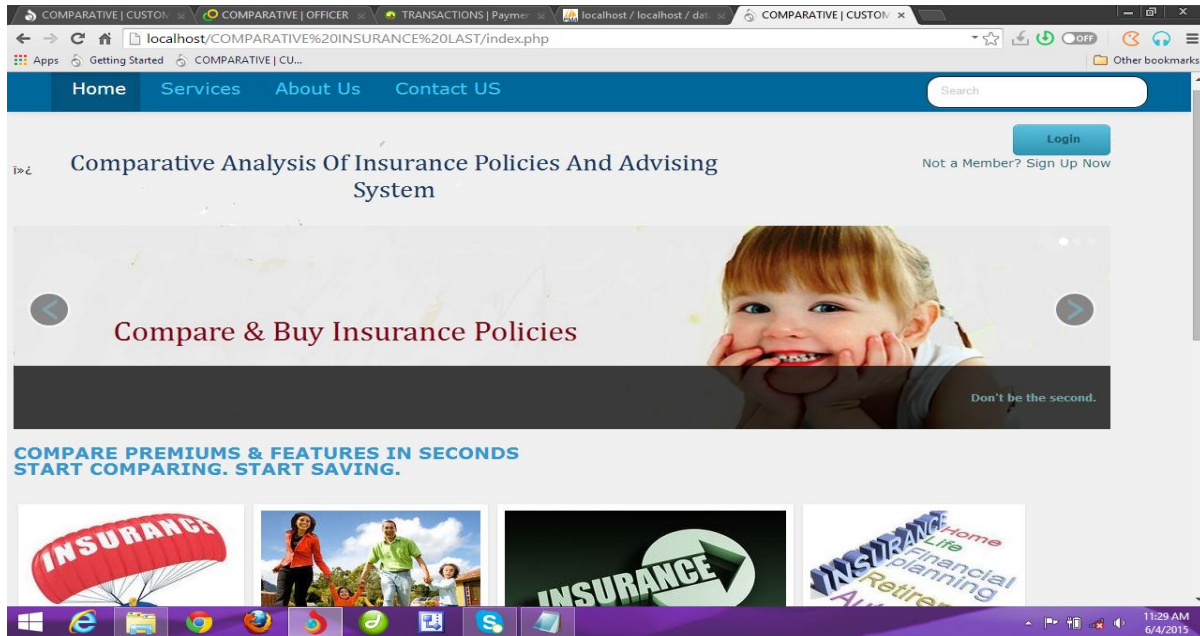


Figure 5.1. System Home Page

System Home Page is the first page of our system through which all admin, officer and customer can choose the activity they want to perform.

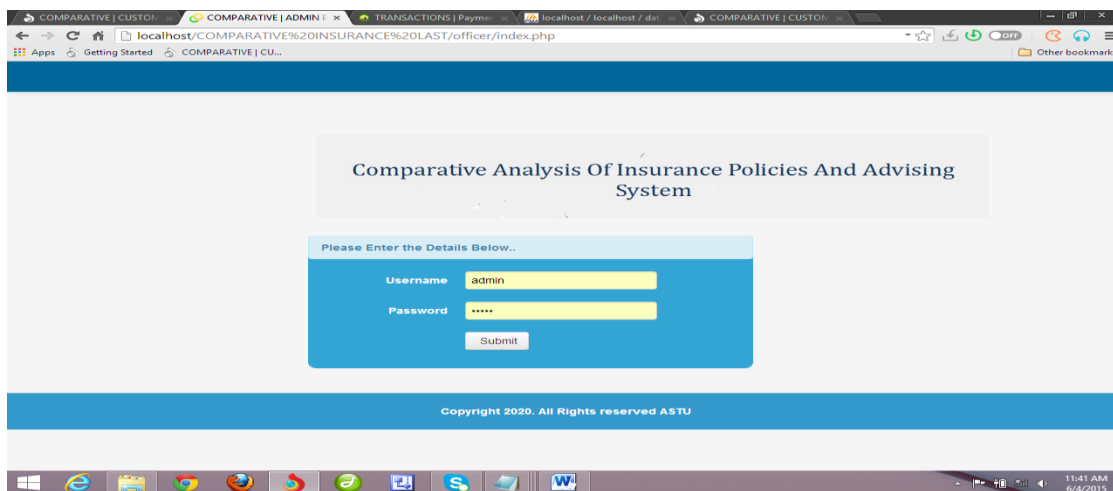


Figure 5.2. Admin Login

Login form is used to insert users(Admin, officer and customer) username and password, when username and password is correctly spelled the system redirect to the their respective page otherwise an error page is displayed

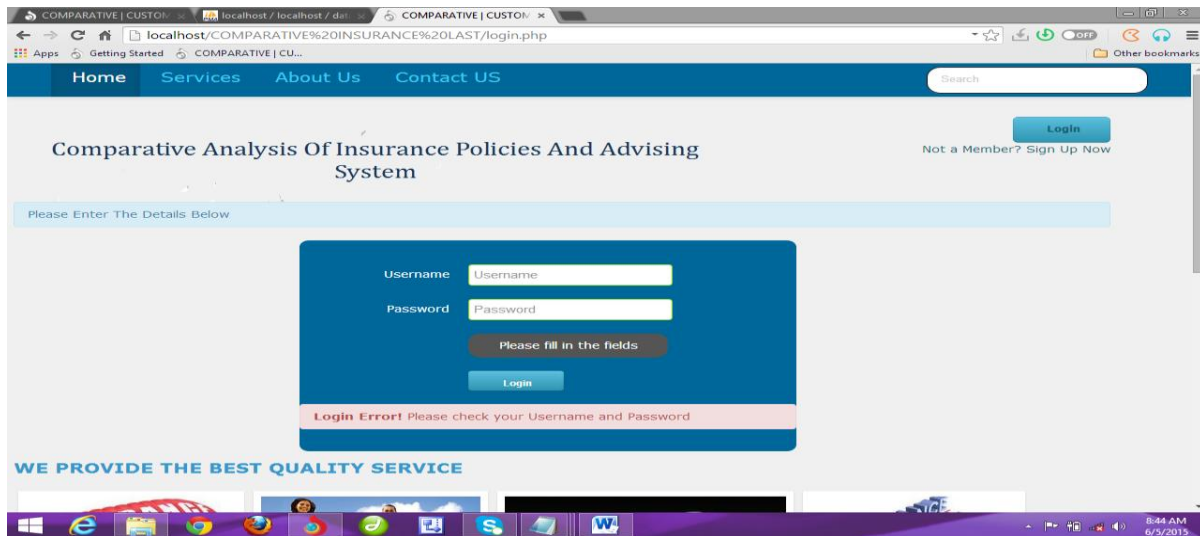


Figure 5.3. Error screen for login

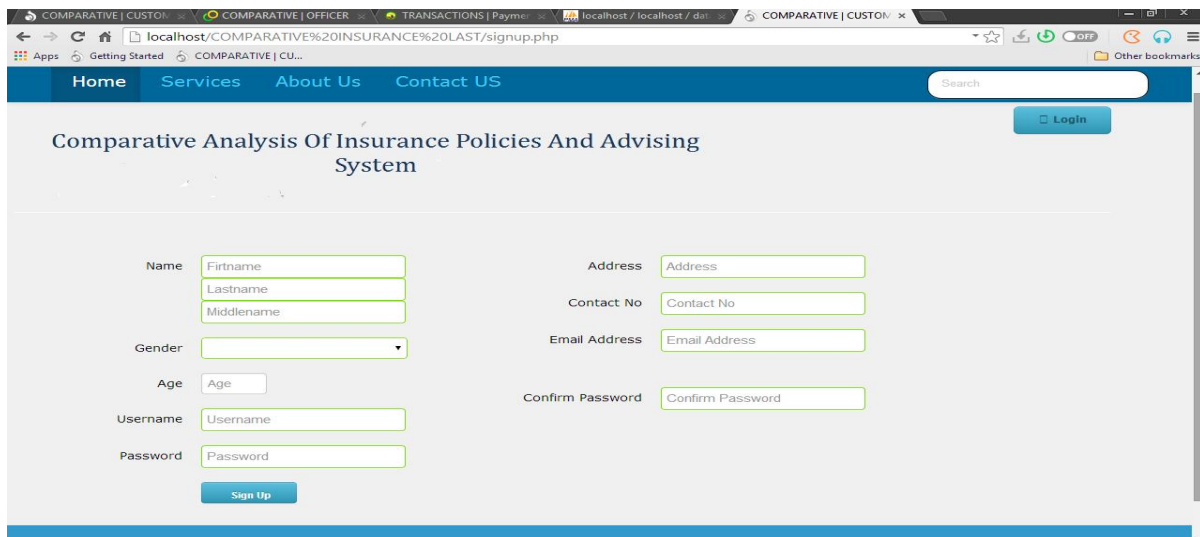


Figure 5.4. Members Registration Page

This page is used to register new members into the system. The member must fill all the required information on the place specified.

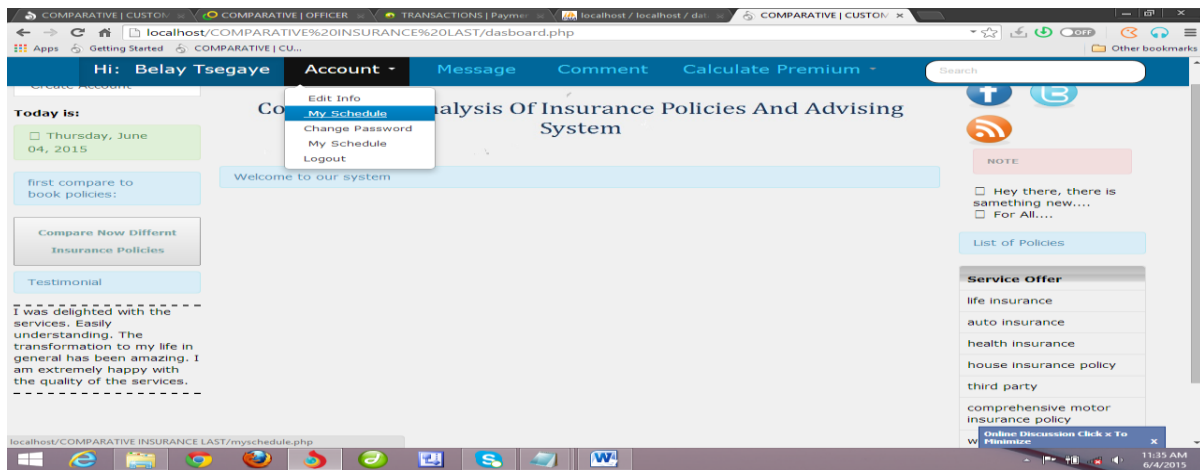


Figure 5.5. Personal Home Page /Dashboard

Personal home page is used to view and control all the policies that the customer bought. The customer can use username and password, when username and password is correctly spelled the system redirects to the his /her respective personal home page. They can also edit their personal profile.



Figure 5.6. List of insurance policies

This page is displayed on the admin, officer, and customer page. The customer can click on a specific insurance service product/policy depending on their choice of insurability.

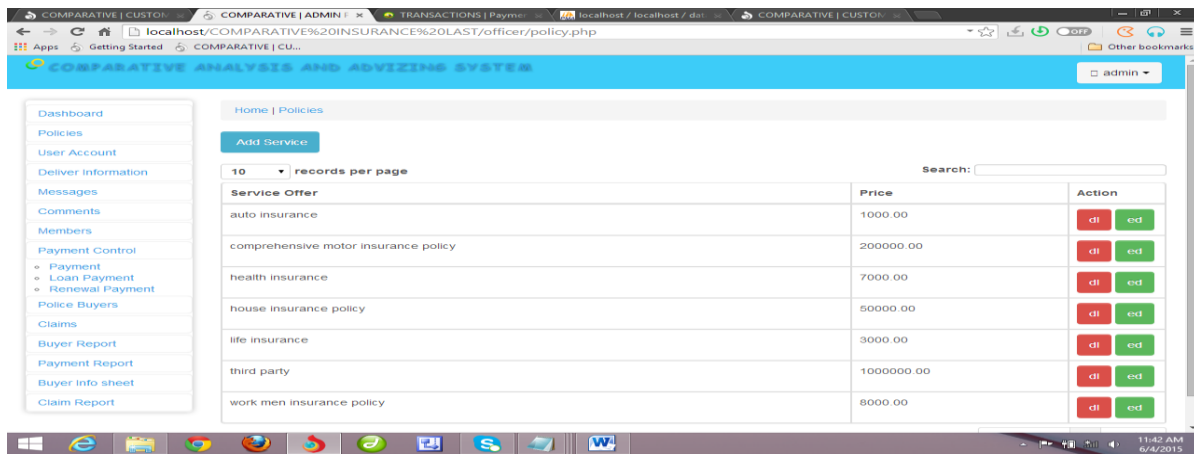


Figure 5.7. Policies

In this page policies are displayed on the admin page of the admin to know and identify what policies the company has and offered, add, edit and delete policies (which are the responsibility of the admin) as per the objective of the company.

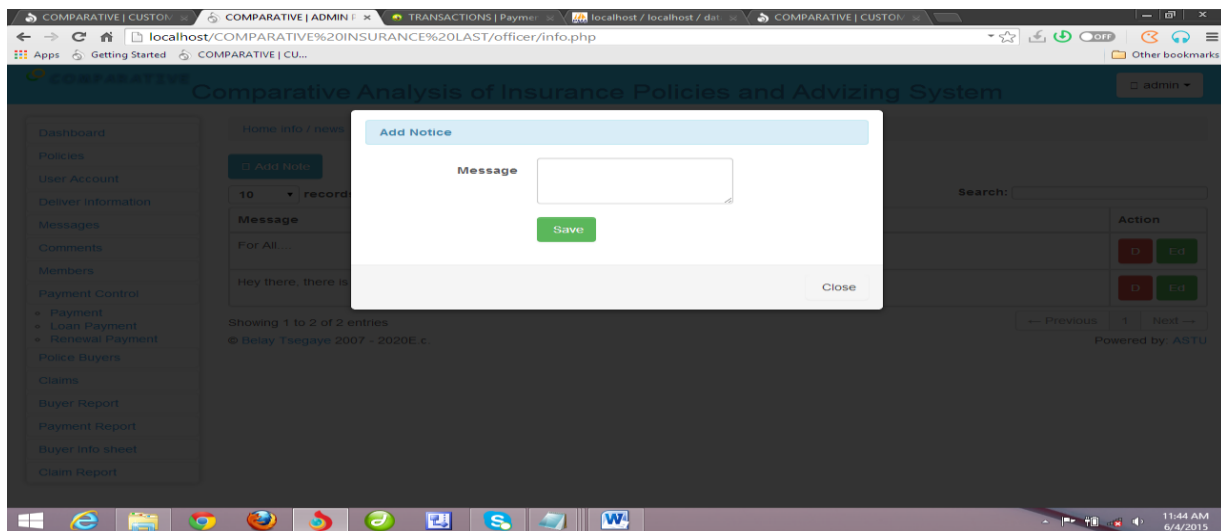


Figure 5.8. Add Notice

This page is displayed on the admin page the responsibility of the admin which is to add notices, news, advertisements about the company and issues related to customer.

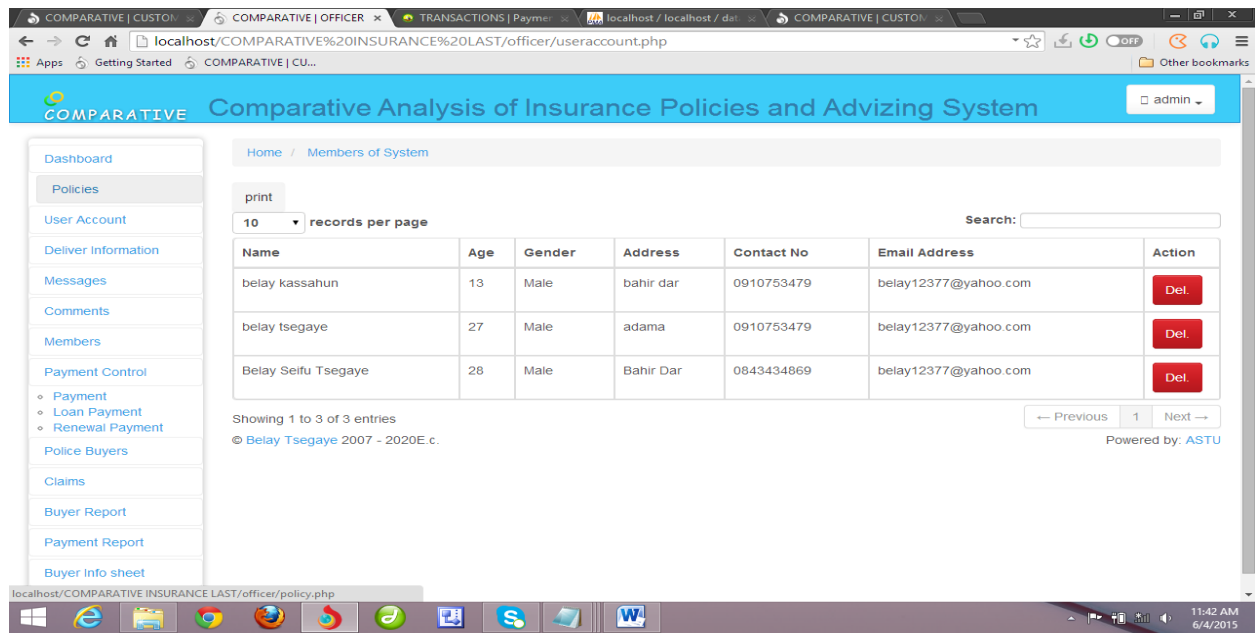


Figure 5.9. Members of the System

This page is displayed on the admin page which is essential to know what and who are, the number and amount of customers that the company have.

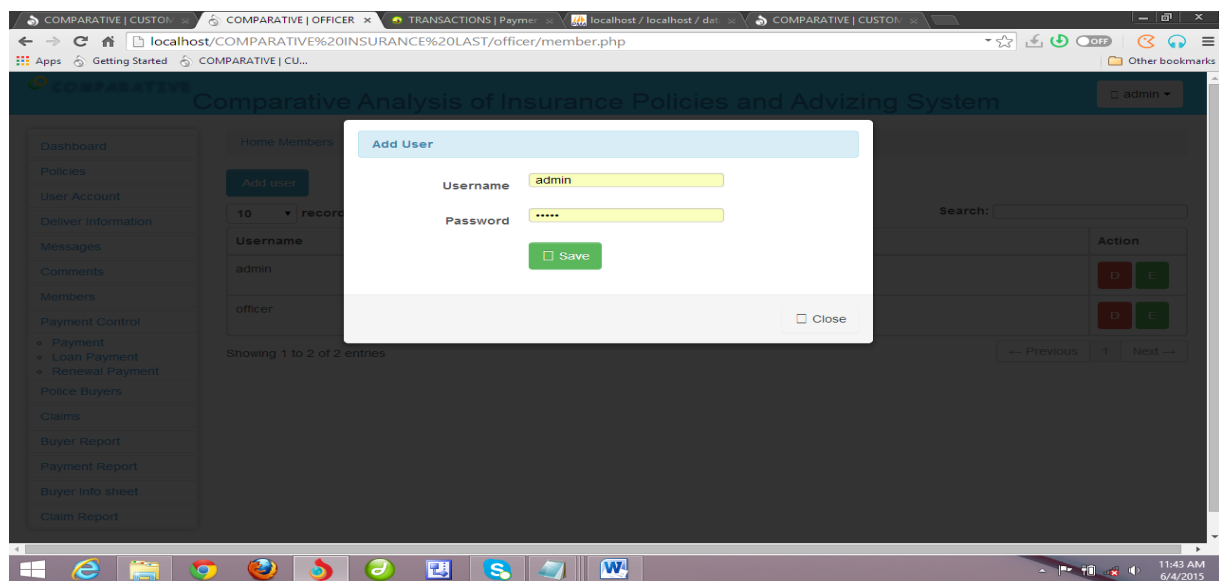


Figure 5.10. Add user/Officers

This page is only displayed on the admin page and the he/she can add new or existing officers in order to provide them username and password.

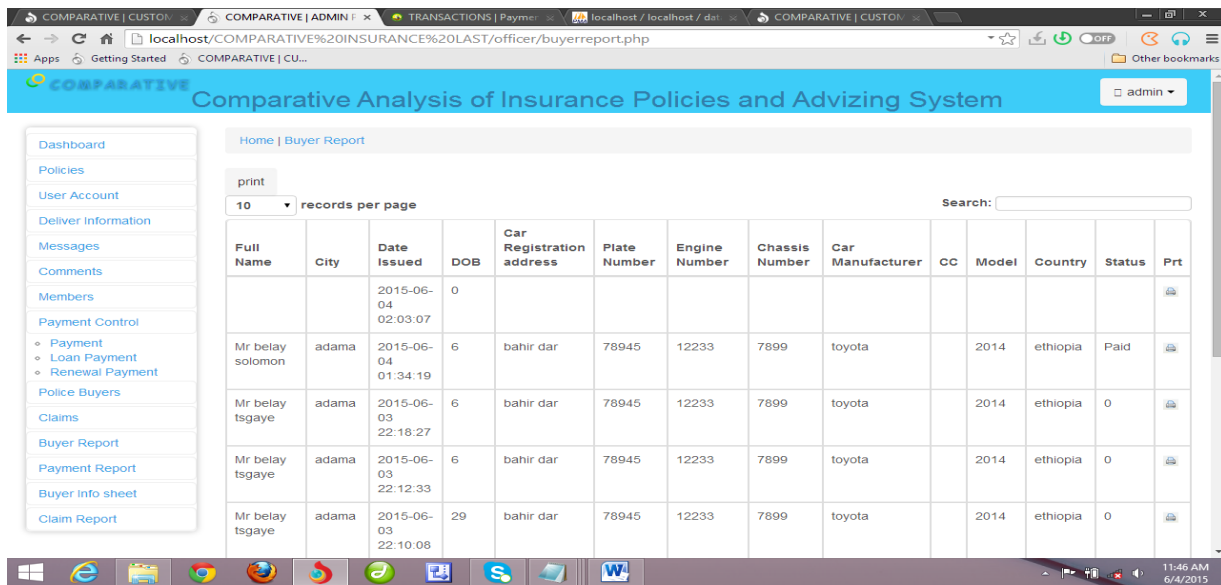


Figure 5.11. Buyer Report Page

This page is displayed on the admin and officer page in which they can see all the right buyers and can print reports on the individual buyers.

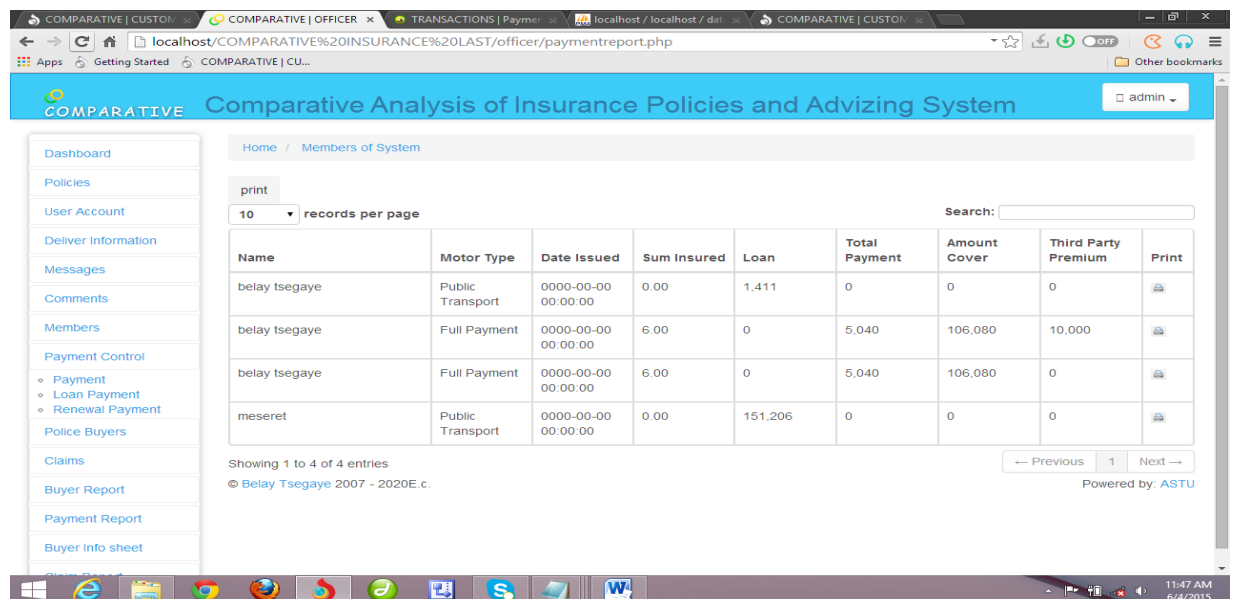


Figure 5.12. Payment Report

This page is displayed on the admin and officer page in which they can see all the right payers and can print reports on the individual buyers.

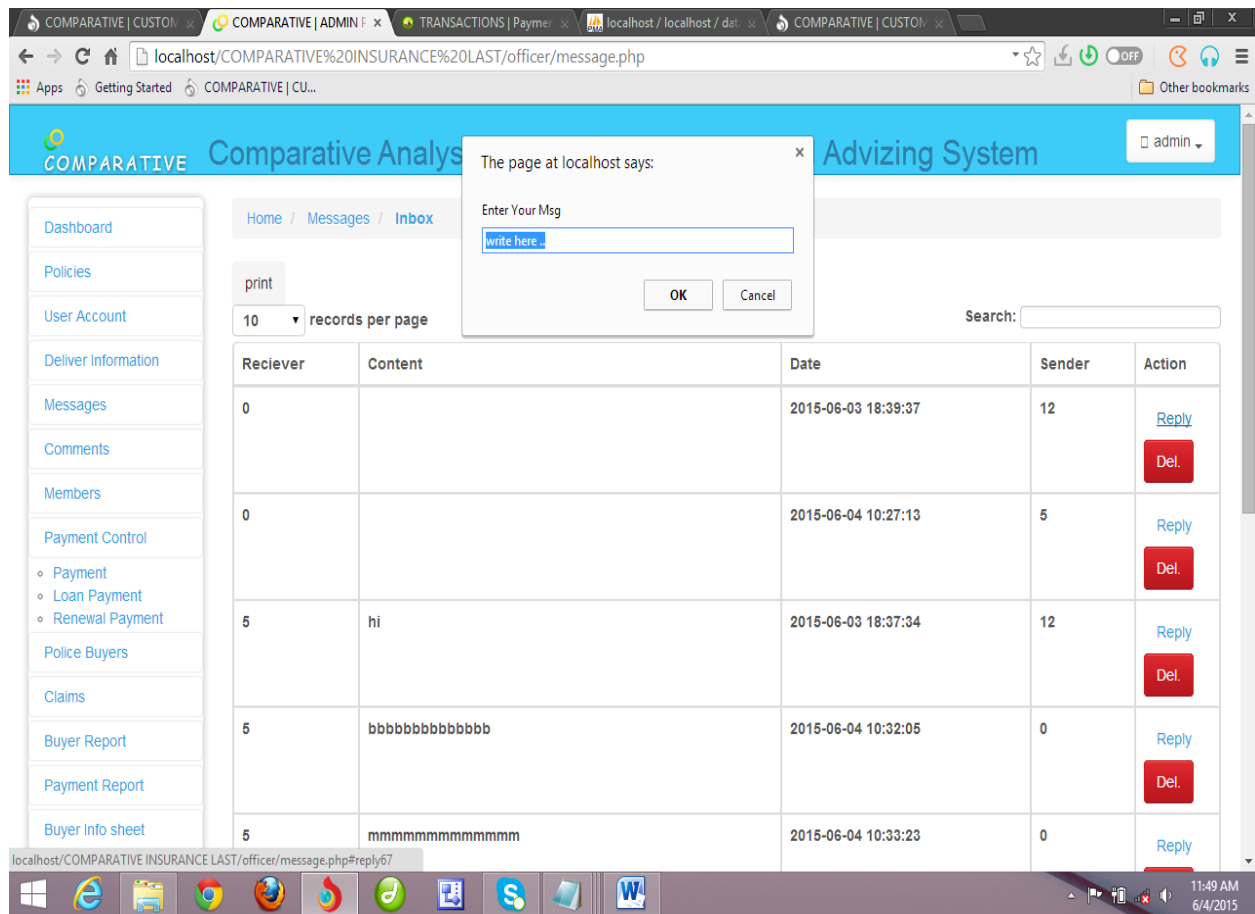


Figure 5.13. Message Report

This page is displayed on the admin and officer page in which they can reply and delete the messages sent from individual customers.

5.4. Sample Codes

Login

```
<?php include('header.php'); ?>

<?php include('navbar.php'); ?>

<?php include('dbcon.php'); ?>

<div class="container">

    <div class="margin-top">

        <div class="row">

            <div class="span12">

                <div class="login_sign_up">

                    <a rel="tooltip" data-placement="left" title="Click Here to Login"

                        id="login" href="login.php" class="btn btn-info btn-large">

<i class="icon-signin icon-large"></i>&nbsp;Login</a>

                    <p><a rel="tooltip" data-placement="bottom" title="Click Here to Sign UP"

                        id="signup" href="signup.php">Not a Member? Sign Up Now</a></p>

                </div>

                <!-- login -->

                <?php include('login_modal.php'); ?>

                <!-- end login -->

            </div>

        </div>

    </div>

</div>
```

```

<div class="span12">

    <div class="caption_index">we provide the best quality service</div></di
    <div class="clearfix"></div>

        <div class="span12">

            <?php include('thumbnail.php'); ?>

                </div>

                <div class="span12">

                    <?php include('content1.php'); ?>

                </div>

                <div class="span12">

                    <?php include('content2.php'); ?>

                </div> </div></div></div>

<?php include('footer.php') ?>

```

Customer_registration_to_book_policy

```

<?php include('header.php'); ?>

<?php include('session.php'); ?>

<?php include('dbcon.php'); ?>

<?php include('navbar_dashboard.php'); ?>

<div class="container">

    <div class="margin-top">

        <div class="row">

```

```

<div class="span3">

    <ul class="nav nav-tabs nav-stacked">

        <li class="active">

            <a href="#"><i class="icon-pencil icon-large">

</i>&nbsp;  Create Account</a></li></ul>

            <p><strong>Today is:</strong></p>

            <div class="alert alert-success">

<i class="icon-calendar icon-large"></i>

<?php

    $Today=date('y:m:d');

    $new=date('l, F d, Y',strtotime($Today));

    echo $new; ?>

</div>

<div class="alert alert-info">first compare to book policies:</div>

<p><a href="list_of_insurance.php"><button><h3>Compare Now Differnt Insurance

Policies</h3></button></a></p>

    <div class="alert alert-info">Believe On Us</div>

    <div class="testimonial_div">

        <p> Your company services to my life in general has been amazing.

            I am extremely happy with the quality of service.</p></div></div>

    <div class="span6">

```

```

        <br><br>

<div class="alert alert-info" align="center"><b>

        NIB Insurance Company</b></div>

<!-- reservation -->

    <?php

        if (isset($_POST['sub'])) {

            $date = $_POST['date'];

            $service = $_POST['service'];

            $query = mysql_query("select * from schedule where date = '$date' and
                member_id = '$session_id' ") or die(mysql_error());

            $count = mysql_num_rows($query);

            /* echo $count; */

            if ($count > 0) { ?>

                <script>alert('You have already schedule on this date');</script>

            <?php

                } else { $equal = $count + 1 ; ?>

            <div class="question">

                <div class="alert alert-success">Your the number <strong><?php echo
                    $equal; ?></strong> client in this date <strong><?php echo $date;
                    ?></strong></div>

            <form method="POST" action="yes.php">

```

```

<input type="hidden" name="session_id" value="<?php echo $session_id; ?>" >

<input type="hidden" name="date1" value="<?php echo $date; ?>" >

<input type="hidden" name="service1" value="<?php echo $service; ?>" >

<input type="hidden" name="equal" value="<?php echo $equal; ?>" >

<p>Are you sure you want to set your Appointment on this date?</p>

<button name="yes" class="btn btn-success"><i class="icon-check icon-
    large"></i>&nbsp;Yes</button>&nbsp; <a href="dashboard.php" class="btn"><i
        class="icon-remove"></i>&nbsp;No</a>

</form></div><br><br>

<?php }} ?>

<!-- end reservation -->

<form class="form-horizontal" method="POST">

<div class="control-group">

<label class="control-label" for="inputEmail">Date</label>

<div class="controls">

<input type="text" class="w8em format-d-m-y highlight-days-67 range-low-today"
    name="date" id="sd" maxlength="10" style="border: 3px double #CCCCCC;"
    required/></div></div>

<div class="control-group">

<label class="control-label" for="inputPassword">Service</label>

<div class="controls">

```

```

        <select name="service" required>

<option></option>

<?php $query=mysql_query("select * from service")or die(mysql_error());

        while($row=mysql_fetch_array($query)){

                ?>

                        <option value="<?php echo $row['service_id']; ?>">

<?php echo $row['service_offer'] ?></option>

                <?php } ?>

</select></div></div>

<div class="control-group">

<div class="controls">

<button type="submit" name="sub" class="btn btn-info">&nbsp;Submit</button>

</div></div></form></div>

        <div class="span3">

                </div> </div></div>

<?php include('footer.php') ?>

```

Compare One policy from two companies

```
<?php include('header.php'); ?>
```

```
<?php include('session.php'); ?>
```

```
<?php include('dbcon.php'); ?>
```

```
<?php include('navbar_dashboard.php'); ?><br><br><br>
```

```
<div class="span6">
```

```
    <?php
```

```
        $occ=$_POST['occ'];
```

```
        $level=$_POST['level'];
```

```
        $con = mysql_connect("localhost","root","");
```

```
        if (!$con)
```

```
{
```

```
            die('Could not connect:Retry ' . mysql_error());
```

```
}
```

```
        mysql_select_db("database", $con);
```

```
        $q1=mysql_query("select * from nib_term_insurance where
```

```
        Amount='$occ' and Payment_Modes='$level';");
```

```
        $q2=mysql_query("select * from lion_term_insurance
```

```
        where Amount='$occ' and Payment_Modes='$level';");
```

```
        if($q1>0)
```

```
{
```

```

echo"<table width=1146 height=122 border=1

align=center cellpadding=1 bgcolor=#F0F0F0>";

echo" <h1>Comparative Result</h1><h3 align=center><span class=style8>

Key Feature </span></h3></div>

<tr><th width=156 align=center>

<h3 class=style5><span class=style2>Company</h3></span></th>

<th width=159 align=center><h3 class=style5><span class=style2>Amount you want to

cover</h3></span></th>

<th width=159 align=center><h3 class=style5><span class=style2>Annual

Premium</h3></span></th>

<th width=225 align=center><h3 class=style5><span class=style2>Death

Benfit</h3></span></th>

<th width=181 align=center><h3 class=style5><span

class=style2>Maturity Benefit</h3></span></th>

<th width=191 align=center><h3 class=style5><span

class=style2>Loan Facility</h3></span></th>

<th width=180 align=center><h3 class=style5><span class=style2>Payment

Modes</h3></span></th></span></tr>";

while($row=mysql_fetch_array($q1))

{

echo"<tr><td><div align=center>$row[1]</div></td>";

```

```

echo"<td><div align=center>$row[2]</div></td>";

        echo"<td><div align=center>$row[3]</div></td>";

        echo"<td><div align=center>$row[4]</div></td>";

        echo"<td><div align=center>$row[5]</div></td>";

        echo"<td><div align=center>$row[8]</div></td>";

        echo"<td><div align=center>$row[12]</div></td>";

    echo"</tr>";

}

while($row=mysql_fetch_array($q2))
{

echo"<tr><td><div align=center>$row[1]</div></td>";

        echo"<td><div align=center>$row[2]</div></td>";

        echo"<td><div align=center>$row[3]</div></td>";

        echo"<td><div align=center>$row[4]</div></td>";

        echo"<td><div align=center>$row[5]</div></td>";

        echo"<td><div align=center>$row[8]</div></td>";

        echo"<td><div align=center>$row[12]</div></td>";

    echo"</tr>";

}

mysql_select_db("database", $con);

    $q1=mysql_query("select * from nib_term_insurance where Amount='$occ' and

```

```
Payment_Modes='$level';");
```

```
$q2=mysql_query("select * from lion_term_insurance
```

```
where Amount='$occ' and Payment_Modes='$level';");
```

```
if($q1>0)
```

```
{
```

```
echo"<table width=1279 height=110 border=1
```

```
align=center cellpadding=1 bgcolor=#F0F0F0>";
```

```
echo"
```

```
<h3 align=center><span class=style8>Benefit</span></h3>
```

```
<tr><th width=251 height=43 align=center><div align=center>
```

```
<span class=style2>Tax benefit on premium</span></div></th>
```

```
<th width=204 align=center><div align=center><span class=style>
```

```
Tax Benfit on death benefit</span></div></th>
```

```
<th width=237 align=center><div align=center>
```

```
<span class=style2>surrender Benefit</span></div></th>
```

```
<th width=270 align=center><div align=center>
```

```
<span class=style2>Grace period</span></div></th>
```

```
<th width=289 align=center><div align=center><span class=style2>
```

```
Free look period</span></div></th></tr>";
```

```
while($row=mysql_fetch_array($q1))
```

```
{
```

```

        echo"<tr><td><div align=center>$row[6]</div></td>";

        echo"<td><div align=center>$row[7]</div></td>";

        echo"<td><div align=center>$row[9]</div></td>";

        echo"<td><div align=center>$row[10]</div></td>";

        echo"<td><div align=center>$row[11]</div></td>";

        echo"</tr>";

    }

while($row=mysql_fetch_array($q2))
{

    echo"<tr><td><div align=center>$row[6]</div></td>";

    echo"<td><div align=center>$row[7]</div></td>";

    echo"<td><div align=center>$row[9]</div></td>";

    echo"<td><div align=center>$row[10]</div></td>";

    echo"<td><div align=center>$row[11]</div></td>";

    echo"</tr>";

    }

    mysql_select_db("database", $con);

    $q1=mysql_query("select * from nib_term_insurance

    where Amount='$occ' and Payment_Modes='$level'");

    $q2=mysql_query("select * from lion_term_insurance

    where Amount='$occ' and Payment_Modes='$level'");

```

```

if($q1>0)
{
    echo"<table width=900 height=122 border=1 align=center cellpadding=1
        bgcolor=#F0F0F0>";
        echo"
<h3 align=center><span class=style8>Additional Benefit</span></h3>
<tr><th width=267 align=center><h3 class=style5>
<span class=style2 style=color: #000066>accidental death benefit</span></h3></th>
<th width=232 align=center><h3 class=style5>
<span class=style2 style=color: #000066>critical illness</span></h3></th>
<th width=375 align=center><h3 class=style5>
<span class=style2 style=color:#000033>Hospital cash Benefit</span></h3></th></tr>";
    while($row=mysql_fetch_array($q1))
    {
        echo"<tr><td><div align=center>$row[13]</div></td>";
        echo"<td><div align=center>$row[14]</div></td>";
        echo"<td><div align=center>$row[15]</div></td>";
    echo"</tr>";
    }
    while($row=mysql_fetch_array($q2))
    {

```

```

echo"<tr><td><div align=center>$row[13]</div></td>";

echo"<td><div align=center>$row[14]</div></td>";

echo"<td><div align=center>$row[15]</div></td>";

echo"</tr>";

}

}

echo"</table>";

}

else {

echo"<h2>No such kind of record that meets the criteria</h2>";

}

```

5.5. Result

Once the actors are login to the system they get different pages which consists of their own privileges, but if the login is not success the error screen will be displayed.

CHAPTER SIX

6. Test Plan

6.1. Test Plan

6.1.1. Introduction

Testing evaluates a software product to insure that it satisfies its planned purpose. A test that is modified to and consistent with development methodologies provides an observable and structured approach to verifying requirements and quantifiable performance.

6.1.2. Test Plan Over View

Test plan is defined as a strategic document which describes the procedure how to perform various testing on the total application in the most efficient way. The main purpose of this test plan documentation is to describe the testing details of the use case of comparative insurance policies analysis and advising system, and to identify the features of the system that will be tested, to identify and define all the activities necessary to prepare for and conduct the testing process, to define the pass/fail criteria for each item that will be tested and discuss the testing techniques being used to test the system.

After the conclusion of this test document, all the modules and sub-systems of our system are expected to be tested rigorously according to the test cases we have set in the test case specification part of this document. When the system is deployed, the system should be able to ignore invalid inputs and as a result, the performance of the system will be enhanced. The security part of the system is also tested according to the test cases set in the login test case specification, and the system is expected to be easily unbreakable.

6.1.3. Features To Be Tested/Not To Be Tested

This section should summarize the system features to be tested. The scale of testing will depend upon many things about the characteristics of the system. Some of them are database connection testing and data validation testing.

❖ **Feature To Be Tested**

The functional testing, which test functionally of the system includes:

- ✓ Login
- ✓ Forward complain
- ✓ Handle complain
- ✓ Add policies
- ✓ Change password
- ✓ Edit account
- ✓ Add/delete
- ✓ Compare policies

❖ The nonfunctional testing includes

- ✓ Performance
- ✓ Security
- ✓ Usability
- ✓ Development

❖ **Feature not to be tested**

Recovery and maintenance of the mysql server is feature those cannot be tested

6.1.4. Approach

This section of the test plan describes the overall approach for testing of the system. The approach followed for testing the comparative analysis and advising system of insurance policies insure that the major feature of the project is effectively tested. The system validates and verified to make sure that the system meets the system design. We try to describe test plan approaches we used for testing our system as follows.

Unit Testing: tests each single module of the software to check for errors. This is mainly done to discover errors in the code, to isolate each part of the program and to check the correctness of the code.

Integration Testing: All the module of the project developed individually would be combined together and tested as a whole system to test the functional and performance

requirements on the major items of the system. The integration testing generally allows unit testing where each module is tested a separate unit.

System Testing:is mainly done on the whole integrated system to make sure that the system that has been developed meets all the requirements. The test cases for the system testing will be the combination of unit and integration tests.

Loading Testing:loading testing is the process of creating demand on a system or devices and measuring its response. It generally refers to the practice of modeling the expected usage of a software program by simulating multiple users accessing the program concurrently. As such, this testing is most relevant for multi-user systems; often one built using a client/ server model, such as web servers.

Performance Testing:the system should meet the performance requirements as mentioned in the vision document. The performance will be evaluated based on the response time of the GUI and the database commands.

Manual Testing:manual testing will be done to ensure the correctness of various parts of the code using test cases generated by the tester.

6.1.5. Testing Material (Hardware/Software Requirements)

In order to test each feature we use different hardware and software material listed below:

Personal Computer:pc with appropriate hard disk memory space for hosting the website.

Printer:we use printer to print reports and documents

Operating system:software used to develop the project

Wamp server:software which help us to test the function of the website.

PHP:main programming language used in our project

Internet:internet browser used to make our system online

Microsoft word:used to produce a proper and standard documentation of our project.

6.2. Test Case Specification

A test case is a set of test inputs, predicted results and execution results. Test case specifies the inputs, predicted results and execution conditions. Each test case should aim to evaluate the operation of a key elements or function of the system.

6.2.1. Test Case Specification Identifier

Table 6.1.Test case specification for login

Test case ID: TC1				
Test name: Login				
Assumption: Redirects to required page				
Purpose : to ensure that only authorized users gain access to the required page				
Test data: user name(valid user name, invalid user name, empty				
Step to be	Executed	Expected results data actual result	Obtained	Pass/ Fail
Click on “login” button without entering data	“user name can’t be empty”	Any valid data for the other fields	“User name can’t be empty”	Fail
Enter invalid user name all their filled and click “login” button	“invalid user name or password”	User name: Bontu doesn’t exist in the login table	“invalid user name or password”	Fail
Enter valid user name, empty password and click “login” button	“password can’t be empty”	User name: habtamu	“password can’t be empty”	Fail
Enter user name, invalid password and click “login” button	“invalid user name or password”	User name: habtamu password:ab123	“invalid user name or password”	Fail
Enter valid user name, password and click on ”login” button	“redirects to the required page”	User name:abebe Password: y34	Redirects to the required page”	Pass

Table 6.2. Test Case Specification for Change Password

Test case ID: TC2				
Test name: change password				
Assumption: Administrator password change				
Purpose: to ensure his own data is not to be accessed				
Test data: User name(can't be empty) password(should be 4-8 character				
Step to be	Executed	Expected results data actual result	Obtained	Pass/Fail
Empty user name and write password "submit" button	"user name can't be empty"	Any valid for password	"user name can't be empty"	Fail
Enter user name and empty password	"password can't be empty"	Any valid data user name	"password can't be empty"	Fail
Enter password less than 5 character	"password can't be less than 5 character"	Password with 3 character	"password can't be less than 5 character"	Fail

Table 6.3. Test Case Specification for Add new user

Test case ID: TC3				
Test name: add new user				
Assumption: user registration				
Purpose: to ensure user data is saved correctly				
Test data: name(can't be empty) sex(should be f and m) Age(should be numbers)photo (should not be large)				
Step to be	Executed	Expected results data actual result	Obtained	Pass/Fail
Empty name and "submit" button	"name can't be empty"	Any valid for data	" name can't be empty"	Fail
Enter name and "submit" button	"name should be filled"	Name" jovain	"name should be filled	Fail
Enter age with character	Age can't be character"	Age:	"Age can't be character"	Fail
Enter age with number	"Age should be number"	Age : 40	"Age should be number"	Pass

Table 6.4. Test Case Specification for Edit Account

Test case ID: TC4				
Test name: edit account				
Assumption: user change account				
Purpose: to ensure user account is changed				
Test data: Name(can't be empty) User name(should be not null) password(should not be empty)				
Step to be	Executed	Expected results data actual result	Obtained	Pass/Fail
Empty name and "submit" button	"can't be empty"	Any valid for data	" name can't be empty"	
Enter name and "submit" button	name should be filled	Name: yalew	"name should be filled	Pass
Empty user name	"user name should not be empty "	Password: 333221	User name should not empty	Fail
Empty password and enter user name	Password should not be empty "	Username: zinabu	"password should not be empty"	Fail
Enter user name and password	User name and password can be filled	User name: belay Password:belay	User name and password can be field	Pass

6.2.2. Test Items

Identify the items or feature to be tested by this case. Keep in mind the level for which this test case is written and describe the items/features accordingly. The item description and definition can be referenced from any one of several sources, depending on the level of the test case specification. It may be good idea to reference the source documents as well.

6.2.3. Input Specification

Identify all inputs required to execute the test case. Again these may vary based on the level the case is written for. Be sure to identify all required outputs not just data elements and values.

6.2.4. Output Specification

Identify all outputs required to verify the test case. Again these may vary based on the level the case is written for. Be sure to identify all required outputs not just data elements and values.

6.2.5. Environmental Needs

➤ Hardware

- ✓ Configuration
- ✓ Limitation

7. Software

➤ System

- ✓ Operating system
- ✓ Compiler
- ✓ Tools

- **Other Application**

- ❖ **Other**

- Facilities
- Training

6.2.6. Special Procedural Requirements

Identify any special constraints on the test cases. If the test case specification covers more than one test case this may be the common procedure for several sets of test or there may be more than one set of steps or external procedures identified.

6.2.7. Inter Case Dependencies

Identify any prerequisite test cases. It is also recommended that the relationship of test cases be documented at both ends of the relationship. The precursor should identify any follow-on test cases and the post cases identify all prerequisites

CHAPTER SEVEN

7. Conclusion

7.1. Conclusion

Comparative analysis of insurance policies and advising system is useful for both the companies and societies. In the study and implementation of comparative analysis of insurance policies and advising system had been conducted. An investigation of the existing insurance policies providing system had been conducted to identify the relevant feature of various service and methods needed to developing comparative analysis of insurance policies and advising system. Currently there is no integrated insurance company to deliver services. Currently the consumers are very wise and clever and they analyze all policies and choose the best. This system helps in finding the best policies for the customer needs. And also this let them to save time, money and they can get what they need more efficiently and effectively.

Over all, comparative analysis of insurance policies and advising system has been successfully implemented and has achieved and fulfilled the objectives and requirements that are stated in the project proposal. In general the system saves time, money and human resource as well as it reduces error compared that of the existing system.

7.2. Results Achieved

Since requirements elicitation focuses on describing the purpose of the system, identify a problem area and define a system that addresses the problem, this project concentrates on the capabilities required by customers of the company and their needs. Having this comparative analysis of insurance policies and advising system is developed with privileges, fast, cost effective and reliable. The system is very useful for all the society and companies. As a result using this system, society and companies will exchange information about the services delivered.

7.3. Limitation of the Project

There may be weakness in any project. As we know this system is online comparative analysis of insurance policies and advising system that means any one can use it, but as the result of the current real situation of the country Ethiopia that does not support any Credit Card or Debit Card, it is impossible to make the payment system online. (And also to get SMS service premium due to the requirement of huge amount of budget) and time constraint to gather all the relevant information about all insurance companies with respect to all insurance services they provide will not be included.

8.4. Future Work

In the future we want to improve what we have mentioned in the limitation of our project, first we would like to enhance the system functionality and performance.

Reaching on conclusion in this aspect that the future improvement mentioned in the limitation is very important as it can bring a great change for the policyholders that will allow easily getting SMS messages to their mobile phones and can paying using credit Card or debit Card and also have updated information on all the services in case if they want to be beneficiary.

Summary

In general, this system helps for the prospective public and policyholders to choose the best and convenient company for them by comparing on online then they will be able to encourage increasing their investment on specific service product. The ability to access and process information quickly allows the prospective public to get services quickly and more effectively. In nature of insurance policies contract, information about the location of the service product companies, key features, benefits, and additional benefits is often extremely crucial to determine further about the specific service. Comparative analysis of insurance policies and advising system helps to compare vast amounts of location based insurance policies from multiple sources and in an interface. It has been creating the way that the administrator, officer and customers together to reducing workload, wastage of time and cost related things. This system enables for the prospective public to control their insurance policies that they bought through their account.

Recommendation

Nowadays, the world is highly becoming a competitive world. Organizations have to divert their attention on using the recent technology to be on the first line and competitive. This can be real if they are able to use information communication technology (ICT) to successfully achieve their objective. Not only achieving the companies' objectives but also the level of satisfaction of customers in finding the best and least cost service product company is needed to be identified and underlined. As we describe in this document, almost all activities in these company is done on manual basis and no integration system. From the various facts that constitute the project, the following recommendations have come to light.

- Attention should be given to the existing practice in the design, development and utilization of the new system.
- Serious consideration should be given for the introduction of the new system.
- The staffing division should have adequate computer facilities for the introduction of the new system.
- Behavioral change of the user of the system to adapt the new system.
- There should be an Internet connection and a network infrastructure in order to connect the different user computers in that live in different place.
- Budget should be allocated to take specific measure.
 - ✓ To change the obsolete hardware instrument by the new one.
 - ✓ To avoid shortage of computer hardware equipment like printer scanner and others.
 - ✓ To have standardize database.
 - ✓ To capacitate manpower in the area.

Appendix

User manual/ Guide

User guide is a documentation which is used to make the system easily understandable for the user. So that we list user guide of our system as follows:



Figure 7.1. System Home Page

The user who need to use this website, firstly they get homepage which consists basic information. This page has admin login, officer login, customer login and sign up that allows them to enter into their page. So dear user if you want to access this system fully you should be registered first and enter into registered user homepage and choose the privilege allowed to you.

The administrator person can take username and password from us first and can change his/her profile including username and password then you can register new administrator. After successful registration the administrator can control the overall activities of the system. to do this you must enter your username and password correctly into the following login page and click on login button.

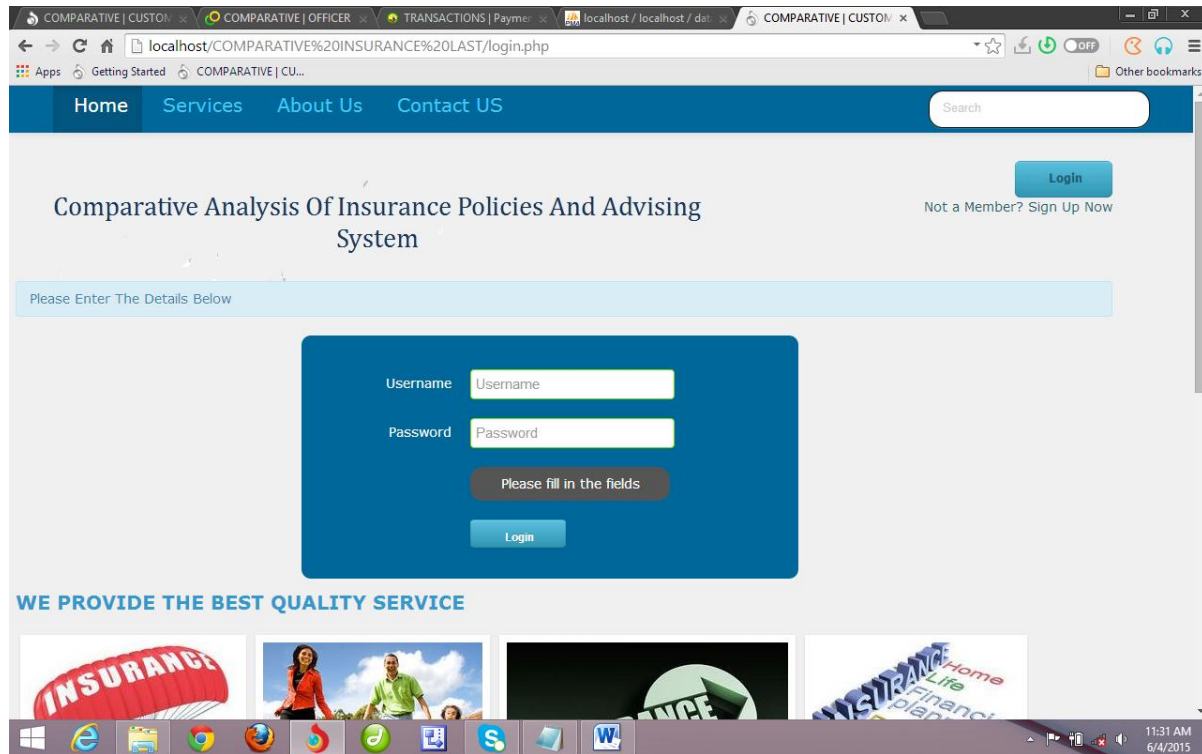


Figure 7.2. Customer Login Page

Steps to be followed when you want to enter to the system

- A. Enter username and password
- B. Click on login button

If you forgot your password, click on forgot password link to get his/her email address.

Other Relevant Documents

Interview

Interview was made with the manager of the company's chief persons and investigators of Adama Lion, Nib and Oromiya insurance companies on how the existing system works, problems of the existing system, how they handle customers and other relevant things.

An Example of Personal profile of the interviewee

Full: Name: Mihiret Tesfaye

Sex: Female

Age: 35

Qualification: BSc in Management

Position in the organization: Assistance Underwriter of Oromiya insurance company.

1. When was the company established?
2. What is the main objective of the company?
3. What does customers should if they want to complain?
4. What are the companies working custom?
5. How much is the total number of customers (policyholders) having this company?
6. Does the current system have problems? If yes please state some.
7. How does your organization control insurance policies?
8. What are the processes to be a member? Could you please explain in detail?
9. Do you want to automate insurance policies? If yes, please reason out.
10. What service products do you have to serve customers?
11. What makes different your company from others?
12. Is there any discount for the customers who have your company service? If yes, write the percentage.
13. How is payment made? How customers can be informed when their premium due date is reached?

Answers for the Interview Questions

1. Oromiya Insurance company is established in 2009 G.C
Nib Insurance Company is established in 1984 E.C
Lion insurance company is established in 1988 E.C
2.
 - ✓ To provide good life and nonlife guaranty of customers
 - ✓ To serve customers effectively and efficiently
 - ✓ To earn income
 - ✓ To mitigate life and nonlife risks.
3. They will go to the company to inform and write a complain on paper everything what they have been feeling in person and calling by phone.
4. It is extremely traditional style because everything is done on paper. Officers will request and report to the admin and admin will approve what is requested.
5. In Oromiya Insurance Company the numbers of customers are 8500

In Nib Insurance Company the numbers of customers are 6000

In Lion Insurance Company the numbers of customers are 7300
6. Yes. The company informs its customer only through phone calls for whatever service action that belongs to a particular customer (policyholder).
7. All of the officers are obliged to record all the customer details. Depending on the need of the customer the officer will serve them and every service will be sent to admin through paper to approve the service action.
8. Whenever anybody wants to be a member they must go to the company in person to ask all the relevant information about the service what he/she wants. Then the assistant officer will tell him/her everything accordingly. If the customer agrees on the evidences what he/she is heard, then he/she will be given a specific proposal, but it will be filled by officers. Finally the customer pays the amount what is expected from him/her.

9. Yes. Because, automating the system will reduce workload, costs incurred, increase customer satisfaction, increase numbers of customers for the company and the like.
10. All the companies have the same services such as Motor insurance, Health insurance, term insurance, and the like.
11. Oromiya insurance service gives incentive programs for motor insurance like Accident Forgiveness, Glass Coverage, Personal/Upgraded Item Coverage, Rental Reimbursement and Roadside Assistance.
Nib insurance service gives incentives for motor insurance like Accident Forgiveness, Rental Reimbursement and Roadside Assistance
Lion insurance company gives special incentives for motor insurancelikeAccident Forgiveness, RentalReimbursement and Roadside Assistance
- 12 Yes. There is a discount.Oromiya insurance company allows 5% per year, Nib insurance company allows 4.5% per year and Lion insurance company allows 4% per year. But still there is an upper limit that is up to 80% after then it will start from zero for all the three companies
- 13 It is made in person by going to the company. Whenever premium due date is reached customers will be informed through phone call.

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