A MASTERS PROJECT
ON
E-COMMERCE WEBSITE FOR MARAKI MOBILE PHONE DISTRIBUTOR AND RETAILER

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF M.SC. IN TECHNICAL TEACHERS EDUCATION IN INFORMATION TECHNOLOGY MANAGEMENT

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ABSTRACT

E-commerce web site can promote a trendy way for people to perform shopping for consumer products. Not merely it is convenient, but also it is time-saving, thus consumers can have more time to take care of other things in daily life. E-commerce website can be developed as a shopping center providing services and products for people to do shopping from any places. This web site, or *E-Commerce Website for maraki* gives service for customers, so shoppers do not need to visit physically in order to search for what product have in the market.

The objective of this project is to develop accessible and manageable E-commerce Website for Maraki Mobile Shop by using user friendly approach. Furthermore, the market place is designed by separating products into various categories. Also, it makes shoppers see the products easily in product groups together with their sub categories. This Electronics Commerce site runs on different browsers like Google chrome, Fire fox, and Internet Explorer and Maxthon browsers. The site also compatible with 32 bit or 64 bit windows operating system , Unix, Linux and runs on Apache and windows server operating system

The results of this study show that the developed E-commerce web site provides considerable benefits for both buyers and sellers to do their businesses. Certainly, shoppers can save traveling expense by choosing their choices of delivery and payment.

CHAPTER ONE

2.Introduction

The rapid and unpredictable advances in information and communication technologies (ICT) and the dissemination of networked data processing have led to widespread access to information resources and globalization of communications, businesses, and services. Among leading digital technologies, internet has brought the huge impact and greatly changing the way how business is conducted, access information, acquire goods and services.

These day's firms should rethink, redesign, and rework how businesses and public services operate and, typically, have been aimed at the improvement of productivity, effectiveness, and efficiency, both internally and in the external relationships with clients, customers, suppliers, and business partners to accommodate the demand of this changing environment.

Internet itself has grown at a remarkable pace since the emergence of the World Wide Web in the early 1990s. Murthy (2004) pointed out that due to a pervasive and steadily growth of information and communication technology, the world industry is entering into new phenomena of unprecedented form of competition supported by modern information and communication infrastructure.

The essence of e-commerce is reliable transaction delivery in a fast changing environment involving people, processes, and a service or business infrastructure. E-commerce in its simplest sense is trading electronically. Different scholars forward different ideas about growth of electronic commerce and its role on different aspect of business. Zwass (2003) pointed out that, over the past decade, electronic commerce on the technological foundation of the Web-Internet compound has entered extensive areas of organizational and social activity.

Despite the global reach of e-commerce, not all countries have taken advantage of or benefited from e-commerce. With Internet, different characteristics of infrastructural, Socio-economic and socio-cultural have created a significant level of variation in the adoption and growth of ecommerce among countries. There is a big gap in e-commerce adoption between the developed and developing countries like Ethiopia.

The concept of the e-commerce has been around for a long time, but it is still in the phase of discussion and design. Initially, the shop provides product in the physical shop there is no e-commerce web site for selling products online. Because of this we develop e-commerce web site for

Marki mobile shop. So the e-commerce system is designed to improve the market share of the organization and to improve customer satisfaction by delivering product in their home area.

2.1 Statement of the Problem

This system provides functionalities for Maraki Mobile shop, as a perfect guide, the current demand for such system became needful. This project will provide e-commerce market for Maraki Mobile shop whose main goal is to sell products online, to crate online advertisement, to communicate easily with customers by using online forum produce bill while selling. This system will provide in a simple and easy to operate user interface, which can be managed by any user without having prior in-depth knowledge of the computer system. One can use this system to get a sales report. Administrators can pull data, from any location from the server. By this project we can't change the existing physical shop system but the organization can gate both system advantages but the physical shop

- Difficult to advertise the new arrived products for customers
- Difficult to sell products out of the town
- Customers can't gate maintenance and other related information
- Difficult to gate market share in the country in the physical system the company must open their branches in multiple location in the country but this is difficult according to cost and management.

We solve these types and other sales related problems by developing e-commerce web site for the organization. There are various applications with more complex implementation and features available in the market, but they are generally very expensive. Therefore, creating e-commerce system with the basic requirement of low cost is essential for business organizations.

2.2 Background of the organization

Maraki mobile shop found at the centre of Adama town kebele 15 traditionally the so called place *Meberat Haile*. This Shop distributes mobile phones for retailers as well as sales mobiles for individual customers. And again this shop has Tecno Mobile branch shop for distribution for retailers and sales for individual customers.

2.3 Organization structure of the company

Maraki mobile phone distributer and retailer shop has its own organizational structure

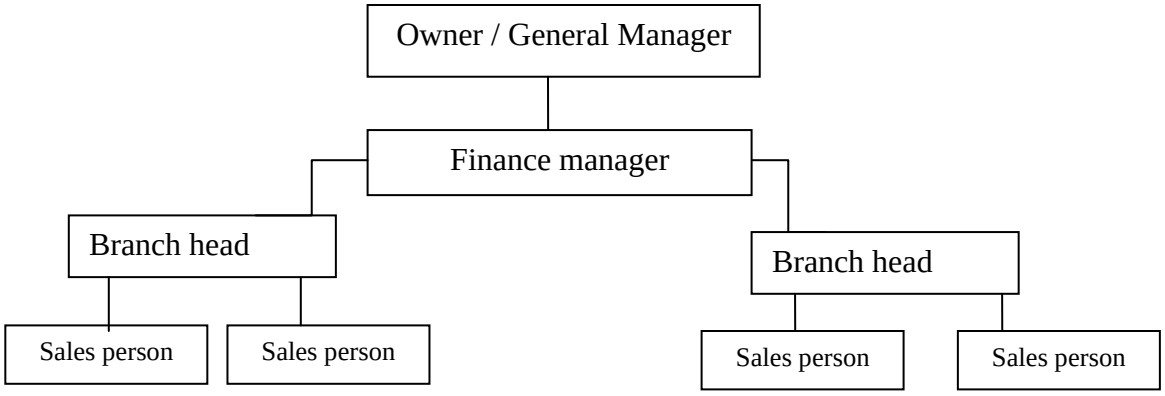

Fig 1.1 organization structure

In the organization under general manager there is one finance manager and again under Finance manager there are two branch heads. The finance administrator control and manage total shop activity and he/she collect money from each branch. Branch heads are responsible for their own branch they control sales of the products, stock levels, price of the product and control sales person activity. The number of sales persons is 6 in the main branch 4 sales persons are found. The remaining 2 persons are for branch shop.

1.4 Objective of the Project

1.4.1 General Objective

The overall objective of this project is to develop accessible and manageable E-commerce site by which customers view products, order products and make payment online and enables shipping organizations to interact with the site to deliver ordered products to customers.

1.4.2 Specific Objectives

- Make requirement analysis of maraki for E-Commerce site development
- Based on requirement of maraki logically and physically design E-commerce site
- Design database for maraki based on requirement analysis and system design
- Implementing E-commerce site based on system design
- Testing the implemented E-commerce site according to maraki's and customer requirement
- To sell products online to retailers and individual customer

- To advertise products online
- To create online forum

1.5 Scope and limitation of the project

1.5.1 Scope of the project

The tasks that are performed in the e-commerce systems are very vast. To limit our scope this project handles the major tasks that are most useful in Maraki Mobile Shop. The scope of our projects is to selling products online for local markets (around Ethiopia), advertising our products in country, crating online forum for customers, giving maintenance related information.

1.5.2 Limitation of the project

As we now any E-commerce web site are work with Internet and communication infrastructure. In this condition our country don't have well-structured Internet infrastructure and power system. This is the main limitation of our project

1.5.3 Significance of the Project

The main significant of this project is to help shops to handle their work in the ways of: -

- Secure data and with wise use of resources available
- Technologically advanced
- Provide security on information handling
- Increase their market share by advertising their products on the web and by making easily available product quantity discounts and other mechanisms for customer incentives.

1.6 Methodology

1.6.1 Data collection methods

Data collection methods are the most important part of our project .It is used to collet detailed in formation and help to understand the functionality of the current system.

For gathering data and information, we have used Primary and Secondary data collection methods:

i) Primary data collection

In primary data collection, we collected the data by the following methods:-.

A .Questionnaire:

Questionnaires the system to identify users' attitude toward the current system and also what they need on the proposed system with regard of service provided, flexibility, accessibility ,time and

others like an e-commerce practices, opportunities, challenges of the online mobile store and sales system

B. Interview:

We had interviewed and communicated with Maraki mobile shop employee's and got information on existing system, so we could identified special features and also problems with existing system..

C. Observation:

We used this method of data collection extensively in order to observe and to see how the organization worked regarding Maraki mobile shop customers and employees, the customer orders, ways of communication, payment system and any shipment process. We also observed the stock of the organization how the cell phone arranged, organized and find the required mobile device and its accessories

ii) Secondary data collection

Document analysis: In order to have a detailed knowledge and understanding of existing system we gathered the required documents an analysed. The group picked out the important data that used to develop this project. So we understood previous works related with the proposed system that could helped us an input and facilitated the development of the new system. During the analysis of documents, the proposed system gives a special consideration to those documents which can bring more features to our system.

System Analysis and Design Methodology

From the two most common approaches of system development tools structured/relational and object oriented methodology, we have used both structural and object oriented software engineering design methods during the analysis and design phase of the system. Therefore most part of the system is analyzed and designed using UML models.The UML has standard diagram used for designing use case conceptual models (class, state chart, component, DFD, and deployment), and interaction diagrams (activity, sequence) and user interface model or communication models.

Object Oriented Programming Approach: offers a new and powerful model for writing computer software. Objects are "black boxes" which send and receive messages. This approach speeds the development of new programs and if properly used improves the maintenance, reusability, and modifiability of software. Object-Oriented Programming has the following advantages:

Simplicity: software objects model real world objects, so the complexity is reduced and the program structure is very clear.

a)*Extensibility*: adding new features or responding to changing operating environments can be solved by introducing a few new objects and modifying some existing ones.

b)*Inheritance: We* can inherit properties of the class that are defined in the super class.

c)*Maintainability:* objects can be maintained separately, making locating and fixing problems easier.

Re-usability: objects can be reused in different programs

1.6.2 System Development Tools

The system implementation methods express that the common languages that developer is going to develop web based system and the group members have used on the following languages that being the essential computer language of this project these are:

PHP: is an open source general-purpose server-side scripting language originally designed for Web development to produce dynamic Web pages.

PHP (recursive acronym for *PHP: Hypertext Pre-processor*) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

What distinguishes PHP from something like client-side JavaScript is that the code is executed on the server generating HTML which is then sent to the client. The client would receive the results of running that script, but would not know what the underlying code was. You can even configure your web server to process all your HTML files with PHP, and then there's really no way that users can tell what you have up your sleeve.

For database we selected MySQL as a back-end. A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or the vast amounts of information in a corporate network. To add, access, and process data stored in a computer database. You need a database management system such as MySQL Server. Since computers are very good at handling large amounts of data, database management systems play a central role in computing, as standalone utilities or as parts of other applications.

A relational database stores data in separate tables rather than putting all the data in one big store room. The database structures are organized into physical files optimized for speed.

The logical model with objects such as databases, tables, views, rows, and columns, offers a flexible programming environment. You set up rules governing the relationships between different data fields, such as one-to-one, one-to-many, unique, required or optional, and "pointers" between different tables. The database enforces these rules, so that with a well-designed database, your application never sees inconsistent, duplicate, orphan, out-of-date, or missing data.

The SQL part of "MySQL" stands for "Structured Query Language". SQL is the most common standardized language used to access databases. Depending on your programming environment, you might enter SQL directly (for example, to generate reports), embed SQL statements into code written in another language, or use a language-specific API that hides the SQL syntax. For web server we use Apache. Apache is the most popular web server in the world, with nearly 70% of all websites running Apache as of January 2006, according to the net craft web server survey. Apache is free, open-source, high-quality software. Although Apache was born in the Unix/Linux world, it runs great on Windows too. In general, the newer you're Windows, the easier it is to install Apache.

The general methodology in analyzing and designing a system is involved in different phases, which describe the system's life cycle model for developing software project.

Those are:

- Requirement analysis phase
- Design phase
- Development phase
- Coding phase
- Testing phase

a.Requirement analysis phase

This phase includes the identification of the problem, In order to identify the problems; we have to know information about the problem, the purpose of the evaluation for problem. We have to clearly know about the client's requirements and the objectives of the project.

b.Design phase:

Software design is a process through which the requirements are translated into a representation of software. One of the software requirements have been analyzed and specified, the software design involves three technical activities: Design, Code generation and testing.

The design of the system is in modular form i.e., the software is logically partitioned into components that perform specific functions and sub functions. The design phase leads to modules that exhibit independent functional characteristics. It even leads to interfaces that reduce the complexity of the connections between modules and with the external environment. The design phase is of main importance because in this activity, decisions ultimately affect the success of software implementation and maintenance.

c.Development phase:

The development phase includes choosing of suitable software to solve the particular problem given. The various facilities and the sophistication in the selected software give a better development of the problem.

d.Coding phase:

The coding phase is for translating the design of the system produced during the design phase into code in a given programming language, which can be executed by a computer and which performs the computation specified by the design.

e.Testing phase:

Testing is done in various ways such as testing the algorithm, programming code, sample data debugging in checking the functionality of the project.

f.Waterfall model:

Each phase, or stage, of development in waterfall model is not initiated until the previous phase is completed and approved. The phases include requirements analysis, system design, program design, coding, testing, training and maintenance. Progress is measured in delivered artifacts such as requirements specifications, design documents, test plans, and code reviews. This model can result in significant integration and maintenance issue

Adding feedback to the waterfall model improves this model by allowing the activities of a previous phase to be revisited based on the feedback of the next phase However, the waterfall model does provide a good basis for other process model

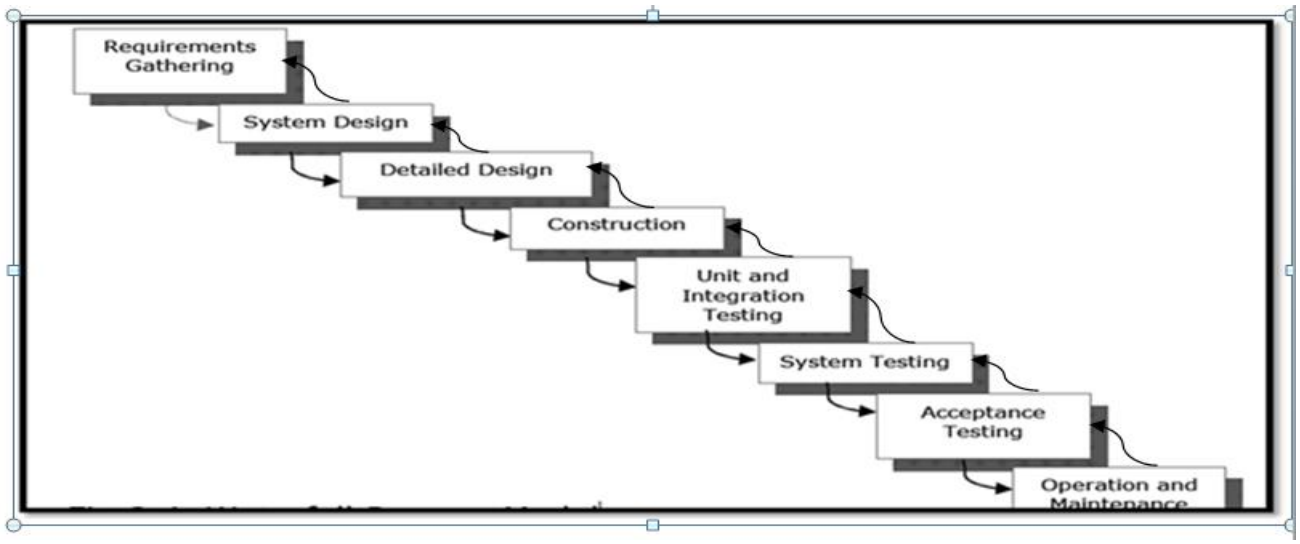

Fig 1.1 Waterfall model

A vital role in the development life cycle (SDLC) as it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process.

1.7 Feasibility Study

Feasibility study is a test of system proposal according to its workability, impact of the organization, ability to meet needs and effective use of the resource

1.6.1 Feasibility Analysis

Preliminary investigation examine project feasibility, the likelihood the system will be useful to the organization. The main objective of the feasibility study is to test the technical, operational and economic feasibility for adding new modules and debugging old running system. All system is feasible if they are unlimited resources and infinite time. There are aspects in the feasibility study portion of the preliminary investigation:

- Technical Feasibility
- Operation Feasibility
- Economic Feasibility

1.7.1.1Technical Feasibility

Earlier no system existed to cater to the needs of 'Secure Infrastructure Implementation System'. The current system developed is technically feasible. Thus it provides an easy access to the users. The database's purpose is to create, establish and maintain a workflow among various entities in order to facilitate all concerned users in their various capacities or roles. Permission to the users would be granted based on the roles specified. Therefore, it provides the technical guarantee of accuracy, reliability and security.

The software and hard requirements for the development of this project are not many and are already available as free as open source. The work for the project is done with the current equipment and existing software technology. Necessary bandwidth exists for providing a fast feedback to the users irrespective of the number of users using the system.

In the new system, the user interface is user friendly and does not require much expertise and training. It just needs a mouse click to do any sort of operations. This is achieved through integration of web server and database server in the same environment.

In general the new system provides the technical guarantee of accuracy, reliability and security. Therefore, the new system developed is technically feasible.

1.7.1.2 Operational Feasibility

The developed projects are beneficial only if they can be turned out into information system. That will meet the organization's operating requirements. Operational feasibility aspects of the project are to be taken as an important part of the project implementation. The system is operationally feasible as it is very easy for the end users to operate it and it only needs basic information about window platform.

This system is targeted to be in accordance with the above-mentioned issues. Beforehand, the management issues and user requirements have been taken into consideration. So there is no question of resistance from the users that can undermine the possible application benefits. The well-planned design would ensure the optimal utilization of the computer resources and would help in the improvement of performance status.

1.7.1.3 **Economic Feasibility**

A system can be developed technically and that will be used if installed must still be a good investment for the organization. In the economic feasibility, the development cost in creating the system is evaluated against the ultimate benefit derived from the new systems. Financial benefits equal or exceed the costs

The system is economically feasible. It does not require any addition hardware or software. Since the interface for this system is developed using the existing resources and technologies available at an open sources, there is nominal expenditure and economic feasibility for certain.

In the present system, the development of the new project greatly enhances the accuracy of the system and cuts short delays in the processing of application. The error can be greatly and at the same time providing a greater level of security and flexibility. Generally economic feasibility refers to the benefits or outcomes that derived from the project compared to the total cost spending for the development and using the new system. Therefore the new system is economically feasible.

CHAPTER TWO

2 Literature Review

2.1 Theoretical Background

Electronic commerce is a powerful concept and process that has fundamentally changed the current of human life. Electronic commerce is one of the main criteria of revolution of Information Technology and communication in the field of economy. This style of trading due to the enormous benefits for human has spread rapidly. Certainly can be claimed the electronic commerce is minimized many of limitations of traditional business. For example, form and appearance of traditional business has fundamentally changed. These changes are basis for any decision in the economy. Existence of virtual markets, passages and stores that have not occupy any physical space, allowing access and circulation in these markets for a moment and anywhere in the world without leaving home is possible. Select and order goods that are placed in virtual shop windows at unspecified parts of the world and also are advertising on virtual networks and payment is provided through electronic services, all of these options have been caused that electronic commerce is considered the miracle of our century

- **Definition**

Interaction between communication systems, data management systems and security, which because of them exchange commercial information in relation to the sale products or services, will be available, so the definition, the main components of electronic commerce are: communication systems, data management systems and security.

- **History**

In the 1970s, the term electronic commerce, referred to electronic data exchange for sending business documents such as purchase orders and voices electronically. Later, with the development of this industry the term of electronic commerce is used to business of goods and services via the web. When the first World Wide Web was introduced in 1994 as a comprehensive, many well-known researchers have been predicated this type of business “the web-based business” will became soon an important in the world economy, but it took four years that http based protocols should be widely available to users.

The first electronic commerce created in USA and some European countries in 1998. These types of business are formed with beginner and unprofessional websites and it has been expanded rapidly. Electronic commerce was spread rapidly in most cities in America, Europe and East Asia in 2005. Some say dates of electronic commerce return to prior of the Internet, but due to the costs of this style

of business, only business and financial institutions and corporations could use it. But with the widespread use of the Internet to all of the people and change the structure of electronic commerce, this kind of business from specific business case for a particular group out and became the industrial form.

➢**Frameworks**

Electronic commerce framework is comprised of three levels that this framework is needed to for successful electronic commerce.

1. Infrastructure

The first part of the framework for electronic commerce is including hardware, software, databases and communications. It is used in term of World Wide Web on the Internet or other message switching methods on the Internet or other telecommunication networks.

2. Services

The second part of the framework include a wide range of services that provide the ability to find and present of information and are including the search for trading partners, negotiation and agreements

3. Products and Structures

This section of the electronic commerce frameworks consist forecasts and direct provision of goods, services and trade-related information to customers and business partners, cooperation and sharing of information within and outside the organization and organizing of environment of electronic marketplace and chain of supply and support.

➢**Electronic Commerce & Information Technology**

Information technology has changed the manner of acts of people, organizations, governments and economic, social affairs and even the mentality of people has changed. Education, health, industry, manufacturing, trade, banking and even of all entertainments services have effected and changes with technology. Information technology creates new jobs, new *international journal of scientific & technology research volume 2, issue 4, April 2013 issn 2277-8616 192 ijstr©2013 www.ijstr.org industries*, change lifestyle and has brought new creativity in all of the dimensions of our life. Understanding of people together, adapted cultures and decrease of incompatibility are examples of these consequences. From scientific perspective, Information Technology and Genetic Engineering with aerospace knowledge is one of the leading branches of knowledge and constructor of civilization of human in the future. Advances in Information Technology have expanded to the point that some experts with phenomena such as “inventing steam engine” have equated. In economic dimension,

"the importance of rapid access to accurate information" is the key to success in global competition. Electronic commerce is one of the important branches of Information Technology that has been emerged as the result of development of Information Technology.

➢**Websites & Electronic Commerce**

Websites are effective in acts of business corporations. Websites are gateways to business brands, products and services of manufacturers. A company that does not care about its websites ultimately will be bankruptcy in business. The websites that are not adapted are like an old and faded showcase in a traditional business. Therefore, companies should have a strong background and exact planning in Internet search. For many users, the site of search (search engine) is the entry point to the Internet. For many changes in the world around us, each organization or agency should coordinate itself with the changes and enhance its work efficiency. Internet especially websites can be suitable means to achieve this goal. For instance, web can use up to extend markets by facilitating the presentation and repartition of existing products in to new business centers. The web can also be a workmanship that facilitates products development, as companies who their existing customers well create exciting, new or alternative offering for them.

➢**Types of Electronic Commerce**

There are many various classifies of electronic commerce and many different methods to characterize these clusters. Academics determined a number of frameworks for classifying electronic commerce but each one want to illustrate it form a unique perspective. The main different classifies of electronic commerce are Business-to-Business (B2B), Business-to-Consumer (B2C), Consumer-to-Consumer (C2C), Consumer-to-business (C2B) and Mobile Commerce (M-Commerce).

B2B

Business-to-Business is a type of commerce transaction that exists between businesses or a transaction that occurs between a company and other company to transfer of services and products. A possible explanation for this might be that Business-to-Business includes online wholesaling in which businesses sell materials, products and services to other businesses on the websites.

B2C

Business-to-Consumer refers to transactions between a business and its end consumer and so it create electronic storefronts that offer information, goods, and services between business and consumers in a retailing transaction or it is an Internet and electronic commerce model that indicates a financial transaction or online sale between a business and consumer.

C2B

Consumer-to-Business is the transfer of services, goods or information from persons to business or it is a business model where end users create products and services that are used by business and institutions.

C2C

Consumer-to-Consumer is an electronic Internet facilitated medium, which involves transactions among users and it is a business model which two consumers deal business with each other directly.

M-Commerce

The term of Mobile Commerce was invented in 1997 to aim "the buying and selling of products, information and services" via wireless handheld devices such as cellular phones, laptops and personal digital assistants. These wireless devices interact with computer networks that have the ability to conduct online merchandise purchases. Mobile commerce allows to users access to Internet and shopping in it without needing to find a place to plug in. Mobile Commerce transactions continue to improve and the phrase includes the purchase and sale of a wide range of products and services, online banking, bill payment, information delivery and so on.

In the other side E-commerce is a commercial activity dealing directly with the trading of goods and services and with other related business activities, in which the electronic communication medium plays a central role. These activities include the communication of information, the management of payment, the negotiating and trading of financial instruments, and the management of transport.

As an economic activity, EC represents an inter-play of physical, human and societal resources.

• Physical resources include natural resources, technologies and physical infrastructure.

• Human resources refer to human labor, knowledge and skill in their broadest sense.

• Societal resources include resources residing in moral and ethical systems, institutions, culture, language, social harmony and community spirit.

EC operates within the constraints of these three resources while, at the same time, influencing and molding them. These three resources have much in common with the human, physical and natural capital identified by the World Bank [2000] in a model used to investigate growth and development.

Historical hindsight shows the importance of societal context and of the contributions made by commerce to the formation of socio-economic institutions and business practices. These contributions may be termed the higher order effects whose consequences are more far-reaching for societal development.

The use of history to inform inquiry into the societal effects of technology-related innovations is a rewarding approach adopted by many researchers, e.g. Drucker [1965], Rosenberg [1976], Freeman [1987] and Shapiro and Varian [1999].

Societal Context

Thirteenth Century Italy witnessed a community of traders active within a greater society undergoing profound cultural, economic, social and political transformation [Braudel 1985]. The political freedom in Italy was conducive to lively commerce and innovations, and the subsequent societal conditions ushered in the Renaissance [Hale 1993; Roberts 1996; Finer 1997]. The

Italian experience is an illustrative case study of how trade and business operated on the basis of existing technology and culture and within the constraints of political conditions.

Traders conduct their business on the principle of making a profit in the process of buying and selling goods. The first order effect of their activities directly promoted efficiency between production and consumption, and indirectly promoted the utilization of resources. Scholars of economic history, however, recognized that the economic repercussions of trading activities went well beyond efficiency in the use of resources in the trading activities themselves [Bauer 2000].

These activities resulted in much more than specific market for specific products. They helped to create commercial institutions and practices and raise the level of human capital, which proved to be of great utility to the entire economy in the ensuing era of rapid industrialization [Price 1989].

These repercussions or higher order effects result in immense social implication when viewed from a broader and longer term perspective [Bauer 2000]. This phenomenon is also observed to be present in the history of technology [Malone and Rockart 1991].

EC in Today's Context

With the benefits of insight from the history of modern commerce, one can study the historical context of EC, and its first and higher order effects. Globalization is the current historical context favoring EC.

The first order effect of EC is the reduction of time and transaction cost, thereby promoting efficiency in the link between production and consumption. Some of the higher order effects already exist; some are still in development while others represent potential institutional changes. This EC changes the following effects:

1. The release of labor and capital resources from intermediary activities into the production of goods and services, thereby exerting a deflationary effect.

2.The stimulation and fulfillment of an increasingly widespread demand brought on by the wider market open to EC, thereby encouraging expansion in industry and global trade.

3.An increase in inter-dependency among business firms that also creates a demand for rating agencies.

4.Challenges to the logic and assumptions of traditional business models by new business models.

5.The stimulation of businesses to engage in areas hitherto alien to them, thus promising an enhancement of innovative processes.

6.A transformation of the banking sector.

Emergent trends confirm the historical experience that the far-reaching consequences of EC are likely to be at the level of social institutions. History also suggests a need to pay due attention to intervention of socio-institutional structure to reap the benefits of EC.

E-commerce site in Ethiopia

ebirana.com

The first ecommerce website, ebirana.com inaugurated Addis Ababa, Jan, 2011. E-books of different categories are available for sale. Articles are also available for reading. To buy e-books, search for the books of individuals' interest, add them to cart, and checkout. The buyer can pay using Dashen Bank ModBirr or in person. After the company receives the money, send back an email containing the download id and link (ebirana.com).

Ethiogift.

Ethiogift is a gift giving service in Addis Ababa during multiple occasion including anniversaries, wedding, New Year, cultural holidays and much more. Its main objective is to rebuild the family ties among families separated by the expatriation of millions of Ethiopians all around the world due to war and other problems. It also wishes to introduce E-commerce in Ethiopia where the ICT infrastructure is still minimal. As of today, ethiogift is the only successful E-commerce initiative in one of the poorest countries of the globe, Ethiopia. It is a service that receives gift orders from Ethiopians all over the world, through the Internet and delivers the gift to their families in Ethiopia within 24 hours (UNCTAD, 2001;

The gifts range from sheep, cakes, liquor, flowers and chocolates on a commission basis, all of which are typical gifts given on certain holidays and birthdays. For example, during Easter Ethiopians living abroad order sheep to be delivered to their relatives in Ethiopia. The goats are purchased over the

Internet via an Internet domain registered in the US and paid by credit card, but the goats themselves are sourced in Ethiopia and delivered to the family in Addis.

Most Potential business opportunities for this site is, there is an Ethiopian Diaspora of around one million people living mainly in Europe and the United States. This Diaspora is possibly the wealthiest of the African Diasporas (UNCTAD, 2001).

Credit cards are not allowed by enterprises. The company works with a credit card clearing company in the United States; this is not legal but it has no choice (UNCTAD, 2001).

Genuine Leather

Also in Ethiopia, Genuine Leather Craft advertises its products on the Web, receives orders and dispatches leather garments throughout the world via regular courier services, promising delivery within ten days (Africa Recovery, 2001).UNCTAD (2001) e-commerce and development report point out the following Obstacles that face genuine leather.

Not easy to get service on time from outsourced web maintenance. Urgent changes cannot be made.

Customs procedures are difficult. With regard to exchange controls, anything over $ must be approved by the National Bank of Ethiopia, which takes at least half a day.

Credit cards are not allowed by enterprises. The company works with a credit card clearing company in the United States; this is not legal but it has no choice

2.2 Related Literature

Many Author explain about E-commerce and online selling from developing and developed country we consider both literature related to our work

- Software Architecture and Patterns for Electronic Commerce By

André Widhani, *Stefan Böge*, *Andreas Bartelt*, and *Winfried Lamersdorf*

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Electronic Commerce is one of the most significant fields in internet applications.

With the focus moving from B2C-commerce to B2B-commerce, integrating internet and legacy systems within one company and getting technologies used in different companies to work together is a pretentious task. After discussing the current research in software architecture, including suitable notations for describing them, the aim of this paper is to derive and identify patterns on an architectural level that are specific to the domain of electronic commerce systems. In order to achieve

this, we present two case studies featuring selected architectural views on both online shop and electronic procurement systems.

- Design and Implementation of Online Shopping Center

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E-commerce web site can promote a trendy way for people to perform shopping for consumer products. Not merely it is convenient, but also it is time-saving, thus consumers can have more time to take care of other things in daily life. E-commerce website can be developed as a shopping center providing services and products for people to do shopping from any places. This web site, or on-line supermarket, integrated of up to one thousand stores, is designed as a one-stop service, so shoppers do not have to visit other sites in order to search for what they are looking for.

CHAPTER THREE

3.The Current System

Maraki Mobile phone and accessorise distributer and retailer preform their day today activity by using physical shop. The organization performs its key functionalities like sales, delivery of information for the different customers; communicating and information sharing are operated by individual and group of people. In such situations the organization faces problems like;

- Difficult to increase the market share out of Adama town.
- Difficult to announce new arrived products and details of product information,
- Difficult to increase sales capacity
- Difficult to facilitate customer needs lick product related information, maintenance.
- Impossible to order products from the web since currently web market increasing rapidly. Sometimes vendor might not available in the customer service in such situations customer can't get any types of service from the vendor because the existing system only supports in the organization work time which is face to face shopping. There is no ways of information to be shared among customer members.

3.1 Major Function of the Existing System

- Record mobile Phone and accessories details
- Produce paper based reports
- Record sales detail
- Record new mobile phone entry
- Calculate total sales
- Count total mobile phone and accessories
- Gives invoce manually
- Check the model and price of each cell phone

3.2 The Proposed System

3.2.1 Overview

Proposed system provides a solution to existing system problems by extending its facilities, making important information available online. Everybody wants methods that are going to save their time and make daily tasks easier on them, and that is exactly what e-commerce does. *Online mobile phone and accessories store management and sales system are* most convenient for users to view or to

create the tasks from the comfort of their own place whenever required, here in this project we are identifying the users and the tasks to be done by each user. And finally we are studied manual mobile store and Sales system and identify possible automation solution.

Therefore, the proposed system will be able to:.

- Enhance effectiveness of in-person services.
- Enhances communication.
- Encourages data owners to rethink and improve web offerings.
- It can be accessed over the Internet everywhere and any time.
- Viewing and display the available mobile phone catalogue with full information can be seen and can proceed further for other information like ordering, payment and shipment.
- Security for the systems or the status will be confidential i.e. they will not be shown to others.
- Attractive and user friendly interfaces to navigate through the system for the users
- Give time saving and reliable searching facility to the users.
- Validation at the time of entering data , so no chance of duplication of data
- Provide global Advertisement
- Provide back-up facility
- The system makes the overall project management much easier and flexible

3.2.2 Functional Requirements

The functional requirements focus on the main functions that the new system will provide. The major functional requirements of our proposed system are the following:

4. The system should make the management system automated as a customer and an organization.

- The system should provide reliable search
- Allowing customers to order multiple mobile phones in a single order.
- The system should display each mobile phone with its prices .model, type etc
- Enables customer to use Bank balance in orders to process the payment.
- Enables users to perform the shipment information
- Enables to view, edit, delete and add mobile phone information.
- Provide a view on shipment order information.
- Develop different types of reports such as :-

➡ Stock Report

➡ Sale Report

- Order Report
- Delivery report
- Provide notification for the payment and shipment information..
- The system should provide quick decision making while selecting mobile phone
- Provides easy access to different information sources online systems
- Online Advertisement, selling and buying, online forum
- The system generet bill automatically

3.2.3 Non-functional requirements

Nonfunctional requirements describe user visible aspects of the system that are not directly related with the functional behavior of the system that are listed above. the non-functional requirements of the proposed systems are listed as follows:

❖**User interface and Human factors**

The system interface shall be able to run on any web browser preferably supporting based on the doing software. The system shall have a user friendly menu driven interface that is easy to navigate with. The greatest degree of user system interface consistency and standard shall be provided for all user interfaces

❖**Documentation**

The activities and outputs of each system development stage in the project workflow shall be properly documented for the successful completion of the project. These documents produced at the end of each stage shall be organized and compiled together at the end of the project for future reference, system maintenance, and system support.

❖**Hardware/Software Consideration**

The system is expected to be implemented using verterigo integrated development software tools. And at the user side the computer shall have a web browser preferably supporting JavaScript.

The software requirement mainly impacts the hardware, especially the web server. Therefore, the server shall comply with the HCL of the Window7, 8 etc. operating system technologies.

❖**Performance characteristics**

The system shall perform operations within a minimum amount of time. The system shall be interactive and the user shall get the expected result within few seconds or the system must enable users to do something else while fetching result for their request to hide response latency.

❖**Error handling and extreme conditions**

When we say error handling, we mean referring to conditions when the user inserts erroneous inputs (data), the system should have some mechanism to trace the error and report the error made by the user. Our system includes HTML with PHP as front end that the user enters data and handles wrong data input by user. There are three main security issues we are going to discuss.

❖**Security Mechanisms**

Access control of data requires user authentication and user authorization. The following commands specify access control identifies and they are typically used to authorize and authenticate the user.

➢Username

The user identification is required to the server for access 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's identification for access control. Since password information is quite sensitive, it is desirable in general to "mask "it or suppress type out

I.Physical security

The physical security is the conditions interfere with the normal function of the system that will probably be occurred to our system. Among these the user of the system should prevent from: -

Physical theft: Someone else may lose physical parts of the system. Like the system that the database is installed, hard disc, etc. of the components of the database server.

Natural and human Disasters: When I say natural and human disasters, they are very common to see both factors to a system. Natural factors like Earthquake, fire, etc. Adding more backup facilities user should use back up files regularly to prevent data loss, Data recovery software's to the system

II. Accidental threat to the system

As human is prone to error, there are many accidents and faults that can occur to our system

- Destruction of data during database processing: this is when the user deletes files that should not be deleted.
- Fail to use backup: users should use file backup facility to save the accidentally deleted data.

❖**Quality issues**:

The system is assumed to be reliable. The system is portable it can be moved to different computer and it is compatible with standard browser and work in different platforms.

❖ **System modification:**

By the help of each participant member of the system some better and stronger work is done on the modification of the web site by making it to have a standard e-commerce web site by adding different product distributers in the web site.

Parts of the system which are the likely candidates for the later modification such as:

- Database modification: modifications are mainly based on the user requirements and the number of venders
- Administrative Functions: At the moment, the system will be handled by one system administrator who will have his own user name and password to modify and update the database. But in case of multiple updates or more sight traffic there will be a need for more users /Administrators to manage the database.
- The forms that the user will fill might encounter a change according to users requirements collected
- Information is changes according to the users and administration
- Database modification: are mainly based on the administrator.

❖ **Physical environment**

❖Database server: located inside the Administrator office and used to store the whole data of the shop

❖ **Resource and management issues**

- Back-up: It should be under taken on a daily basis .The vender will be responsible for making the backups
- System installation: -it will be responsible for the installation of system
- Web Site administrator: the system administrator will be responsible for handling the system management and responsible for handling system maintenance

3.3 Hardware and software requirements

Software tools

- Vertrigo Server
- Any windows OS(xp,lastxp,windows7,windows8)
- Macromedia Dreamweaver
- Visio 2003/2007
- Microsoft 2007/2010 enterprise edition
- Web browser: Mozilla Firefox, Internet explorer, Google chrome

- Web server : Apache server
- MYSQL5
- PHP 5
- HTML5
- CSS

Hardware tool

- Processor: Intel Pentium Dual Core CPU 2.16GHz
- 300 GB Hard Disk Space
- Physical Memory (RAM)1.00 GB
- Compact disks (CDs)
- Network Interface Cards (NIC)
- Uninterrupted power supply (UPS)
- Flash
- Server
- Printer
- Digital camera
- Computer with internet connection

3.4 Analysis Activities

Object oriented analysis can be defined as the investigation of objects. The most important purpose of Object Oriented analysis is to identify objects of a system to be designed. This analysis is also done for an existing system. Now an efficient analysis is only possible when we are able to start thinking in a way where objects can be identified.

After identifying the objects their relationships are identified and finally the design is produced.

So the purpose of analysis and design can describe as:

- Identifying the objects of a system.
- Identify their relationships.
- Make a design which can be converted to executable using Object oriented languages

3.4.1 Use case diagrams

Use Case

A use case illustrates a unit of functionality provided by the system.

The main purpose of the use-case diagram is to help development teams visualize the functional requirements of a system, including the relationship of "actors" (human beings who will interact with the system) to essential processes, as well as the relationships among different use cases.

Use case model is a unified modeling language:

- It uses to describe what a system does without describing how the system does it.
- It also reflects the view of the system from the Perspective of a user outside of the system
- UML can be used to analyze the use case model and derive system's object and their interaction with each other with the users of the system.

A use case model partitions system functionality into behaviors (use case) that are significant to the users of the system (actors).

Actor refers to a particular role of a user of the system. The actor exists outside the system and interacts with the system. The main purpose of this use case is to produce something of value to an actor in the system i.e. a model based on the interactions and relationships of individual use cases and the actor is imitator of the use case model.

The Use Case diagram technique allows us to make a first cut at defining the system requirements, and will help us in presenting these requirements back to the users of the system

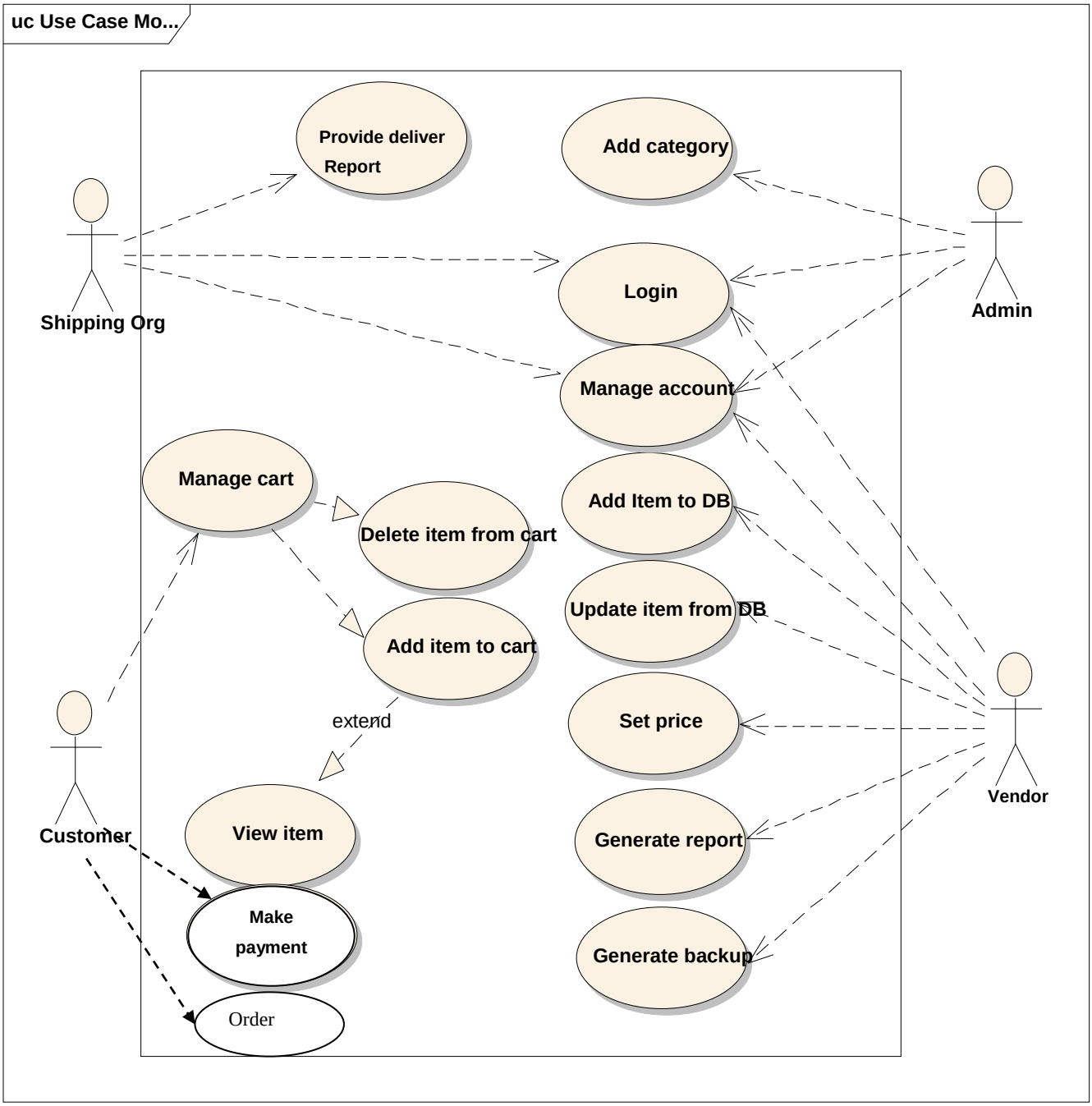


Fig 3.1.2: System use case Diagram

Use case diagrams are diagrams used for capturing for functional requirements of the system. The notation of use case diagrams is developed to build an external view of a system. Each use case diagram describes a behaviorally related sequence of transaction in a dialogue between the user and the system. It captures the goal of the users and the responsibility the system to its users. It is the functionality of the system or the service provided by the system.

The following are use cases used in the system:

- Login
- Add Item
- Update item
- Price setting
- Generate Reports
- Manage Account
- Manage cart
- Generate backup
- Deliver product
- Manage DB

1.Use case Description for login to the system

Use case Name: Login

Description: Validates the user to enter the system

Actors involved: vender, Administrator and shipping organization

Precondition: The user must have valid user name and password.

Basic course of action:

1.The actors want to enter to the system.

2.The system displays the login page

3.The actor fills and submits the username and password.

4.The system checks the login information.

5.The system displays homepage.

6.Use case ends.

Alternate course A2: The entered username and password are in correct.

A.3.The system determines the invalidity of username and password

A.4.The system informs the user to reenter username and password

A.5.The user resumes at step 3 of basic course of action.

A.6. Use case ends.

Post condition: The users logs in to their own page.

2 .**Use case Description for Add Item**

Use case Name: Add Item

Description: allows to Add newly arrived cell phone and accessory information on the Maraki mobile shop website

Actors involved: vender

Precondition: the actor should login to the vender page

Basic course of action:

1. The vender browse/select the web site
2. The system display the homepage
3. The vender click on vender login
4. The system display the login form
5. The vender fill his/her user name and passwords
6. The system validate the filled user name and password
7. The system display the Add Item form
8. The vender fill the data that he/she wants to Add to the system
9. The vender click on the Add button
10. The system display successfully Add message
11. Use case end

Post condition: The items stored in database

Alternate course A5: The entered username and password are in correct.

A.6.The system determines the invalidity of username and password

A.5.The user resumes at step 5of basic course of action.

A.6. Use case ends

Alternate course A7: The entered field is missed and/or is not correct.

A8 the system Displays Fields cannot be empty dialog box

A9 the system informs the user to reenter Fields

A10 the user resumes at step 8 of basic course of action.

A11 Use case ends.

3. Use case Description for update items

Use case name: update items

Description: the vender update details of item that is stored in database

Actors involved: vender

Precondition: the actor should login to the Vender page

Basic course of action:

12. The vender browse/select the web site
13. The system display the homepage
14. The vender click update data on the homepage
15. The system display the login form
16. The vender fill his/her user name and passwords
17. The system validate the filled user name and password
18. The system display the update data form
19. The vender fill the data that he/she wants to update
20. The vender click the search button
21. The system display the data that is going to update
22. They vender updated the necessary data
23. The vender click update
24. The system display successfully updated message
25. Use case end

4. Use case Description for Setting price

Use case name: set price

Actors involved: vender

Precondition: the actor should login to their own page

Basic course of action: -

1. The Actor browse/select the web site
2. The system display the homepage
3. The system validate the filled user name and password
4. The fill his/her user name and passwords
5. The Actor click price setting on the homepage
6. The system display price setting page

7. The Actor set item price
8. The system display price in the main homepage
9. Use case end

Post condition: The Item price information stored in database

5. Use case Description – Manage Cart

Use case Name: -Manage cart

Description: customers purchase item

Actors involved: - buyer/customers

Preconditions: The user must have an account from the bank

Basic course of action:-

1. The customers browse/select the Marki mobile phone web site
2. The system display the homepage
3. The customers click on "Order item
4. The system displays item list.
5. The customers select an item and add to cart
6. To order the customer add items in shopping cart
7. The system display total costs of the product
8. The customers fill necessary in formation and click on submit
9. The system display payment page
10. Customer pay for ordered products
11. The system display bill for purchased product

Post condition: The sold items information display in shipping organization page

Alternate course A1: The entered Account have Invalid /or is not correct.

A2: The system displays invalid Account

A3: The system informs the user to reenter valid account

A.9 The user resumes at step 3 of basic course of action.

A.6 Use case ends.

6. Use case Name: - Manage Account

Actors: Administrator, shipping organization and vender

Description: This use case is used to manage account each user can manage their own account but Administrator can manage others user account

Preconditions

1. The actor crate password and username
2. The actor can change password and username

Basic course of action

1. The user click on signup from the main menu.
2. The system displays registration form
3. The user fill full information
4. The system check all input data are correct
5. the system display the message you are successfully registered
6. the system stored information into database,
7. the user gat their own page

Post condition; the user get access privilege

Alternate course of Action A:

A1 if an input data is incorrect

A2 the system display error message.

A3The system return back to step 3

A4Use case end

7. Use case Description for Generate report

Use case Name: Generate report

Description: Generate a report such as: - Stock Report, Sale Report, and delivery report

Actors: vender

Precondition: the actors should login to the Admin page

Basic course of action:

1. The actor selects generate report
2. The system display report types
3. The actor selects report type
4. The actor fill the necessary information
5. The system generate report
6. End of use case.

Post condition: Report is generated.

8. Use case Description for Create backup

Use case Name: Create backup

Description: Create backup such as: - delivered products, database

Actors: vender

Precondition: the actors should login to their own page

Basic course of action:

1. The actor selects back up.
2. The system display back up page.
3. The actor fills start and end date.
4. The system creates backup.
5. End of use case.

Post condition: Backup is created.

9. Use case Description – Generate Deliver report

Use case Name: - Deliver product

Actors: - Shipping Organization

Description: The systems approve the order when the payment is done the system automatically send the ordered product in to the shipping organization page.

Preconditions

1. The shipping organization log in to web site
2. The system display the shipping organization page
3. The actor sees ordered item destination
4. The actor change item status (delivered / or not)
4. End the use case

3.5.2 Class diagram

The purpose of a class diagram is to depict the classes within a model. In an object oriented application, Classes have attributes (member variables), operations (member functions) and relationships with the classes

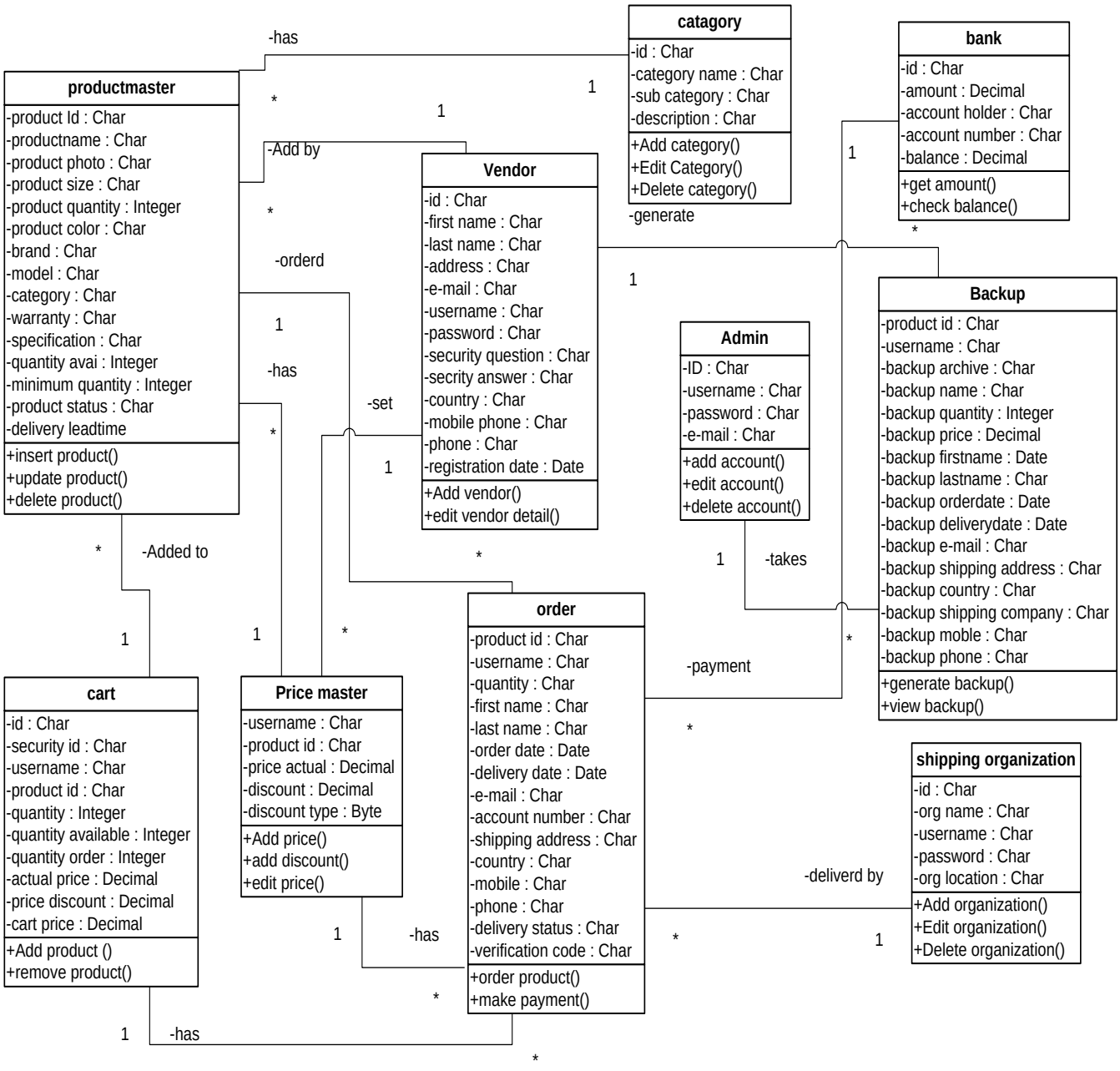


Fig 3.2.1: Class Diagram

3.5 Sequence diagram

Sequence diagrams are used to model the logic of usage scenarios or the description of the potential w ay the system used. Sequence diagrams are a great way to validate and flesh out the logic of use case scenarios and to document the design of the system.

Online mobile phone and accessories store management and sales system has the following sequence diagrams.

Sequence Diagram for login

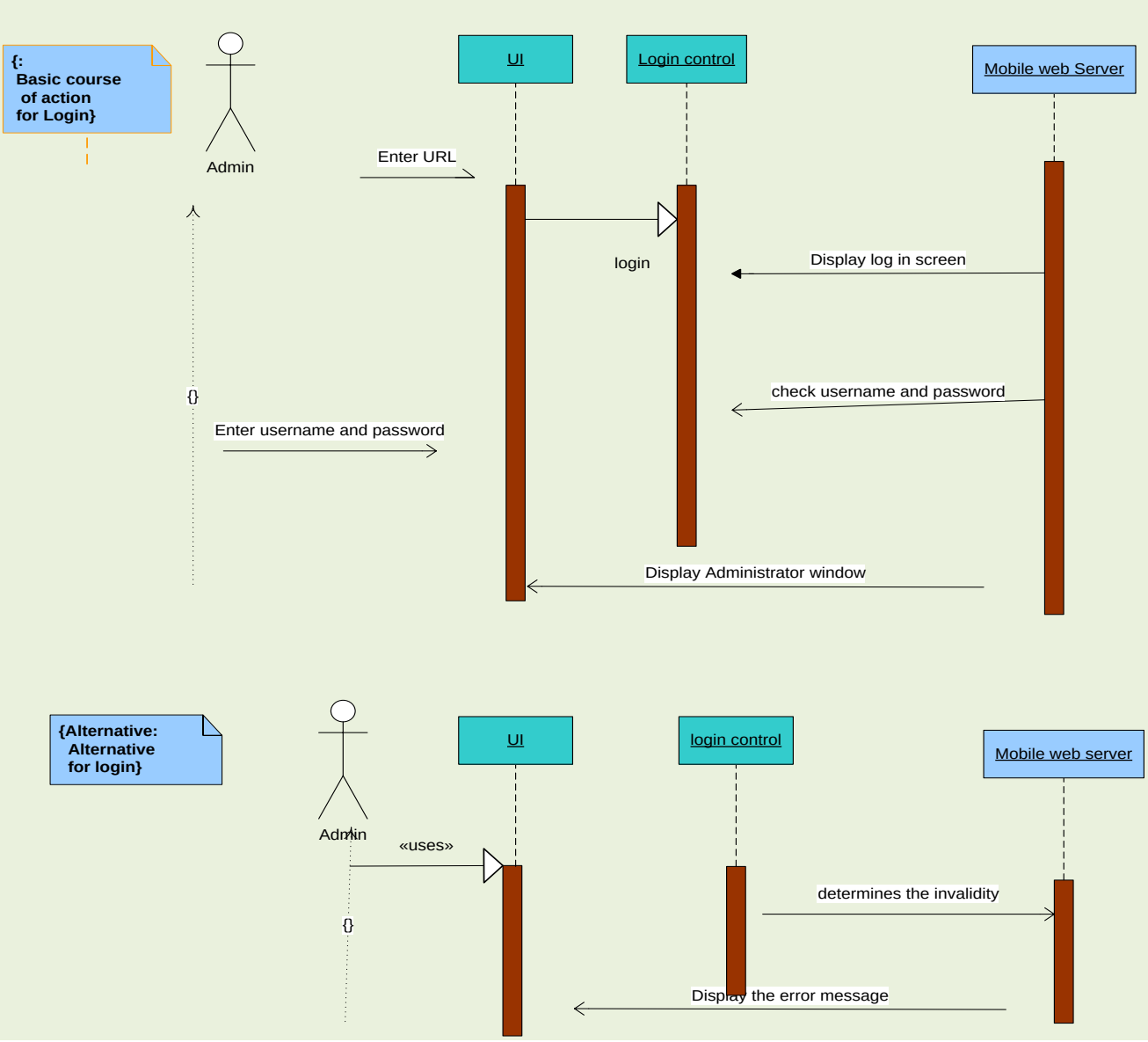


Fig 3.3.1: Sequence diagram for alternative course of action for Login

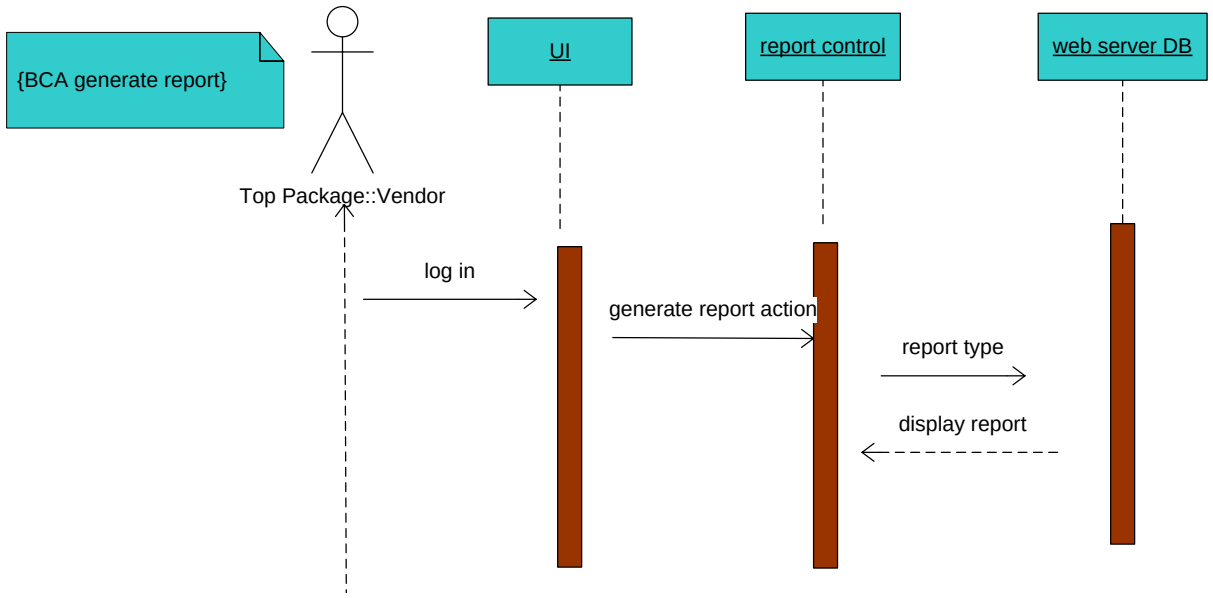


Fig.3.3.2: Sequence diagram for generate report

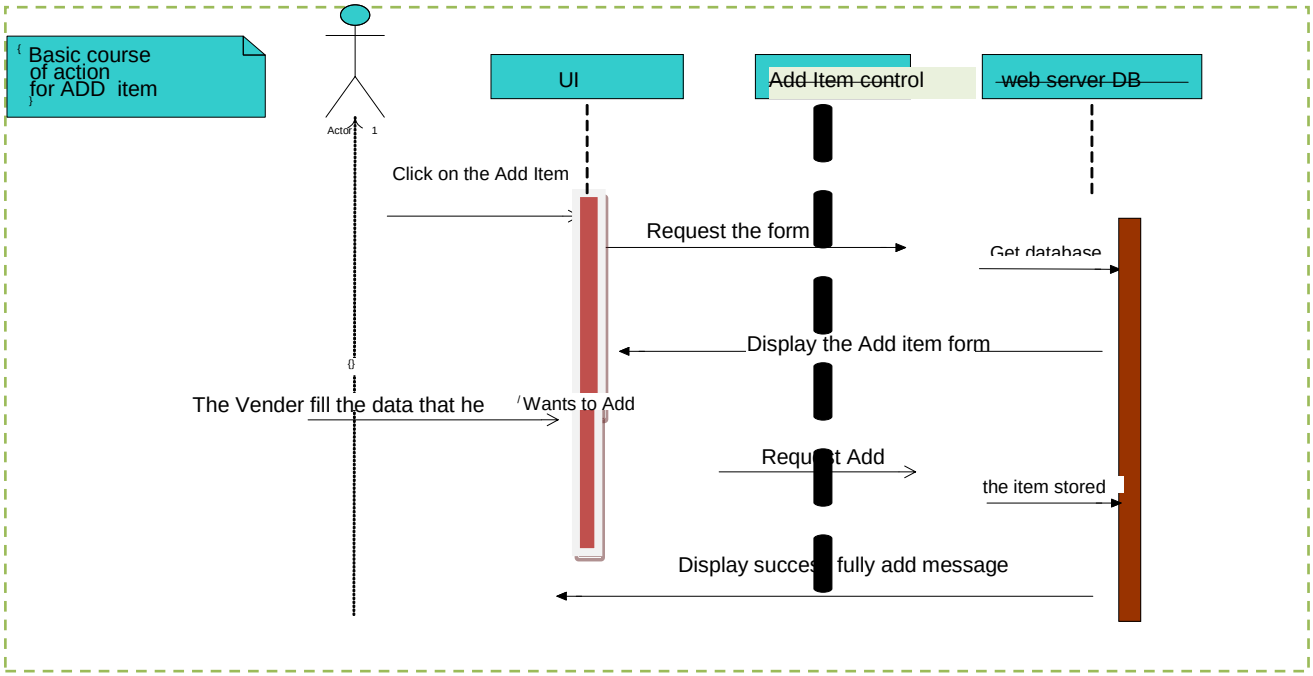


Fig 3.3.3Sequence diagram for add item

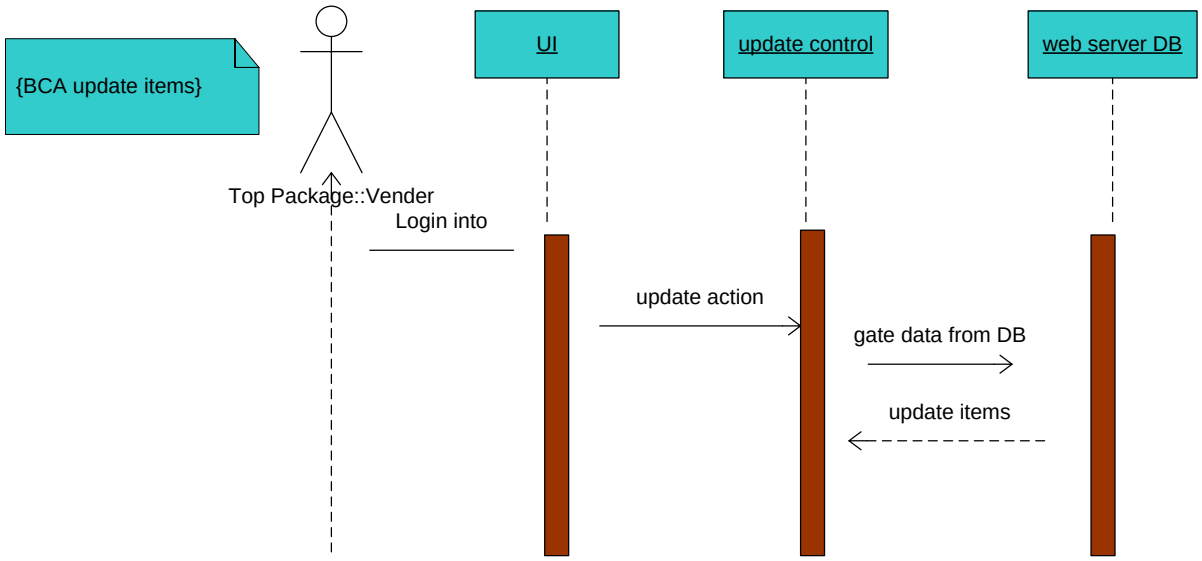


Fig 3.3.4: Sequence diagram for update item

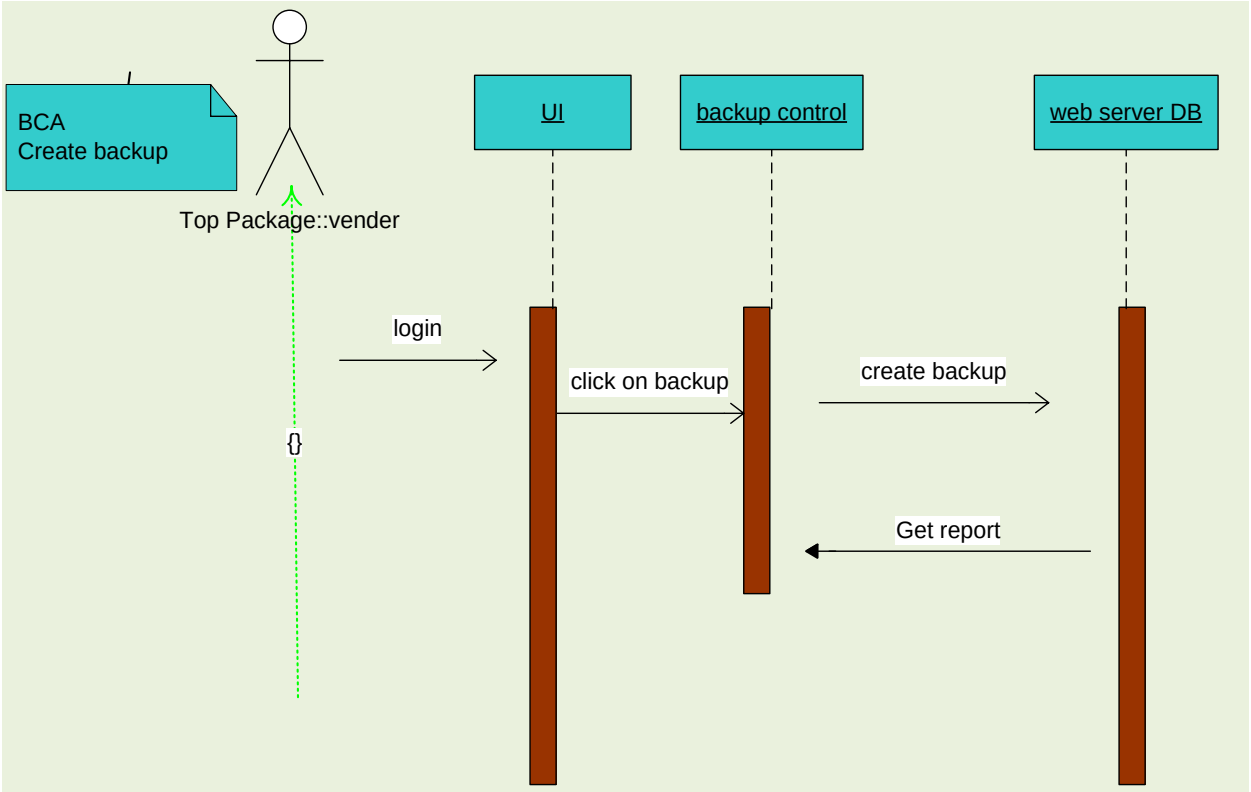


Fig 3.3.5Sequence Diagram for Create backup

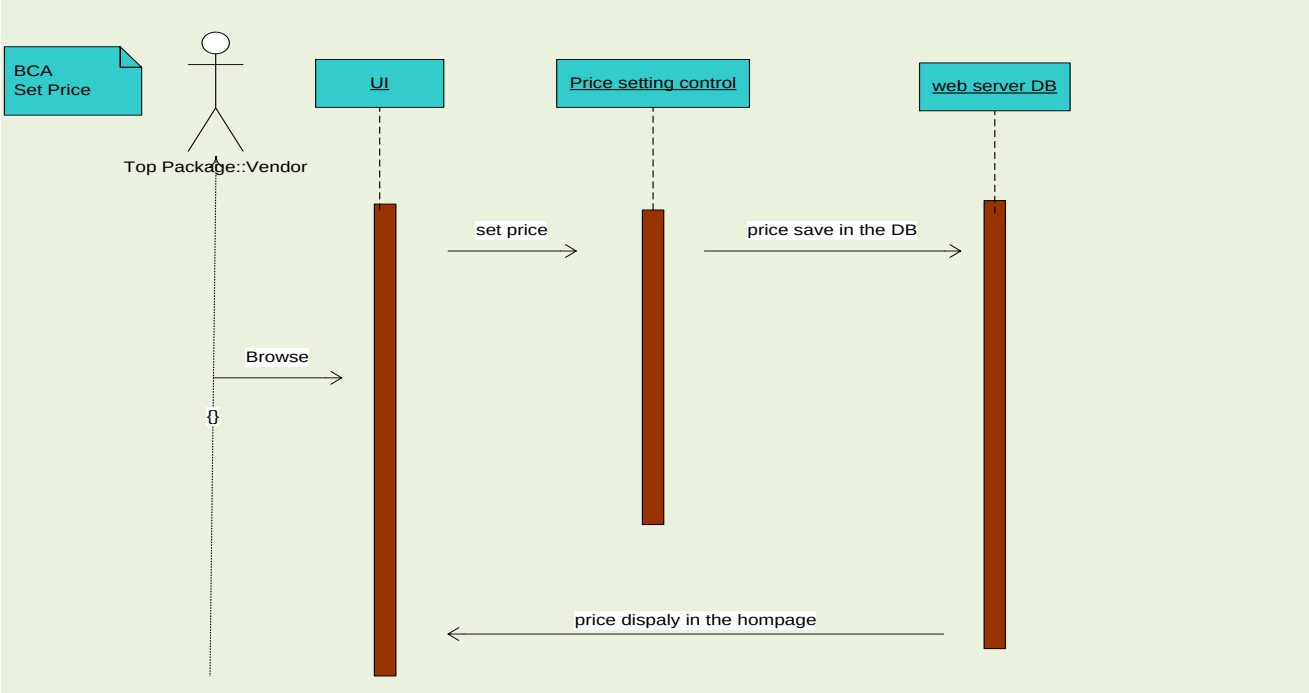


Fig 3.3.6 Sequence Diagram for set price

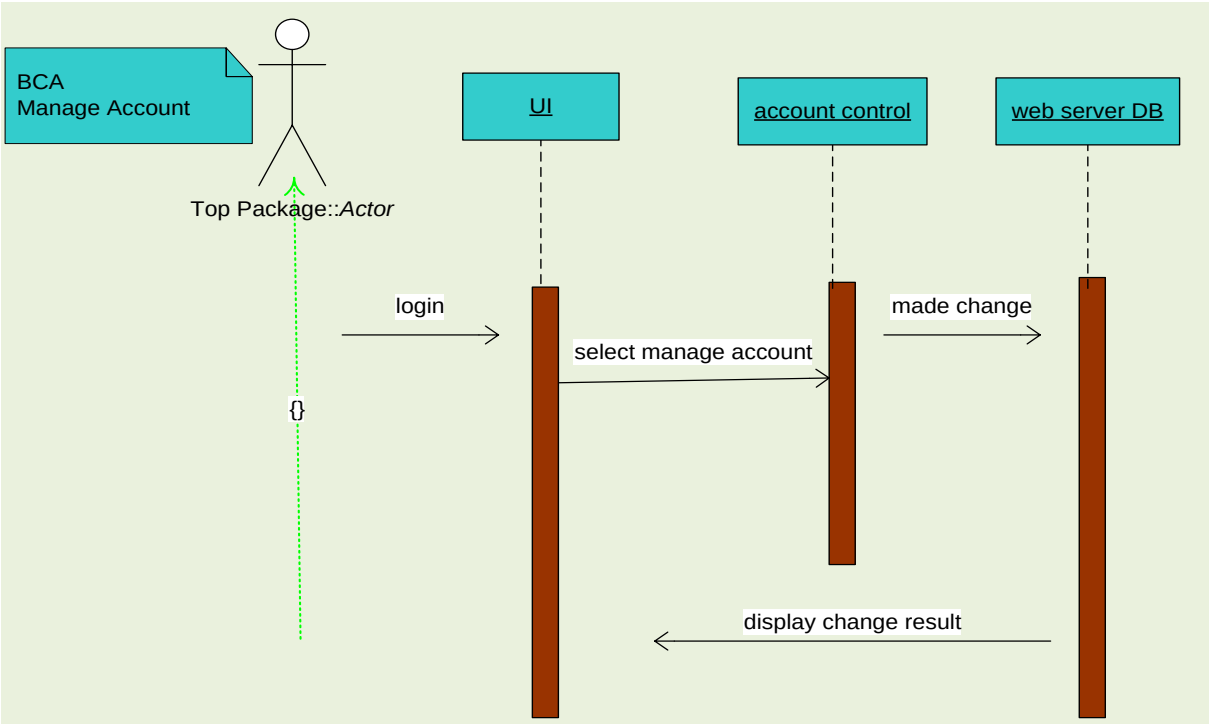


Fig 3.3.7 Sequence Diagram for manage Account

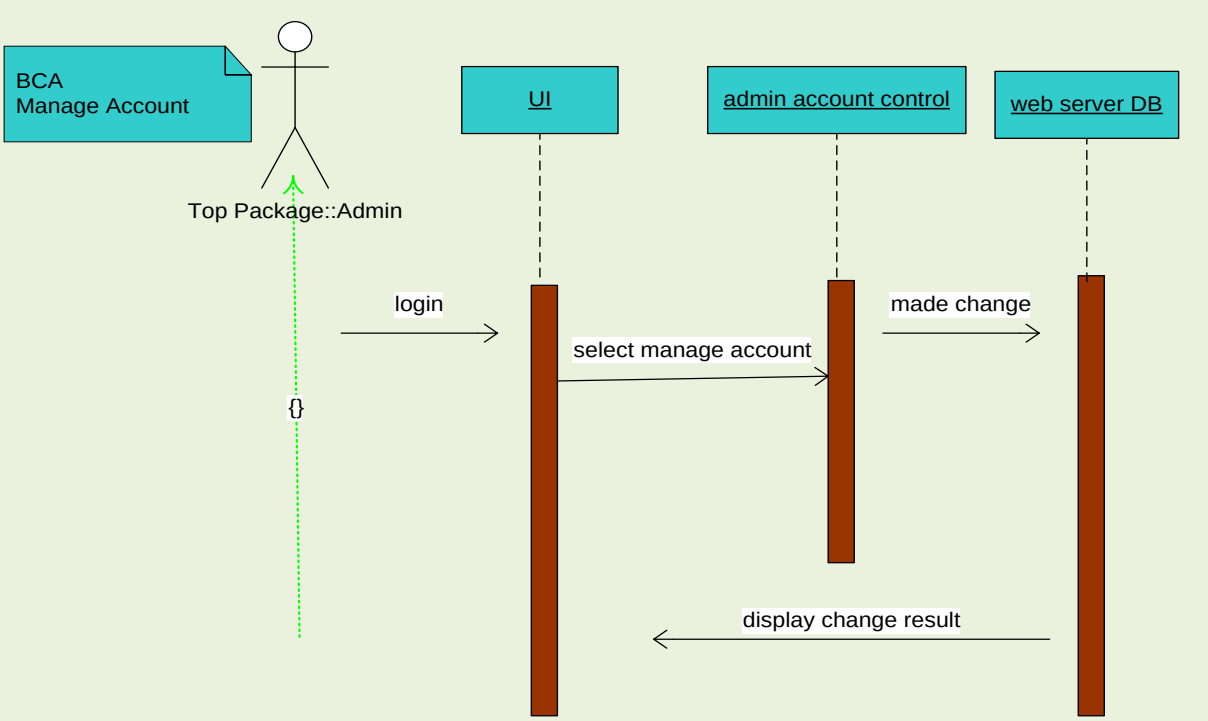


Fig 3.3.8Sequence Diagram for manage Account for Admin

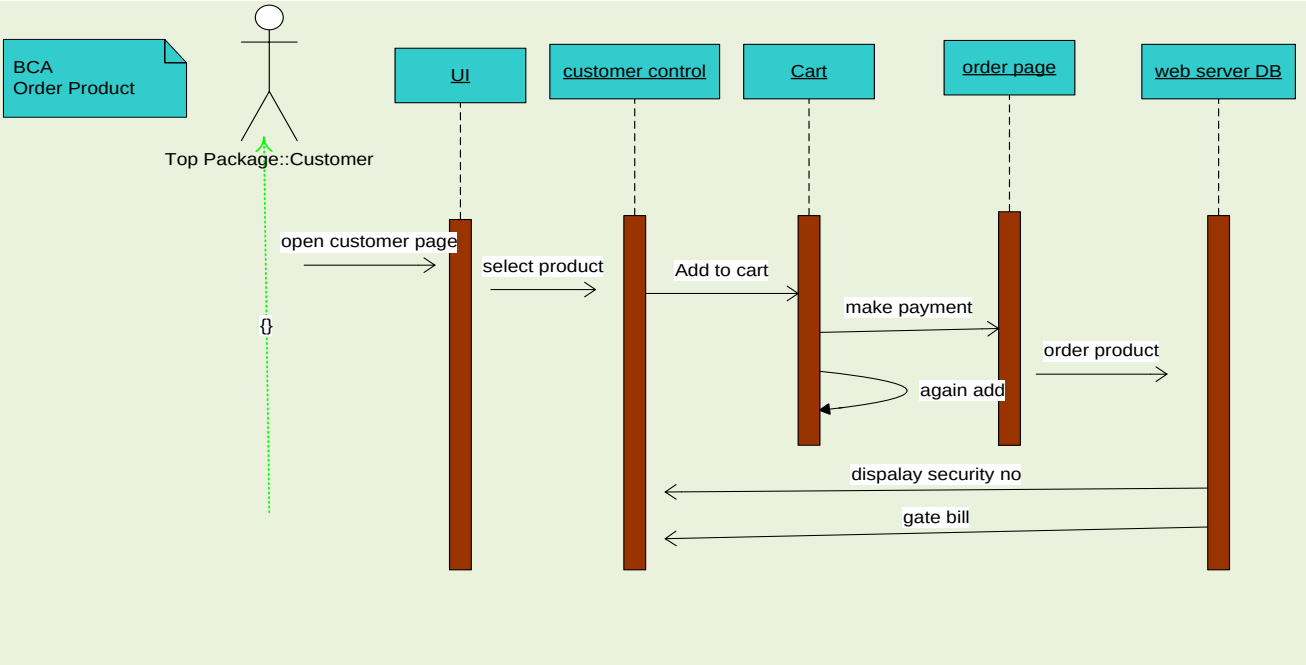


Fig 3.3.9 Sequence Diagram for order product

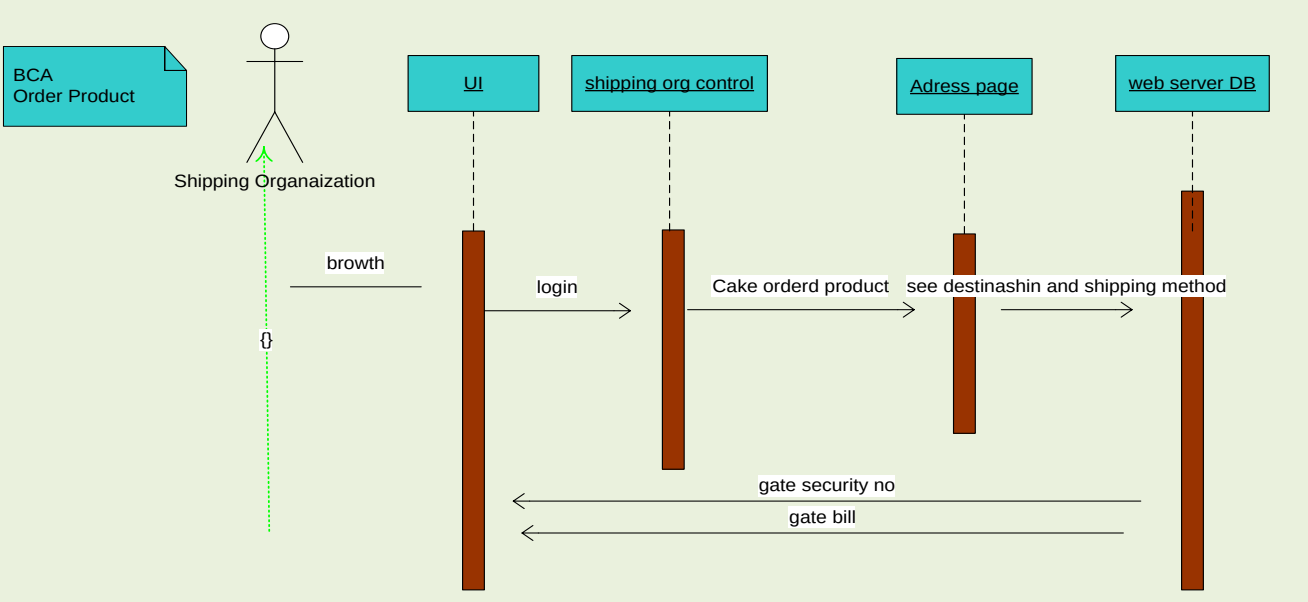


Fig 3.3.10 Sequence Diagram for product delivery

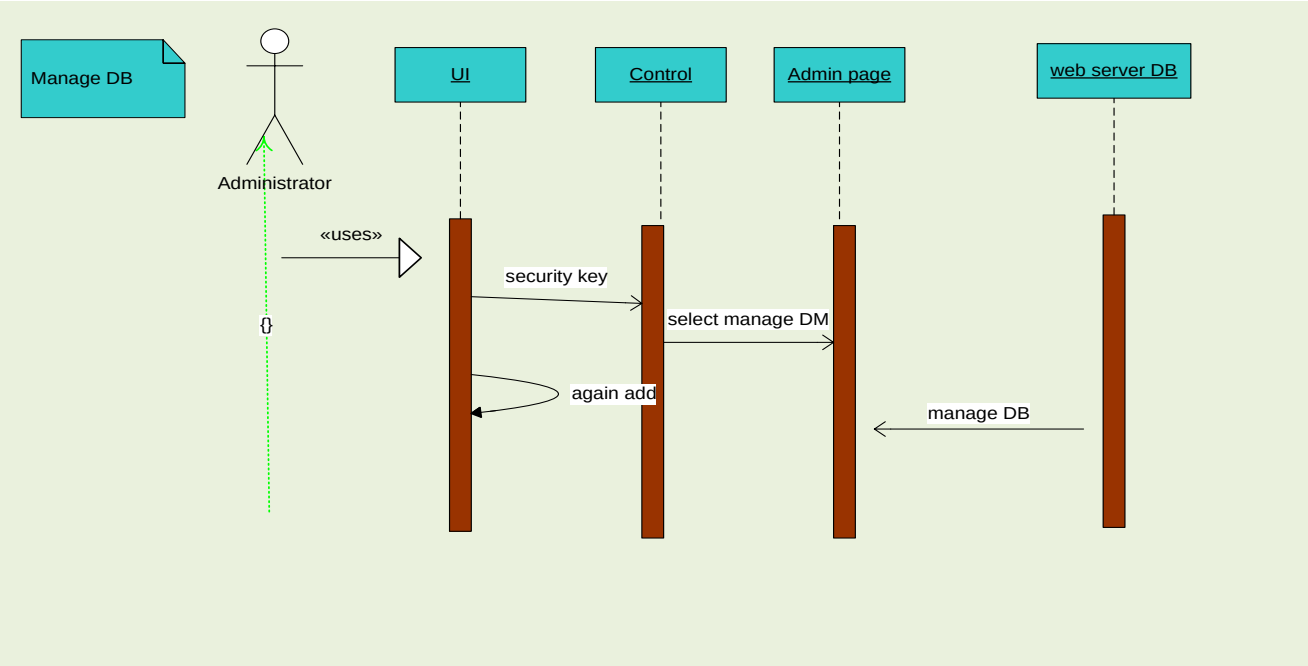


Fig 3.3.11 Sequence Diagram for manage DB

3.6 State charts

We make state charts for selected classes. These state charts will help us identify the states the classes can take. The state charts are followed by a description of a list of attributes

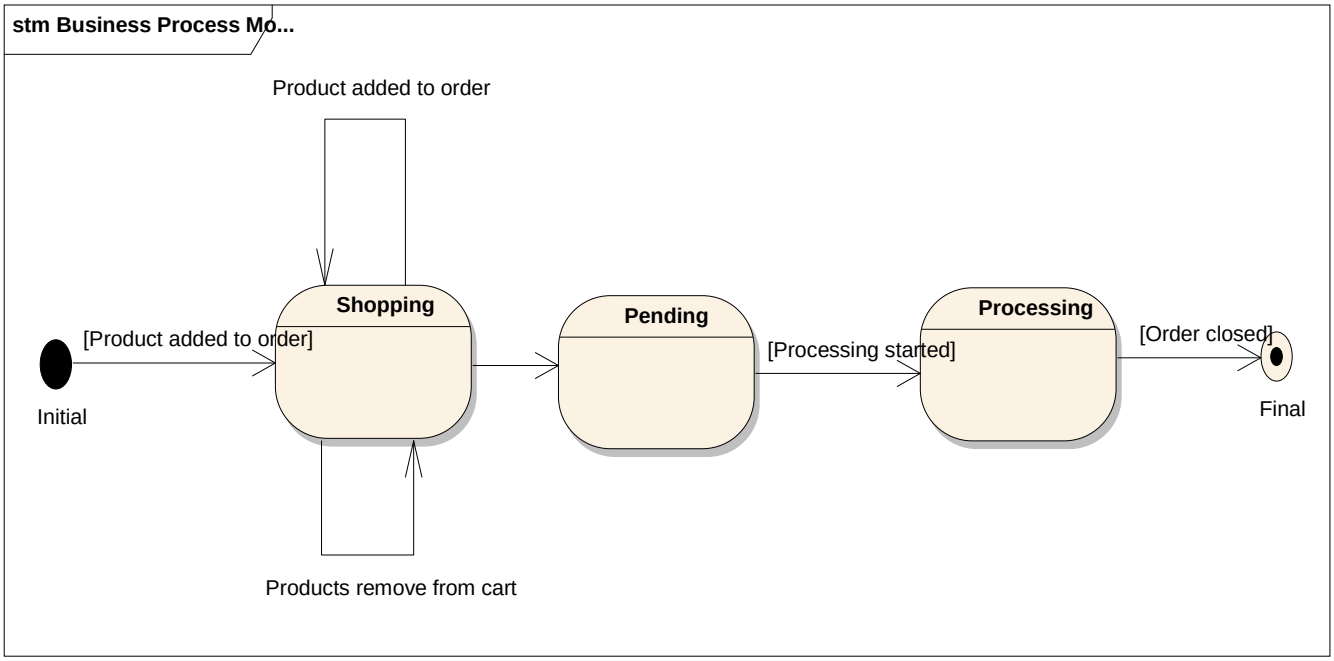


Fig 3.4.1 State chart diagram for order

Attribute	**Description**
Product Id	Id of the products added to the order
User name	Name of the vender
Quntity	quantity of the product
First name	name of the customer
Order date	date of the order
Email	email of the customer
Ship Address	specific address of the customer
Country	City used for delivery
Delivery Mobile phone	Used for persenal contact with customer
Delivery stutus	used for delivery confirmation
Shipping date	The date the order got shipped from the warehouse
Creation date	The date the order was created

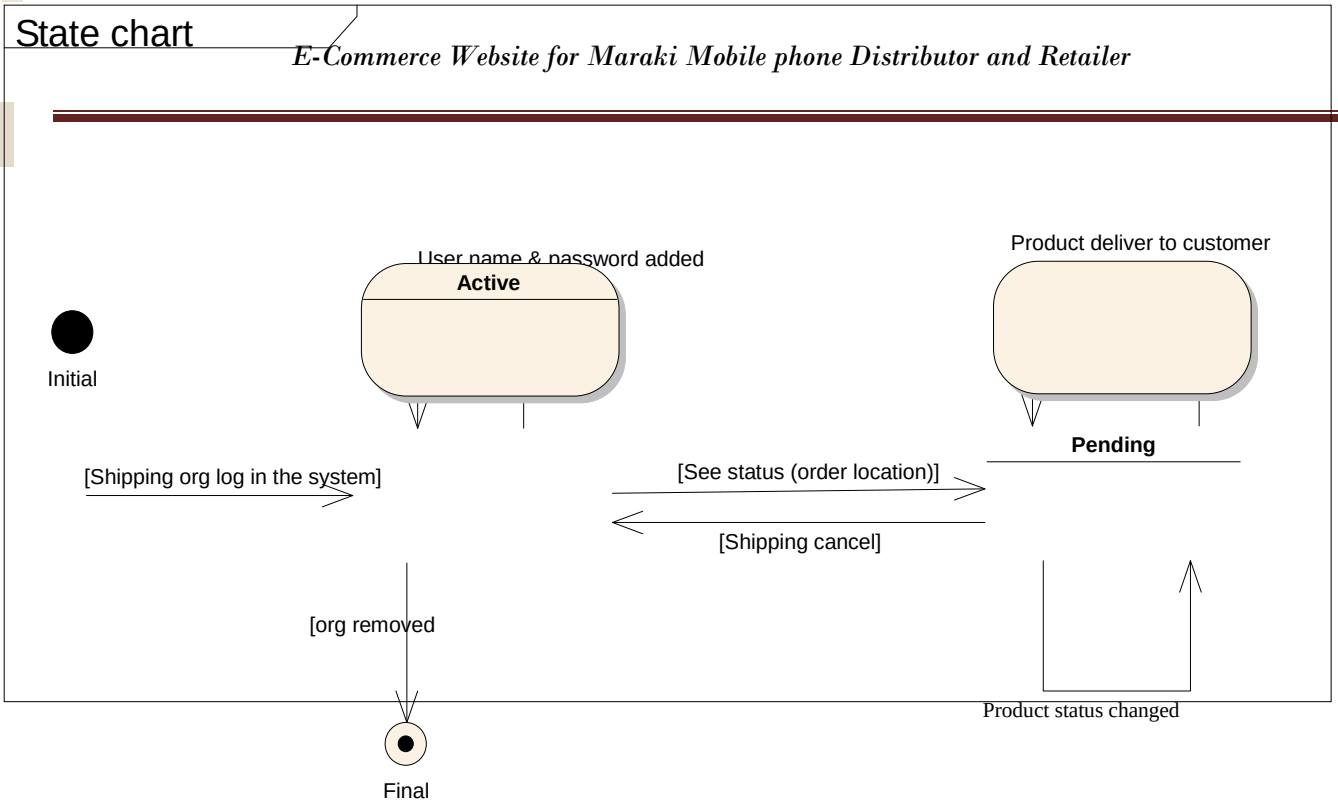


Fig 3.4.2 State chart diagram for shipping organization

Attribute	**Description**
ID	Id of the organization
Org Name	name of the organization
Org Location	geographical location of the organizatin
User name	The username for the organization website account
Password	The password for the organization website account

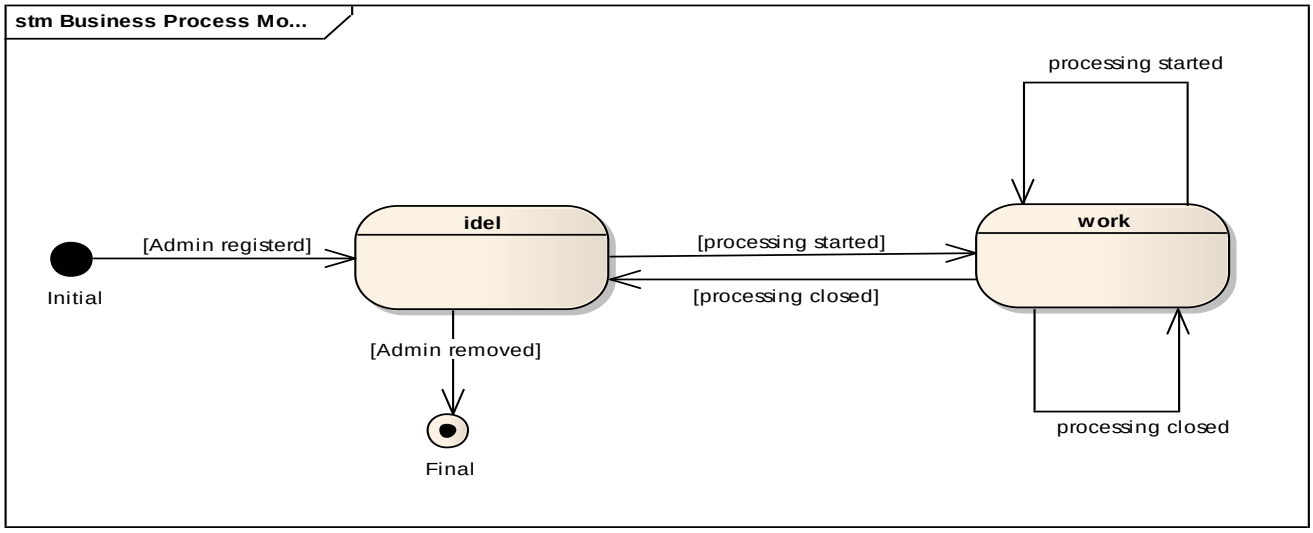


Fig 3.4.3 State chart diagram for Admin

Attribute	**Description**
First Name	Name of the Administrator
Last Name	Last of the Administrator
Address	Address for the Administrator
E-mail	A valid e-mail to contact the Administrator
User name	The username for the Administrator website account
Password	The password for the Administrator website account
Security question	Used for when password is forgot
Security answer	Used for when password is forgot
Phone number	Phone number to contact the Administrator
Country	The country where the Administrator lives
Registration Date	date of registration

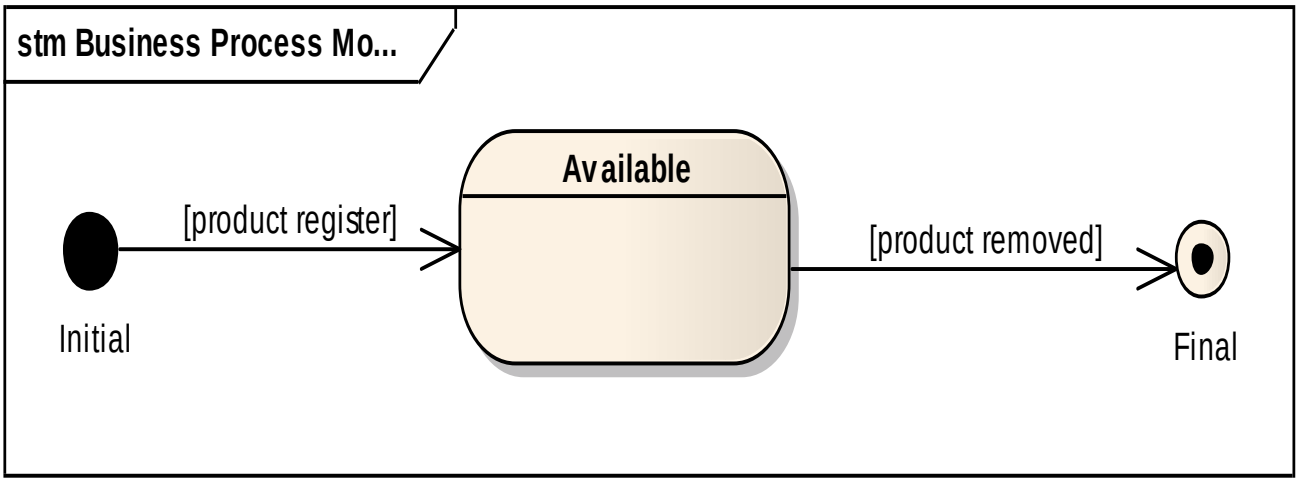


Fig 3.4.4 State chart diagram for product master

Attribute	**Description**
Name	Name of the product
Model	Model of the product
Type	The type of the product
Vendor	Vendor of the product
Description	Description of the product
Price	The price the customers are paying
Picture	The product picture

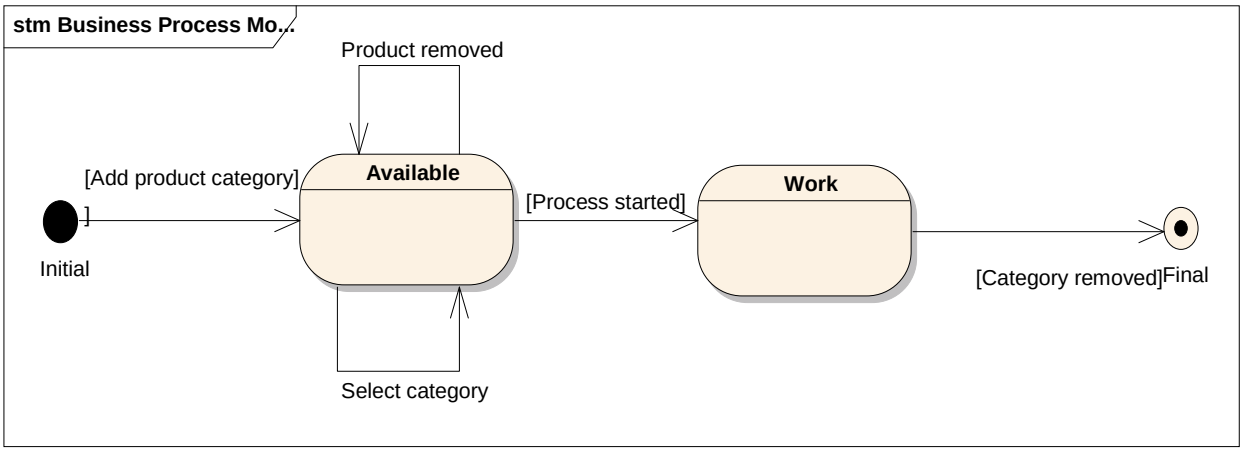


Fig 3.4.5State chart diagram for category master

Attribute	**Description**
Model	Model of the product
Type	The type of the product
Price types	The price type discount or not
Price	The product price

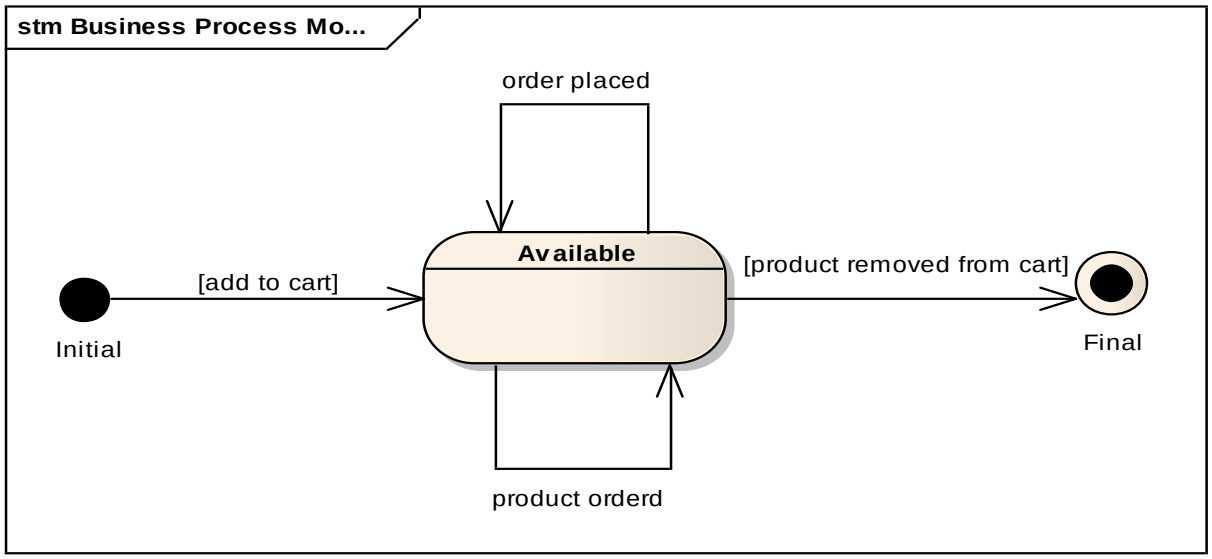


Fig 3.4.6 State chart diagram for temporary cart

Attribute	**Description**
Model	Model of the product

Type	The type of the product
Customer	Customer of the product
Price	The price the customers are paying
Picture	The product picture

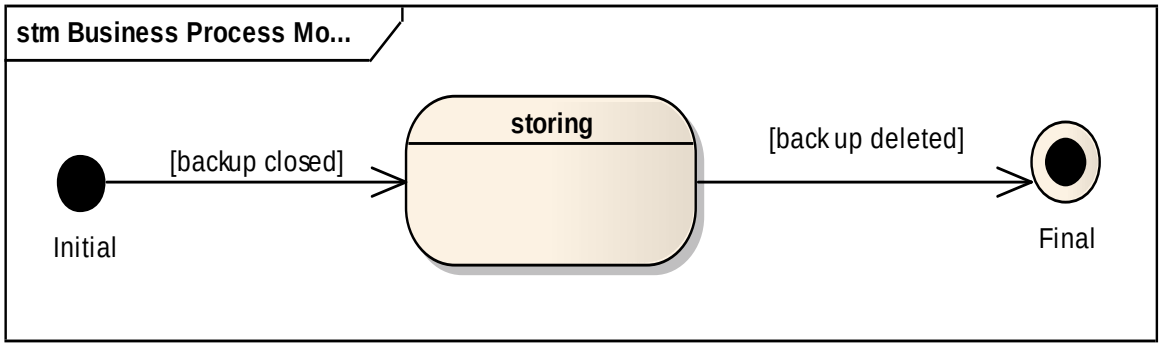


Fig 3.4.7 State chart diagram for temporary cart

3.7Activity diagram

Uml activity diagram used to document logic of single operation or method, a single use case or the flow of business process and show the how those activities depend on one another the field circle represent the starting point of the activity diagram and the field circle with border represent the end point. The diamond represent decision point called branch the arrow represent the transition between two activity and the text on the arrow represent condition that must be fulfilled to process of the transition.

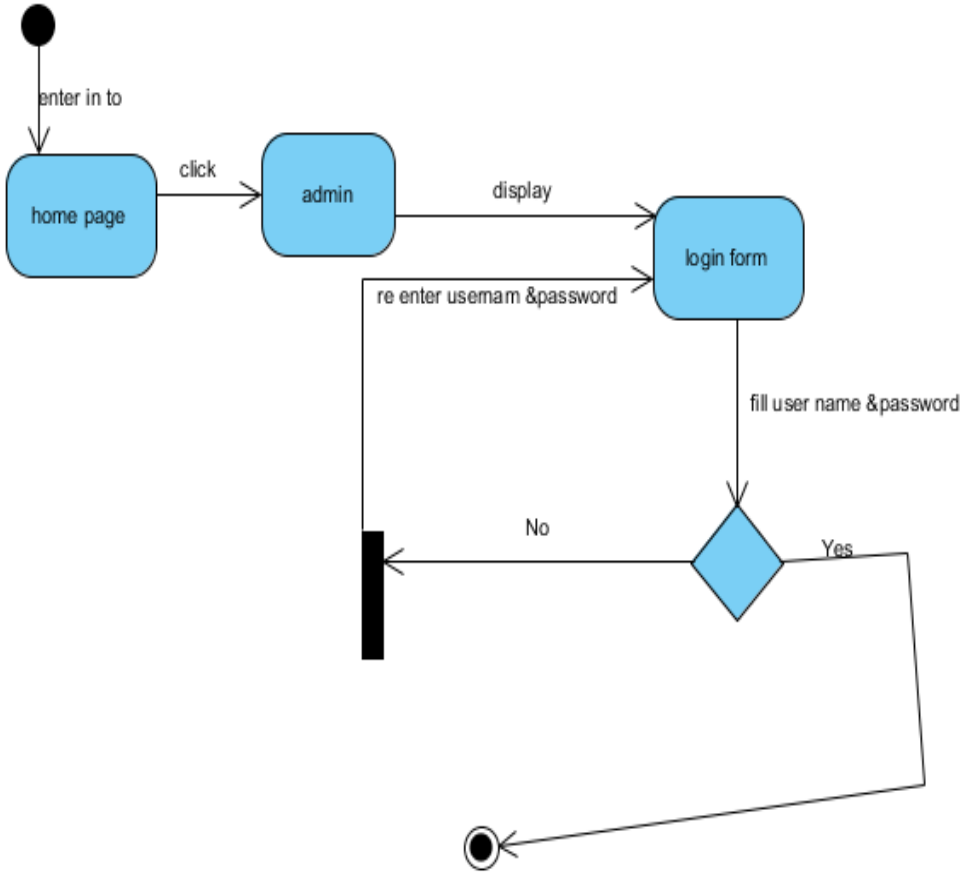


Fig 3.5.1 Activity diagram login

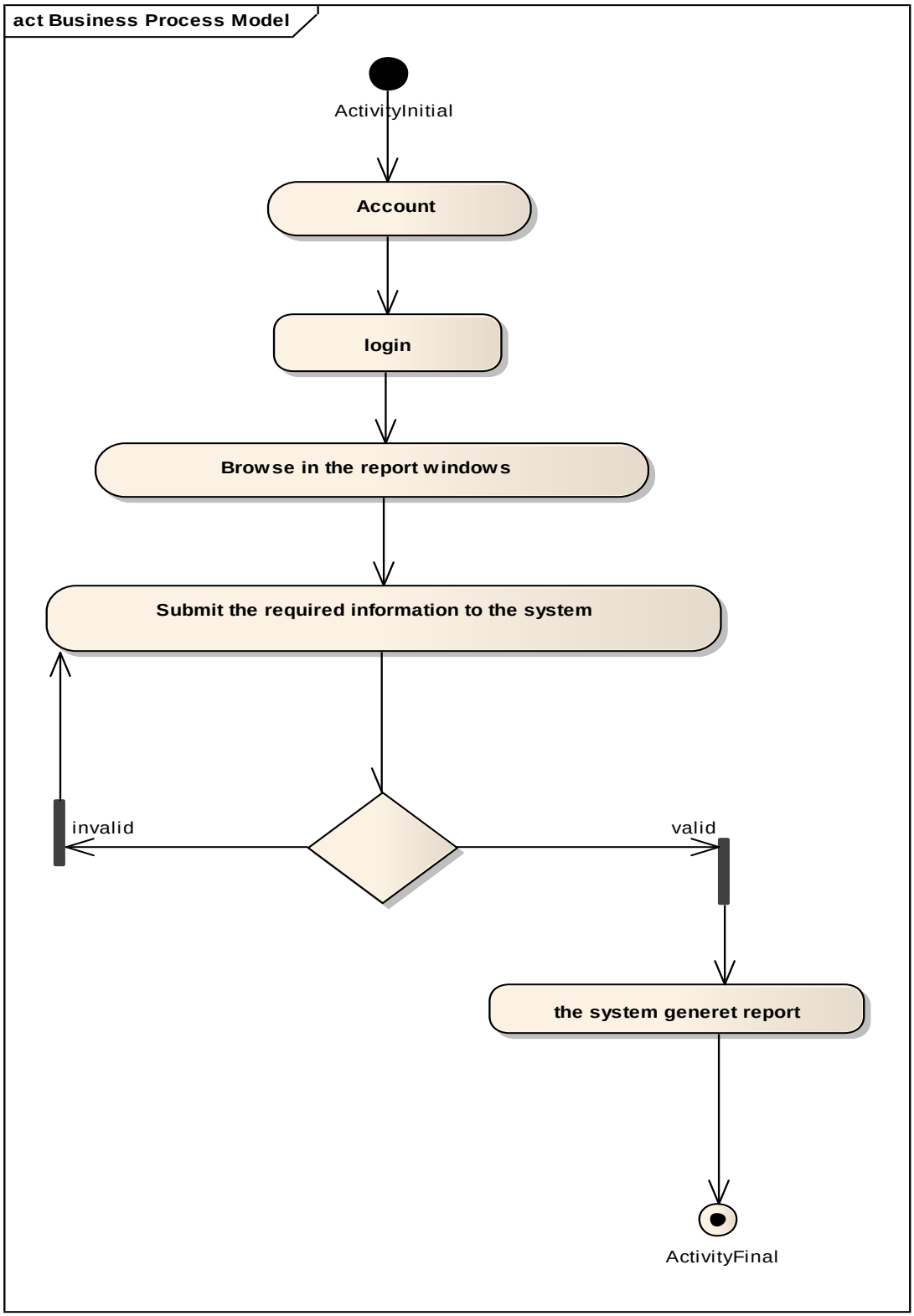


Fig 3.5.2 Activity Diagram for Generate Report.

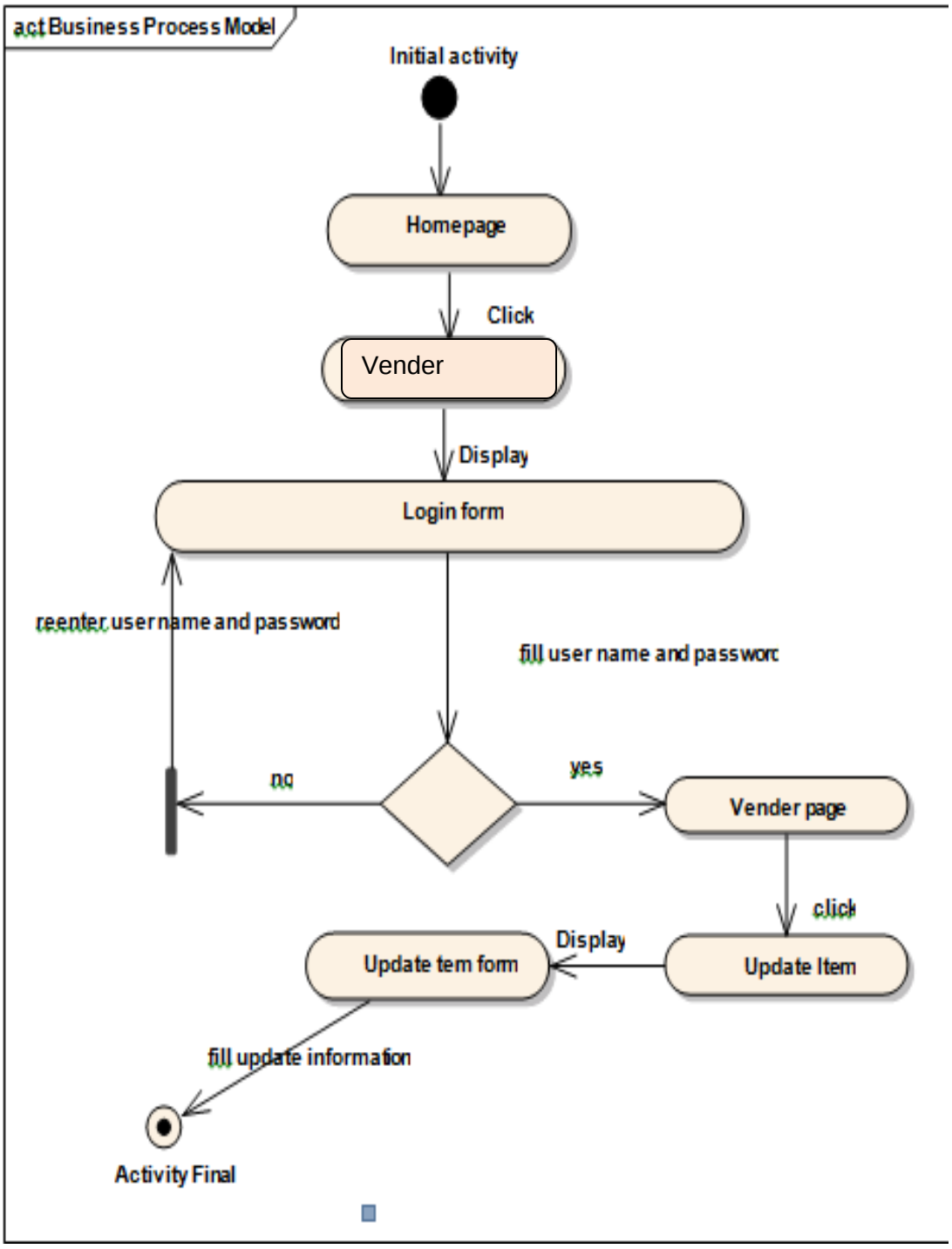


Fig 3.5.3 Activity diagram for update record

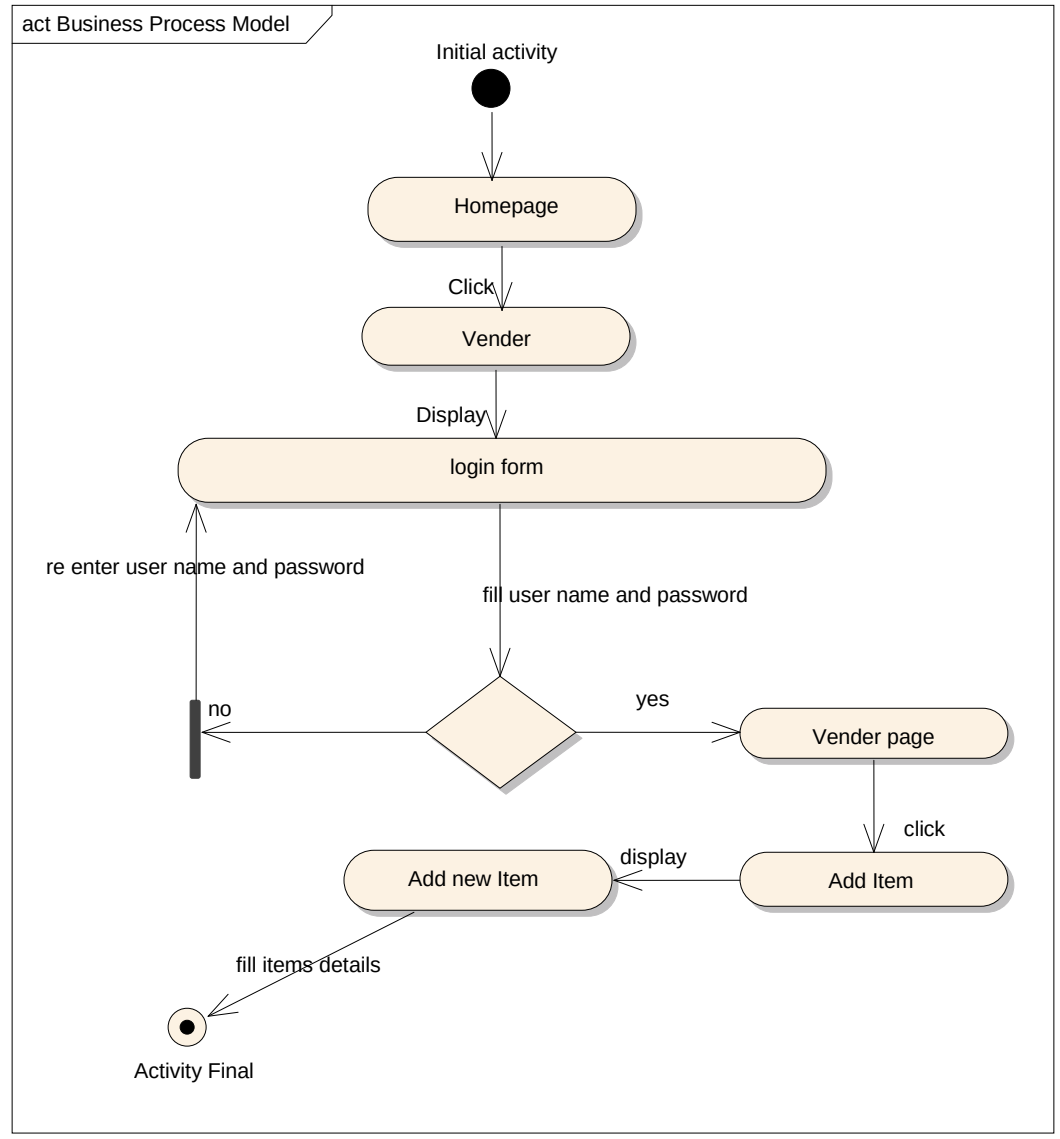


Fig 3.5.4 Activity diagram for Add Item

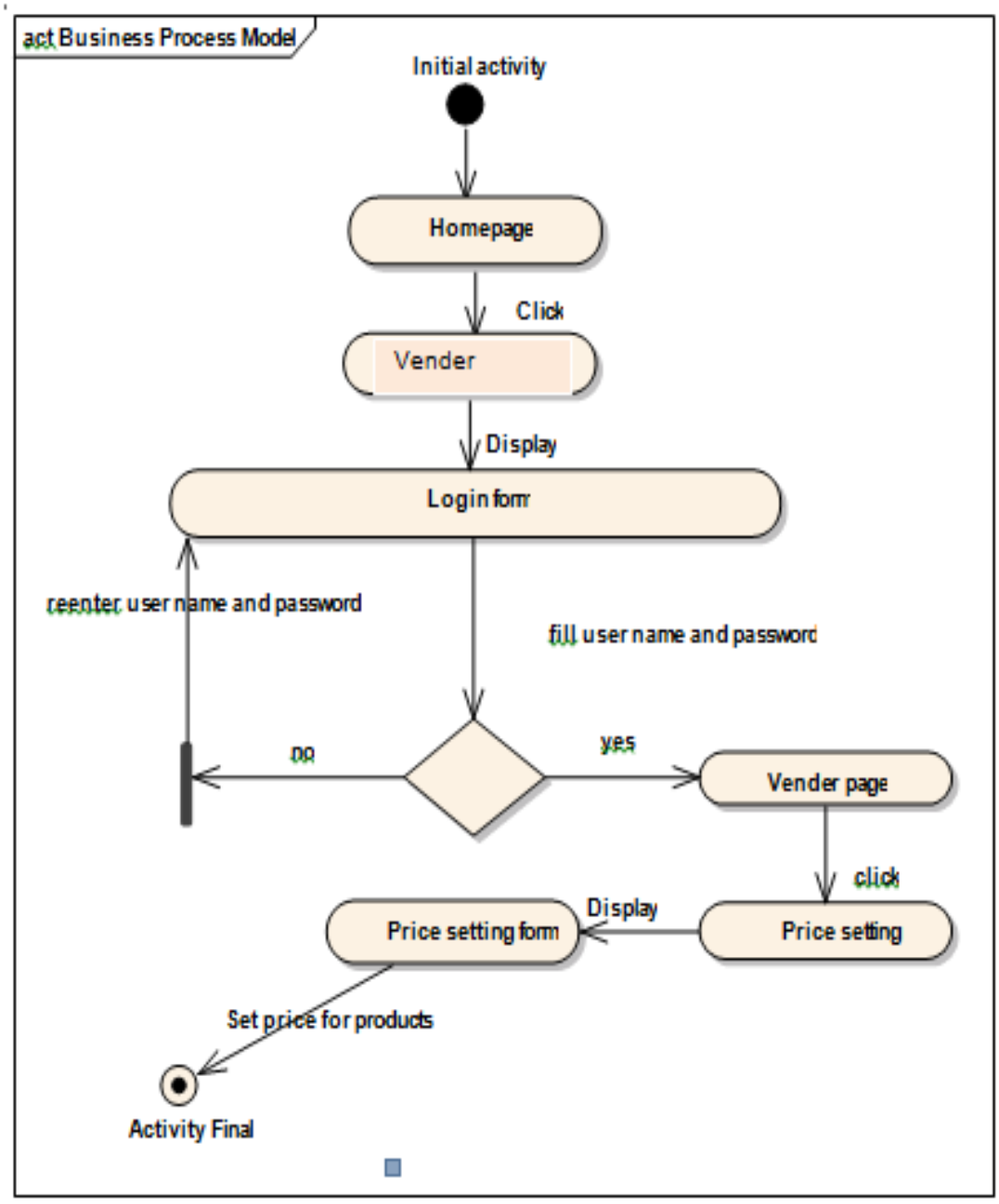


Fig 3.5.5 Activity diagram for price setting

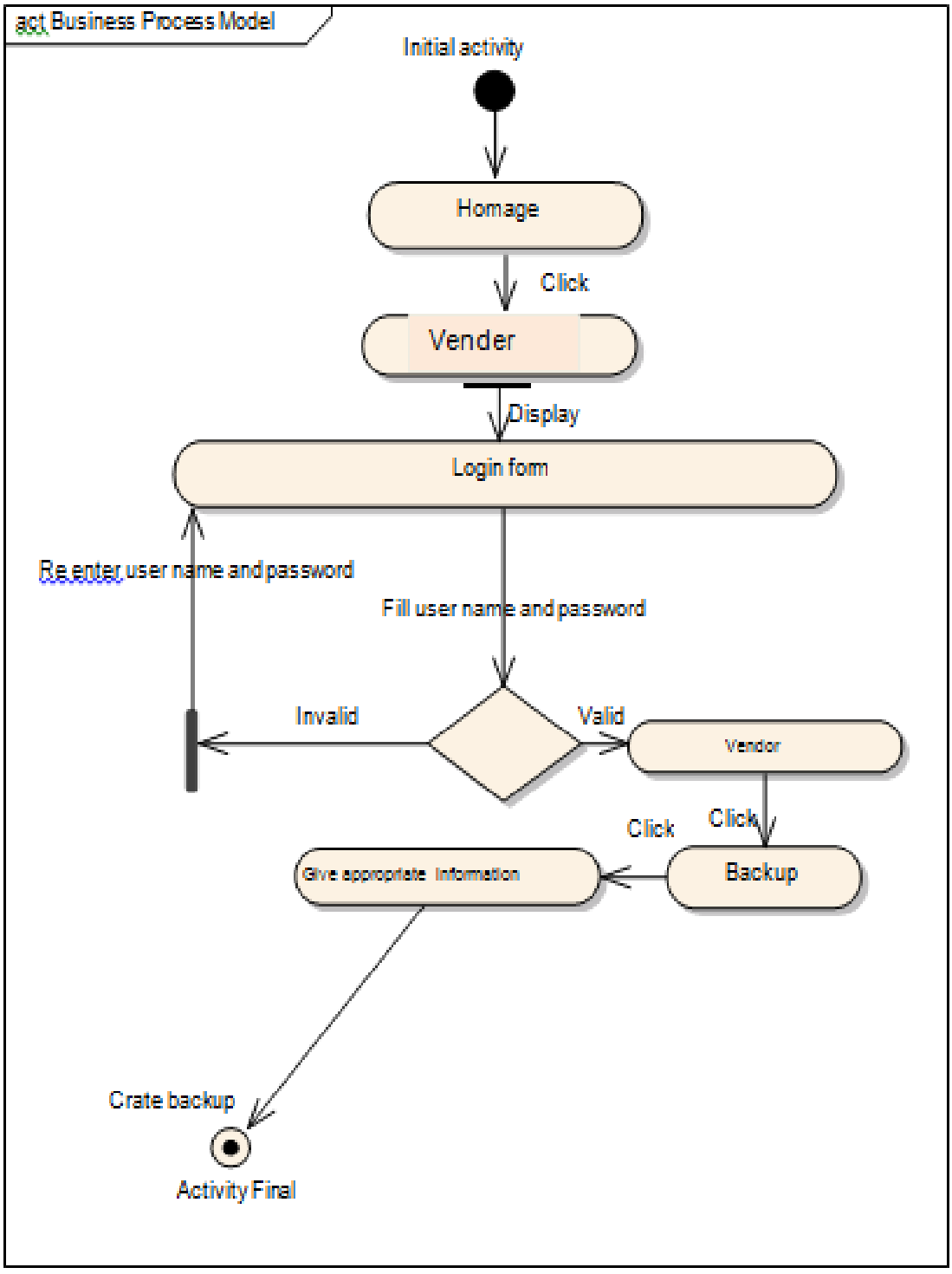


Fig 3.5.6 Activity diagram for crate backup

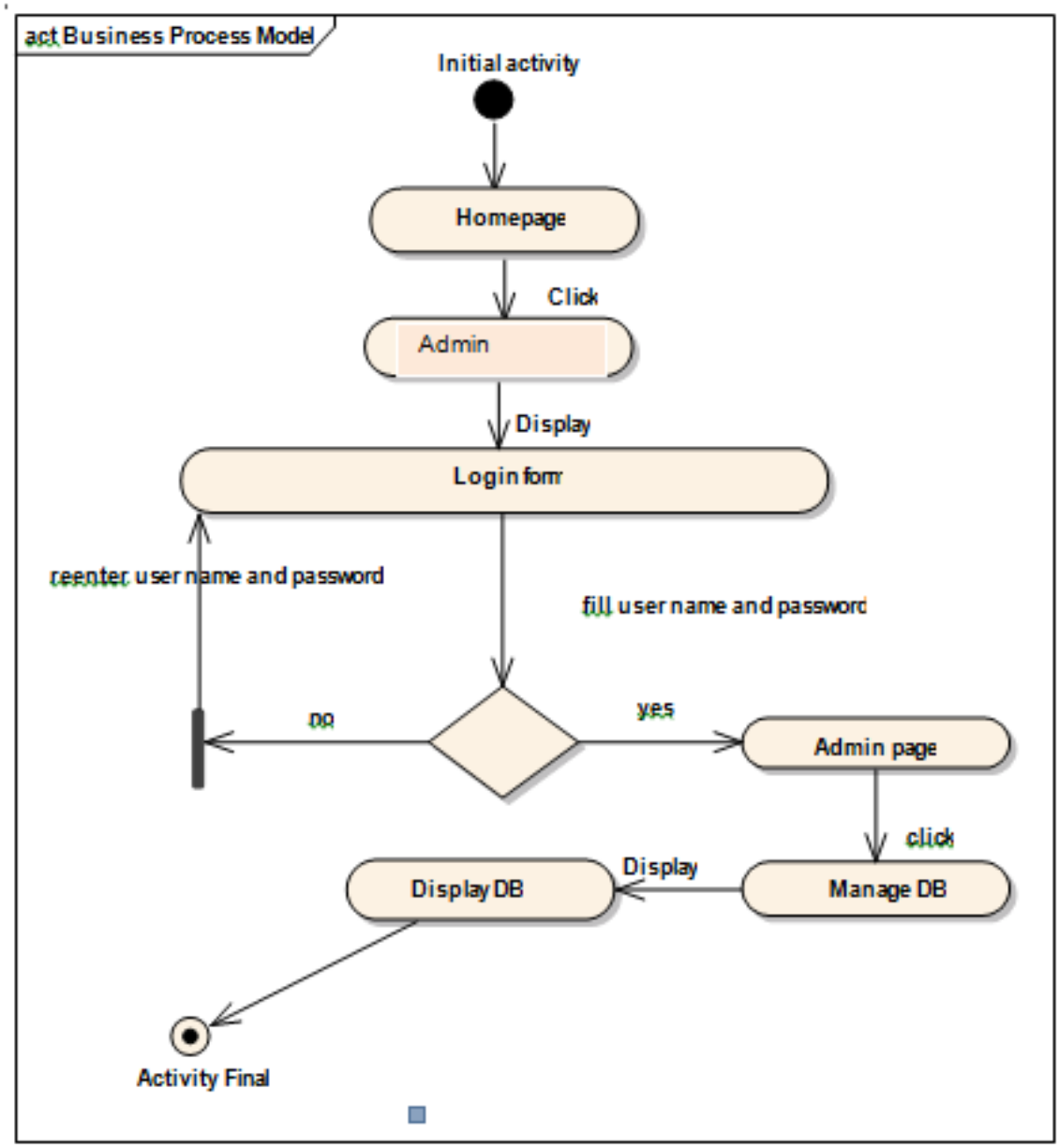


Fig 3.5.7 Activity diagram for manage DB

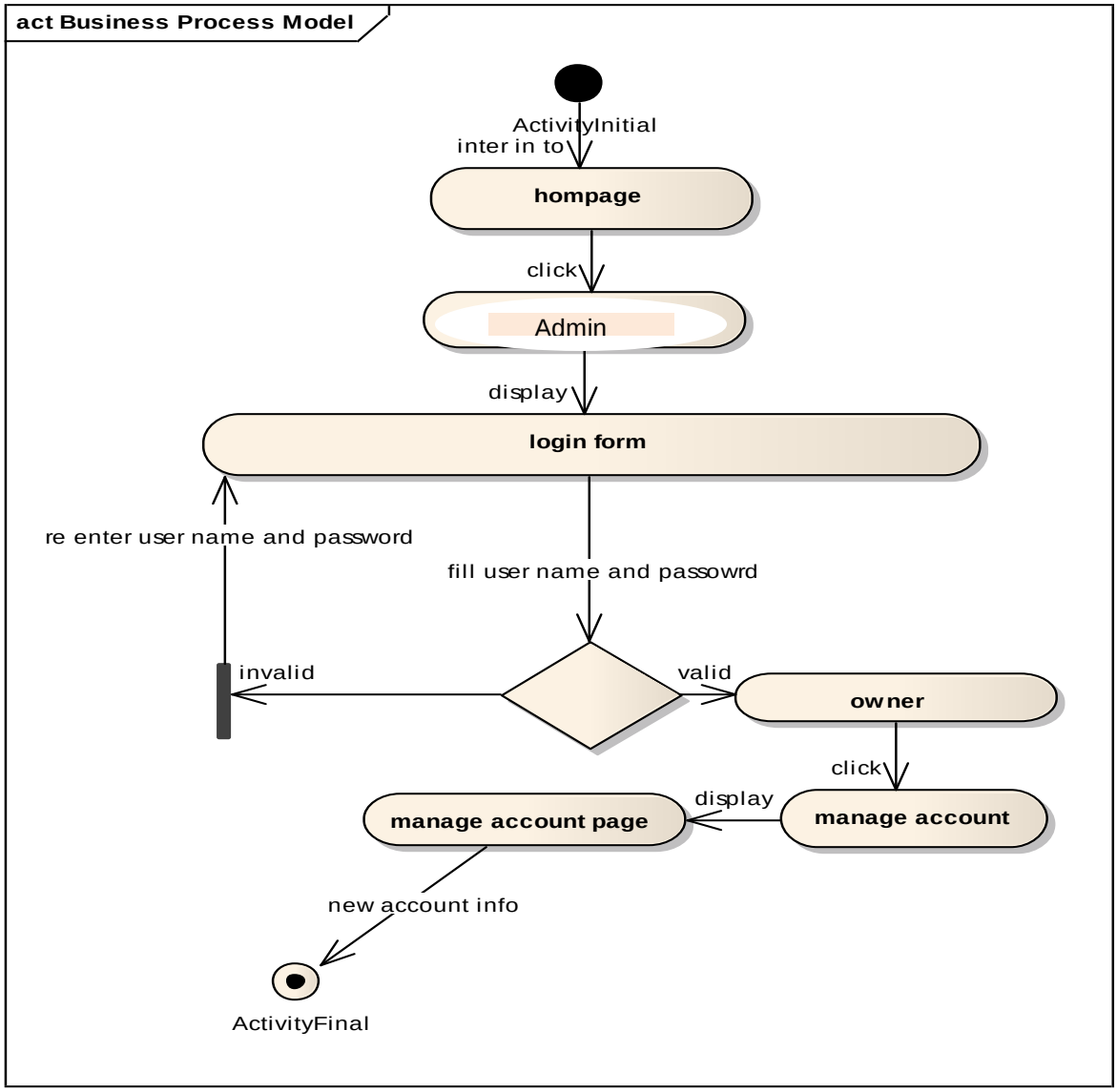


Fig 3.5.8 Activity diagram for manage account

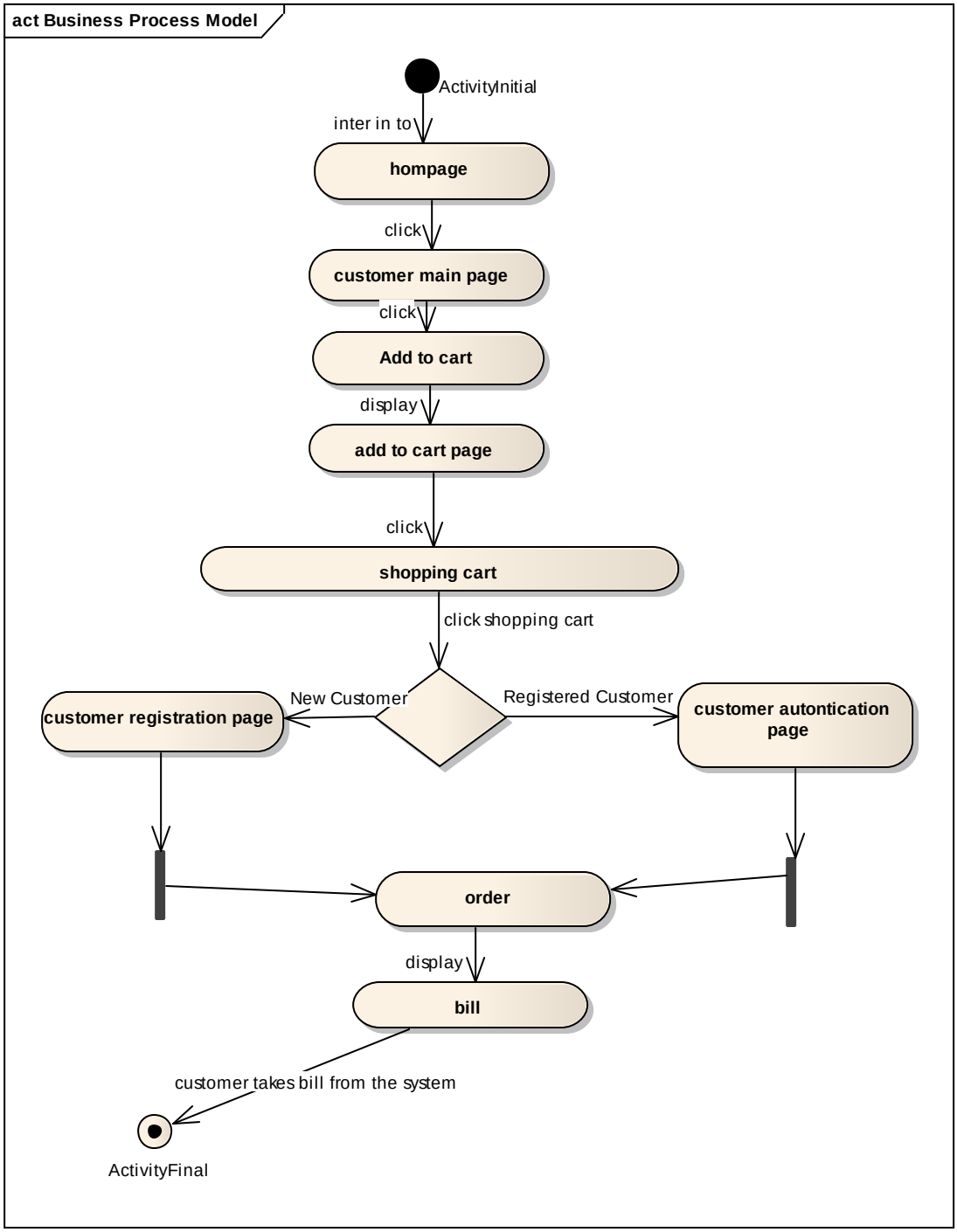


Fig 3.5.9 Activity diagram for order product

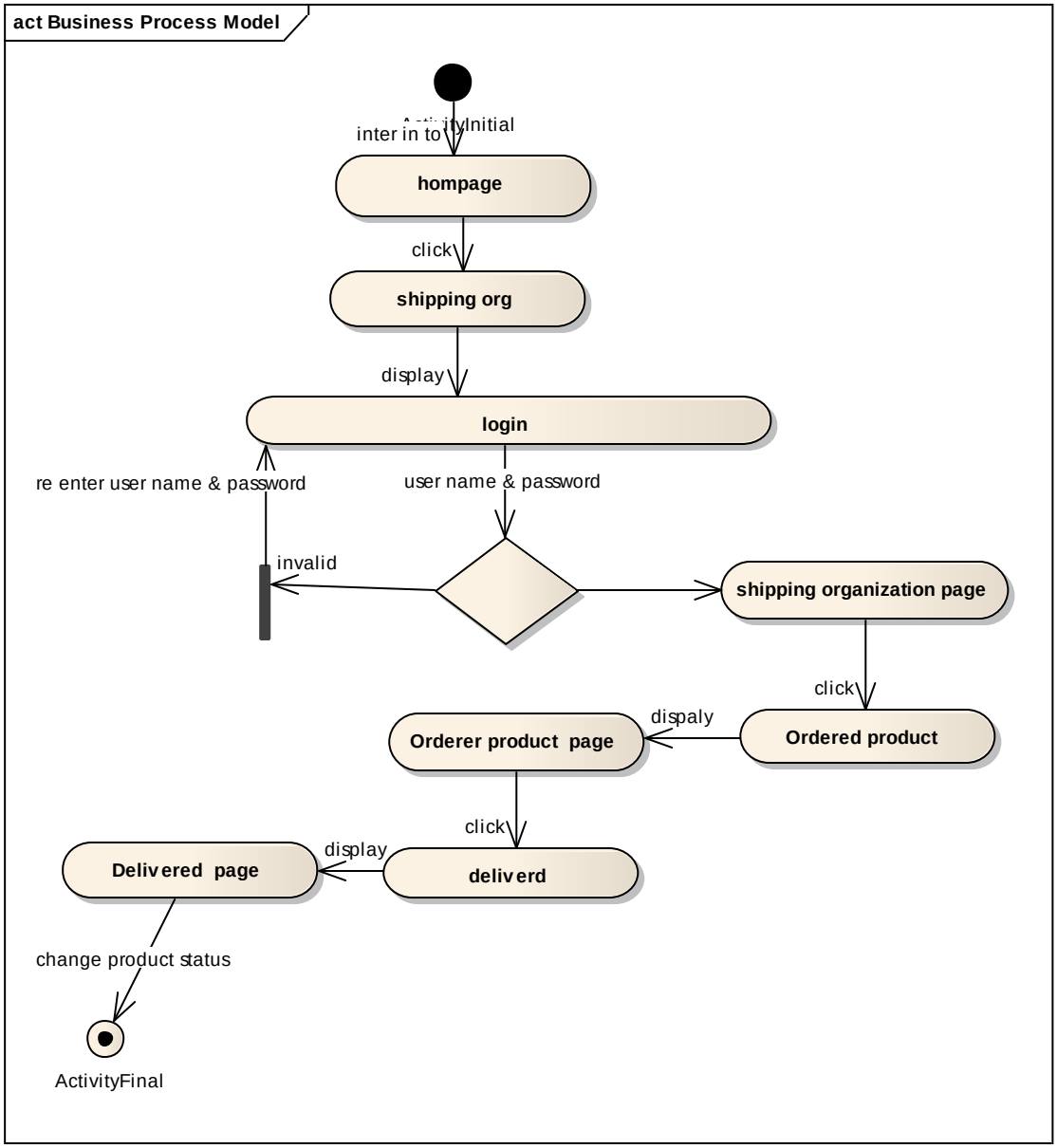


Fig 3.5.10 Activity diagram for deliver product

CHAPTER FOUR

4.SYSTEM DESIGN

4.1Introduction

Systems design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. In this phase I introduces object modeling technique where the objects, Including data and process therefore the unified modeling language used method of visualizing and documenting the system. It uses a set of symbols to represent graphical various components and relationships within the system. The object modeling techniques require many type of diagrams to represent the proposed system. Those diagrams will form the foundation for the system design. Systems design could be seen as the application of systems theory to product development. System design is the process and focuses on decomposing the system into manageable parts .during requirement elicitation and analyses in I concentrated on the purpose and the functionality of the system. During system design is I focus on the process, data structure, and software and hardware components necessary to implement it. The new system will bring new sort of integration and flexibility of information and transaction processes for customers and to the organization.

4.1.1Purpose of the system

The main purpose of the system is to develop Online Mobile phone distributer and retailer for Maraki Mobile shop whose main goal is to keep track on store level, controlling and managing store in different location, produce bill while selling and wants to change from paper based transaction to computerized transaction. This system will provide in a simple and easy to operate user interface, which can be managed by any user without having prior in-depth knowledge of the computer system. One can use this system to get a sales report. Administrators can pull data, from any location from the server. There are various applications with more complex implementation and features available in the market, but they are generally very expensive. Therefore, creating a system with the basic requirement of low cost is essential for small organizations. This system will allow stores to manage customer details, keep inventory of all products and purchase information in a very simple way. It will automatically generate invoices and update inventory

4.1.2 Design Goals and design Objectives

The objective of designing is to model a system with high quality. The ability of the programmers to implement a high quality, error-free, system depends very much on the nature of the created by the designer; also, the ability of maintaining programs to make changes to the system after it has been put into operation and to the expanded system depends on the quality of the system design. The first step in design process is to map the essential model of the user requirements on to a configuration of process. Then, within each process, the designer must decide how to allocate process and data to different task into a hierarchy of modules, using modeling tools. The goal of system design is to manage complexity by dividing the system in to smaller, manageable pieces. Generally, we identified the following design goals that we need to focus on during the design phase:

- Reliability: the system should be reliable
- Fault tolerance: the system should be fault tolerant to loss of connectivity during the routing service.
- Security: the system should be secured
- Modifiability: the system should be modifiable to use different routing services.

There are a number of possible design criteria. These criteria are organized in to four groups:

a)Performance: Performance, dependability, and end user criteria are usually specified in the requirements or inferred from the application domain. the user and the project developer dictate cost and maintenance criteria.

A. performance criterion includes:

✓Response time, the speed imposed on the system. the system should be responsive to maximum number of tasks with minimum time.

Throughputs, the number of tasks accomplished in a fixed period of time.

Memory, memory space available for speed optimization should be used efficiently.

B. **Maintenances criteria**: When we say the system is maintainable, we mean it can be maintained easily when changes arise from the user and designers or developers. it is not only changes arise but during when considered the non-functional requirements.

C. **Cost:** When we talk about cost we mean the required for maintenance, installation and develop the system and to make the networked computer to use the system effectively.

D. **End user criteria:** This is to mean the users of the system after the completion of the system, how the system is used in a friendly manner for both the experienced and inexperienced users using the user interface and this is clearly stated in the users' documentation.

Online Mobile phone and accessories store management and sales system is an ecommerce system that gives different online services for users like manage all of the customers services, effectively utilize people and motivate in selling, buying & distribution and dissemination of information, coordinate internal activities and communicate with customers/users. All organizations can be benefited from the proposed an e-commerce site Online mobile phone and accessories store management and sales system. It increases: the productivity of the organization, income, organization of the records, local or worldwide marketing and decreases the overall work load in the employee's and the customer's undesired outcomes.the system shall maintain a central data store which can be maintained and accessed from different locations by a number of users. Thus the system mainly follows a special type of repository architecture called client/server architecture.

System design, object and implementation constitute the construction of the system. During these three activities we try to fill the gap between the system specification that produced during requirement elicitation and analysis.

The system is implemented, with a backend database MySQL, a middle tier of PHP, and a web browser as the front end client.

4.2 Proposed Software Architecture

The proposed software architecture is a client-server architecture on which all the operations are performed by the server side and the clients (workstations of factors) request services from the server.

Software architecture for client-server

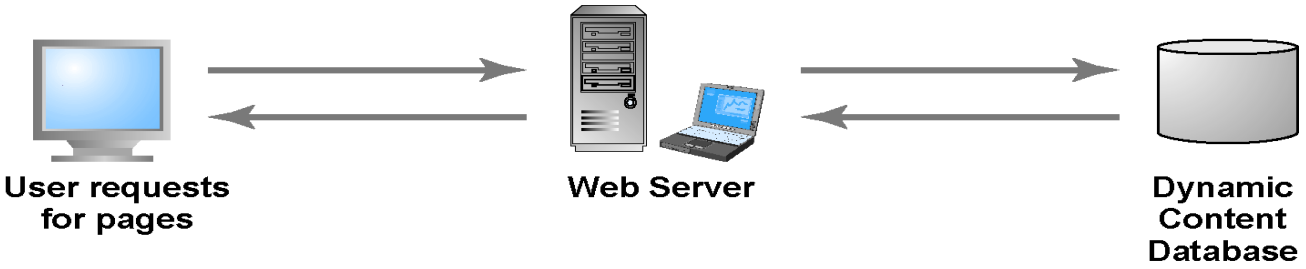


Fig 4.1.1 client –server Architecture

Web server architecture responds to requests for web pages and a database server provides backend data storage.

Physical Design for a Simple Web Site

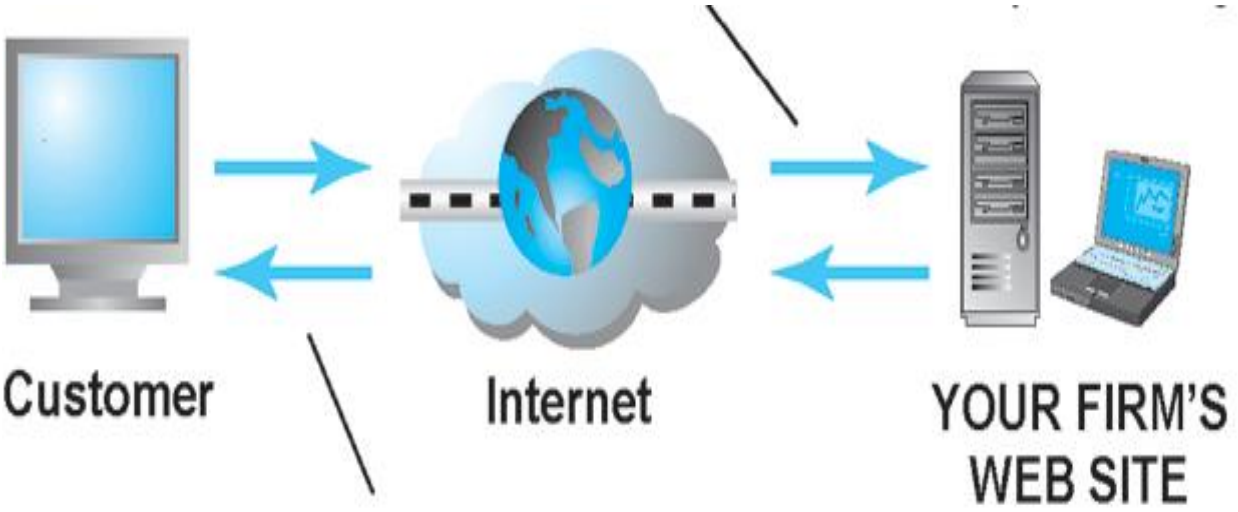


Fig 4.1.2 a physical design describes the hardware and software needed to realize the logical design

Logical Design for a Simple Web Site

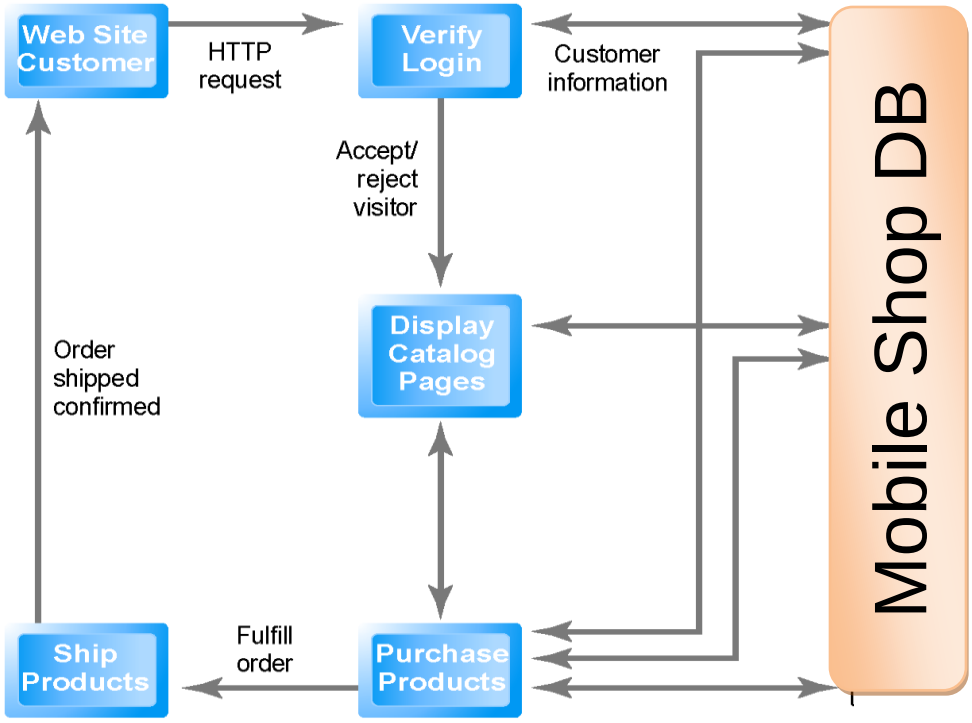


Fig 4.1.3 Data flow diagram describes the flow of information requests and response

4.2.1 Subsystem decomposition

A system is usually decomposed in to subsystems using partition. In the partition the system is vertically divided in to the same level of abstraction This contains the analysis of the three main business processes the online shopping system must implement. They are described using UML activity diagrams

In this web site order process pattern is the main pattern that shows the order process of products this pattern defined in the *Context and Forces:*

Order pattern

After having browsed through the products, the customers eventually proceed to the order process. The requirements are simple:

- ·personal information of the purchaser, like payment and delivery details need to be collected
- ·the purchaser should get a confirmation
- order information must be passed to the relevant systems or persons for fulfillment

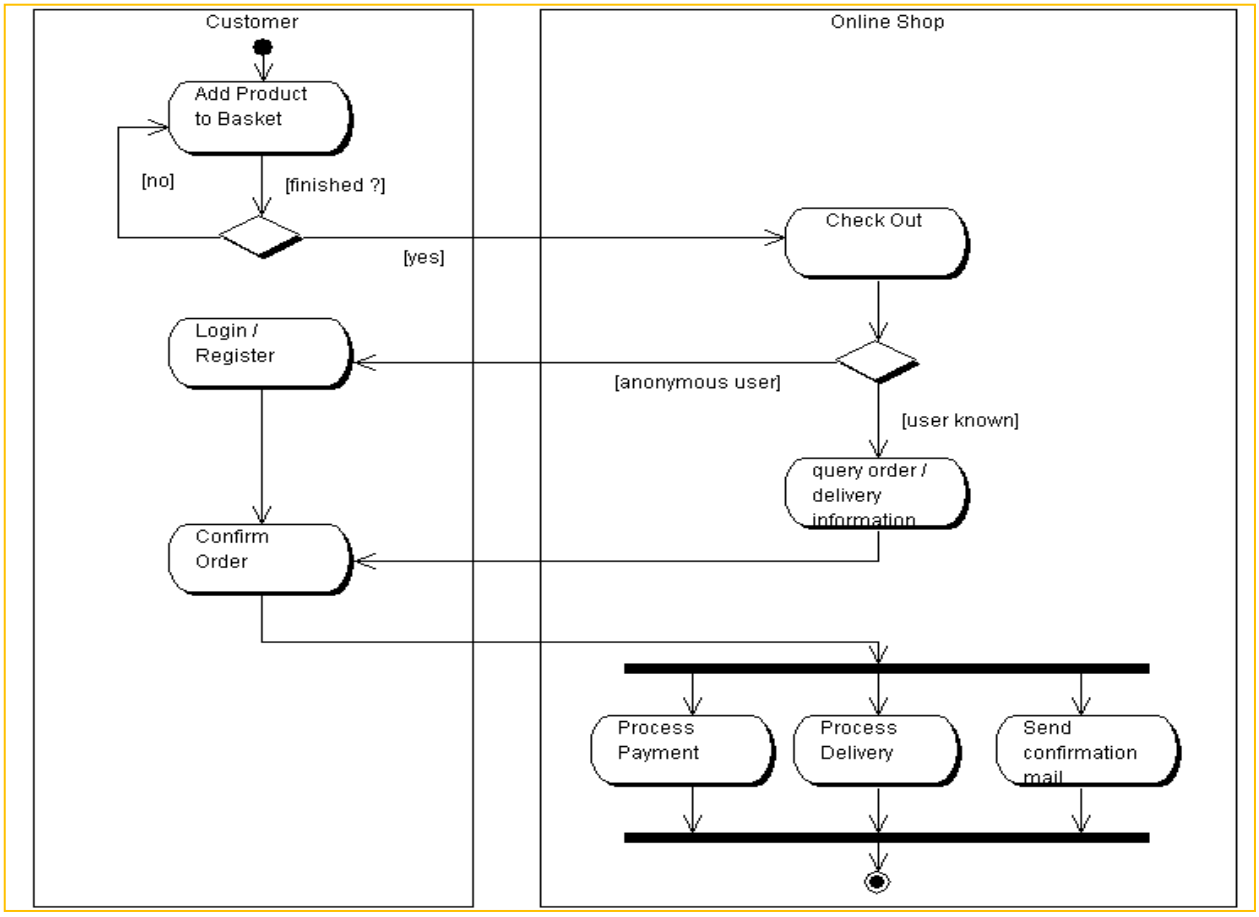


Fig 4.2.1 the sub activity of product order

This web site, designed as an online mobile phone shopping center, is decomposed into two parts: back end and front end parts.

Front end system.

The front end part, comprising of pages which users can view, is created by using templates so that it can expedite design and loading processes. This part, in the appearance, the main menu is consistent, thus it is easy to use. Considered as the most frequently access when comparing with other parts of the web site, front end pages have to use template, and in turn, saving bandwidth and number of database accesses. For database operation issue, aiming for minimizing number of accesses, it needs just four queries to display all details. Those queries consist of jointed My SQL statements, which inquire merely main information from the database. The front end design of the web site can be illustrated in Figure 4.4

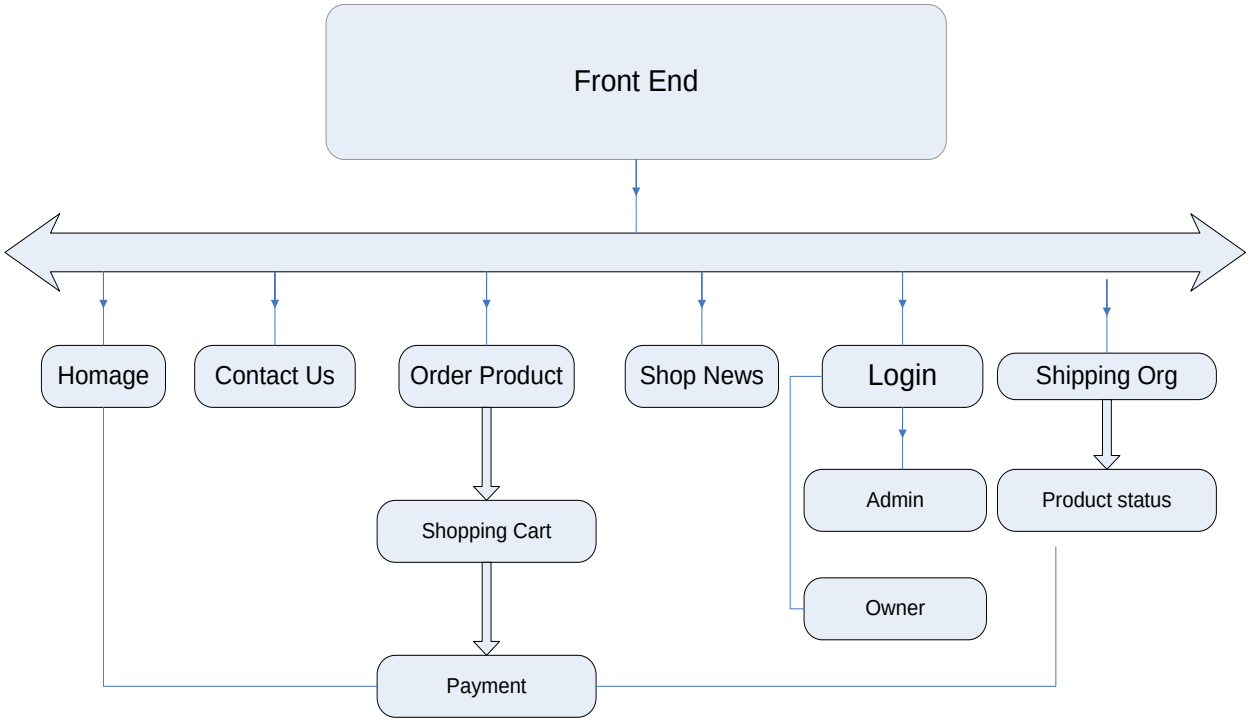


Fig 4.2.2 front end of the web site

Back end System.

This part provides facility for store owner to edit and modify information in his own store. Providing validation check for member and store identification, the back end system can securely protect users' proprietary information. In addition, all page views employ session variables to deter manually

defined variables by users. Applying user friendly approach, and focusing on web programming inexperience, the user can effortlessly manage his back end information.

Inside the back end, users can control and view all store information. Besides that, using content management design, the back end part encompasses with these modules: customer management, Product management, price management, shopping cart management, category management, cart management, backup management, The back end components can be organized as shown in Figur 4.5

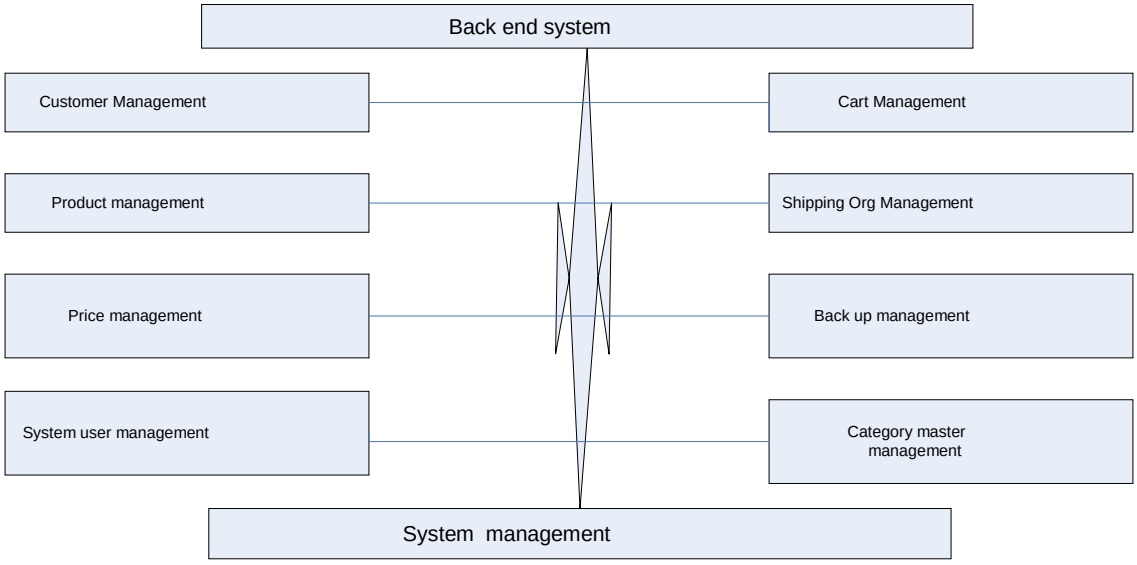


Fig 5.2.3 back end of the system

4.2.2Hardware/software mapping

As described previous client-server architecture is selected to operating at server side while the output of the system process directed to the server.

Thus, at the client side a web browser that is capable of interpreting basic tags and the system as well as the database will reside on web server. The user will operate at the client side and he/she will request a service from the server by accessing a page. And the server will process the server script implemented in HTTP that connects to a MYSQL server database and produce a set of HTML tags as a response to the client. The server could access the database to produce the required information to the users/clients. and the system will deploy an object oriented database system ,that is found to be ideal for client server architecture and capable of handling concurrent record access

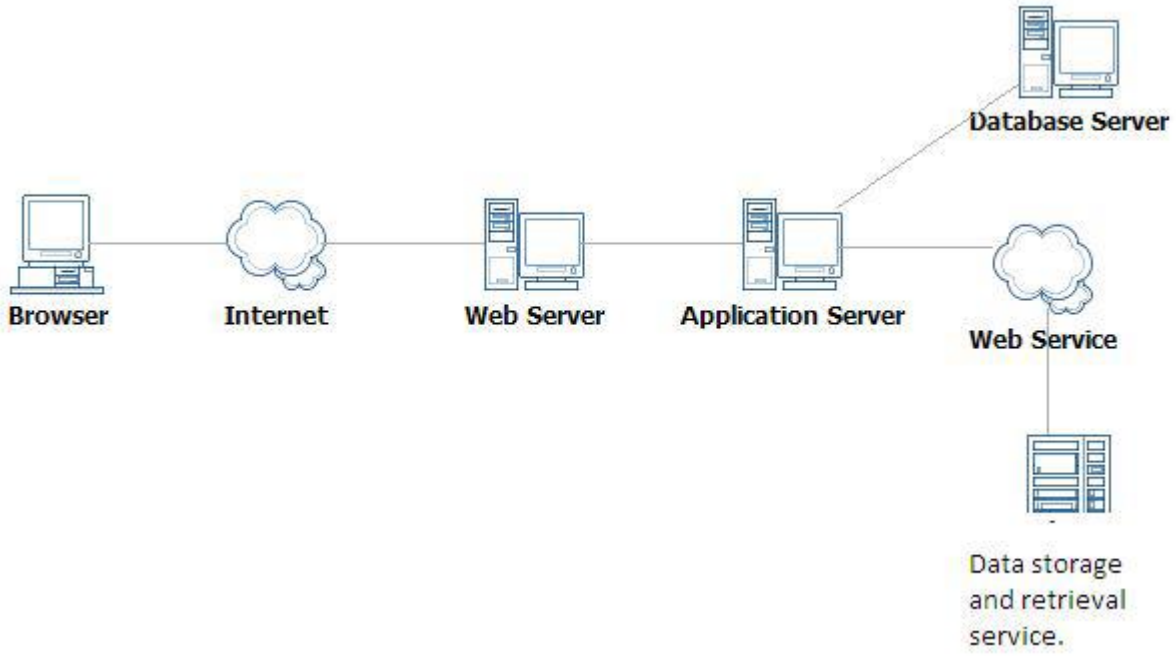


Fig 4.2.4 Hardware/software mapping

4.2.3Persistent data management

It describes the persistent data stored by the system and the data management infrastructure required for it. This section should include the description of data schemes, the selection of a database, and a description of the encapsulation of the database.

•Mapping

As described in the Hardware/software mapping section of this document MySQL server is preferred for implementing the database of the system. Therefore, though the design has followed the object oriented approach, it is required to shift to relational database model for an implementation. Thus mapping of Object Oriented Model to Relational one is required.

The persistent classes are used to store most important and permanent information of the system. In persistent modeling we will perform the following activities.

Identifying keys:

 Primary: Identifies unique instance of an entity.

 Foreign: This will help us to show the relationship between two tables or classes.

 Identifying entities:Entities which are the persistent classes willbe stated with their attributes T he methods of the classes will be used.

 Multiplicity and optionally as well as visibility of the attributes will be included

- Inheritances will be included and if there is any associations exist they will also be included.
- The attributes will be given data type and initial sizes.

4.3 Component diagram

A component diagram in the unified modeling language depicts how components are wired together to form larger components and /or software systems. component diagram s are different in terms of nature and behavior .component diagrams are used to model physical aspect of a system and it is used to visualize the organizations and relationships among components in a system .these diagrams are also used to make executable systems .component diagram is a special kind of diagram in UML. The purpose is also different from all other diagrams discussed so far it does not describe the functionality of the system but it describes the components used to make those functionalities. so from that point it used to visualize the physical components in the system these components are store ,products ,files ,etc .a single component diagram cannot represent the entire system but a collection of diagrams are used to represent the whole.

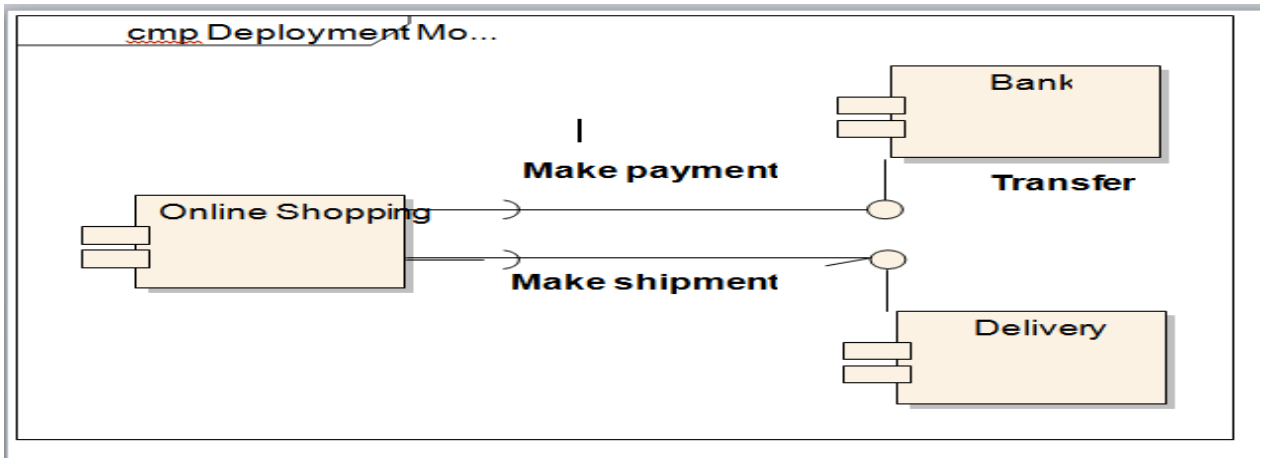


Fig 3.6.1 Component diagram for payment

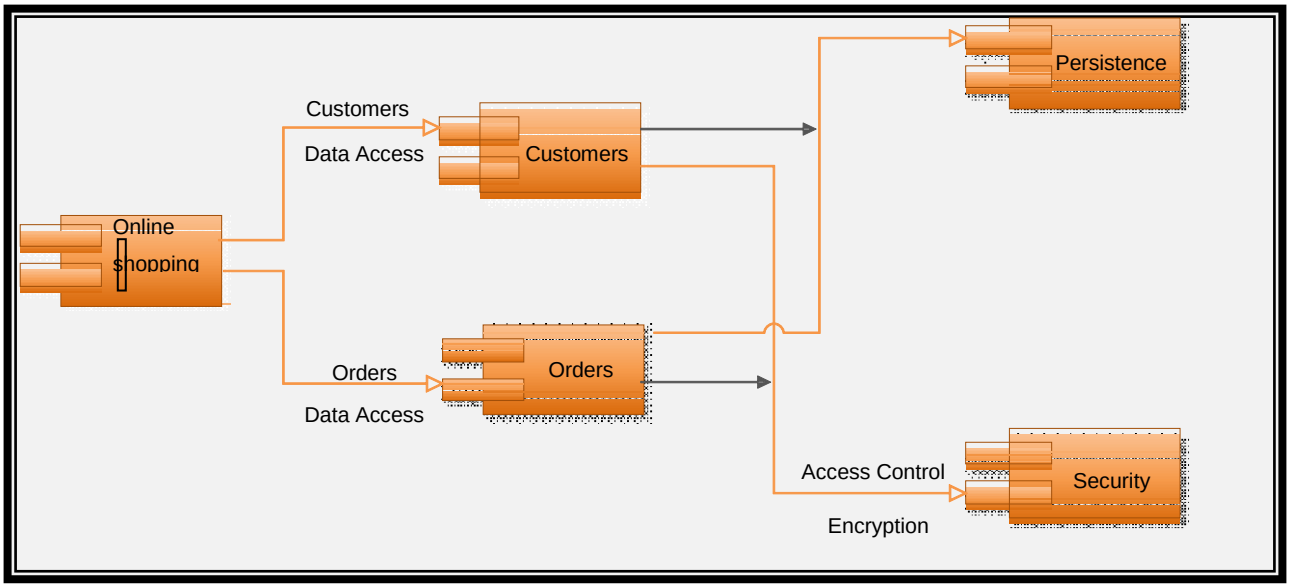


Fig 3.6.2 Component diagram order product

4.5 Deployment Diagram

Deployment diagrams are used to show the relationship among run-time components and hardware nodes. Middle ware used to connect the disparate machines to one another. Components are self-contained entities that provide services to other components. Component interface provides a frontage pattern for the internal class structure of the framework and used to simplify the development of end-user application software.

It describes the physical architecture of the hardware and software in the system. They depict the software components, processors, and devices that make up the system's architecture

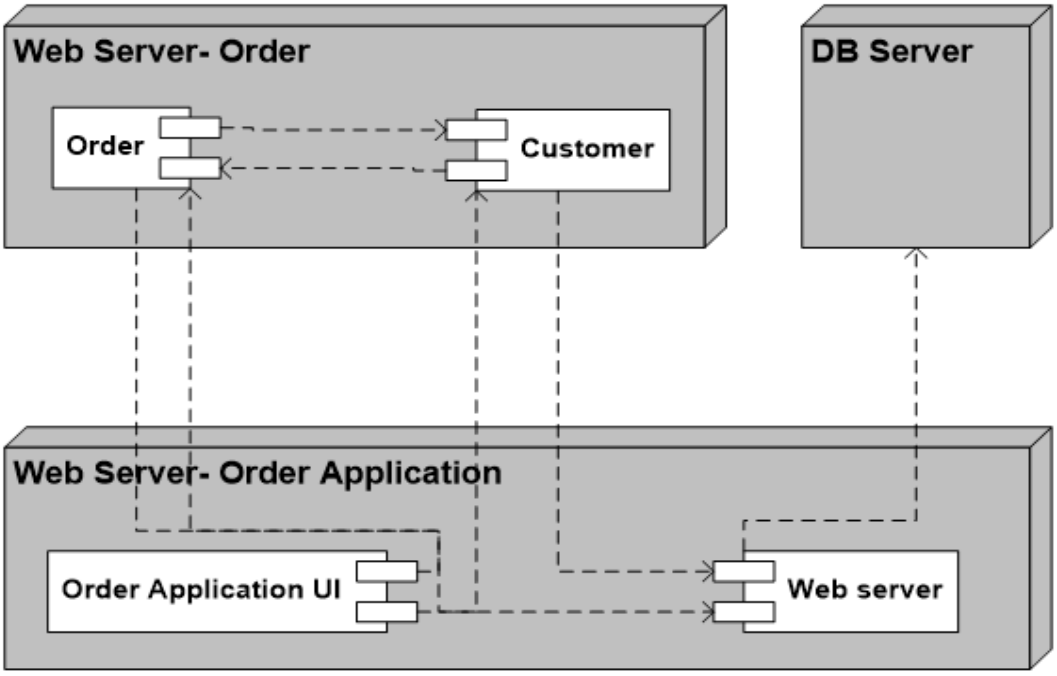
A Deployment modeling depicts a static view of the run-time configuration of processing nodes and components that run on those nodes. And it shows: -

i. The hard ware for the system

ii. The software that is installed on the hardware

iii. Depict the hardware/network infrastructure of an organization.

iv. Depict a major deployment configuration of a business application.



Data base tables

The classes of an ecommerce shopping system mapped in to relational tables in the following ways:

Table 4.1 Product Table

Filed Name	Data type
Id	Int
Product ID	Varchar
Username	Varchar
Product name	Varchar
Product photo	Varchar
Product size	Varchar
Product quantity	Int(10)
Product color	Varchar
Brand	Varchar
Made by	Varchar
Model	Varchar

Category	Varchar
Warranty	Text
Specification	Text
Quantity available	Int(10)
Minimum quantity	Int(10)
Product status	Varchar
Delivery mode	Varchar
Delivery lead time	Varchar

Table 4.2 Owner Table

Filed Name	Data type
Username	Varchar
Password	Varchar
e-mail	Varchar

Table 4.3 Order Table

Filed Name	Data type
Id	Int
Product ID	Varchar
Username	Varchar
Quantity	Int
First name	Varchar
Last Name	Varchar
Order Date	Date
Delivery Date	Date
Email	Varchar
Bill address	Varchar
Ship address	Varchar
Country	Varchar
Mobile No	Int
Phone No	Int
Delivery status	Varchar

Table 4.4 Cart Table

Filed Name	Data type
Id	Int
Security ID	Varchar
Product ID	Varchar
Username	Varchar
Quantity	Int
Quantity available	Int
Quantity Ordered	Int
Actual Price	Decimal
Price discount	Decimal
Cart Price	Decimal

Table 4.5 Backup Table

Filed Name	Data type
Id	Int
Product ID	Varchar
Username	Varchar
Backup archive	Varchar
Backup name	Varchar
Backup quantity	Int
Backup price	Decimal
Backup first name	Varchar
Backup last name	Varchar
Backup order date	Date
Backup delivery date	Date
Backup email	Varchar
Backup bill	Varchar
Backup shipment address	Varchar

Backup country	Varchar
Backup phone	Int
Backup mobile	Int

Table 4.6 Administrator Table

Filed Name	Data type
Id	Int
First name	Varchar
Last Name	Varchar
Address	Varchar
Salutation	Varchar
Email	Varchar
Username	Varchar
Password	Varchar
Security question	Varchar
Security answer	Varchar
Country	Varchar
Mobile No	Int
Phone No	Int
Registration date	Date

Table 4.7 Price table

Filed Name	Data type
Username	Varchar
Product ID	Varchar
Price actual	Int
Discount	Int
Discount type	Int

Table 4.8 Category Table

Filed Name	Data type
Category	Varchar
Sub category	Varchar

4.6 Access Control and security

Security

This system is provided with authentication without which no user can pass. So only the legitimate users are allowed to manage the web site.

Our system offers several ways to secure the application while allowing users to remain productive. The most basic is a system password. The user has control and manages the system according to their privilege

A higher level of protection is the use of workgroup security requiring a user name and password. Users and groups can be specified along with their rights at the object type or individual object level. This can be used to specify people with read-only or data entry rights but may be challenging to specify. A separate workgroup security file contains the settings which can be used to manage multiple tables

Access Control

One of the primary issues with many current access systems is that the hosting software must be installed on either a shared or separate PC, which then must be maintained for software updates and integrity. These PC based systems are usually difficult to access remotely and require dedicated and supplier specific software.

Web browser-based systems allow network-connected access controller panels to be accessed and manipulated by authorized users - utilizing universal Web browser software such as Internet Explorer.

Each controller on the network is ,in essence, a Web server. With this type of system no software is installed or maintained on the end user's PCs. If the access controller panels are connected to a LAN and configured for Internet access, system software updates can be performed remotely.

E-mail alerts of alarm and/or invalid credential presentation can be enabled.

Web-based systems can be a single controller panel, or many spread across multiple buildings and locations.

Cost of ownership by the user is very low, with no separate computers or software to maintain or update.

Built in WEB standards in the product allow adoption by the users' IT department quicker.

4.7 System boundaries

System boundaries in life cycle assessments (LCA) must be specified in several dimensions: boundaries between the technological system and nature, delimitations of the geographical area and time horizon considered

Two methods for defining the contents of the analyzed system in this respect are described: geographically and socio-economic.

In this web site it possible to access worldwide but our market area is located around Ethiopia if there is internet connection. And we accept request from any geographically location but they must consider transportation and other related expense.

The socio-economic whole system boundary includes the same processes and transports as the geographical boundary but, in addition, considers economic forces and social factors. This may lead to further expansion of the system. Although effects of socio-economic factors are taken into account, the objective of the analysis is defining the boundary of the system. Therefore our system expand as a moll system that means any online selling organization can register in the system and can sell and advertise their own product by paying some amount of payment for Maraki

CHAPTER FIVE

5. Implementation and Result

After having the user acceptance of the new system developed, the implementation phase begins. Implementation is the stage in the project where the theoretical design is turned into working system. During this phase, all the programs of the system are loaded onto the user's computer. The implementation phase constructs, installs and operates the new system. After loading the system, training of the user starts. Main topics of such types of training are:

- How to execute the system.
- How to enter the data in database.
- How to modify the data in database
- How to process the data(processing details)
- How to take out the reports.

There are several activities involved while implementing a new project.

They are:

End user education (basic computing)

The education of the end user starts after the implementation and testing is over. If the system is found to be more difficult to understand than expected, more effort is put to educate the end users to make them aware of the system.

Training of application software

After providing the necessary basic training on the computer awareness, the users will have to be trained upon the new system such as the screen flows and data to be entered, type of errors while entering the data, the corresponding validation check at each entry and the ways to correct the invalid data.

Post implementation Review

The department is planning a method to know the states of post implementation process. For that regular meeting will be arranged by the concerned officials about the implementation problem and success.

Also performance checks are carried out to find out the drawbacks and weak points of the system for future improvement. After the users are trained about the computerized system, manual working has to shift from manual to computerized working. The following strategy is used for running the system.

Parallel run: In such run for certain defined period, both the systems i.e. computerized and manual are executed in parallel. This strategy is helpful because manual results can be compared with the result of the computerized system and failure of the computerized system at the early stage, does not affect the working of the organization, because the manual system continues to work, as it used to do.

5.1 Method Used

Once a new software product has been produced it must be installed and then implemented on site. There are a number of ways to introduce a new system and each of these can suit different situations. Usually implementation will involve conversion from an old system that the new system is designed to replace, so often these methods are known as methods of conversion. The 4 common methods of implementation (or conversion) are:

- **Direct cut-over:** This method involves the old system being completely dropped and the new system being completely implemented at the same time. The old system is no longer available. As a consequence, you must be absolutely sure that the new system is totally functional and operational. This conversion method is used when it is not feasible to continue operating two systems together. Any data to be used in the new system must be converted and imported from the old system. Users must be fully trained in the operation of the new system before the conversion takes place. It is a risky approach and system testing and training.
- **Parallel:** The parallel method of implementation (or conversion) involves operating both systems together for a period of time. This allows any major problems with the new system to be encountered without the loss of data. Parallel conversion also means that users have time to familiarize themselves with the new system. In essence, the old system remains operational as a backup to the new system. Once the new system is found to be meeting requirements then operation of the old system can stop. The parallel method involves double the workload for users as all functions must be performed on both the old and new system. This method of implementation is especially useful when the product is of a critical nature. That is, terrible consequences would result if the new system were to fail. By continuing the operation of the old system, the crucial nature of the data is protected. This strategy is less risky but more expensive because of the following:

- Manual results can be compared with the results of the computerized system.
- The operational work is doubled.
- Failure of the computerized system at the early stage does not affect the working of the organization, because the manual system continues to work, as it used to do.

- **Phased:** The phased method of implementation (or converting) from the old system to a new system involves a gradual introduction of the new system and whilst the old system is progressively discarded. This can be achieved by introducing new parts of the new product one at a time while the older parts being replaced are removed. Often phased conversion is used because the product, as a whole, is still under development. Completed modules are released to customers as they become available. Phased conversion can also mean, for a large business, that the conversion process is more manageable. Parts of the total system are introduced systematically across the business, each part replacing a component of the old system. over time the complete system will be converted.
- **Pilot:** With the pilot method of implementation (or conversion), the new system is installed for a small number of users. These users learn, use and evaluate the new system. Once the new system is deemed to be performing correctly then the system is installed and used by all. This method is particularly useful for new products, as it ensures functionality at a level that can perform in a real operational setting. The pilot method also allows a base of users to learn the new system. These users can then assist with the training of the others once the new system had been fully implemented. The pilot conversion method can be viewed as the final testing of the product. Both the developer and the customer are able to evaluate the product in an operational environment prior to its full implementation.

In our case the method we choose to implement the system is pilot method because it is less expensive and risky than parallel run approach. This strategy builds the confidence and the errors are traced easily without affecting the operations.

5.3 Sample Input/ Output Screens

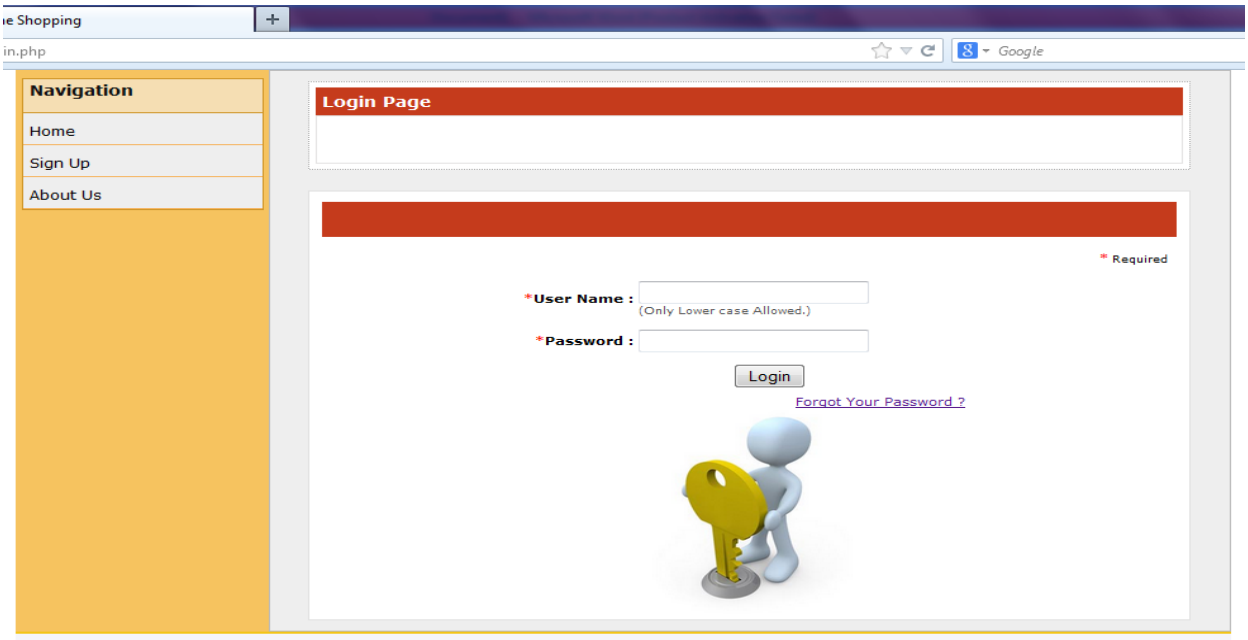


Fig 5.1 user interface for Login

The login screen is used to ensure that an unauthorized user do not gain access into system. The staff will enter the correct username and password at the login prompt and will be given access to system otherwise access is denied.

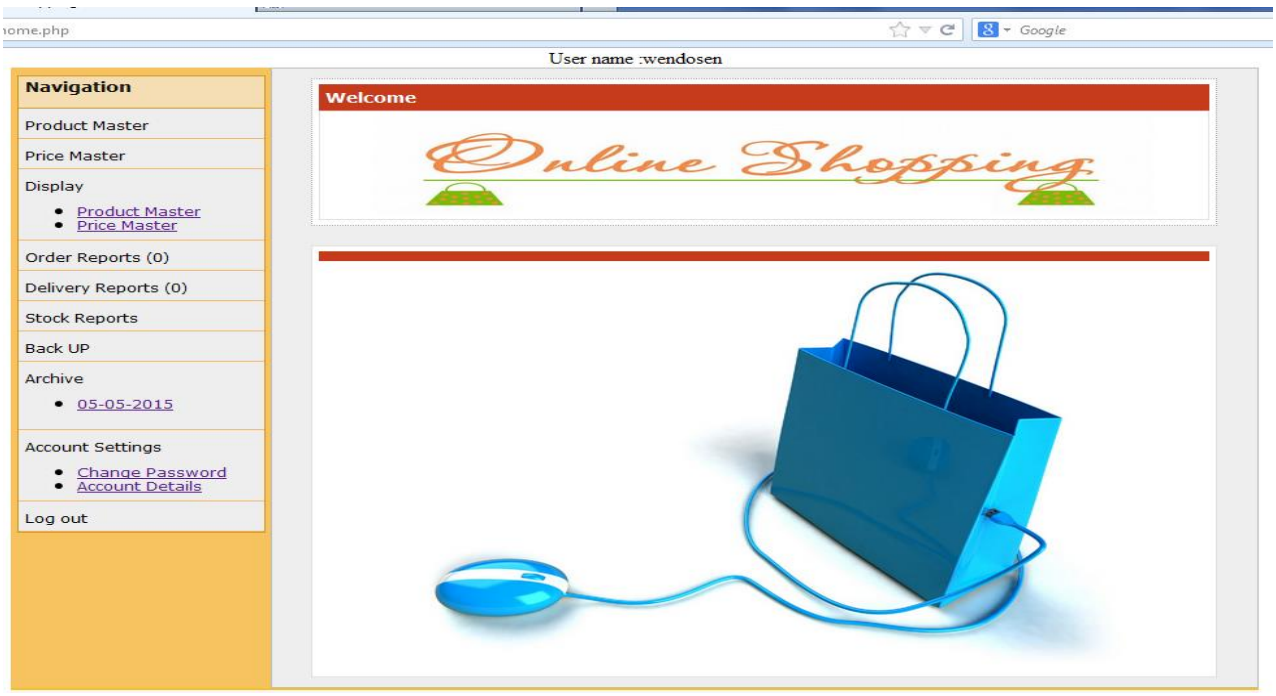


Fig 5.2 Use interface for Vender page

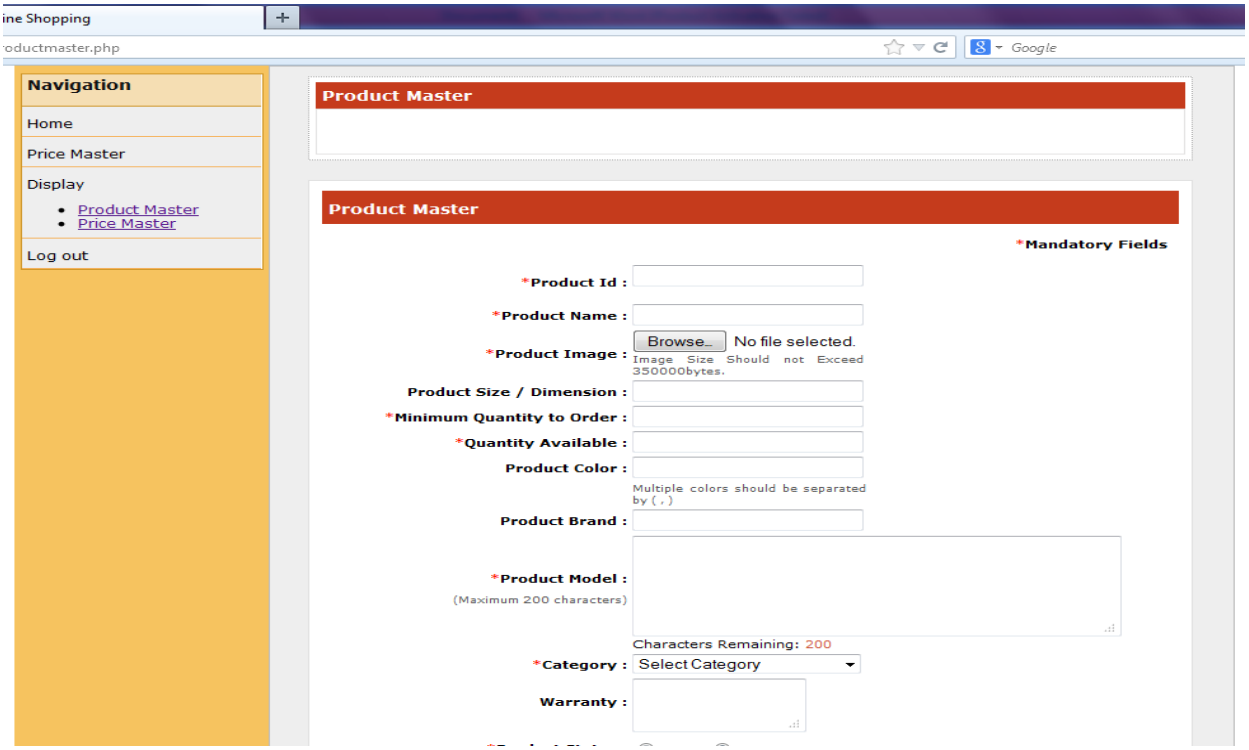


Fig 5.3 User interface for Adding product in the database

Administerator add new products in the database and spacifay product type,color,quantity avalable ,product brand,product category ,warranty and so on

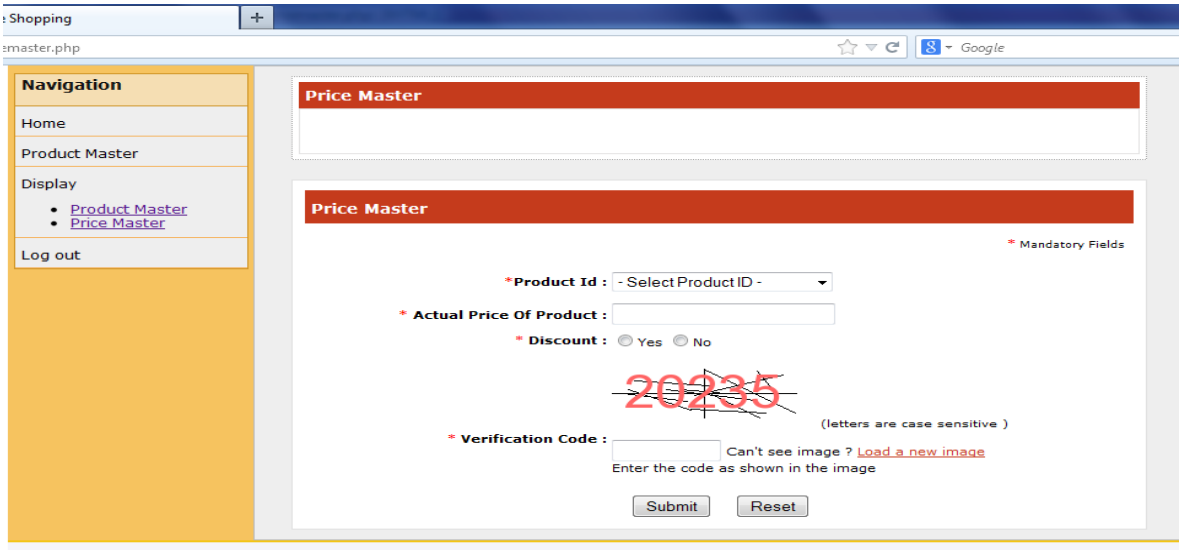


Fig5.4 user interface for price master

Administrator set price for the products with product Id, Actual price and discount

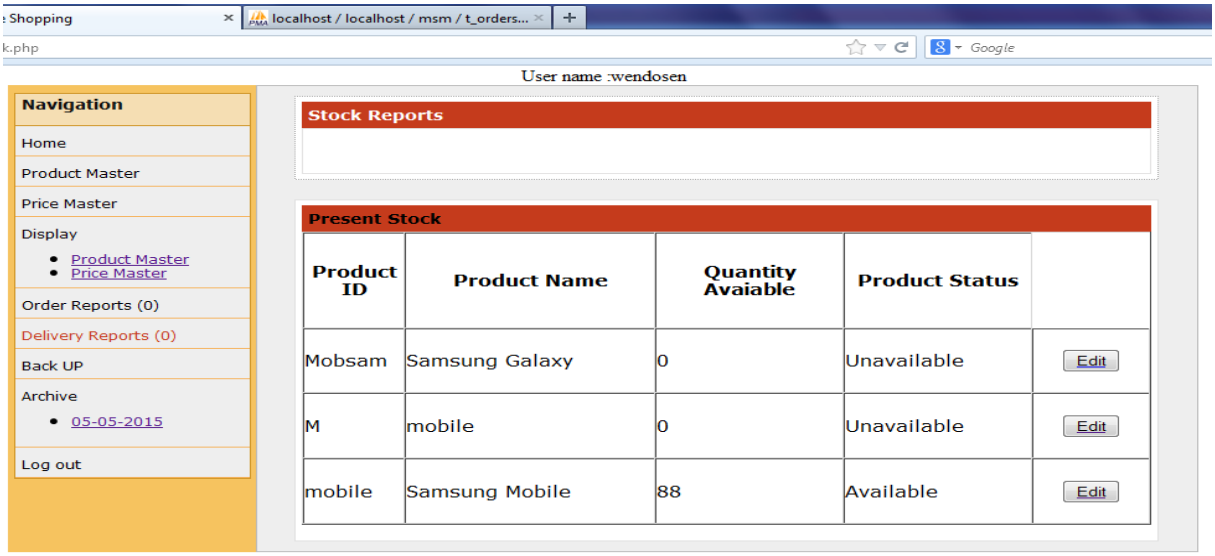


Fig 5.5 user interface for stock report

Stock rport generated by both shop owner and shop administrtor

Fig.5.8 User interface for order main page (customer)

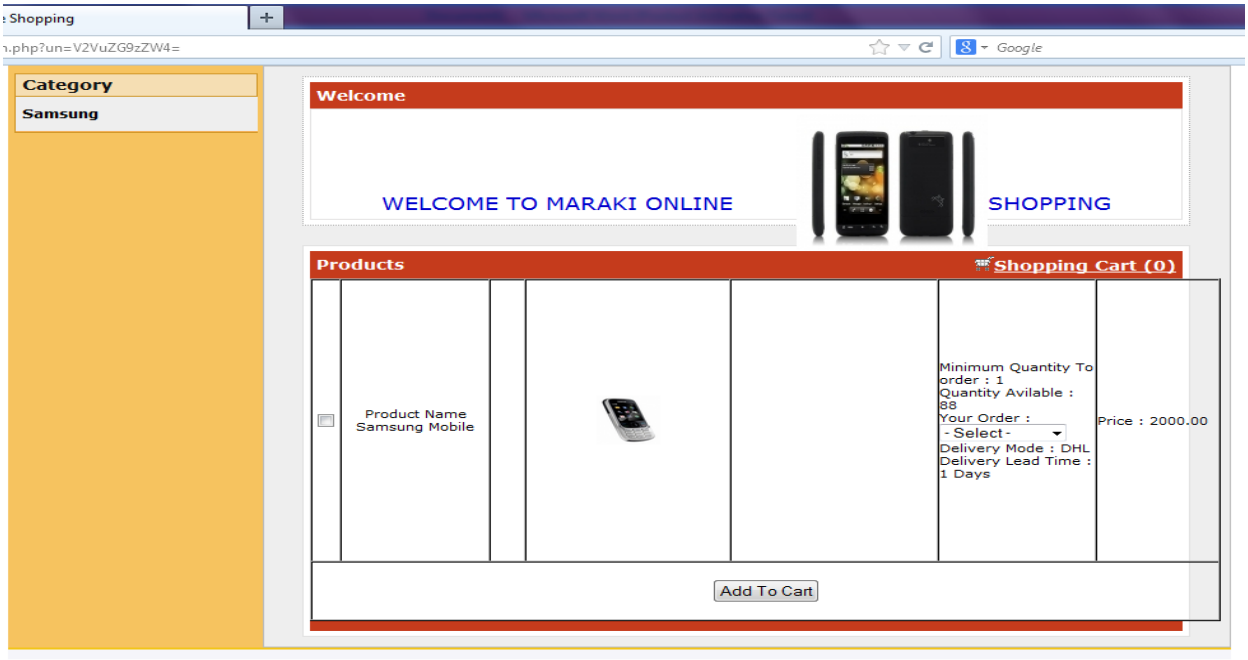


Fig 5.9 user interface for Add to cart

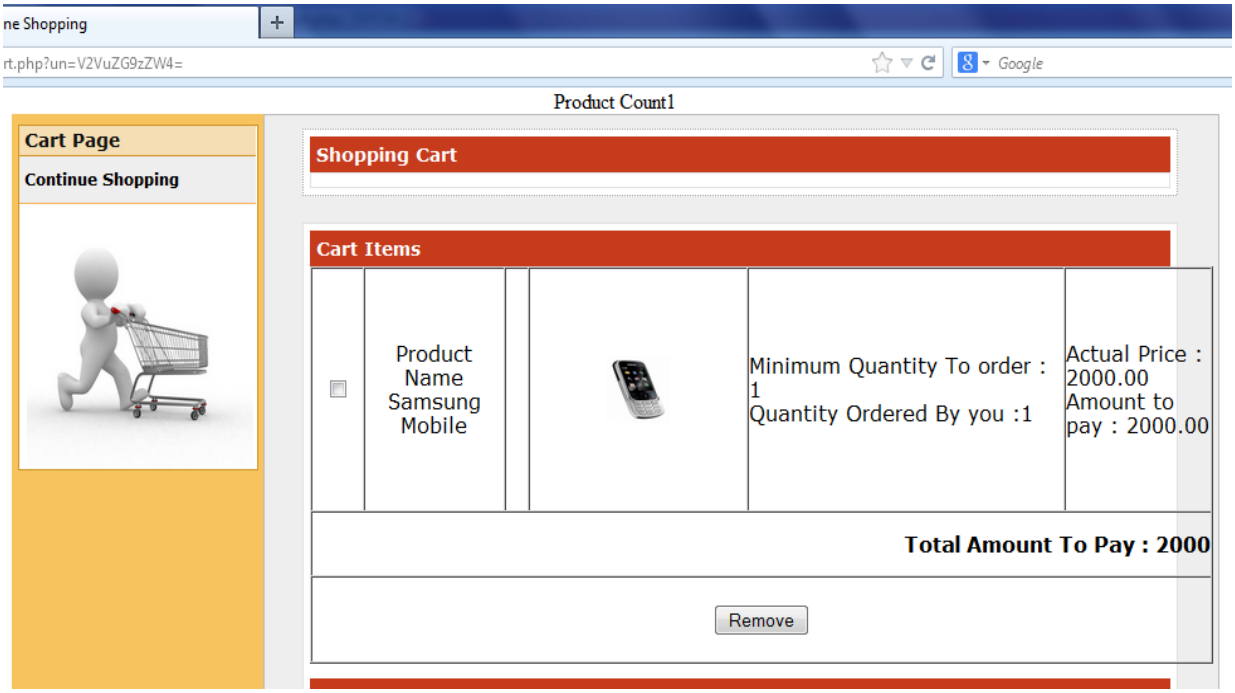


Fig.5.10 User interface for shopping cart page (customer)

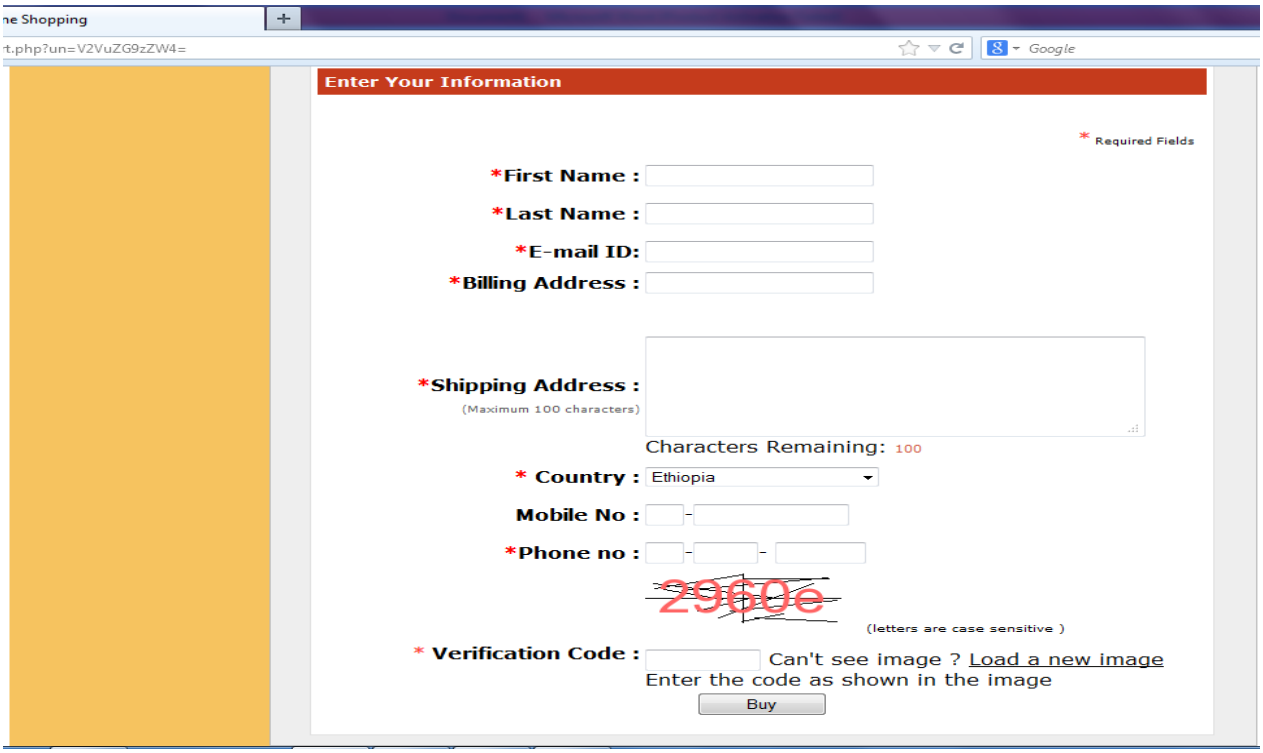


Fig.5.11 User interface for customer registration for products (customer)

5.2 Results

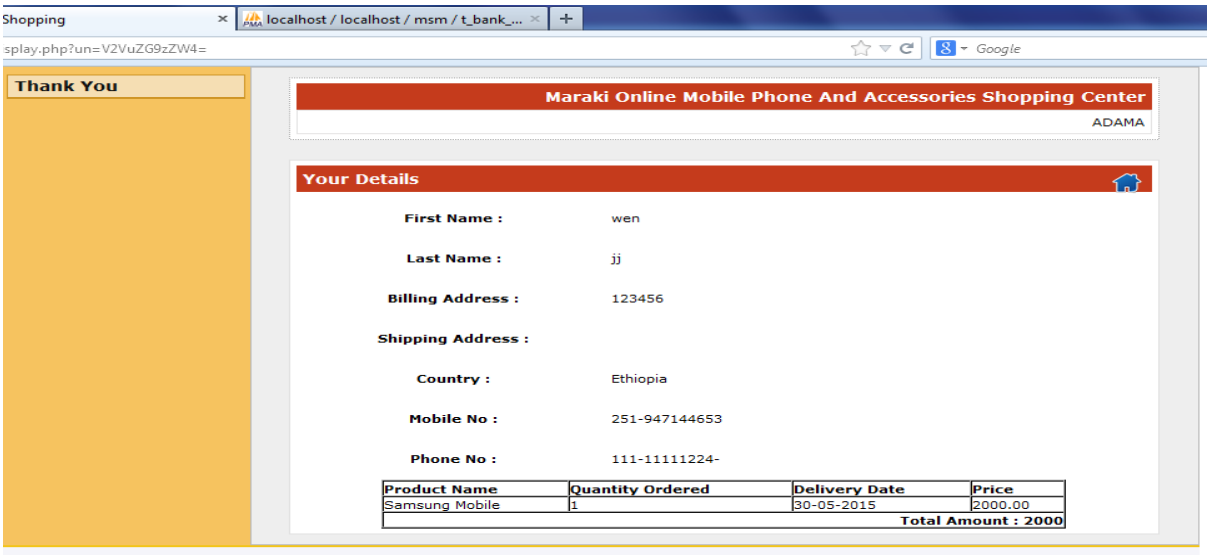


Fig 5.12 system result for customer

Sistem produced bill after the customer purcase products and use as a document to recive productes from shipping company

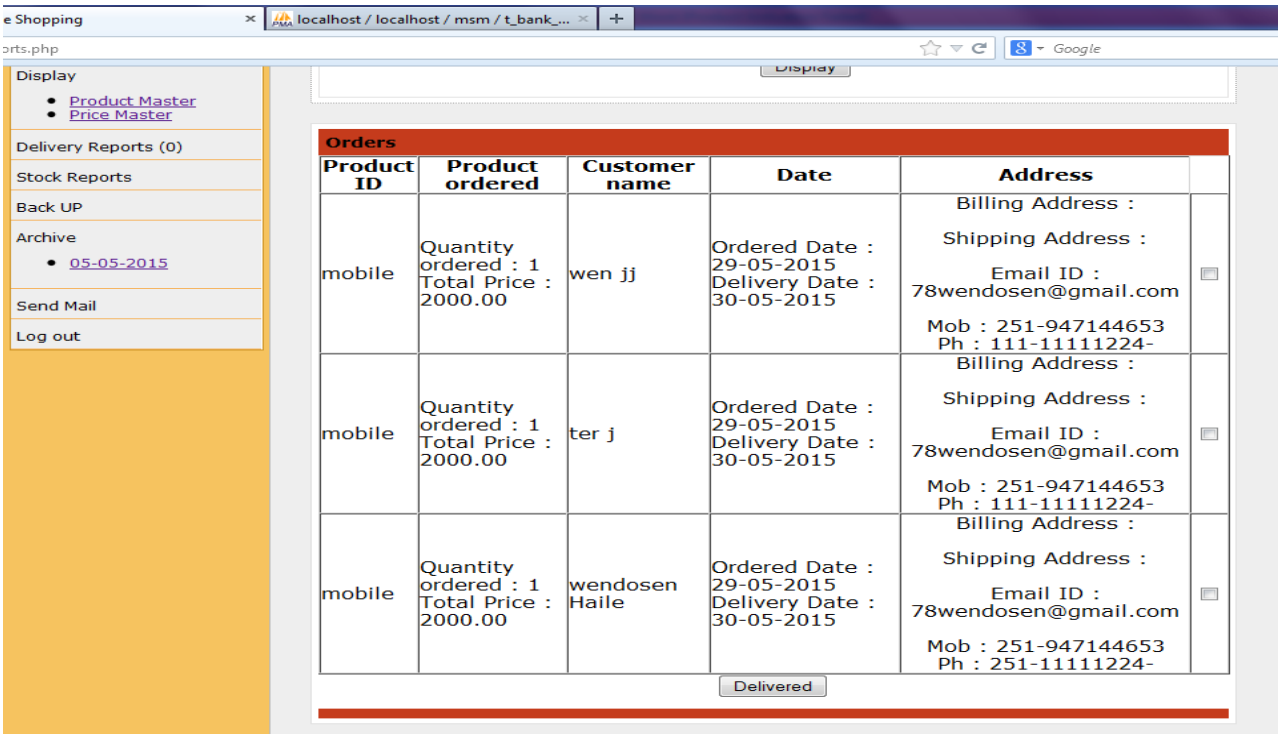


Fig 5.13 system result for the sistem owner

Syistem produced report based on different crieriya according to Admin or Owner interest

CHAPTER SIX

6.Test Plan

6.1 Introduction

Testing is the process of evaluating a system or its component(s) with the intent to find that whether it satisfies the specified requirements or not. This activity results in the actual, expected and difference between their results. In simple words testing is executing a system in order to identify any gaps, errors or missing requirements in contrary to the actual desire or requirements. Software testing is essential to assure the quality of the software and to ensure that the software will not fail. The objective of test plan is to ensure a high level of confidence in the correctness and usefulness of the project deliverables.

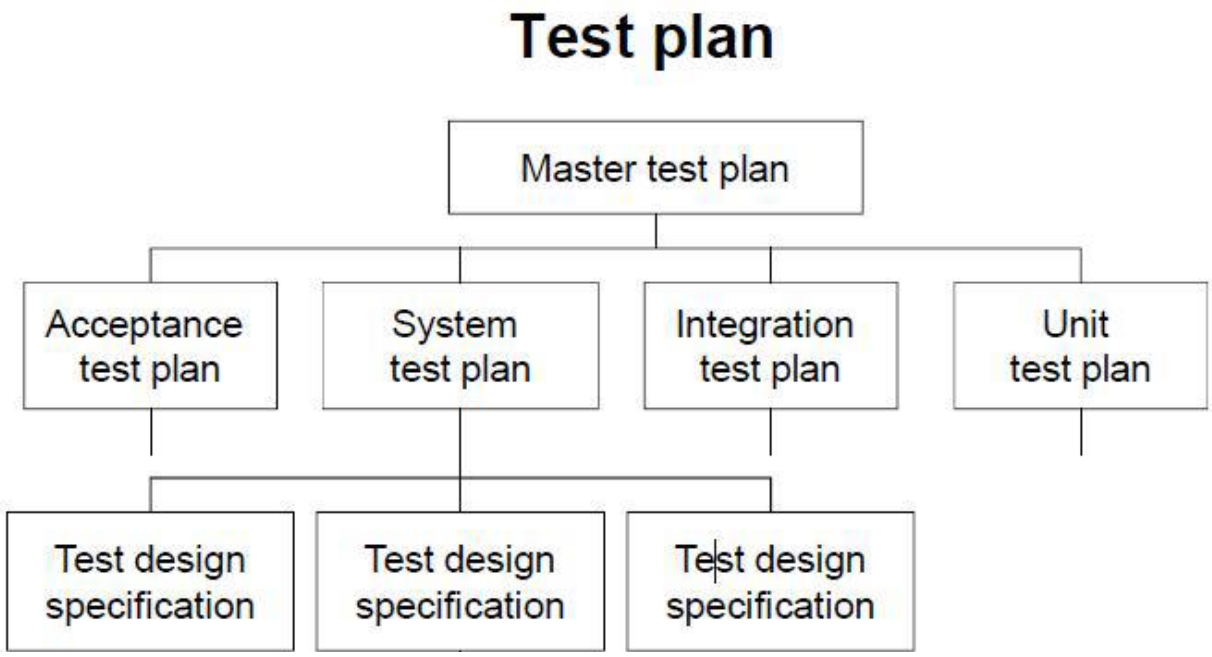


Fig.6.1 Test plan

6.2.Test Plan Overview

Using the test data the following test runs are carried out:

1. **Unit Test**: When the programs have been coded and compiled and brought to working conditions, they must be individually tested with the prepared test data. Any unwanted happening must be noted and debugged (error corrections).

2. **System Test**: After carrying out the unit test for each of the programs of the system and when errors are removed, system test is done. At this stage the test is done on actual data. The complete

system is executed on the actual data. When it is ensured that the system is running error-free, the users are called with their own actual data so that the system could be shown running as per their requirements.

3. **Acceptance Testing**: End users perform acceptance tests to assess the overall functionality and interoperability of an application. Using white box testing methods, the following tests were made on the system:

- All independent paths within the system were exercised at least once. Each possible path was selected and executed. All case structures were checked.
- All logical decisions were checked for the truth and falsity of the values.

6.2.1Features to be tested/not to be tested

Features to be tested: Features such as User Creation or customer interest and Modification Search information, online ordering, shipping methods, Security / User permissions and Database Interface has to be tested

Features not be tested: Response time (to a limited extent), Dataset size, Hardware availability etc.

6.2.2Approach

There are two types of testing:

- White Box Testing
- Black Box Testing.

White Box Testing

White box testing, sometimes called "Glass box testing" is a test case design that uses the control structure of the procedural design to derive test cases. The tester has knowledge of the back-end, structure and language of the system. This system has not been tested using white box testing due to time limitation and the complexity we faced in developing the system.

Black Box Testing

Black box testing focuses on the functional requirement of the software. It enables the software engineer to derive a set of input conditions that will fully exercise all functional requirements of a program. Black box testing is not an alternative to white box testing; rather, it is complementary approach that is likely to uncover a different class of errors that white box methods would not find. Black box testing attempts to find errors in the external behavior of the code such as: incorrect or missing functionality, interface errors, errors in data structures used by interfaces, behavior or

performance errors and initialization and termination errors. In case of black box testing it has been tested but not thoroughly.

6.2.3Testing materials (Hardware/Software requirements)

Software Requirement: Software's such as Windows 7 operating system, macromedia Dreamweaver, PHP, Adobe Photoshop**,** *Database*: SQL Server is used as a testing material.

6.3 Test Case Specification

A test case has an input, an action and an expected result.

6.3.1Case specification identifier

During Login:

- Valid input (valid username and password):the user(admin, owner, shipping organization) logs in
- Invalid input (invalid username and password): message pops up informing the user to enter valid username and password.
- While forgetting password there is an option to recover it by clicking on the forget password and entering in the password reset service.

6.3.2 Test items

User Interface: Manual execution of a set of test cases is performed on all aspects of the user interface to assure correct product operation.

Database: Selected SQL queries is executed directly via tools such as SQL*Plus to verify correct operation of the triggers and stored procedures.

User Documentation: The user documentation is reviewed by the project development team and verified against the actual implementation to determine accuracy and completeness.

6.3.3 Input specifications

Automated input controls help ensure users to accurately input information or data, systems properly record input, and systems to either reject or accept and record input errors for later review and correction. Examples of automated input controls include the following:

Check Digits: The calculation confirms the accuracy of input by verifying the calculated number against other data in the input data, typically the final digit.

Completeness Checks: confirms that blank fields aren't inputted and that cumulative input matches control totals.

Duplication Checks: they confirm that duplicate information isn't accepted to be put.

Limit Checks: checks for a value not to exceed predefined limits.

Range Checks: confirms that a value is within a predefined range of parameters.

Reasonability Check: confirms that a value meets predefined criteria.

Validity Checks: confirms that a value conforms to a valid input criterion.

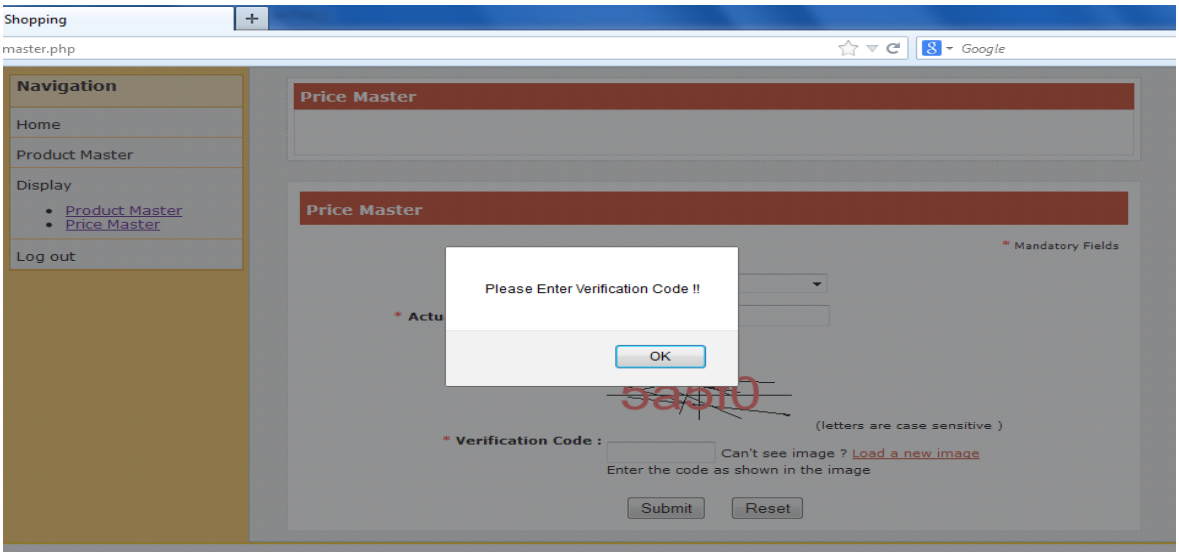


Fig 6.2. Validity check for validation code

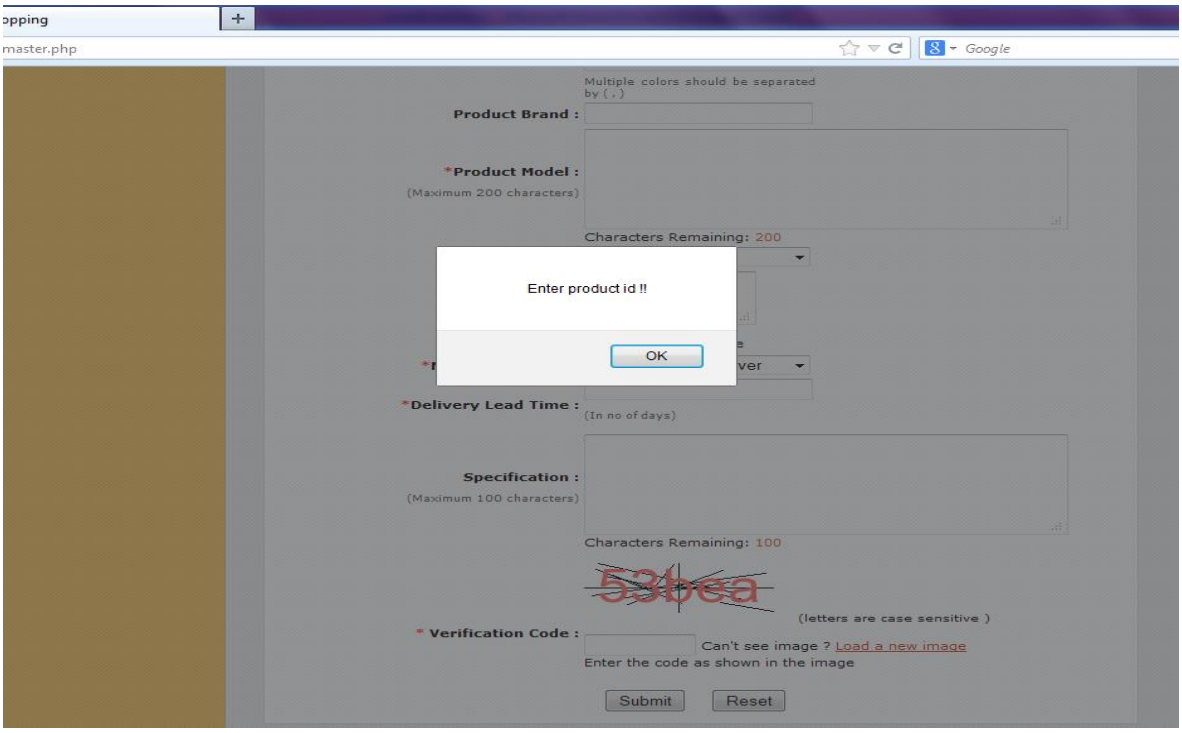


Fig 6.3 validdatin check for product ID

If you input text in the tel/mobile textbox you will get invalid phone number message in the red color as shown on the above diagram and the same is true for Email textbox in following user interface and also for the rest of boxes.

6.3.4Out Put Specification:

Specify all of the outputs and features (for example, response time) required of the test items. Provide the exact value (with tolerance where appropriate) for each required output or feature.

6.3.5Environmental needs

1. **Hardware:** the characteristics and configurations of the hardware required to execute this test case. This may include computer with 4GB RAM, 64bit 2.4GHZ processor, 600GB hard disk.

2. **Software**: system and application software required to execute this test case. This may include windows 7operating system, macromedia Dreamweaver, Wamp server, internet explorer and PHP programming language

6.3.6Special procedural requirements:

There is no special constraint on the test procedures which execute this test case.

6.3.7 Inter case dependencies

List the identifiers of test cases which must be executed prior to this test case. Summarize the nature of the dependencies.

Test-Procedure-specification identifier – the unique identifier assigned to this test –procedure specification Supply a reference to the associated test-design specification.

Purpose –the purpose of this procedure. If this procedure executes any test cases, provide a reference for each of them.

In addition, provide references to relevant sections of the test item documentation (for example, references to usage procedures)

Special Requirements any special requirements that are necessary for the execution of these procedures. These may include perquisite procedures, special skills requirement, and special environmental requirements.

Procedure steps the following steps as applicable.

Measure –The test measurements will be made (for example, describe how re terminal response time is to be measured using a network simulator)

Shout down– The actions necessary to suspend testing, when unscheduled events dictate.

Restart, identify any procedural restart points and describe the actions necessary to restart the procedure at each of these points.

Stop - the actions necessary to bring execution to an orderly halt.

Wrap up- the actions necessary to restore the environment.

Unit testing

For not doing break the functionality of existing the system, we will test individual use cases and list down test cases for each of the use case.

Log in

a. Identification and Password properly initiated, encrypted, and validated

b. MySql injection test

c. Checking for uppercase, lowercase, number, special character in ID and password

d. Either of ID and password not blank

e. Checking for overlapping ID

f. Checking for weak passwords

g. Not available to minors without permission from parents

h. Checking for e-mail notification about making ID and initiating password

Login and start shopping

a. Correctly validated before staring a shopping

b. Not possible to check out products which is already in progress

c. Displaying list of all available products

d. Checking for newest version products place on first page.

e. Checking for exact number of products stocks

f. Checking for available coupon information

g. Checking for visibility about previous history of search

h. Checking for system about suggestion for newest version of products

View online help

a. Help documentation appropriate to every occasion

Payment

a. Certification username and Account information for security

b. Consumer payment for money in proper order.

c. Certification for balance of the account

d. Certification about deducting

e. Checking the maximum purchasing capacity

f. Checking for signature

Shipping

a. Checking for available address information

b. Checking for private information and updated address

c. Chargeable or no chargeable for shipping

d. Checking for number about comment to deliveryman

e. Checking about time for shipment

f. Check about comment when the consumer will gate the product

Logout

a. Search history saved properly after logout

b. Checking out information saved in database

c. Customer redirected to the login screen

d. Checking e-mail system about purchasing information

Integration testing

We consider the online mobile phone shopping system as a black box and white box; also check up all of the parts. Also, we will conduct as following orders; creating test plans, performing code review of the application modules that integrate the application block, executing the use cases of the application, performing load testing, performing stress testing, performing globalization testing and perform security testing.

- System compatible with different web browsers (Google chrome, Fire fox, and IE)
- System compatible with 32 bit or 64 bit operation
- Stress testing against a large number of customers
- Stress testing against a large number of purchasing in one products

System Testing:

In system testing the software engineer should anticipate potential interfacing problems such as:

- Design error-handling paths that all information coming from other elements of the system.
- Conduct a series of tests that simulate bad data or potential errors at the software interfaces.
- Record the results of the test to use as a proof for future reference.
- Participate into planning and design of the system test to ensure that the software is adequately tested.

Test Report

No	User Action	Expected Result	Observed Output	Result
1	Login	The user need to enter valid user name and password otherwise an error message will be visible.	The user is able to enter into the main screen and to perform operations.	Pass

Table 6.1 login test

No	User Action	Expected Result	Observed Output	Result
1	Add	The user can enter and store new items.	When clicked on the add button all the details will be stored to the database and item added to stock dialog box will be displayed.	Pass
2	Show	This is an option to display all the fields in the table.	When clicked on the show all users are visible to view the stored data in the grid below.	Pass
3	Close	This is an option to close the active table.	When clicked on the close button the active table closes.	Pass
4	Exit	This is an option to close the active form.	When clicked on the exit button the active form of add item closes.	Pass

Table 6.1 Add item test

No	User Action	Expected Result	Observed Output	Result
1	Update	This is an option to update the item details which were stored earlier.	After all the information is entered when clicked on the update button, the entered value for Item master gets stored in database.	Pass
2	Exit	This is an option to close the active form.	When clicked on the exit button the active form of add item closes.	Pass

Table 6.1 update item test

No	User Action	Expected Result	Observed Output	Result
1	Delete	This is an option to delete the item details which were stored earlier.	When clicked on the delete button all the details were stored in the database will be deleted, item deleted successfully dialog box will be displayed. and the information gets invisible in the grid below.	Pass
2	Exit	This is an option to close the active form.	When clicked on the exit button the active form of add item closes.	Pass

Table 6.1 Delete item test

No	User Action	Expected Result	Observed Output	Result
1	Manage account	Here user is able to change the password where he needs to enter current and existing password, if and only if the username and existing password matches.	When clicked on the change button if both current and new password matches then the user will be able to use current password and this will be stored in the database	Pass
2	Refresh	This is an option to clear all the fields.	When clicked on the refresh button the fields that were filled with the data gets deleted from all the fields but not from the database.	Pass

Table 6.1 manage account item test

CHAPTER SEVEN

7 Conclusion

The application can be used for any E-commerce application. It is easy to use, since it uses the GUI provided in the user dialog. User friendly screens are provided. The application is easy to use and interactive making online shopping a recreational activity for users. It has been thoroughly tested and implemented.

The 'Online mobile phone Shopping' is designed to provide a web based application that would make searching, viewing and selection of a product easier. The search engine provides an easy and convenient way to search for products where a user can search for a product interactively and the search engine would refine the products available based on the user's input. The user can then view the complete specification of each product. They can also view the product reviews and also write their own reviews.

The project began by laying out the foundation that dictates the development process. This involved defining the system development methodology, identifying resource requirements, and setting the project schedule.

We performed requirements analysis to discover the needs of the new solution to proposed system. This phase consists of drawing out functional and non-function requirements of the system.

In analysis, we tried to model the new and proposed system using UML diagrams: use case diagrams, sequence diagrams, Class diagrams, Activity diagrams. Domain modeling was handled using Class Responsibility Collaboration (CRC) model, while we gave a sneak preview of what the new system might look and feel with our user interface design and documentation.

In design phase, we extended our work in analysis with more models. The Class diagrams in analysis were extended in design to step closer to implementation, while deployment and component diagrams were also drawn.

In implementation, what we have done so far is the Conversion of manual system to an automated

- The paper work is overcome by being computerized.
- Time and money reduced due to browsing, viewing or accessing products on line
- The System can deliver timely, secure information and tools with user friendly interface such as Internet Explorer.
- Since Web-based system has no time or geographic restrictions. Users can access the system at any time, any place.

- Users can order and retrieve products remotely and instantly. It is very essential to consider that the project development is not an easy task that requires time, resource, budget, and other constraints.

7.1 Results achieved

The new developed system provides services; the following are main results that are achieved.

- Reliable and flexible Search of different type's product.
- Interaction of users and the system flexible and user friendly.
- Management and maintenance of items and reports becoming easy for administrator.
- Maintain search, orders, payment, and shipment transactions becoming reliable, flexible, and straight forward and not time consuming.
- Any users can sign up and enter into his account easily.
- Maintain user's information and banking system is assigned to them this results guarantee the user works in a secure environment.

7.2 Limitation of the project

Some limitations concerning to the projects is:-

Unbalanced time assigned to develop a project is main limitation of the project difficult to achieve required work in this short time and in other side major and supportive courses given for us is a limitation in doing the project.

As additionally the Costs of technological solutions are based on the system problems and Some internal or external pressures are affected the system such as Unexpected failure of connection power, Insufficient telecommunications bandwidth means a failures of network and Customers expectation and experience are one of the a challenge problem of the system. According to the country current banking infrastructure and finance system our system support only debit card system it is difficult to support Credit Card because there is no one give credit card system in our country.

According to our system to purchase products from the web site the customer must have sufficient balance in the bank, otherwise impossible to purchase even if he/she are known customer of the web site, because of lack of credit card system.

7.3 Future work

As future development and enhancement the system can be extended to access real bank database on a given port and access privilege provide by the bank .Generally sequence enhancement approach

system functionality improvement new interface design and smart phone accessibility can also can be integrated as future development and enhancement.

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Appendix

Activity Diagram:-Diagrams showing the flow of activities .an activity diagram covers the dynamic view of the system.

Actor: A consistent entity taken on by the use case user when he or she interacts with use case.

Attribute: Characteristics of a named type.

Black box testing: method of testing that focuses on determining whether or not a program does what it is supposed to do based on its functional requirements

Class: A description of a group of objects which share the same attributes, operation, relationship, and Semantics.

Class Diagram: The class diagram shows how the different entities (people, things, and data) relate to each other.

Component Diagram: diagrams used to implement component based software.

Deployment Diagram: It describes the physical architecture of the hardware and software in the system.

Persistent data management: used to communicate the design of database, usually relational database, with the user and other developers

Sequence Diagram: Sequence diagram graphically depict how object interact with each other

Use case: A use case illustrates a unit of functionality provided by the system. The main purpose of the use-case diagram is to help development teams visualize the functional requirements of a system.

UML: Unified modeling languages that describe the behaviors, the interactions and relations of various objects in the system through UML diagrams.

User Interface: an interface between the user and application

White box testing: white box testing focuses on the internal structure of the software code.

User Manual

Introduction:

A good user interface design is one of the most crucial aspects of any system. The goal of the interface design is to provide an easy and simple way for users to interact with the system by hiding all the complexities of the system. A good interface certainly helps to achieve these goals.

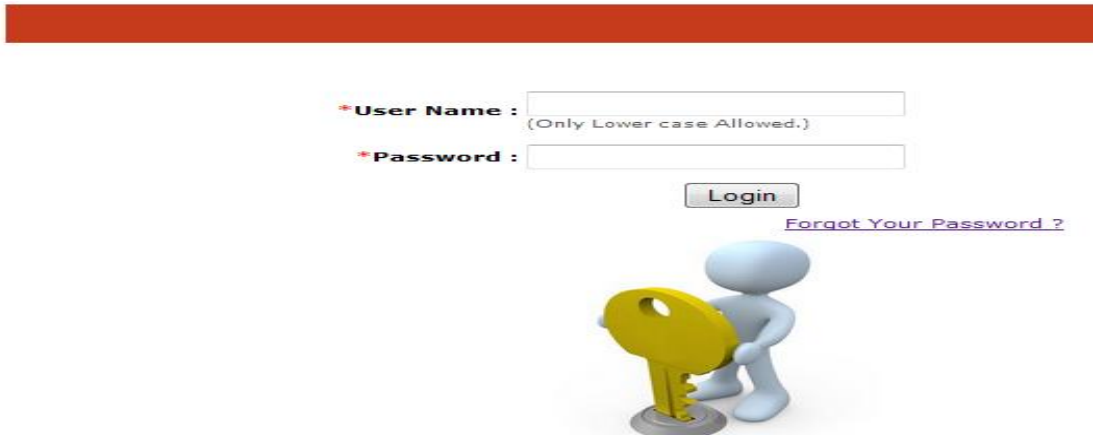
The system front end is designed with the following objectives keeping in mind.

1. Capture information for storage and later use by system users.
2. Retrieve information often called system output.
3. Support of regular operation such as calculating bill and generating reports.

Another objective of the system is user friendliness. That the interface should be helpful, tolerant and adaptable and the user should be happy and confident to use it.

The system follows the interactive interface strategy in that a set of forms is presented to the screen and the user is requested fill in the forms. Several labeled field are provided and the user enters data into the blank spaces.

Login screen:

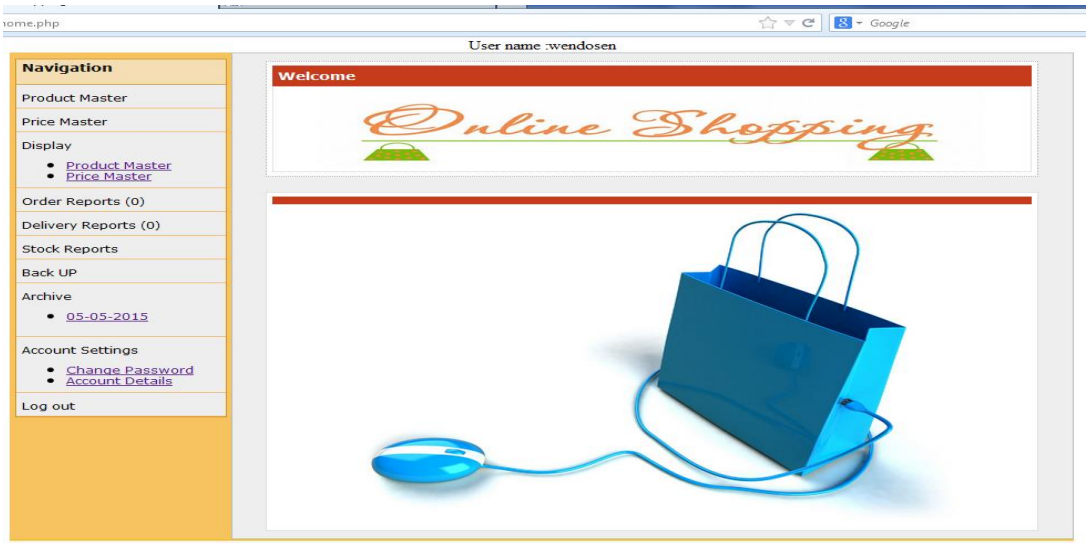


Purpose of the interface:

This is start up screen that will appear on screen every time when user log on to the system. The user need to enter the valid user name and password if both are valid then the login is success and the user is allowed to enter into the system. When the user enters the wrong username or password login is failed.

LOGIN: The user is able to enter into the main screen and to perform operations.

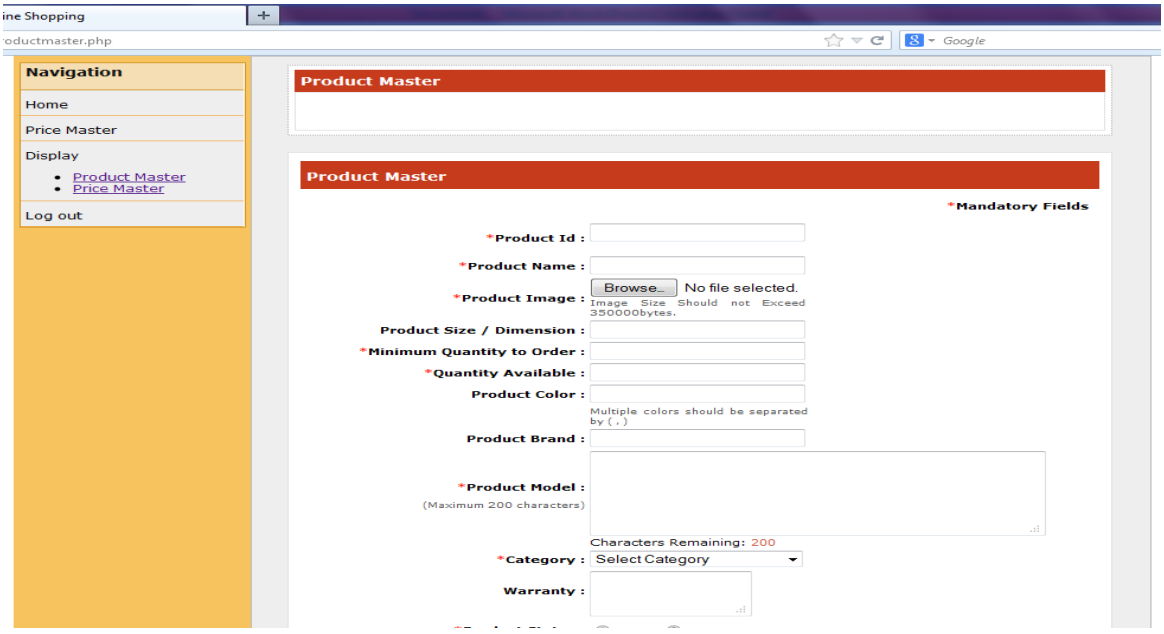
Home page:



Purpose of the interface:

Product master module has three sub modules, add new item, edit item, delete item. Here the user can add, update and delete the item information as and when he needs.

Add item form:



Purpose of the interface:

Here admin have to enter all the fields, if he fails Fields cannot be empty dialog box will be displayed.

ADD: When clicked on the add button all the details will be stored to the database and item added to stock dialog box will be displayed.

REFRESH: When clicked on the refresh button the fields that were filled with the data gets deleted from all the fields but not from the database.

SHOW ALL: When clicked on the show all button the user is visible to view the stored data in the grid below.

EXIT: When clicked on the exit button the active form of add item closes.

CLOSE: When clicked on the close button the active table closes.

Edit item form:

Purpose of the interface:

Here the admin can update details of item that is stored in database. Here the admin selects item name from combo box, and he can update item details and updated details will be stored in database.

UPDATE: After all the information is entered when clicked on the update button, the entered value for Item master gets stored in database.

EXIT: When clicked on the exit button the active form of edit item closes.

Delete item form:

Purpose of the interface:

Here the admin can delete details of item that is stored in database.

DELETE: Here the admin selects the item name from combo box and when he clicks delete button, item deleted successfully dialog box will be displayed..

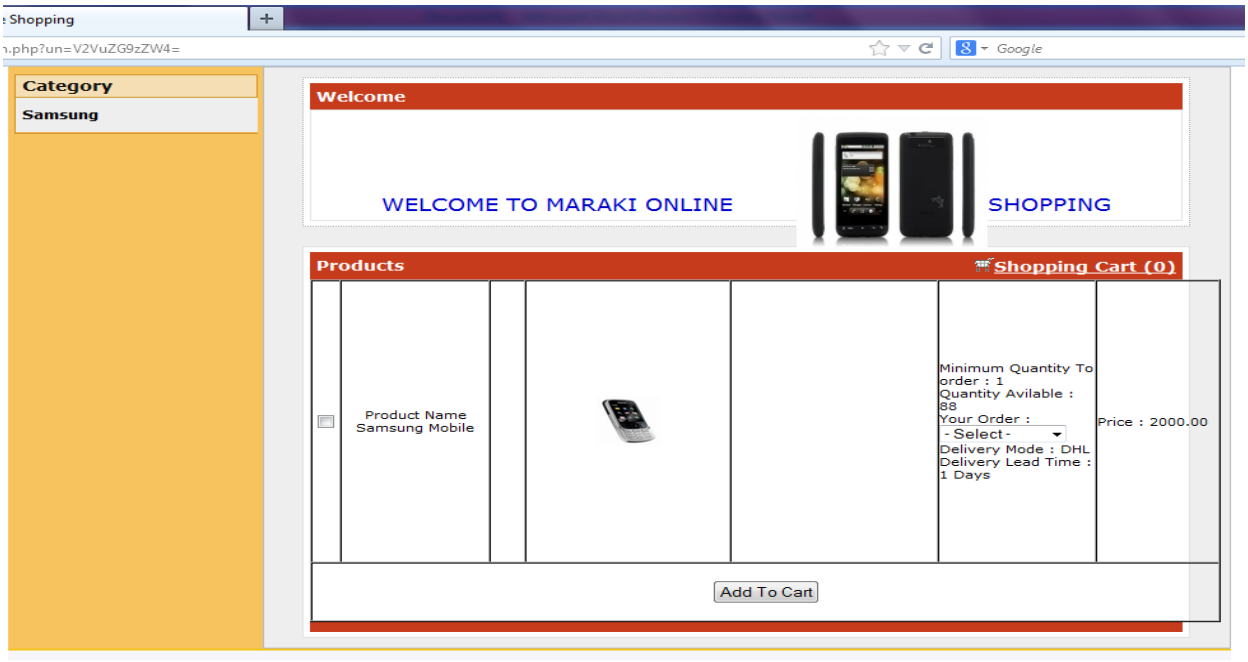
EXIT: When clicked on the exit button the active form of delete item closes.

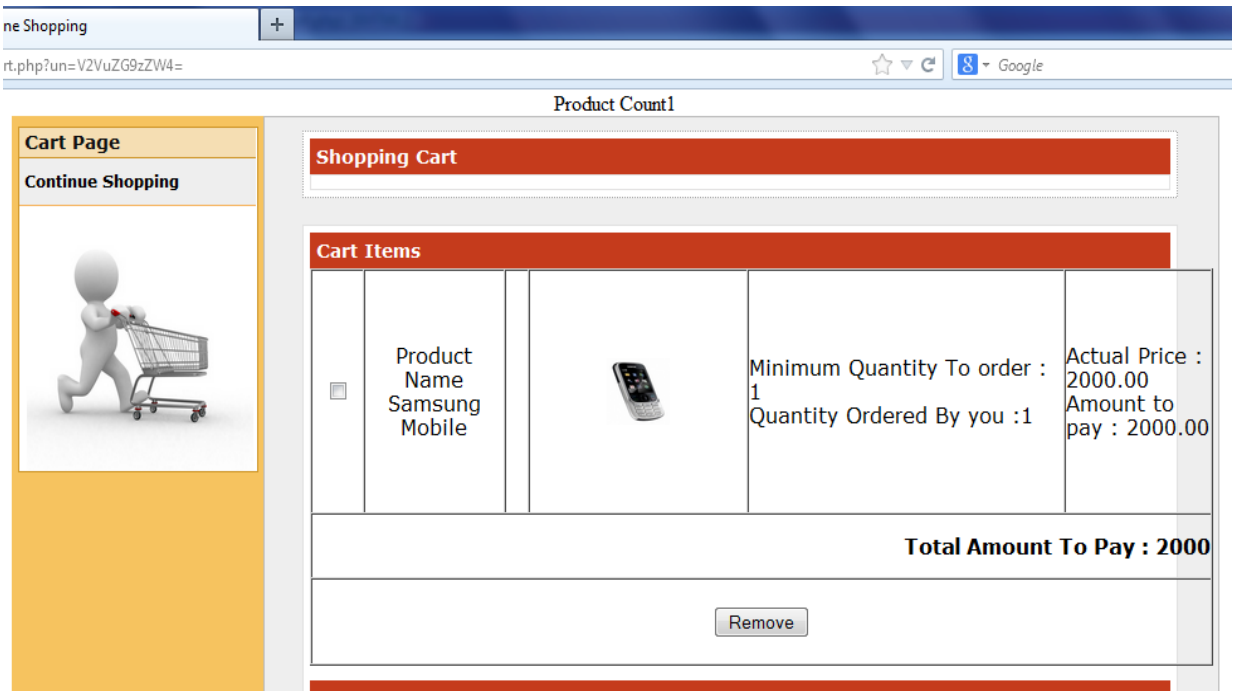
Order Master

Purpose of the interface:

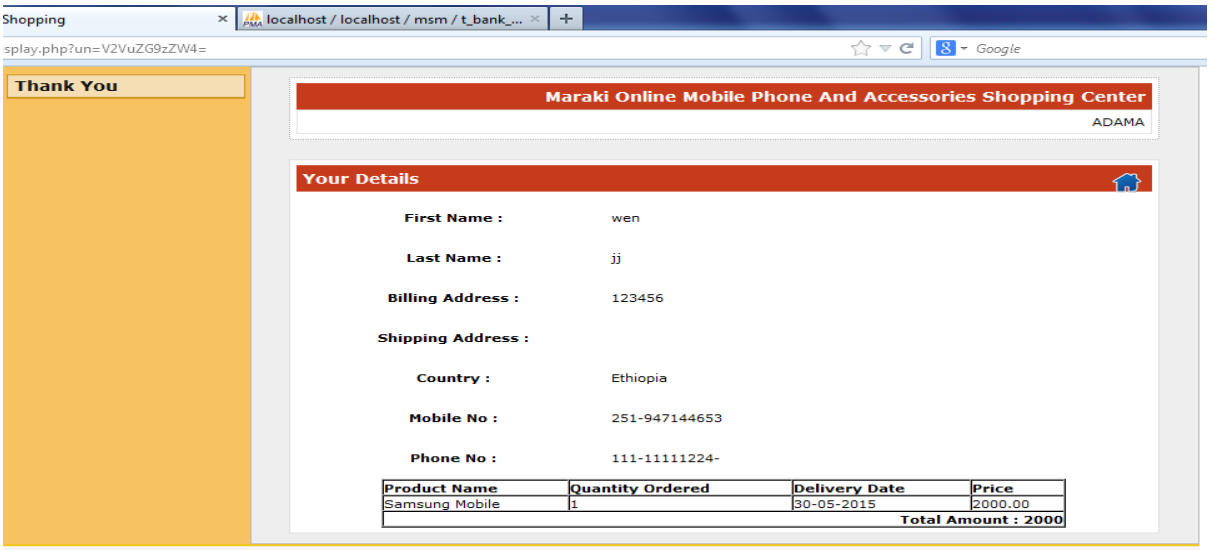
Order master module has Add to cart module and Add to Shopping. Here the user can order item.

Add to Cart:





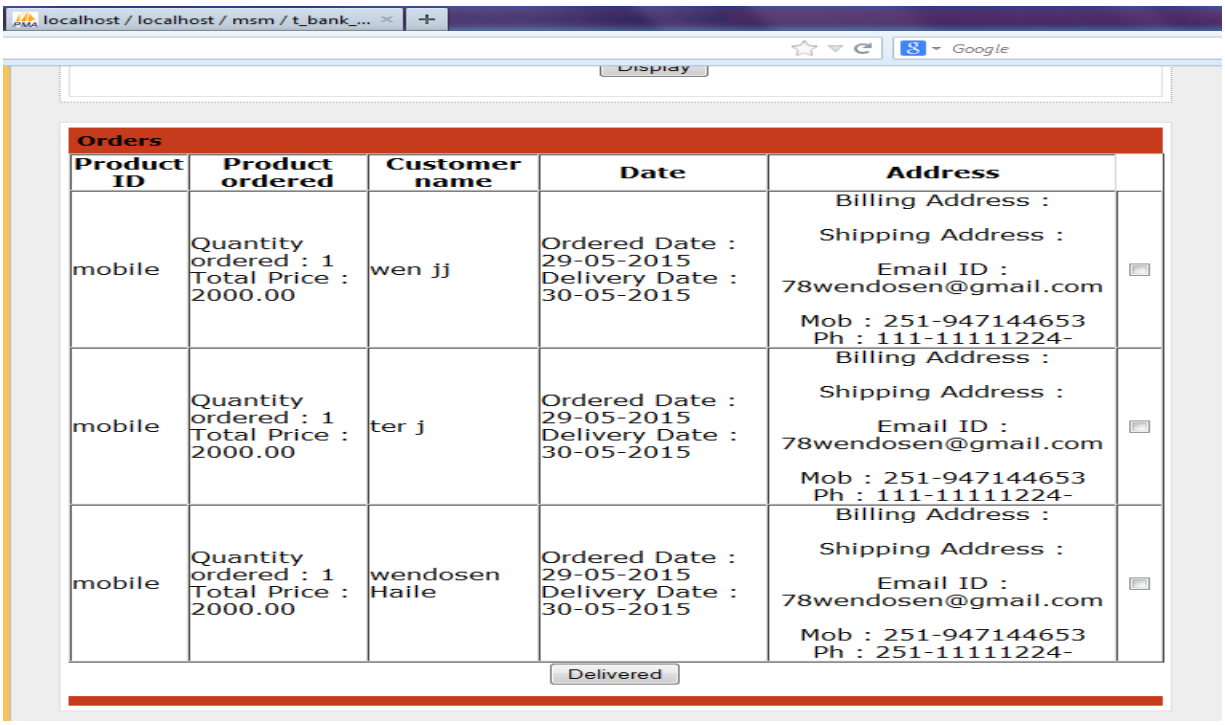
Bill form:



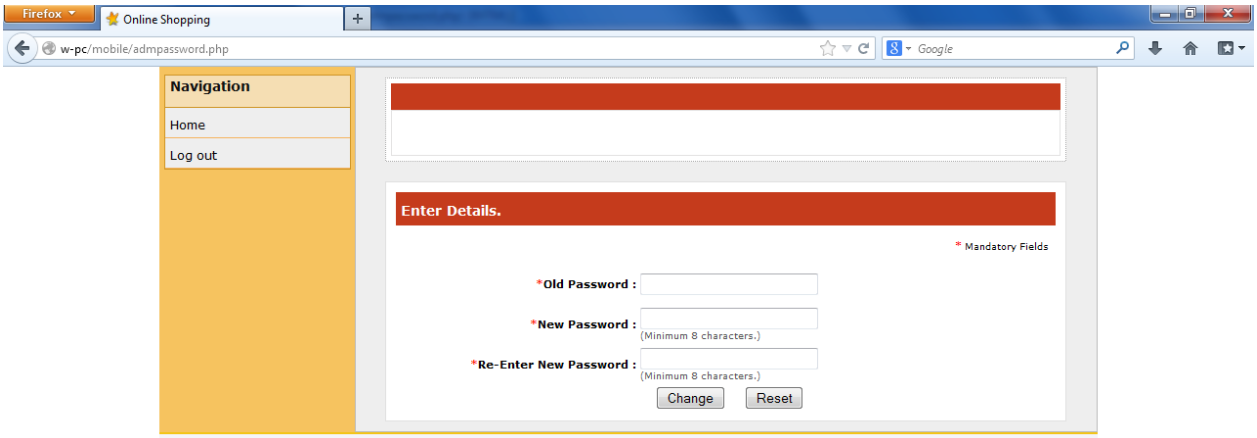
Purpose of the interface:

When the sale process is completed, it automatically generates the bill.

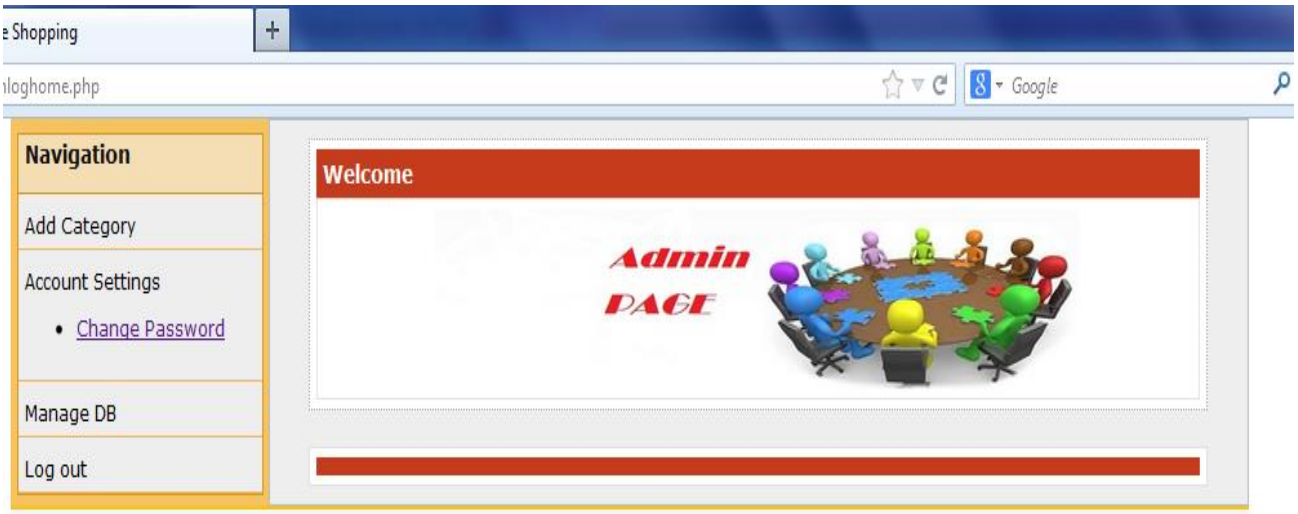
Reports form



Change password form:



Admin form:



Purpose of the interface:

Login module has one sub module, change password.

Purpose of the interface:

Here admin has to enter username, old password and new password.

CHANGE: When clicked on the change button if both current and new password matches then the user will be able to use current password and this will be stored in the database

REFRESH: When clicked on the refresh button the fields that were filled with the data gets deleted from all the fields but not from the database.

Respondents Questionnaire Form

1.Do your business ever sold products online?

Yes ☐

No ☐

2.Do your business needs to sold mobile phones and its accessories via online channels?

Yes ☐

No ☐

3.If yes, Please tell us why your business needs to sell products using online channels? In particular, what are the benefits to your business?

4.Does your business do any methods to make customers aware of about your product information?

Yes ☐

No ☐

5.If yes, please specify your methods to make product information available for your customers including price, new arrivals and product discounts?

6.Which payment methods have you used in the current selling system?

7.How your business's currently handle product information?

8.Do you have any automated system currently?

Yes ☐

No ☐

9.If yes, please specify the system?

10.Please tell us what problems do face on the current system?

LIST OF ACRONYMS

BCA	Basic course of action
B2B	Business-to-Business
B2C	Business-to-Consumer
C2B	Consumer-to-business
C2C	Consumer-to-Consumer
CRC	Class Responsibility Collaboration
CSS	Cascading style sheet
DB	Database
DFD	Data Flow Diagram
EC	Electronic Commerce
HCL	Hardware compatibility list
HTML	Hypertext mark-up language
ICT	Information Communication Technology
IE	Internet explorer
LCA	life cycle assessments
MC	Mobile Commerce
NIC	Network Interface Cards
PASDEP	Plan for Accelerated and Development for End Poverty
SDL	CSystem development life cycle
SQL	Structural Query Language
SQL	Structured Query Language
Telecom	Telecommunications
UI	User-interface
UML	Unified modeling language
UN	United nation
UPS	Uninterrupted power supply
URL	Uniform Resource Locator
USA	United Sate of America
WWW	World Wide Web

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