

Internship Report

On

**Sajilo Buy: A Multi-vendor E-commerce platform
At**

**E-Zone International Pvt. Ltd.
[Code No: CSC-452]**

A final year internship report submitted in partial fulfillment of
the requirement for the degree of Bachelor of Science in
Computer Science and Information Technology

Submitted by

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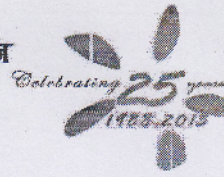
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माइतीघर, काठमाडौं, नेपाल

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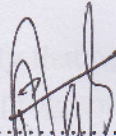
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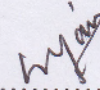
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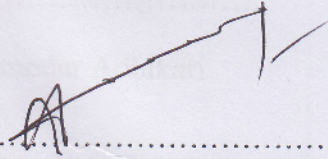


CERTIFICATE OF APPROVAL

The undersigned certify that they have read and recommended to the Department of Computer Science for acceptance, a project report entitled **"SAJILO BUY: A MULTI-VENDOR E-COMMERCE PLATFORM"** submitted by **Diwash Adhikari (T.U. Exam Roll No. 847/067)** in partial fulfillment for the degree of Bachelor of Science in Computer Science & Information Technology.


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Thanking You,

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ABSTRACT

This report contains the details of the activities carried out during the internship conducted for the three months internship duration.

The main focus of this report is Web Based Online Shopping for “Online users”. The online shopping is a Web based intended for online retailer. The main objective of this website is to make it interactive and its ease of use. It would make searching, viewing, comparing and selection of a product easier. User can view the complete specification of each product. The website provides a features to a user to add a product, update the item in the product and delete the product in to the shopping cart. The main emphasis lies in providing a user-friendly online shopping cart that consists of features to add, update and delete the product.

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LIST OF ABBREVIATIONS

| | |
|----------|--|
| BSc.CSIT | Bachelor in Science in computer Science Information Technology |
| ICT | Information and Communication Technologies |
| IT | Information Technology |
| MVC | Model View controller |
| TU | Tribhuwan University |
| DFD | Data Flow Diagram |
| PHP | Hypertext Preprocessor |

CHAPTER 1: INTRODUCTION

1.1 Introduction to Internship

As per the requirement of the TU for the BSc. CSIT final year students are required to complete a six credit (minimum ten weeks/180 hour long) internship as a part of the course requirement. Industry is a crucial requirement of the internship course and this will have to be secured before getting started with the course. The internship in specialized field provides students in-depth understanding about the field, market exposure, and help to identify the potential career opportunities. Internship project is good for students to understand real world implications of the sound academic knowledge gained in college. [1] The internship gives the real world exposure to the professional life and show wider exploration of the career opportunities in information technology and software development.

The internship experience is expected to enable the students to assist in the resolution of complex problem associated with database systems. The broad objectives of internship are as follows:

- To test the interest in particular field before permanent commitment are made.
- To develop skills in the application of theory to practical work situations.
- To test the aptitude for a particular career.
- To know the value of time management and interpersonal skills.
- To develop skills and techniques directly applicable to the careers.
- To acquire in-depth knowledge of the formal functional activities of a participating organization.

1.2 Background

In online marketing, a shopping cart is a piece of e-commerce software on a web server that allows visitors to an Internet site to select items for eventual purchase, analogous to the American English term "shopping cart". The website allows online shopping customers to accumulate a list of items for purchase, described metaphorically as "placing items in the shopping cart" or "add to cart". [2] Upon checkout, the website typically calculates a total for the order, including shipping and handling (i.e. postage and packing) charges and the associated taxes, as applicable.

These web apps typically provide a means of capturing a client's payment information, but in the case of a credit card they rely on the software module of the secure gateway provider, in conjunction with the secure payment gateway, in order to conduct secure credit card transactions online.

Although the simplest shopping carts strictly allow for an item to be added to a basket to start a checkout process, most shopping cart web app provides additional features that an Internet merchant uses to fully manage an online store. Data (products, categories, discounts, orders, customers, etc.) is normally stored in a database and accessed in real time by the software.

This project contains the model of the Online Shopping Cart system for everything in Nepal shopping store, including all the models used to specify and realize the IT system. This model addresses the development of an online shopping cart system that allows suppliers of everything in Nepal to sell their products directly online to customers. The goal is to show the analyzing and designing a robust system that corresponds to the initial requirements.

1.3 Objectives

The age of internet shopping has already taken over the globe, which is the reason why everyone wants to shop online. Shopping has long been considered a recreational activity by many. Shopping online is no exception. The goal of this application is to develop a web-based interface for online retailers. The system would be easy to use and hence make the shopping experience pleasant for the users [3]. The main objective of the project of this internship is to develop working in real world and to develop a online web-based Shopping Cart System for everything in Nepal. Some of the objectives of this website are as following:

1. To develop an easy to use web based interface where users can search for products, view a complete description of the products and order the product.
2. A search engine that provides an easy and convenient way to search for products specific to their needs. The search engine would list a set of products based on the search term and the user can further filter the list based on various parameters.
3. Various kinds of goods can be placed in online shopping cart for sale and promotion of each and every good with the product description.
4. To sell various goods and items to customers online by allowing customers to add item into the cart or to remove in the undesirable case.

1.3.1 Internship Objective

The main objective of the internship project in simple term is to get practical experience of the theoretical knowledge gained in the classroom. The main task is to get enrolled into the organization and do tasks as required by the organization as well as the course of study i.e. BSc.CSIT. The internship attachment project is a remarkable opening to experience the real world working environment and culture where the knowledge learned during B.Sc. CSIT course might be implemented. The solution given to the

organization will be in terms of system analysis and design and developing an integrated system that helps in planning and decision making for the organization.

The report is prepared for the purpose of acquainting the achievement of the author during internship at the company, e-Zone International Pvt. Ltd.

The broad objectives of this internship are as follows:

- To provide students the opportunity to test their interest in a particular career before permanent commitments are made.
- To develop skills in the application of theory to practical work situations.
- To learn the skills required to work in real time working environment.

1.3.2 Task Based Objective

The specific objectives related to the placement of the author in the e-Zone International Pvt. Ltd. is as follows:

- To learn PHP programming language
- To learn the detail study on WordPress.
- To be able to develop PHP web application according to the clients' requirements
- To study different type of problems faced in web application development life cycle
- To learn the testing methodologies implemented in the systems

1.4 Brief Introduction of Industry

The age of internet shopping has already taken over the globe, which is the reason why everyone wants to shop online Shopping has long been considered a recreational activity by many. Shopping online is no exception. The goal of this application is to

develop a web based interface for online retailers. The system would be easy to use and hence make the shopping experience pleasant for the users [3]. The main objective of the project of this internship is to develop working in real world and to develop a online web-based Shopping System for everything in Nepal. Some of the objectives of this application are as following:

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3. Various kinds of goods can be placed in online shopping cart for sale and promotion of each and every good with the product description.
4. To sell various goods and items to customers online by allowing customers to add item into the cart or to remove in the undesirable case.

1.5 Brief Introduction of Organization

e-Zone International Pvt. Ltd is an ever-growing community of passionate and brilliant people. This exceptional team has every solution to their clients' biggest and most complicated problems. This organization services are offered both on and offshore, and delivered with pride and passion. This organization is a group of young, motivated, skilled people whose main goal is to provide their clients with an innovative solution regarding web development and software development.

The company is led by a strong management team and knowledgeable computer engineers and IT knowledge workers with experience in various areas of the

information and communication technology (ICT) industry covering software development, wired & wireless solutions, network design and implementation, e-Business applications solutions and others internet related systems.

e-Zone has combined a set of products and services that meet the immediate information technology needs of a small business: Basic and enhanced hosting services, Web design, software development and Intranet applications. With the experience, e-Zone be able to help its customers to define and implement their e-business strategies successfully.

This organization is driven towards providing the best of the technology era through solutions locally and globally with a slogan ‘...quality forever.’

1.5.1 About Organization

E-Zone International is a premier IT organization established on 2003 which is situated at Baneshwor, Kathmandu. This organization is driven towards providing the best of the technology era through solutions locally and globally with a slogan ‘...quality forever.’ [4]

E-Zone International is an ever-growing community of passionate and brilliant people. This exceptional team has every solution to their clients' biggest and most complicated problems. This organization services are offered both on and offshore, and delivered with pride and passion. This organization is a group of young, motivated, skilled people whose main goal is to provide their clients with an innovative solution regarding web development and software development. [4]

1.5.2 Organization Rationale

E-zone International acquire confident and professionally motivated team to deliver solutions to your needs. They simplify, standardize and automate the organizations technically. Analyzing client need, effective planning, development and maintenance

are the major steps for any new web development and software development service they provide. They believe in creating the best technology and product through the combination of best people and best equipment. Everything they do reflects this mission and the values that make it possible. Their Values: Honesty, Trust, Freedom, Innovation, Integrity, Team spirit and Fun are some values influence the way we meet client needs.

1.5.3 Organization Hierarchy

The organization structure or form of an organization has evolved in order to perform the various roles of the organization and also to provide the services efficiently and effectively. Organizations are usually organized according to the functions they perform to the extent possible so that the company can run smoothly. E-zone International Pvt. Ltd. also has a functional organization structure. The structure facilitates all the functions carried out by the whole organization. The company has departments to facilitate the business process which also has good coordination amongst each other. The organization has a line of authority that flows from the top to the bottom of the organizational hierarchy however the flow of information in organization is as follow:

1.5.4 Contact Details

| | |
|--------------------|--|
| Organization: | E-zone International Pvt. Ltd |
| Organization Type: | Private Limited. |
| Address: | Baneshwor, Kathmandu |
| Email: | info@ezone.com.np |

CHAPTER 2: ANALYSIS OF ACTIVITY DONE

2.1 Internship Placement Details

2.1.1 Organization Selection

It is very important to select organization that fulfills our objectives. As it is for our internship, it is necessary to select organization where there is learning environment because as an intern our first motive is to learn how the works are carried out in the real field.

The four-year degree of BSc. CSIT allows us to attain knowledge on various aspects of Information Technology. At the same time the internship is the one of the major highlight of the program to expose the students to the professional world. Among the various criteria and sectors provided to us in internship prerequisite statement, software Development Company was chosen. Various organizations were shortlisted and approached out of which the organization with the best lucrative offer and environment was selected. E-Zone International Pvt. Ltd. which is located Baneshowr, Kathmandu, an IT company that covers software development, wired & wireless solutions, network design and implementation, e-Business applications solutions and others internet related systems and I got selected there. The company helped me gain wide experience by getting me involved in their projects.

2.1.2 Placement

During the internship tenure, the author was provided with work space in the Research and Development Department at the organization, not only that author was treated as trainee staff with the access to the very information of the organization, its organizational resources, information and equipment.

2.1.3 Duration

| | |
|-------------|--------------------|
| Start Date | February 9, 2015 |
| Duration | 12 weeks |
| Position | Intern Programmer |
| Supervisors | Mr. Ram Babu Thapa |
| Office hour | 10:30 am – 6 pm |
| End Date | May 9, 2015 |

Table 1: Internship Duration

2.1.4 Roles and Responsibilities

During the internship period knowledge of various platforms and programming languages are gained. The target was to deliver a fully-fledged web based system by using different tools and frameworks such as PHP, WordPress etc. Hence, to meet that objective, this internship required the extensive preliminary studies about the core PHP, WordPress before actually analyzing the actual requirement of the system. The study was required not only to understand the subject under study but also to realize the solutions to the existing problems and implementing the findings from the study was another bigger challenge.

Besides study of, Core PHP and WordPress, other major activities carried out during internship was extensive study of current system, presentations of study analysis and practical implementations, and most importantly the team discussions to analyze the

customer change request. The regular meetings with the Supervisor and discussion with mentors helped me to wide my horizon of knowledge of the existing system and problem background.

2.2 Literature Review

Sajiko buy an E-commerce site with multi-vendor is a system developed using WordPress framework and MySQL as a database. This site works as mediator for vendor and the buyer. This site helps the vendor to sell its product and buyer to buy the product through the help of internet.

In online marketing, a shopping cart is a piece of e-commerce software on a web server that allows visitors to an internet site to select items for eventual purchase, analogous to the American English term “shopping cart.” [5]

Storefront: the area of the Web store that is accessed by visitors to the online shop. Category, product, and other pages (e.g. search, best sellers, etc.) are dynamically generated by the software based on the information saved in the store database. The look of the storefront can normally be changed by the store owner so that it merges with the rest of the Web site (i.e. with the pages not controlled by the shopping cart software in use on the store) [6]

In today’s scenario we can see that people have become very busy with their lives. In this busy life the main problem for people is finding the right product in a right time. People usually doesn’t find what they are actually looking for. Travelling to different stores and comparing among the product, searching the right product waste the time and money. Usually people have to compromise with the similar product they find rather than finding the right product. Due to lack of time people have to spend more money than the actual price in the same product.

Some online players such as eBay have been providing a platform for third party providers to sell their items through their ecommerce site. It is now common for online

retailers and manufacturers to integrate with marketplaces such as Amazon, eBay, Overstock.com, and Buy.com. The concept has picked up significantly as digital marketplace after the success of Apple's Application Store for iPhone in 2008. With an estimated \$30 billion market for Mobile applications by 2013, software and SaaS vendors are also expected to follow the race to own and monetize app marketplaces as innovated by Google, Sales force and Intuit.

With the advancement of technology, e-commerce website has the huge scope in all the areas. In today's world many people depend on internet for carrying out their work. 29.78% people use the internet services in Nepal. Among those user many of them uses the e-commerce website to carry out their business. The use of this website helps the vendor to sell their product and buyer to find the right product saving their precious time and money.

Ecommerce websites have the ability to distribute, sell, or buy goods or services online through the transfer for funds with electronic networks or communications.

A multi-vendor Internet commerce system (MV-ICS) is provided which includes a centrally implemented multi-vendor central processing unit (MV-CPU) acting cooperatively with a centrally implemented multi-vendor shared data store (MV-SD). Using a variety of vendor-site I/O modules and consumer-interface I/O modules, the resources with the MV-SD may be shared by the plurality of vendor websites. [7]

The main benefits of this type of site are that we can open up an online store with relative ease and avoid some of the overhead costs of a physical store location. It is accessible to clients 24 X 7, all over the world. This expands our geographical and customer reach, as our business is not limited to just clients or customers around our immediate physical location. Building an ecommerce website that is user-friendly and available to a vast number of clients is also helpful because it provides easier delivery of information. Rather than calling to find store hours or more information about our company, our catalogue software can display information, promotions, sales and real-time data on our products or services. Allowing customers to shop for the convenience

and comfort of their own homes at any time of the day or night can increase our sales and potentially our profits while decreasing costs for your business. We are also able to increase product and brand. Awareness, as well as increasing customer loyalty. The possibilities are endless, and it is a good idea to leverage an online store to increase our business.

E-commerce in Nepal

Many companies have started the trend of e-Commerce in Nepal decade ago, but the challenges are still the same. The actual sales have not been able to start due to lack of knowledge, awareness and online payment systems. Selling globally and inside the country is the same in years. Payment Gateways are being developed but they have their limitation due to legal and security issues. [8] The lack of proper knowledge and awareness among the generation is the major hurdle in e-Commerce [c]. In past recent years due to education and reach to internet among the many people in Nepal has brightened the future of e-Commerce The interest of students in the field of IT, the growth of IT companies has helped a lot in the awareness and interest in young generation for internet and IT, has directly created more opportunities for the growth of e-Commerce in Nepal [8]

Growth of Commerce in Nepal

Before a decade e-Commerce was setup as sending gifts and money online and other websites promoting “Send Gifts to Nepal” which had merely a concept of e-Commerce. [8] It was target to Nepali residing in USA, UK, Australia and Europe. There was no effect of that business to support the e-Commerce concept in Nepal. Gradually the business was promoted by other companies who saw there was a marginal profit. Along with the rise of IT, and business concept many online stores were launched but they didn’t have the actual process of buying and selling online. They were the virtual stores

with the best example which gave a concept of selling and buying online but not paying. [9]

Current Practice of E commerce in Nepal

Many online portals and shopping portals are launched. Leaving the measurement of success behind, they are now on the top list. Peeping into the future of e-Commerce, launch of few large online shopping portals was thought as milestone, everyone thought there will be a turnaround in the e-Commerce industry in Nepal. Now having dozens of virtual Nepali stores in the web, they still have the same problem of payment and a belief of people, they still have a level of trust to build among the visitors [9].

2.3 Specific Problem Analysis

2.3.1 Description of the System

The shopping cart system is the web application that allows customers to find an item that they would like and if they want it or if the customers are ready to buy it, they are allowed to put the items in the cart but can always return it to the shelf before checkout. They can simply click on the “Add to Cart” button .One can simply check how many specific items are there in the cart and to specify how many items they would like to purchase at this point.

Items will automatically go into cart after the viewer click on the button “Add to cart” button; one can view items in cart at any time. There is usually little picture of a cart in the left side of the page so that one can always click on it to see what he have placed in their cart. From this system, one can change the number of a particular item that one would like to purchase as simply by pressing the cross sign one can take item out of his cart i.e. can remove and delete the item from the cart, review the specific of the items in the cart by clicking on items name or picture can see a running subtotal of the cost of his items.

There are large numbers of commercial Online Shopping websites offering large number of products tailored to meet the shopping interests of large number of customers. These online marketplaces have thousands of products listed under various categories.

Finding the right trades people can be a real challenge. The most common complaints are around poor quality of work and a general lack of professionalism resulting in problems and issues [10]. The diversity and versatility of display devices today imposes new demands on digital media. For instance, designers must create different alternatives for web-content and design different layouts for different devices. Moreover, HTML, as well as other standards, can support dynamic changes of page layout and text. Nevertheless, up to date, Images, although being one of the key elements in digital media, typically remain rigid in size and cannot deform to fit different layouts automatically. Other cases in which the size, or aspect ratio of an image must change, are to fit into different displays such as cell phones or PDAs, or to print on a given paper size or resolution. Standard image scaling is not sufficient since it is oblivious to the image content and typically can be applied only uniformly. Cropping is limited since it can only remove pixels from the image periphery. More effective resizing can only be achieved by considering the image content and not only geometric constraints.

2.3.2 Development of Project Goals

The goal of this application is to develop a web based system for online retailers. The system would be easy to use and hence make the shopping experience pleasant for the users. The goal of this application is:

- Simply just by a click, allowing the user to add products to or remove products from the shopping cart by clicking the products add to cart or clicking the cross sign to remove the product from the shopping cart.
- The system should allow the user to register and login into their account in order to buy an item they want.

- A user should be able to edit the contents of a shopping cart. They should be able to update the quantities of the products added to the cart and remove the products from the cart.
- The user should be able to remove the product from the shopping cart by clicking the cross sign, the product is to be outside of the cart.
- To develop an easy to use web based system where users can seek for products they want, view a complete description of the products and order the products.

2.4 Management Strategy

A project is a temporary group activities designed to produce a unique product, service or result. Project management is the application of knowledge, skills and techniques to execute projects effectively and efficiently. Project management is the discipline of planning, organizing, and controlling resources to achieve specific goals. Project management has been necessary and important in this project. The constraints for this project, as for most projects, have been time, cost and quality. Project management is necessary to complete the project under these constraints and utilize the resources properly [11]. The goal of project management for this project was to achieve all the project goals within specified time and cost.

Time management and cost management strategies are very important. Both of them must be considered while doing any or the project. Likewise, it was also taken care of during the internship project.

2.4.1 Time Management

This strategy involves brief study all the steps of Software Development Life Cycle and assigning a deadline to complete those stages in correct time. Also ideas are made to complete any step as fast as possible and also the most important strategy is given more priority by analyzing them.

2.4.2 Cost Management

Budget is one of the limited factors of the project. In this particular project there are three kinds of budget involved. Development cost was minimal as the PHP Programming Language is an open-source programming language. Maintenance cost includes the maintenance of hardware and bug fix and improvement of the system.

2.5 Project Schedule

2.5.1 Time Schedule

| Time Schedule | | | |
|---------------|---|------------|---------------|
| Task ID | Task Description | Start Date | Finished Date |
| 1 | Preliminary Work | | |
| 1.1 | Planning for the Project | 1/2/2015 | 1/5/2015 |
| 1.2 | Analysis on the Topics | 1/5/2015 | 1/6/2015 |
| 1.3 | Meeting with Supervisor | 1/19/2015 | 3/12/2015 |
| 1.5 | Preparation of Project Proposal | 1/19/2015 | 1/26/2015 |
| 1.6 | Preparation of Gantt Chart and Project Schedule | 1/20/2015 | 3/11/2015 |
| 1.7 | Approval from Supervisor | 1/26/2015 | 1/26/2015 |
| 1.8 | First Review | 1/30/2015 | 1/30/2015 |
| 2 | Research Work | | |
| 2.1 | Research on Online Shopping | 1/8/2015 | 2/25/2015 |
| 2.2 | Research on Shopping Cart | 1/5/2015 | 3/3/2015 |
| 2.3 | Research on Prepare Best Design | 1/26/2015 | 2/5/2015 |
| 2.4 | Second Review | 2/10/2015 | 2/10/2015 |
| 3 | Design | | |
| 3.1 | Data Flow Diagram | 2/10/2015 | 2/12/2015 |
| 3.2 | ER Diagram | 2/10/2015 | 2/13/2015 |
| 3.3 | Schema Diagram | 2/13/2015 | 2/13/2015 |
| 4 | Implementation | | |
| 4.1 | Database Design on parse | 2/13/2015 | 2/16/2015 |
| 4.3 | Coding in PHP | 2/16/2015 | 3/10/2015 |
| 5 | Testing | | |
| 5.1 | Alpha Testing | 3/10/2015 | 3/12/2015 |

| | | | |
|-----|--|-----------|-----------|
| 5.2 | Beta Testing | 3/12/2015 | 3/18/2015 |
| 5.3 | User Acceptance Testing | 3/10/2015 | 3/20/2015 |
| 6 | Dissertation | | |
| 6.1 | Final Report Writing | 2/10/2015 | 3/20/2015 |
| 6.2 | Report Evaluation and Conclusion | 2/20/2015 | 3/23/2015 |
| 6.3 | Submission of Final Report Copy | 3/2/2015 | 3/23/2015 |
| 6.4 | Final Documentation Printing and Binding | 3/23/2015 | 3/25/2015 |
| 6.5 | Document Submission to College | 3/26/2015 | 3/26/2015 |

2.5.1 GANTT chart

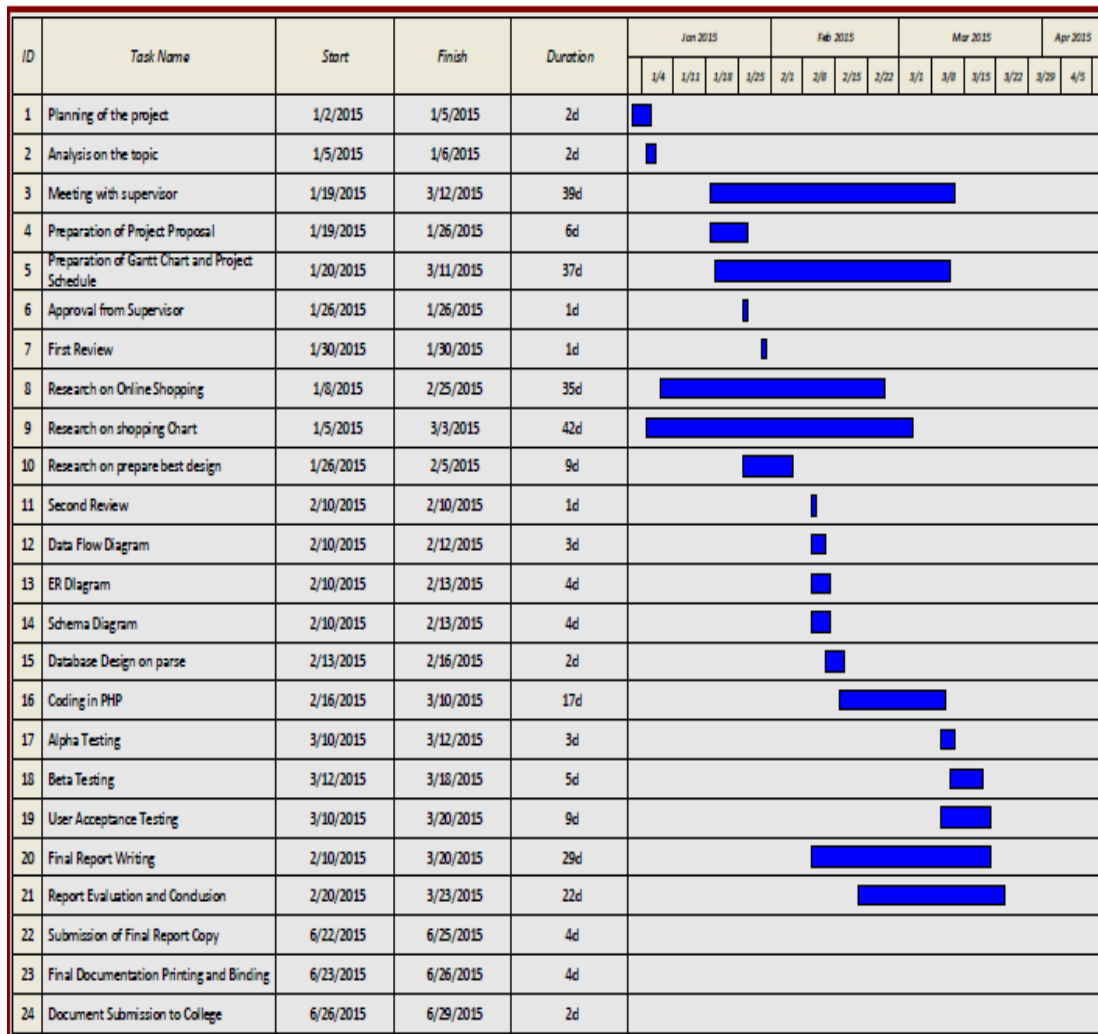


Figure 1: Gantt Chart

CHAPTER 3: SOLUTION DESIGN

3.1 Project Management Plan

The overall development of the system was carefully analyzed under the proper guidance from the supervisor to make this project a grand success.

3.1.1 System Analysis

System Analysis is the process of studying an activity in order to define its goals or purposes and to discover operations and procedures for accomplishing them most efficiently. Analysis is defined as the procedure by which we break down an intellectual or substantial whole into parts. Synthesis is defined as the procedure by which we combine separate elements or components in order to form a coherent whole. Systems analysis researchers apply methodology to the analysis of systems involved to form an overall picture. System analysis is used in every field where there is a work of developing something.

3.1.1.1 Feasibility Study

Feasibility analysis helps to figure out if the project will be successful or not. The feasibility analysis should be carried out on various aspects like economic, technical, legal and operational.

3.1.1.1.1 Technical Feasibility

Technical feasibility was to make sure that the new system would be able to work in the existing infrastructure and integrate with the existing database. We can strongly say that it is technically feasible, since there will not be much difficulty in getting required resources for the development and maintaining the system as well. All the resources needed for the development of the software as well as the maintenance of the same is available in the organization.

3.1.1.1.2 Economic Feasibility

In order to analyze the economic feasibility of the system, Cost/Benefit analysis is to be carried out. This tool helps to determine the benefits that can be obtained from the system by comparing them with the various costs. If the benefits are higher than the cost then the system is considered to be economically feasible to be developed. Else we can easily understand that the system is not economically feasible and certain things are to be worked out and modified in order to acquire the desired economical feasibility. [12] The economic feasibility of the project was based on budget provided by the cost estimation made by the project manager at e-Zone International Pvt. Ltd.

3.1.1.1.3 Legal Feasibility

Legal Feasibility analyzes and deals with various legal issues, contracts, policies, laws and violations that staffs are usually unknown about. It ensures if the application is legal to operate or not. Some systems may require license to operate. In such cases legal feasibility needs to be checked. This was done by going through all the legal requirements of the government of Nepal.

3.1.1.1.4 Operational Feasibility

The Operational feasibility study helps in measuring the degree to which the system solves the problems and the extent to which it fulfills the requirements stated in the requirements document. It helps to understand the operation of the system before and after implementing new functionalities. It determines how well the system functions in the operational level. The enhanced GUI feature will help the users to operate easily and no detailed knowledge is required [13]. Therefore, it is operationally feasible. The operational feasibility of the project was evaluated by testing its server's capacities and connection with the existing Database.

3.1.1.1.5 Schedule Feasibility

All the required phases of development had to be finished within the given time frame. The analysis and design phase required about 3 weeks of time. The effort was reduced due to clear requirement and database. The development process required only about one month because PHP framework allows to develop application rapidly. [14] Testing required further two weeks. Hence the project is feasible in the dimension of schedule.

3.1.2System Design

The design of the system was developed keeping in mind the MVC Model. Design covered the requirements for managing the shopping cart of the organization and tried to integrate the different requirements of the Company [15]. Design patterns are program structures used to solve common problems, separate concerns and improve understandability of code among other things. The design pattern used in this system is MVC pattern

3.1.2.1 System Architecture

They required the system to be based on the MVC (Model – View – Controller) model of designing the system. Model-View-Controller (MVC) is a classic design pattern often used by applications that need the ability to maintain multiple views of the same data. The MVC pattern hinges on a clean separation of objects into one of three categories:

There are 5 basic steps in the process of intelligently rescaling the image. These basic steps also consist of many sub steps. There might be some changes to the phases as the source of the image change from time to time as shown above.

These steps are the basic of what happens inside of the system. Every process of intelligently scaling the image goes through these activities.

3.1.3Flow Chart

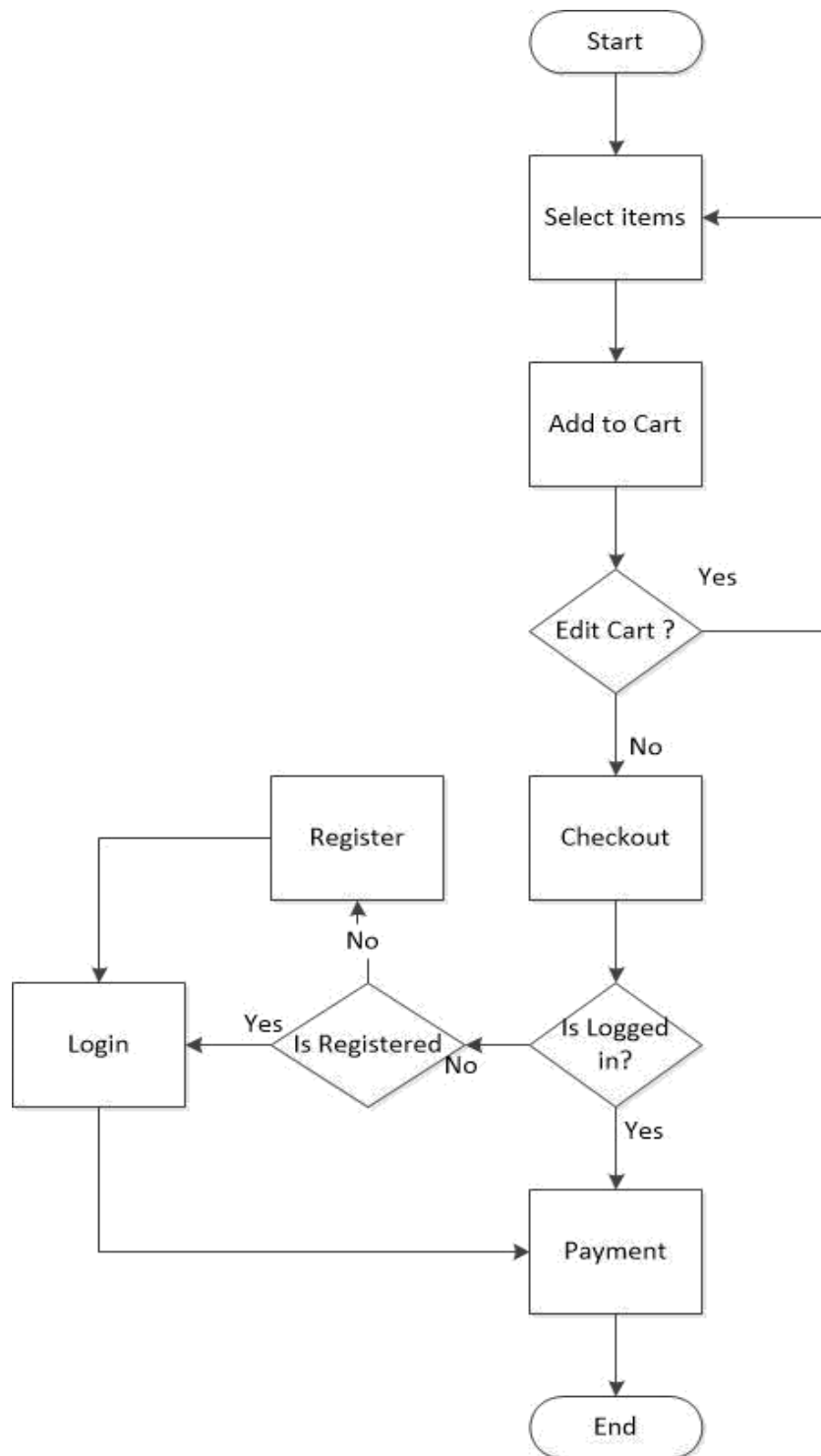


Figure 2: Flow Chart of Online shopping system

Above figure 3 describes the work flow of the shopping cart, where visitors can add items, edit items and they need to login for the checkout process. If the visitors don't have their account they need to register and then login with their respective account then they can make their payment and buy the items

3.1.4 Data Flow Diagram of Shopping Cart

The data flow diagram (DFD) for the Online Shopping cart System is a graphical representation of the "flow" of data through the system, modeling its process aspects. DFD is a preliminary step used to create an overview of the system which can later be elaborated. DFD is used for the visualization of data processing and structured design.

Context Level Diagram is a diagram that defines the boundary between the system, or part of a system, and its environment, showing the entities that interact with it. This diagram is a high level view of a system.

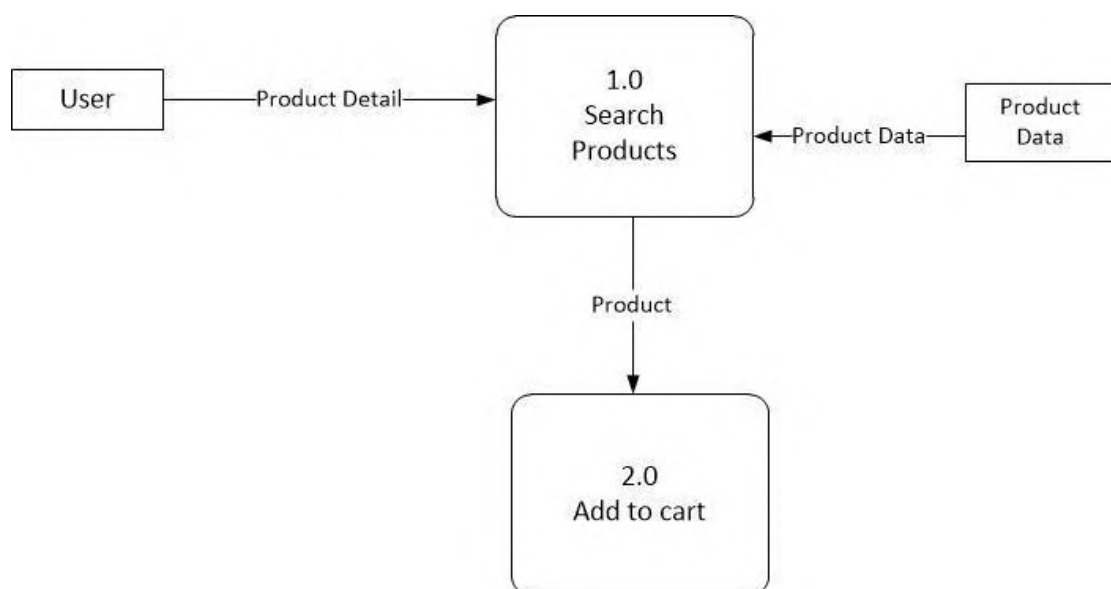


Figure 3: Context level diagram

This context diagram in figure 4 consists of user that interacts with various items in online shopping to buy the various product items. The online shopping application acknowledges by providing with various products and categories that user required.

FIRST LEVEL DFD

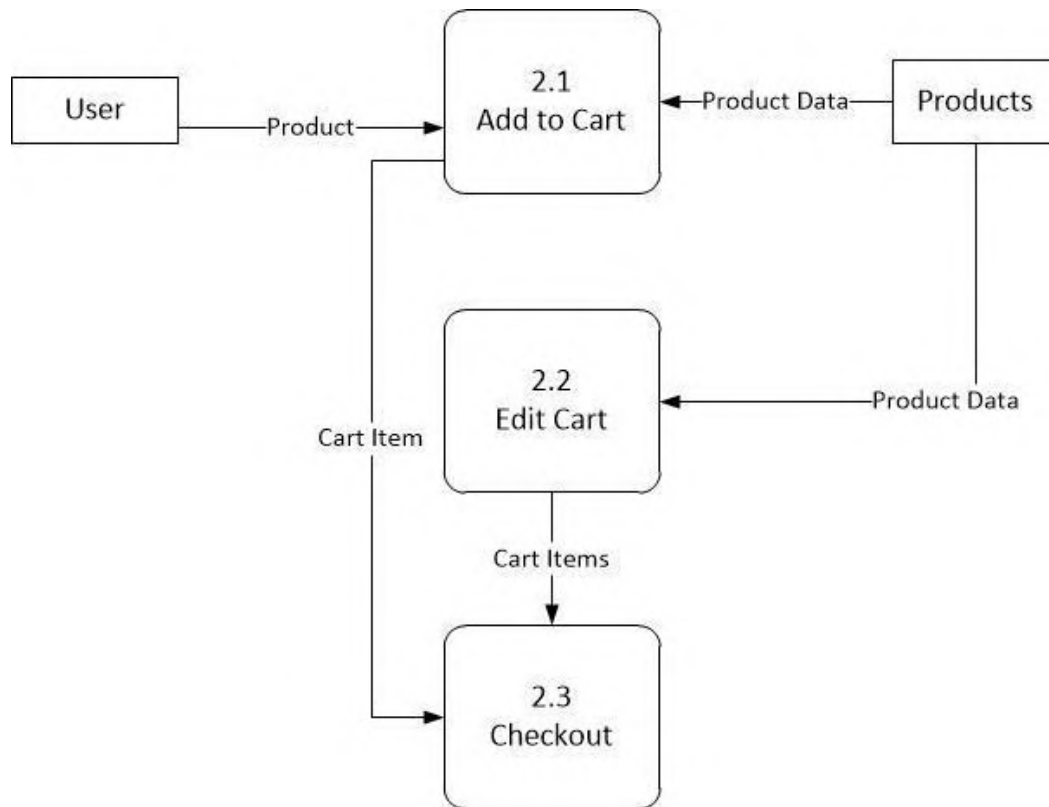


Figure 4: First Level DFD

Figure 5 first level DFD shows user can search products in process 1.0. While searching product data is fetch from product database. Then user can add the selected product in cart in process 2.0.

SECOND LEVEL DFD

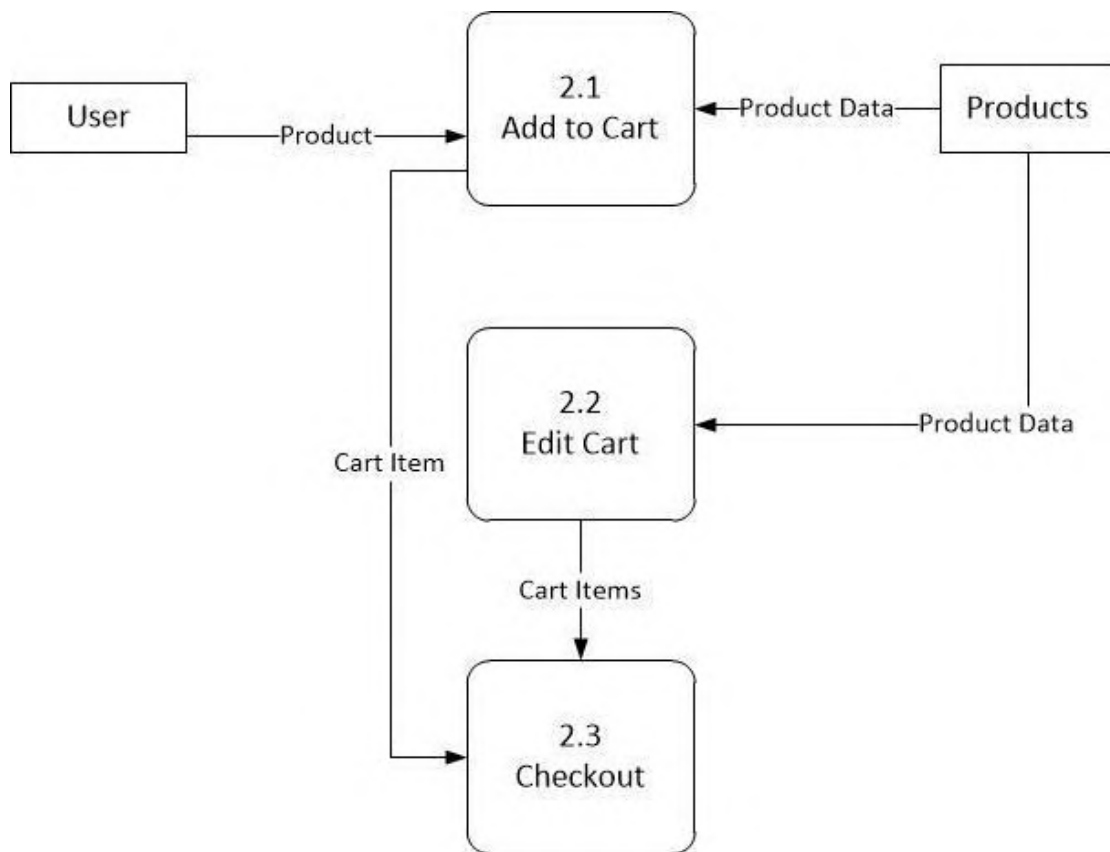


Figure 5: Second Level DFD

In this level, user search for the various products that one wants. For this various products are loaded from the database. Then for the further searching of the products, user can apply further filtering the search products by viewing various categories of products and the specification of the product. The specification of product can be viewed by loading the image of the products.

3.1.2.2 ER Diagram

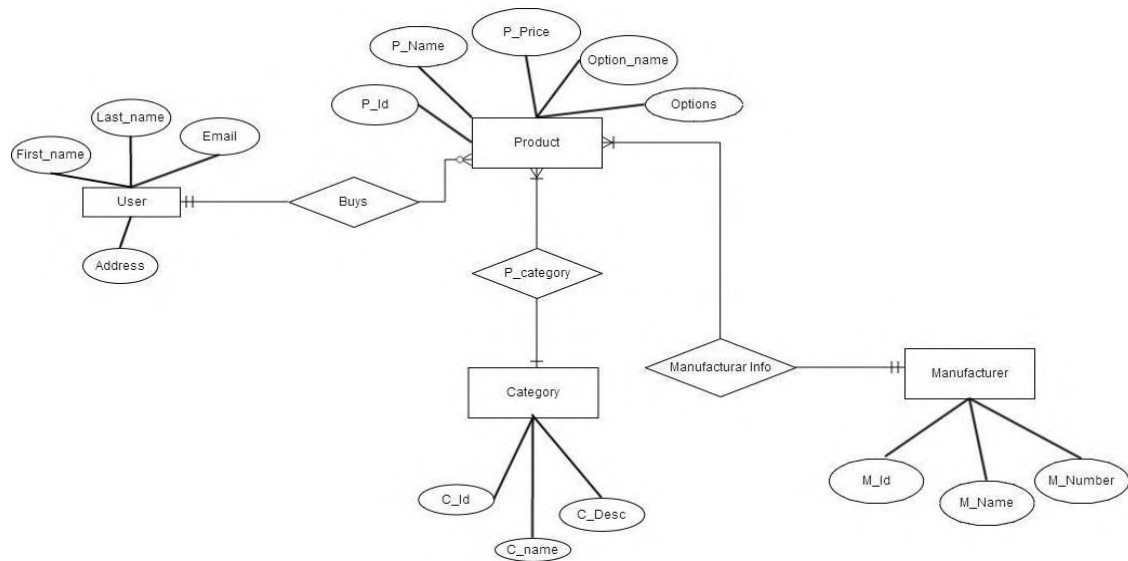


Figure 6: ER diagram of system

The figure 7 shows the basic design of the database of shopping cart. In figure 6 there are four entities user, product, category and manufacturer. User has one to many relationship with product as one user can buy many products. Category has one to much relationship with product as one category may have many products. Similarly, there is one to many relationship between manufacturer and products as one manufacturer can manufacture many products.

3.1.2.4Use Case Diagram of Shopping Cart

Use case diagram consists of use cases and actors and shows the interaction between them. The main purpose is to show the interaction between the use cases and the actor. It represents the system requirement from user's perspective. These are the functions

that are to be performed in the module. An actor could be the end-user of the system or an external system.

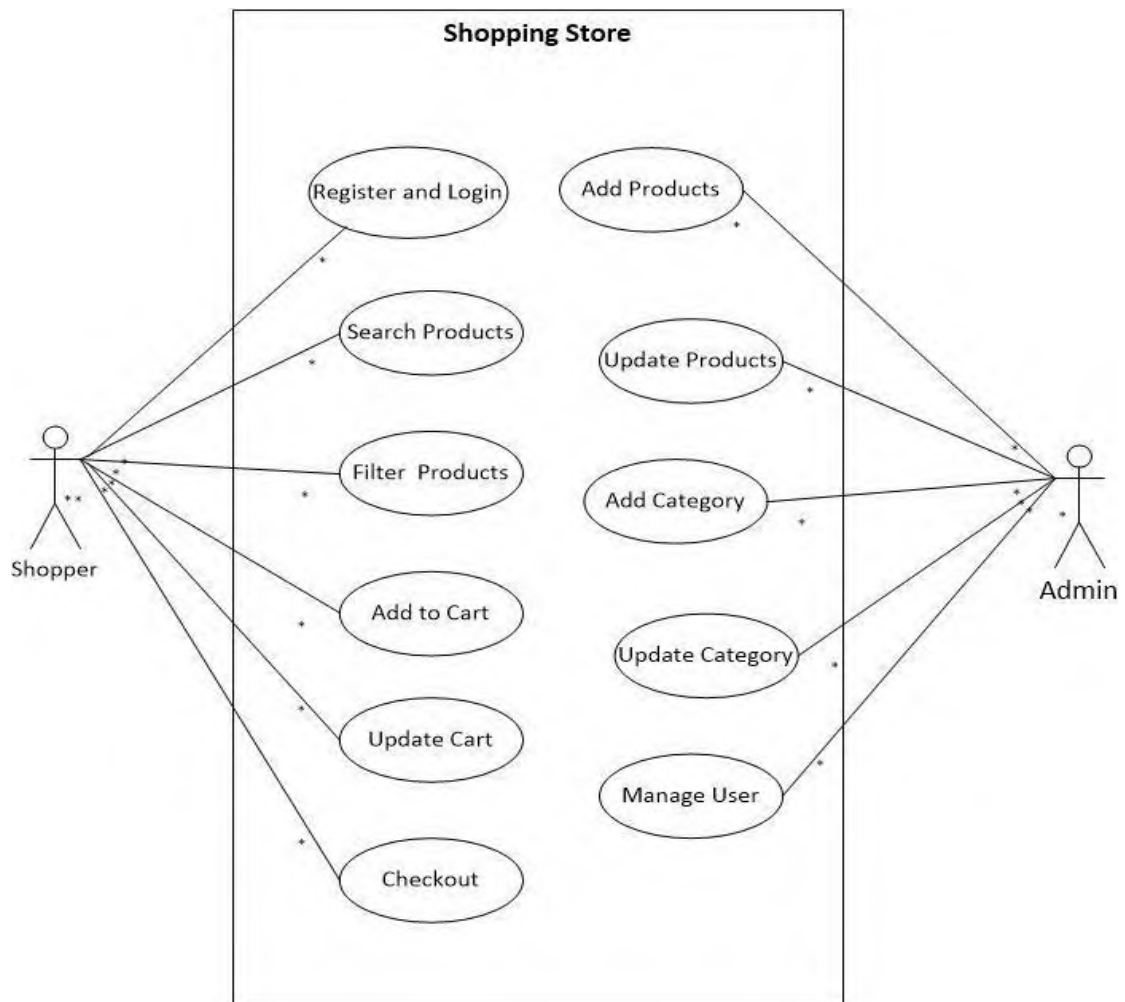


Figure 7: Use Case Diagram

In this use case diagram show in figure 8 the shopper or the user and the admin interacts with the various use cases. The shopper or the user can register to create their account and after creating their account they can login into the system. The user can search the products or view the products what they are seeking for. The

shopper or the user can filter the products by choosing from the various categories and various products of that category. They can add, update the products from the cart and user can check out if user have added the items in the cart. Admin can add, update the products and the category and manage user.

CHAPTER 4: IMPLEMENTATION STRATEGIES

4.1 Testing Strategies

Software testing is a process of running with intent of finding errors in software. Software testing assures the quality of software and represents final review of other phases of software like specification, design, code generation etc.

4.1.1 Unit Testing

Unit testing emphasizes the verification effort on the smallest unit of software design i.e.; a software component or module. Unit testing is a dynamic method for verification, where program is actually compiled and executed. Unit testing is performed in parallel with the coding phase. Unit testing tests units or modules not the whole software.

Author has tested each view/module of the application individually. As the modules were built up testing was carried out simultaneously, tracking out each and every kind of input and checking the corresponding output until module is working correctly.

4.1.2 Integration Testing

Unit testing emphasizes the verification effort on the smallest unit of software design i.e.; a software component or module. Unit testing is a dynamic method for verification, where program is actually compiled and executed. Unit testing is performed in parallel with the coding phase. Unit testing tests units or modules not the whole software.

Author has tested each view/module of the application individually. As the modules were built up testing was carried out simultaneously, tracking out each and every

kind of input and checking the corresponding output until module is working correctly.

4.1.3 Validation testing

It provides final assurances that software meets all functional, behavioral & performance requirement. Black box testing techniques are used. There are two main components are:

Validation test criteria (no. in place of no. & char in place of char). Configuration review (to ensure the completeness of s/w configuration.)

4.1.4 Test Case

| SN | Test case name | Test Procedure | Pre-condition | Expected Result | Outcome |
|----|---------------------------|-------------------------|--------------------|----------------------------------|---------------------------|
| 1 | Login form test1 | Create account | Add to cart | Empty fields must generate error | Success |
| 2 | Login form test2 | Mail not sent | Product page | Email is received | Success only on live site |
| 3 | All product display test1 | Display all packages | All package page | All packages should be displayed | Success |
| 4 | Database connection | Connect to database | Database connected | Connection successful | Success |
| 5 | Add product | Add product to database | Add product | Data should be added to database | Success |

| | | | | | |
|----------|----------------|----------------------------|-------------|----------------------------------|---------|
| 6 | Delete product | Delete from database | Delete page | Data should be added to database | Success |
| 7 | Update product | Update Product in database | Update page | Update description | Success |

Table 2: Test Case

4.2 Tools Used

4.2.1 Hardware Requirement

- A Computer to run the development software.
- Internet connection.
- Servers to host core system and database.

4.2.2 Software Requirement

- Platform: windows
- Integrate Development Environment (IDE): Sublime text 3
- Database: MySQL
- Language: PHP
- Web framework: WordPress 4.1

CHAPTER 5: RESULT ANALYSIS

5.1 Result

The customer can buy the variety of items. The user can view the items added by the retailers. The users can add item in the cart as requirement also user can view and update the item in the cart. Then user have to log in before checkout and after checkout user is taken to the billing process.

5.2 Critical Analysis

The online shopping website in Nepal is an easy web based interface developed for its customers for easy access of the products where visitor can use the website simply by creating their account and logging in. This web based system is built in PHP WordPress framework in the MVC platform. It makes the shopping reliable and efficient by providing the specification of the products, providing various options features and letting the users to update the cart as per their wish either by removing the items from the cart or by adding the items into the cart.

PHP is a server-side scripting language designed for web development. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. [16] PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge. [17] PHP is an open source scripting language whereas MySQL is one of world's most popular open source databases. The advantages of PHP/MySQL include:

It is compatible with all operating system and browsers (cross platform compatibility). It provides high performance and speed. In PHP, everything runs in PHP's memory space. This means that PHP code will run faster because there is no overhead of communicating with different COM objects in different processes.

Features native support for most popular databases

Multi-language support

Configurable PHP or installing specific libraries is relatively easy

PHP installations are cheaper as compared to other options, and PHP runs great on Linux which is free.

PHP runs very efficiently, even on small hardware footprints, are tightly integrated with the web server, and are better suited for agile development by amateurs. Scripting languages like PHP lend themselves at affordable cost. Sun, on the other hand, failed to make Java accessible to amateurs. PHP has made web development more accessible. [38] Undoubtable, the level of code will take a hit when non-professionals are at work, but as we all know, being a professional is no guarantee for decent code.

PHP, MySQL server are all free and upgrades are also free. In addition, there is no additional licensing cost for having another hot standby server as a backup, or needing to run multiple servers for load balancing or server clustering.

PHP frameworks streamline the development of web applications written in PHP by providing a basic structure for which to build the web applications. In other words, PHP frameworks help to promote rapid application development (RAD), which saves time, helps build more stable applications, and reduces the amount of repetitive coding for developers. Frameworks can also help beginners to build more stable apps by ensuring proper database interaction and coding on the presentation layer. This allows to spend more time creating the actual web application, instead of spending time writing repetitive code. The general idea behind the workings of a PHP framework is referred to as Model View Controller, [18] MVC, Model refers to data, View refers to the presentation layer, and Controller to the application or business logic. Basically, MVC breaks up the development process of an application, so you can work on individual elements while others are unaffected. Essentially, this makes coding in PHP faster and less complicated.

PHP Frameworks are used for various reasons. For speeding up the development process. Reusing code across similar projects will save the developer a substantial amount of time and effort. A framework offers pre-built modules for performing tedious coding tasks, so the developer can spend their time on developing the actual application rather than re-building the foundation with each and every project.

WordPress is well-known for its ease-of-use, performance and speed. The shopping cart developed in this internship program provides basic functionalities of online shopping to the business and customers. The author was not able to work on each and every detail of the project due to limited time span. The payment after checkout process is not included in project as it was not assigned to author due to its sensitive and financial data. Apart from it, the application provides good online shopping facility to user.

5.3 Recommendation to the internship program

The internship program launched under BSc.CSIT program is really an appreciable step taken by the university which will surely be helpful and beneficial to all the BSc.CSIT students to explore their knowledge furthermore. But, the BSc.CSIT course is not application oriented. This course doesn't deal with equipping student's knowledge of any application program. Students learn about computer science, algorithms and inner working of computer system and various architectures. What is seen is there are no such companies which offer internship or job according to what they have learnt in four years. Whatever companies here in Nepal, are application oriented. They built a website, mobile app, SEO, software and web based systems etc. for their clients. There is no place where real knowledge which we gain during four years could be fully utilized.

The course structure of BSc.CSIT is research oriented. Students have a lot of knowledge for R&D (Research & Development). But the companies are not risking taking any steps in R&D. Putting hands in R&D involve huge risk factors. It requires huge investment and efficient manpower. It can't be guaranteed that the

company will sustain and will be able to compete with rest of the companies around the globe.

The companies are just focusing into maintaining and growing their customer base and bring more projects. Companies are involved in outsourcing jobs. The IT market within the country is very less. There are fewer places where IT products are sold, as the working procedure in Nepal is still traditional involving pen and paper. So, absence companies working in computer science R&D has caused lower exploration of our knowledge gained during four years.

CHAPTER 6: CONCLUSION

The internship in e-Zone International Pvt. Ltd. has provided a great opportunity to enhance knowledge and skills. It helped author to gain the experience of working in real and practical field and most importantly working in team. Moreover, it presented an opportunity to work in the project related to author interest and specialization. The main objective of the internship is learning the things that is necessary to get yourself into the real field of work. This internship has enhanced author knowledge and skills. It has given author the opportunity to understand this industry and how the work is actually done.

To conclude, author found that the internship was very beneficial as a part of development of career and the experience gained through this would be helpful and beneficial for the future opportunities. Besides developing a project other lessons are also learnt and they are as follows:

The importance of communication to coordinate the tasks. How important it is to work in team and the way to work in team.

How to bring ideas into the implementation. How to work within the time constraints.

The process of gathering the information that is required to develop a software.

The 'Online Shopping' is designed to provide a web based application that would make viewing and selection of a product easier. The user can then view the specification of each product. The application can be used for any Ecommerce application. It is easy to use. Customers can view the items that are added in the cart and also can remove the item from the cart. The application is easy to use and interactive making online shopping a recreational activity for users. It has been thoroughly tested and implemented.

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<http://www.noupe.com/php/discussing-php-frameworks.html>

CHAPTER 8: APPENDIX

Appendix 1: Screenshots

Shop:

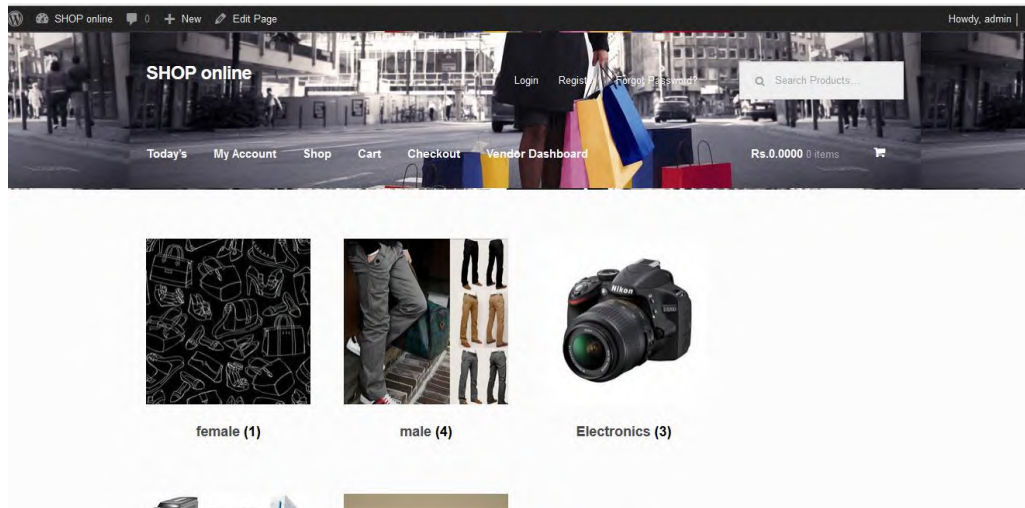


Figure 8: Home screen of shop

Above figure 9 shows how the site looks after the URL is entered.

Sub Categories of item

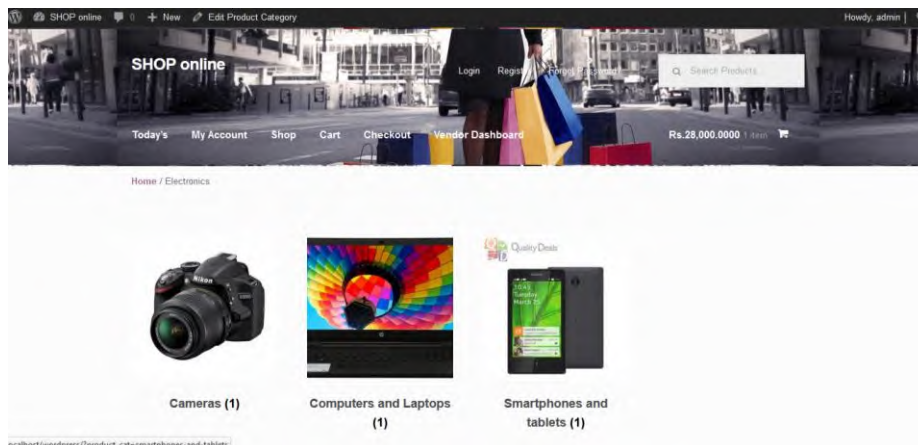


Figure 9: Sub Categories of Item

Here in figure 10 the vendors can add his/her product and similarly buyer can search his/her product in the sub categories.

Login

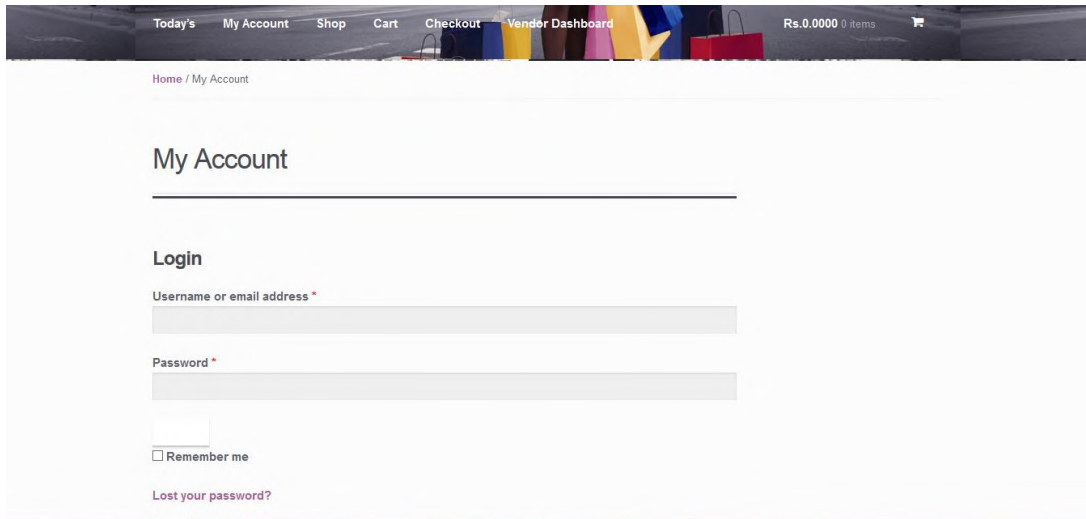


Figure 10: login page

In this figure 11 we can see the login page from which vendors and buyers should login in order to carry out their task.

Selection of particular product

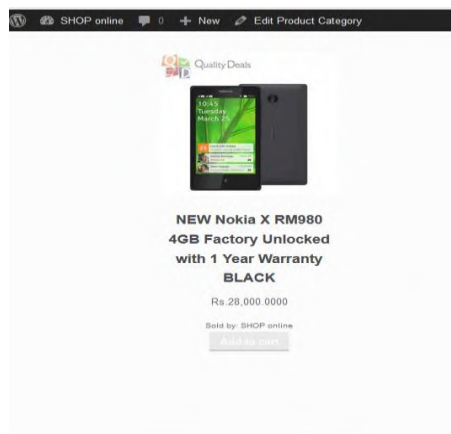


Figure 11: Select the product

In figure 12 we can see a particular item selected by a buyer inorder to buy or add the product into his/her cart.

Checkout

The screenshot shows a web browser window with the URL 'SHOP online'. The page displays a cart item: 'NEW Nokia X RM980 4GB Factory Unlocked with 1 Year Warranty BLACK'. The price is Rs.28,000.0000, and the quantity is 1. Below the item, there is a 'Coupon code' input field. To the right, a 'Cart Totals' section shows a subtotal of Rs.28,000.0000, free shipping, and a total of Rs.28,000.0000. A 'Proceed to Checkout' button is at the bottom.

| PRODUCT | TOTAL |
|---|----------------|
| NEW Nokia X RM980 4GB Factory Unlocked with 1 Year Warranty BLACK × 1 | Rs.28,000.0000 |
| Subtotal | Rs.28,000.0000 |
| Shipping | Free Shipping |
| Total | Rs.28,000.0000 |

Figure 12: Check out

In above figure 13, we can see the product being ready to checkout buy the buyer.

Billing Information

The screenshot shows a web browser window with the URL 'SHOP online'. The page displays a 'Billing Details' form with fields for Country (Nepal), First Name (asdha), Last Name (jhgj), Company Name (hghasd), Address (hghasd), and Postcode / Zip (hasd). To the right, a 'Your order' summary table shows the product details, subtotal, shipping, and total.

| PRODUCT | TOTAL |
|---|----------------|
| NEW Nokia X RM980 4GB Factory Unlocked with 1 Year Warranty BLACK × 1 | Rs.28,000.0000 |
| Subtotal | Rs.28,000.0000 |
| Shipping | Free Shipping |
| Total | Rs.28,000.0000 |

Figure 13: filling the Billing detail

In above figure 14 we can see the final process that is filling up the billing info by the buyer.