DESIGN AND IMPLEMENTATION OF ONLINE SHOPPING SYSTEM

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TABLE OF CONTENTS

LIST OF FIGURES

1. Product Description

1.1 General Overview of Project:

This project is a web-based purchasing system for existing shops. The goal of the project is to provide an online shopping application into Android platform. This project is an attempt to convey the benefits of online shopping to customers in physical stores. Helps to buy items in the store anywhere on the internet using your android device. So, the customer get access to your favorite online shopping and courier services shopping. This system can be used at any store in the area or a multinational brand store with a retail chain. When a store provides an online portal that customers can enjoy and can easily shop from anywhere and the store will not lose any more customers to trendy online shops like eBay. Since then, the application is available on your smartphone and is easily accessible at any time.

1.2 Aim:

The aim of the project is to make an application in android platform to purchase items in an existing shop. To build such an application complete web support, need to be provided. A complete and efficient web application which can provide the online shopping experience is the basic objective of the project. The web application can be implemented in the form of an android application with web view.

1.3 Scope of the project:

This system can be implemented in any shop in the locality or to multinational branded shops having retail outlet chains. The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy. If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won`t be losing any more customers to the trending online shops such as eBay. Since the application is available in the Smartphone it is easily accessible and always available.

1.4 Target Audience:

The proposed project will be beneficial because over the past two years, 22% of people have increased their online shopping habits. More people are shopping online due to the recent recession

such as better deals, no need to travel and easy to comparison. The biggest time of the year that people shop online is the holiday season, in general.

1.5 Goals/Features of project:

The primary goal of e-commerce is to reach maximum customers at the right time to increase sales and profitability of the business. Functions of e-commerce include buying and selling goods, transmitting funds or data over the internet. Apart from this, the project is focused to provide high quality information or results regarding the products search. Having an eCommerce store will boost your business's visibility and attract more customers. As a result, you will be able to sell more products and increase your profits. For selling products we simply need to conduct research, select the right products to sell, and set up an online store to start selling online. The Application is designed to be easily available for the public to use. It will be available online anytime from trusted sources such as, google chrome for android devices and it will increase project understandability and ensure high quality product achieving the goal to deliver a high-quality service.

2. Team Overview

The proposed project has several modules that are developed using various programming languages. We have assigned each module to each member based on their area of expertise.

The same can be viewed in the table below.

Member	Module Assigned
Asha Jyothi Mannem	Angular,JS,HTML
Keerthana Sankaramaddi	UI/UX designer – Figma Testing -Junit

Nivas Reddy Kanmanthareddy	Deployment Manager - Integrator
Sri Gayatri Mudimbi	Backend Development- Web services Using Spring Framework,JDBC

Figure 2.01 Team members and area of expertise

Each team member is assigned roles depending on the level of knowledge of the different modules which is summarized in the table below

Member	Roles Assigned
Asha Jyothi Mannem	Front End Developer
Keerthana Sankaramaddi	UI/UX designer Tester
Nivas Reddy Kanmanthareddy	Deployment Manager Integrator
Sri Gayatri Mudimbi	Backend Developer

Figure 2.02 Team Member and roles assigned

3. Software Process Model Overview

To ensure timely delivery and high-quality software, this project proposes a hybrid software process model. This project can be successfully implemented using a waterfall model and an iterative improvement process model. The waterfall model process is used for core project features such as project planning, design, and iterative processes, and continuously develops the project until it is released to the end user. One of the basic principles of the waterfall model is that each phase must be completed before the next phase begins and the phases do not overlap. The waterfall model always focuses on the goal. This ensures that there are no deadlocks, and the process is transparent. But with the waterfall model, we cannot test the product until the last phase, which is very risky and making changes is very difficult in the waterfall model. So, to overcome all these difficulties we are adding an iterative refinement process in some stages. The main usage of iterative refinement is that we can come back to the same process anytime and make necessary improvements, that is, we can improve the product with each iteration rather than aiming for a perfect design. In addition, all the requirements for this project are clearly understood. The complication that might be encountered is the accuracy of the model is not up to standards. To overcome this, an iterative development can be followed to allow us to go back to the model to increase its prediction accuracy.

4. Project Definition

4.1 User Interface

A user interface, commonly referred to as a "UI," is the user-facing design of a webpage or application. User-friendly UI is important for ecommerce merchants to provide intuitive navigation — and a pleasant shopping experience — for customers.

User Interface design the languages used popularly were JavaScript, Angular JS, and HTML to integrate front end and back end conveniently. A workflow diagram of the functioning of the UI is given in Figure 4.01.

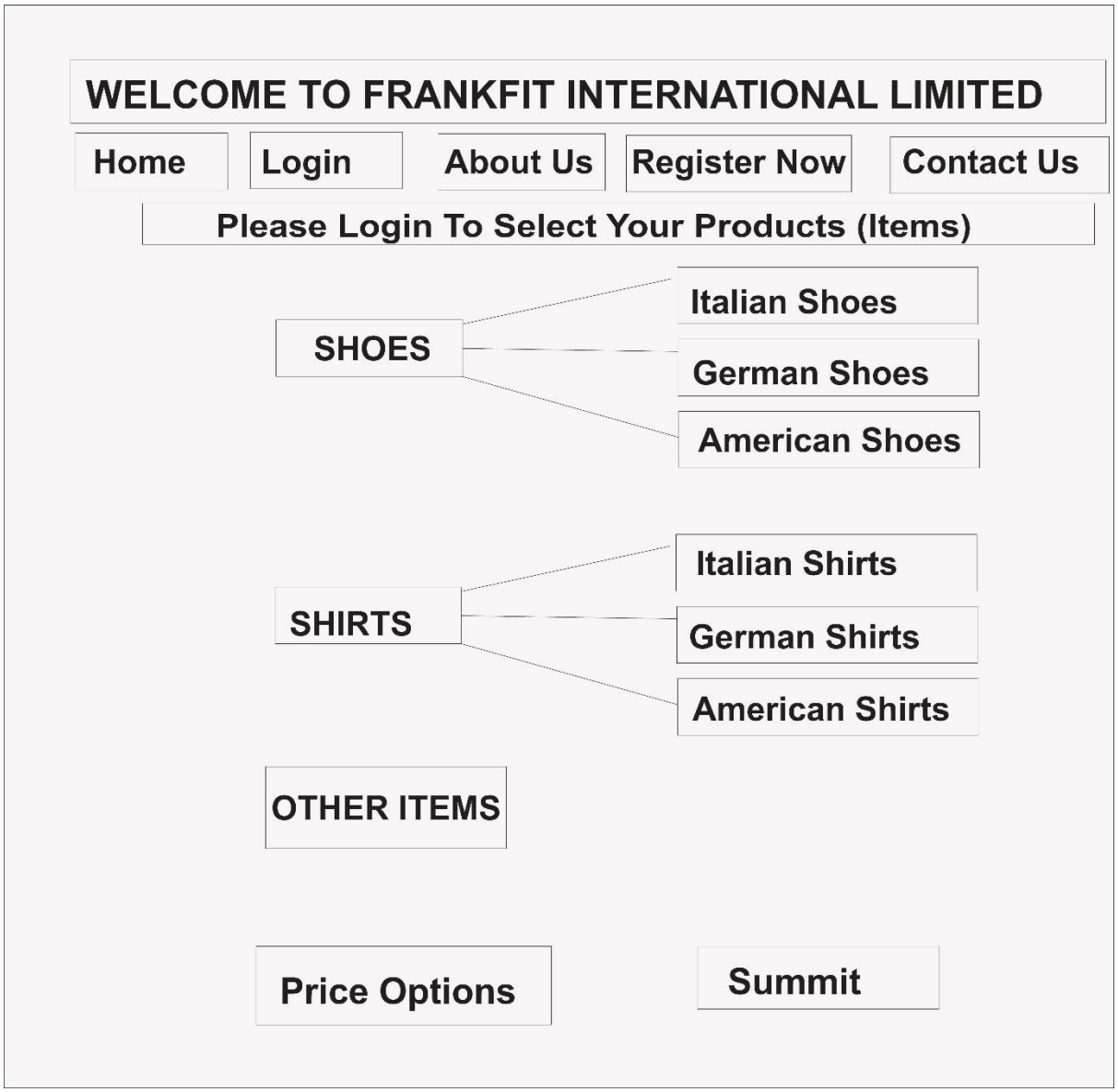


Figure 4.01 Workflow Diagram of UI

4.2 Product Implementation

A good shopping cart design must be accompanied with user-friendly shopping cart application logic. It should be convenient for the customer to view the contents of their cart and to be able to remove or add items to their cart. The shopping cart application described in this project provides several features that are designed to make the customer more comfortable.

This project is about creating an interactive website and the technology used for implementation. With the data model and the process model shows how the database is built with different tables and what the data looks like access and processing from the table. The structure of the project gave me accuracy knowledge of how to develop a website using ASP.NET and how to connect to a database access data, modify data and web pages to give users shopping cart application.

5. Project Organization

5.1 Work Breakdown Structure

The scope of work is depicted in the below chart.

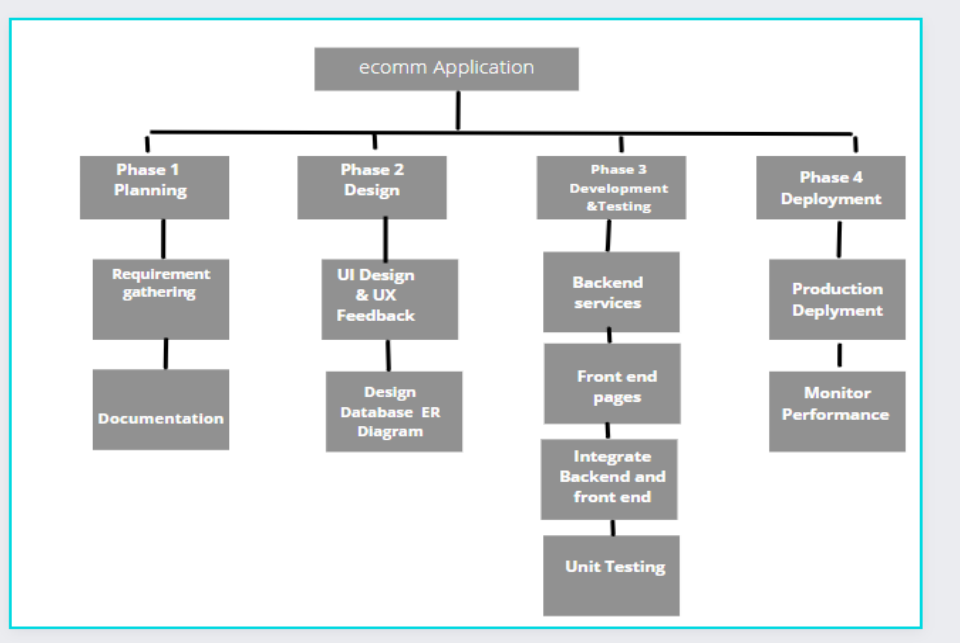
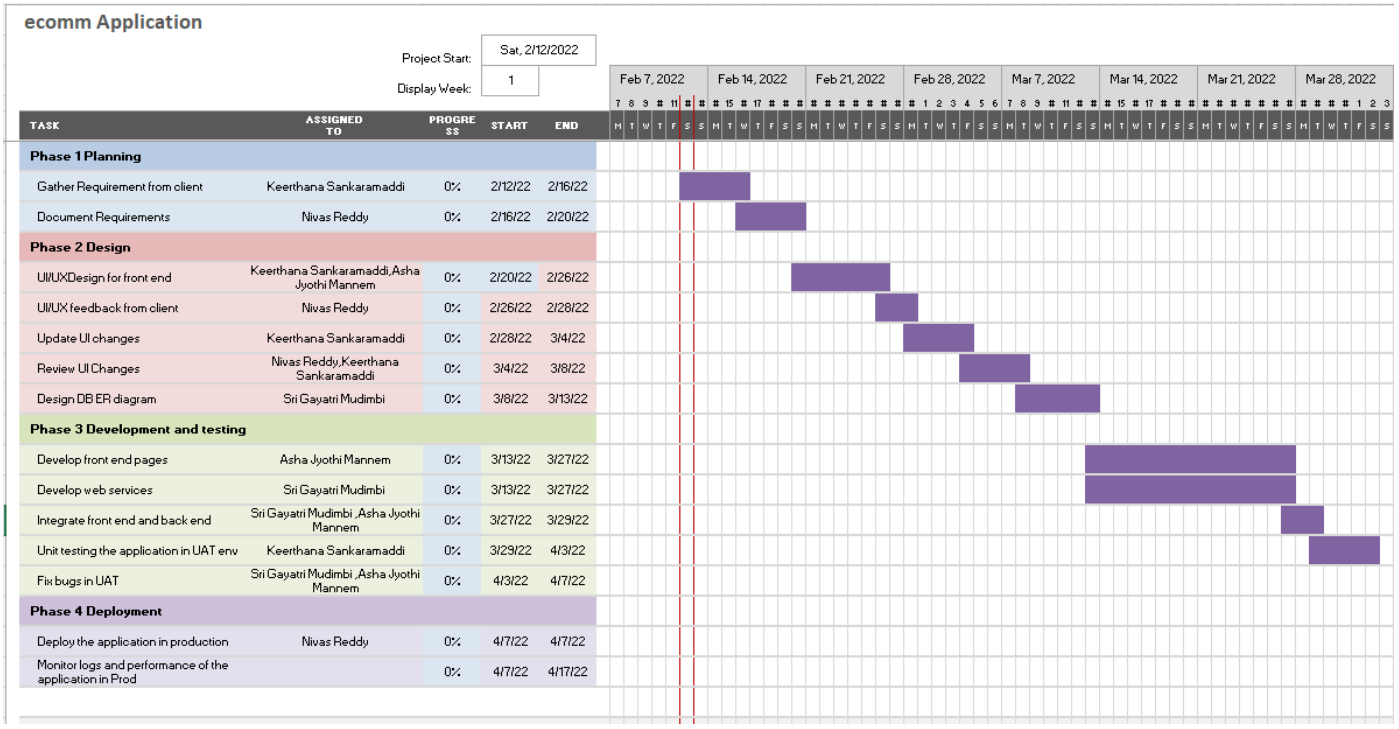


Figure 5.01 Work Breakdown Structure Synopsis

5.2 Team Schedule

A detailed version of the work breakdown structure along with the schedule of the team is depicted in a Gantt chart in Figure 5.02.



TASK	ASSIGNED TO	PROGRESS	START	END
Phase 1 Planning				
Gather Requirement from client	Keerthana Sankaramaddi	0%	2/12/22	2/16/22
Document Requirements	Nivas Reddy	0%	2/16/22	2/20/22
Phase 2 Design				
UI/UXDesign for front end	Keerthana Sankaramaddi,Asha Jyothi Mannem	0%	2/20/22	2/26/22
UI/UX feedback from client	Nivas Reddy	0%	2/26/22	2/28/22
Update UI changes	Keerthana Sankaramaddi	0%	2/28/22	3/4/22
Review UI Changes	Nivas Reddy,Keerthana Sankaramaddi	0%	3/4/22	3/8/22
Design DB ER diagram	Sri Gayatri Mudimbi	0%	3/8/22	3/13/22
Phase 3 Development and testing				
Develop front end pages	Asha Jyothi Mannem	0%	3/13/22	3/27/22
Develop web services	Sri Gayatri Mudimbi	0%	3/13/22	3/27/22
Integrate front end and back end	Sri Gayatri Mudimbi ,Asha Jyothi Mannem	0%	3/27/22	3/29/22
Unit testing the application in UAT env	Keerthana Sankaramaddi	0%	3/29/22	4/3/22
Fix bugs in UAT	Sri Gayatri Mudimbi ,Asha Jyothi Mannem	0%	4/3/22	4/7/22
Phase 4 Deployment				
Deploy the application in production	Nivas Reddy	0%	4/7/22	4/7/22
Monitor logs and performance of the application in Prod		0%	4/7/22	4/17/22

Figure 5.02 Gantt Chart of team schedule

6. Validation Plan

6.1 Sample UI

Online shopping user Interface follows the structure of Figure 6.01. We will have a search button through which user can search based on their category which will provide the classification result given by the prediction model. The output will be displayed along with the sign.

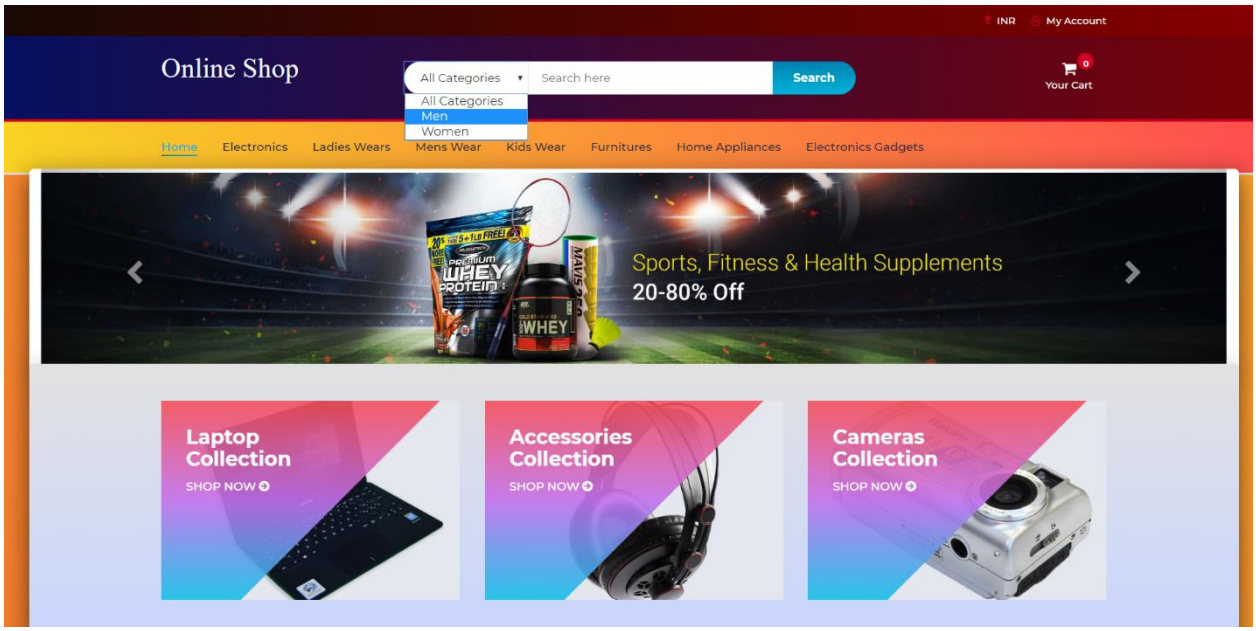


Figure 6.01 Sample Input/Output UI prototype

7. Version Control

The project scope, workflow, deadlines along with other important details are all documented and uploaded in Google Drive. The entire code base is committed to GitHub.

7.1 Google Docs

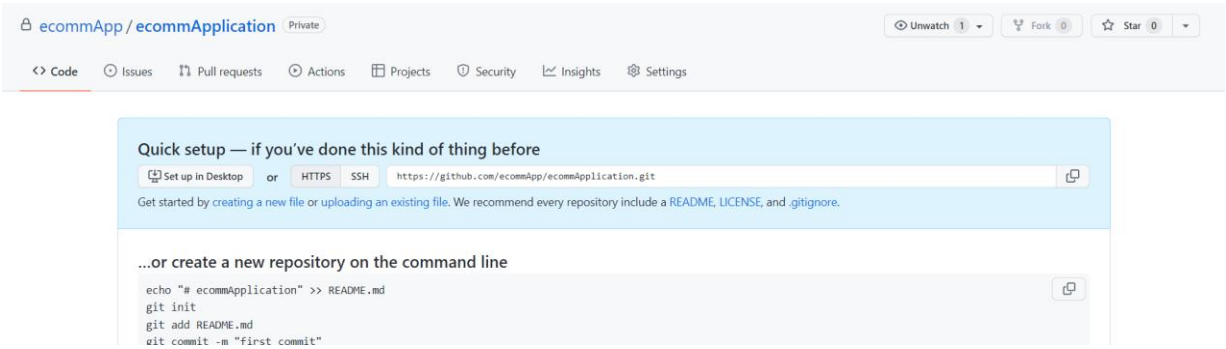
Documentation will be managed through Google Docs, with every team member having the ability to make updates to the pages at the same time. This provides an automated version control, which means that any modifications to the document are automatically recorded, and earlier versions of the content may be easily reached.

7.2 GitHub

The GitHub platform will be used for all application development collaboration. Each team member would be able to clone the project and work on developing using the git repository URL. They can push the code after making essential changes, and the changes are automatically updated in the master branch. By allowing us to observe older commits, GitHub enables automatic version control.

We have created a repository “ecommApplication” for our project. The link for the same can be found below. The code for both front end and backend is committed to different projects in the same repository. We are planning to build a war file and deploy the same in the server.

https://github.com/ecommApp/ecommApplication.git



8. Tools

The various system tools that have been used in developing both the front end and the back end of the project are being discussed in this.

FRONT END: JSP, HTML, CSS, JAVA SCRIPT, ANDROID are utilized to implement the frontend.

Java Server Pages (JSP)

The various pages of the application are designed using JSP. The Java Server Pages component is a type of Java Servlet intended to act as a user interface for Java web applications. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands. JSPs are used to collect user input about webpage.

HTML (Hyper Text Markup Language)

HTML is a syntax used to format a text document on the web.

CSS (Cascading Style Sheets)

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language.

Java Script

JS is a dynamic computer programming language. It is most used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. Java Script is used to create pop-up windows displaying different alerts in the system like “User registered successfully”,” Product added to cart” etc.

Android

The application is delivered to customer through an android application. So android platform is used to develop the user application.

BACK END

The back end is implemented using MySQL which is used to design the databases.

MySQL

MySQL is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language.

An application software called Navicat was used to design the tables in MySQL.

SYSTEM REQUIREMENT

To use it effectively and efficiently, every system software needs certain hardware component or the software requirement to be made available on the computer.
To ensure proper installation and usability of the new system, the following must be taken into consideration:

HARDWARE REQUIREMENT

- A minimum of Pentium (M) processor
- A minimum of 512 MG RAM and 40 GB Hard Disk
- 14 NGA Monitor of flat Screen
- CD ROM Drive, Print, UPS, and a Voltage Regulator
- Flash Drive
- External Hard Disk for Backup