

**A
Project Report
On**

**PC-PARTS
BTech-sem VI**

In partial fulfillment of requirements for

Bachelor of Technology

in

Information Technology

Submitted By:

- 1. Dhruv Patel (IT092)**
- 2. Parth Patel(IT098)**

Under the Guidance of

Prof. Archana N. Vyas



DEPARTMENT OF INFORMATION TECHNOLOGY

**FACULTY OF TECHNOLOGY, DHARMSINH DESAI UNIVERSITY
COLLEGE ROAD, NADIAD- 387001**

CANDIDATE'S DECLARATION

I/We declare that pre-final semester report entitled “PC - PARTS” is my /our own work conducted under the supervision of the guide Prof. Archana N. Vyas.

I/We further declare that to the best of my/our knowledge the report for B.Tech. VI semester does not contain part of the work which has been submitted either in this or any other university without proper citation.

Candidate's Signature

Candidate's Name: Dhruv Patel
Student ID: 18ITUON122

Candidate's Signature

Candidate's Name: Parth Patel
Student ID: 18ITUOS050

Submitted To: Prof. Archana N. Vyas

Department of Information Technology,
Faculty of Technology,
Dharmsinh Desai University, Nadiad
Gujarat.

DHARMSINH DESAI UNIVERSITY
NADIAD-387001, GUJARAT



CERTIFICATE

This is to certify that the project carried out in the subject of Software Design Project, entitled “**PC - PARTS**” and recorded in this report is a bonafide report of work of

1) Dhruv Patel Roll No. IT092 ID No: 18ITUON122

2) Parth Patel Roll No. IT098 ID No: 18ITUOS050

of the Department of Information Technology, semester VI, . They were involved in Project work during the academic year 2020 -2021.

Prof. Archana N. Vyas,
(Project Guide),
Department of Information Technology,
Faculty of Technology,
Dharmsinh Desai University, Nadiad
Date:

Prof. (Dr.) V . K. Dabhi,
Head , Department of Information Technology,
Faculty of Technology,
Dharmsinh Desai University, Nadiad.
Date:

ACKNOWLEDGMENT

It is indeed a great pleasure to express our thanks and gratitude to all those who helped us during this project. This project has given us a great opportunity to think, implement and interact with various aspects of the Software Development Life Cycle. I would like to acknowledge all the people who have helped us at one stage or another by providing the much-needed support, encouragement and groundwork to complete our project. I express a deep sense of gratitude towards our Project guide **Prof. Archana Vyas** towards their ideas and earnest effort to make our project a success. It is their sincerity that prompted us throughout the project to do hard work using the industry adopted technologies. Our commitment to the application is the sole result of patience, hard work and dedication being inspired by them.

A blend of gratitude, pleasure and great satisfaction is what we feel to convey our indebtedness to all those who all have directly or indirectly contributed towards completion of the project.

Dhruv Patel(IT092)
Parth Patel(IT098)

DETAILS OF CHAPTERS

Abstract.....	i
TABLES.....	ii
1. List of Figures.....	ii
2. List of Tables.....	iii
CHAPTER-1 Introduction.....	1
1.1 Project Details: Broad specifications of the work entrusted to you.....	2
1.2 Purpose.....	2
1.3 Scope.....	2
1.4 Objective (Scope – what it can do and can’t do).....	2
1.5 Technology and Literature Review.....	2
CHAPTER-2 Project Management.....	4
2.1 Feasibility Study.....	5
2.1.1 Technical feasibility.....	5
2.1.2 Time schedule feasibility.....	5
2.1.3 Operational feasibility.....	5
2.1.4 Implementation feasibility.....	5
2.2 Project Planning.....	5
2.2.1 Project Development Approach and Justification	5
2.2.2 Milestones and Deliverables	6
2.2.3 Roles and Responsibilities.....	6
2.3 Project Scheduling.....	7
Project Scheduling chart.....	7
CHAPTER-3 System Requirements Study.....	8
3.1 Study of Current System.....	9
3.2 Problems and Weaknesses of Current System.....	9
3.3 User Characteristics (Type of users who is dealing with the system).....	9
3.4 Hardware and Software Requirements (minimum requirements to run your system).....	9
3.5 Constraints.....	10
3.3.1 Hardware Limitations.....	10
3.3.2 Higher Order Language Requirements.....	10
3.3.3 Reliability Requirements.....	10
3.3.4 Criticality of the Application.....	10
3.3.5 Safety and Security Consideration.....	10
3.6 Assumptions and Dependencies.....	10
CHAPTER-4 System Analysis.....	12
4.1 Requirements of New System (SRS).....	13
4.1.1 User Requirements.....	13
4.1.2 System Requirements.....	13
4.2 Data Modeling.....	26
4.2.1 Data Dictionary	26
CHAPTER-5 System Design.....	27
5.1 System Architecture Design.....	28

5.1.1	Class Diagram (Design level with considering impl. Environment MVC based).....	28
5.1.2	Sequence Diagrams (Design level with considering impl. Environment MVC based).....	28
5.1.3	Deployment Diagram.....	34
5.2	Database Design/Data Structure Design.....	35
5.2.1	Table and Relationship.....	35
5.2.2	Logical Description Of Data.....	35
5.3	Input/Output and Interface Design.....	36
5.3.1	State Transition/UML Diagram.....	36
CHAPTER-6 Implementation Planning.....		37
6.1	Implementation Environment (Single vs Multiuser, GUI vs Non GUI).....	38
6.2	Program/Modules Specification.....	38
6.3	Coding Standards.....	39
CHAPTER-7 Testing.....		40
7.1	Testing Plan	41
7.2	Testing Strategy.....	41
7.3	Testing Methods.....	42
7.4	Test Cases.....	43
7.4.1	Purpose.....	43
7.4.2	Required Input.....	43
7.4.3	Expected Result.....	43
CHAPTER-8 User Manual (Screen shots with description).....		49
CHAPTER-9 Limitation and Future Enhancement.....		61
CHAPTER-10 Conclusion and Discussion.....		63
10.1	Conclusions and Future Enhancement.....	64
10.2	Discussion.....	64
10.2.1	Self-Analysis of Project Viabilities.....	64
10.2.2	Problem Encountered and Possible Solutions.....	64
10.2.3	Summary of Project work.....	64
References	66

ABSTRACT

In daily life now a days online shopping has increased by huge amount. Everything we can think of is available online. There is possibility that offline building PC can affect your cost by huge amount compared to online because we potentially cut the brokerage charge of trader in between. Also there is possibility that there may or may not be the product you desire be available offline in local stores. So the main aim of this project is to provide the products they want to build PC at home without any hesitation of offline trader and provide cheap product compared to local stores.

This app has three end users viz. admin, customer and payment service. The admin user manages the product, users and can also read reviews. The customer can view all the products available in stock if customer wants to buy the product then he/she has to login to add to cart and then buy using payment service named Paytm. The logged in user can manage/change their profile accordingly. If user wants some specific of product then user can also use the search bar given at top. The chat bot mechanism provided in the website deals with any inquires the user might have. The role of payment service is to accept payment from user and transfer it to admin.

List Of Figures:

Figure 2.1 Waterfall Method	6
Figure 2.2 Gantt Chart	7
Figure 4.1 Use Case Diagram for Customer	24
Figure 4.2 Use Case Diagram for Admin	25
Figure 4.3 ER Diagram	26
Figure 5.1 Class Diagram of system	28
Figure 5.2 - Sequence diagram for Registration and Verification	29
Figure 5.3 - Sequence diagram for Login	30
Figure 5.4 - Sequence diagram for Forgot Password and Reset Password	30
Figure 5.5 Sequence Diagram for Search Product	31
Figure 5.6 Sequence Diagram for Cart	31
Figure 5.7 Sequence Diagram for Add to Cart	32
Figure 5.8 Sequence Diagram for Edit/Remove Product in Cart	32
Figure 5.9 Sequence Diagram for Logout	33
Figure 5.10 Sequence Diagram for Adding Product(Admin)	33
Figure 5.11 Sequence Diagram for Editing Product(Admin)	34
Figure 5.12 Deployment Diagram	34
Figure 5.13 Data Dictionary for USER	35
Figure 5.14 Data Dictionary for CART	35
Figure 5.15 Data Dictionary for different categories of Product	35
Figure 5.16 STATE DIAGRAM	36
Figure 8.1 Home Page	49
Figure 8.2 Registration Page	50
Figure 8.3 Login Page	51
Figure 8.4 My Profile Page	51
Figure 8.5 Show Product Page	52
Figure 8.6 My Cart Page	53
Figure 8.7 Give Review on Products	54
Figure 8.8 Checkout Page	55
Figure 8.9 Paytm Gateway Page	56
Figure 8.10 Paytm Gateway Confirm OTP Page	57
Figure 8.11 Login Page for admin	58
Figure 8.12 Home Page for admin	59

List Of Tables:

Table 7.4.1 Test case of Login and Forgot Password	43
Table 7.4.2 Test case of Update profile	44
Table 7.4.3 Test case of registration of user	45
Table 7.4.4 Test case of adding data to cart	46
Table 7.4.5 Test case of search	46
Table 7.4.6 Test case of checkout	47
Table 7.4.7 Test case of adding product by admin	47
Table 7.4.8 Test case of logout	47

CHAPTER - 1 - INTRODUCTION

1.1 Project Details: Broad specifications of the work entrusted to you.

1.2 Purpose

1.3 Scope

1.4 Objective (Scope – what it can do and can't do)

1.5 Technology and Literature Review

1.1 Project Details: Broad specifications of the work entrusted to you.

The proposed system is a website to buy or sell different parts of PC using internet connection. Enables consumers to shop or do other transactions 24 hours a day, all year round from almost any location. It can be accessed over the Internet.

Purchasing goods online, users can choose different products based on categories , online payments , delivery services and hence covering the disadvantages of the existing system and making the buying easier and helping the vendors to reach a wider market. It Provides consumers with more choices.

1.2 Purpose

Pc Parts provides a facility to customers to buy different products required for building a PC at the same place.

The purpose to design this application is to provide the right to the customer to choose the best product which is most appropriate and suitable according to his/her requirements.

1.3 Scope

In this application users can get all the necessary details of different products of PC. And later users can select products and buy those products.

1.4 Objective (Scope – what it can do and can't do)

The main objective of PC PARTS project is to make responsive websites, reduce the management cost(as much as possible), and provide a unique customer experience.

To save time for customers.

Main challenge is to maintain a smooth flow of operations involving customers and admin.

1.5 Technology and Literature Review

Technology:

Front-End: Html, Css, Javascript, etc.

Back-end: Django

Database: MYSQL

Html: The HyperText Markup Language, or HTML(HyperText Markup Language) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Css: Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language such as HTML.

Javascript: JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Django: Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of Web development, so you can focus on writing your app without needing to reinvent the wheel. It's free and open source.

MYSQL: MySQL is an open-source relational database management system. Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language.

Software Required: VSCODE

VScode: Visual Studio Code is a freeware source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

CHAPTER - 2 - PROJECT MANAGEMENT

2.1 Feasibility Study

- 2.1.1 Technical feasibility
- 2.1.2 Time schedule feasibility
- 2.1.3 Operational feasibility
- 2.1.4 Implementation feasibility

2.2 Project Planning

- 2.2.1 Project Development Approach and Justification
- 2.2.2 Milestones and Deliverables
- 2.2.3 Roles and Responsibilities
- 2.2.4 Group Dependencies

2.3 Project Scheduling

- 2.3.1 Project Scheduling chart

2.1 Feasibility Study:

2.1.1 Technical feasibility:

Since the project is designed with Microsoft Visual Studio, it is easy to install in all the systems wherever needed. It is more efficient, easy and user friendly to understand by everyone. Huge amount of data can be handled efficiently using Microsoft SQL Server as a back end and it also handles stored procedures.

2.1.2 Time schedule feasibility:

The project has simple working and the basic requirement can be satisfied within the allotted time period so the time development feasibility for this is satisfied.

2.1.3 Operational feasibility:

The number of users to this application is very vast and every user can use this application to check different pc parts. These kinds of applications are becoming more common day by day. And this Project is divided into different modules so that every user has no privileges to see every module, they can see only their permissible module only. Hence, this system is operationally feasible.

2.1.4 Implementation feasibility:

The requirements mentioned above can be fulfilled using various technologies available. Django, MySql, etc. The system uses basic coding standards and implementation rules and logic. The system is reliable and easy going for all users.

2.2 Project Planning:

2.2.1 Project Development Approach and Justification

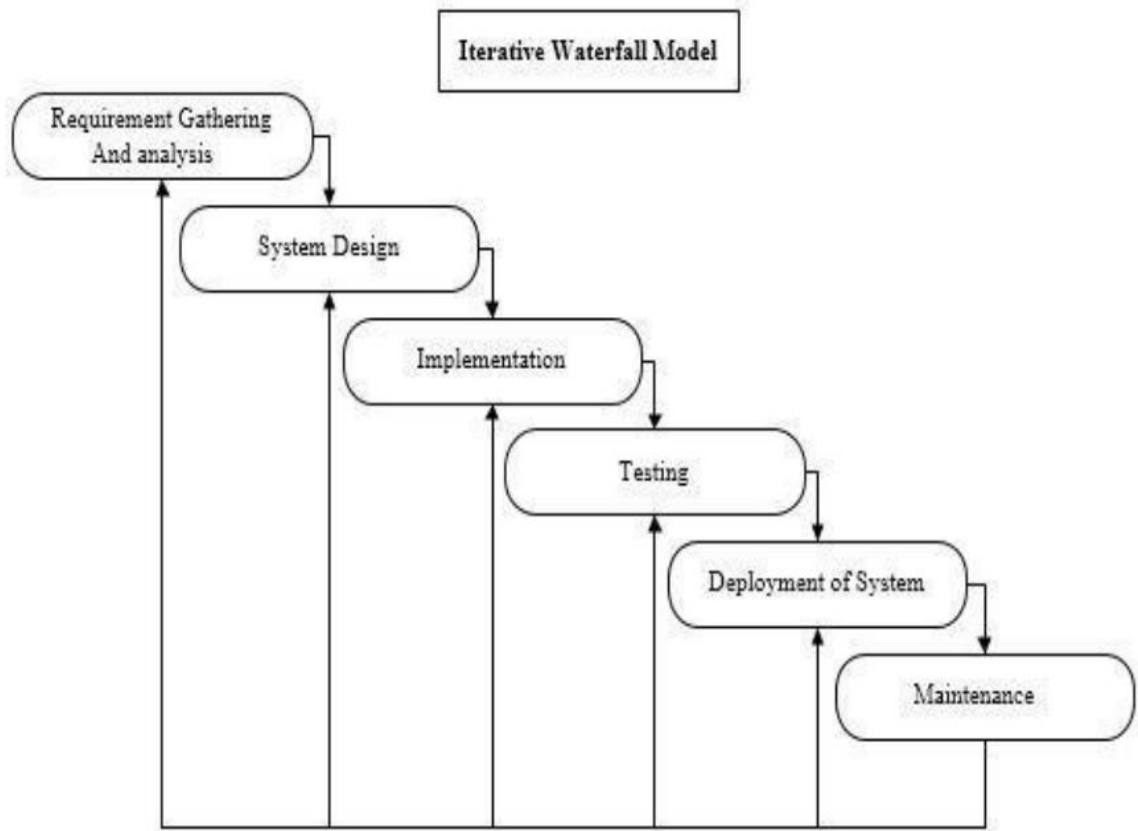


Figure 2.1 Waterfall Method

We used an iterative waterfall model in this application, because we can switch at the back stage.

2.2.2 Milestones and Deliverables:

Feasibility analysis phase: 1 week

- Requirement analysis and Specification phase: 3 week
- Page design done: 1 week
- Front-End connected to database: 1 week
- Designing phase: 1 weeks
- Coding phase: 4 weeks
- Testing phase: 2 weeks
- All functions work and navigate correctly with testing three times.

2.2.3 Roles and Responsibilities:

Database: Parth Patel, Dhruv Patel

Front-End: Dhruv Patel

Back-End: Parth Patel

2.4 Project Scheduling:

2.4.1 Project Scheduling chart

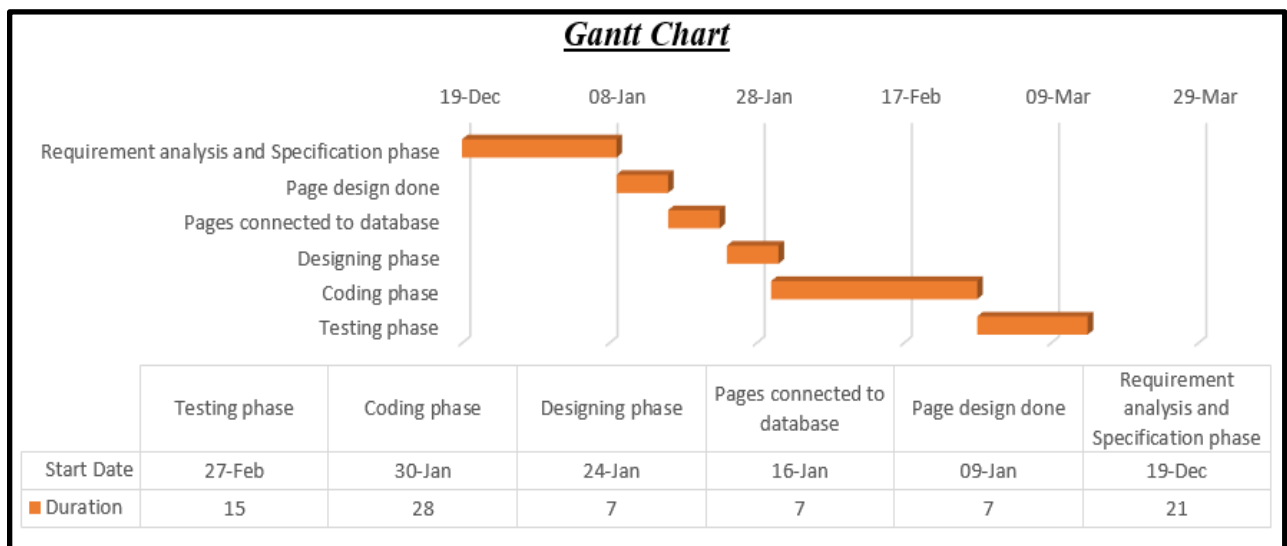


Figure 2.2 Gantt Chart

CHAPTER - 3 - SYSTEM REQUIREMENTS STUDY

3.1 Study of Current System

3.2 Problems and Weaknesses of Current System

3.3 User Characteristics (Type of users who is dealing with the system)

3.4 Hardware and Software Requirements (minimum requirements to run your system)

3.5 Constraints

3.3.1 Hardware Limitations

3.3.2 Higher Order Language Requirements

3.3.3 Reliability Requirements

3.3.4 Criticality of the Application

3.3.5 Safety and Security Consideration

3.6 Assumptions and Dependencies

CHAPTER - 3 - SYSTEM REQUIREMENT STUDIES

3.1 Study of Current System

In the first step of our project, we went through current E-commerce websites which deal with PC PARTS and tried to analyze their websites to acquire knowledge.

3.2 Problems and Weaknesses of Current System

- Time consuming
- Expensive
- Need Supplier
- Depends on only one payment method(PAYTM)

3.3 User Characteristics (Type of users who is dealing with the system)

The major User classes in the System would be:

1. Administrator users

The Admin users are users of the system that manages and assigns privileges to other users of the system. Also the administrator user is responsible for managing orders and databases.

2. Customer Users

The Customer Users can browse, search, view products according to their need. Also customers can add products to their cart and can buy the same.

3.4 Hardware and Software Requirements (minimum requirements to run your system)

3.1: Hardware Requirements:

- Processor: Intel x86 64-bit chip architecture, 12 CPU, cores at 2Ghz
- RAM: Minimum 4 GB.
- Hard Disk: Minimum 2 GB.

3.2: Software Requirements:

- Server Side: Any Operating System which has graphical user interface(GUI).
- Client Side: The user's browser should support HTML5 and JavaScript and cookies must be enabled for a satisfactory user experience.

- Frontend: HTML, CSS, JAVASCRIPT
- Backend: DJANGO
- Database: MYSQL

3.5 Constraints

3.3.1 Hardware Limitations:

The user must possess a computer with internet access.

3.3.2 Higher Order Language Requirements:

The application requires the front end to be the windows/macOS.

3.3.3 Reliability Requirements:

The application must adhere to the reliability requirements as needed and should run smoothly on devices.

3.5.4 Criticality of the Application:

The application would not work if there is no working network or data connection available.

3.3.5 Safety and Security Consideration:

The application does not access any feature of the device which may cause it to compromise on the user's security or personal information. No data of user except location is used by the application; hence, data theft is prevented. The transactions are secured using Paytm.

3.6 Assumptions and Dependencies

Assumptions are described below: -

- Users should have some knowledge about the workflow of the system.
- Server is running smoothly.
- Users have a working PAYTM account.
- Database updates are giving expected and accurate results.
- Dependencies are described as below: -
- The system working needs an Internet/Wi-Fi Connection.

CHAPTER - 4 - SYSTEM ANALYSIS

4.1 Requirements of New System (SRS)

4.1.1 User Requirements

4.1.2 Non-functional Requirements

4.2 Use Case Diagram

4.3 Class Diagram

CHAPTER - 4 - SYSTEM ANALYSIS

4.1 REQUIREMENTS OF NEW SYSTEM(SRS):

4.1.1 User Requirements

R1: REGISTRATION

Description: If a customer wants to buy any item from the website then he/she must be registered, unregistered users can't add items to cart. After the registration customer has to login to purchase any product.

Pre-Condition: The customer should not be already registered using the same username or email. It has to be a new account also the password should contain one capital character, one small character, one numerical and one special character and the length of password should be more than 8 characters.

Input: The customer enters details i.e First Name, Last Name, Email, User Name, password, confirm password and clicks on the register button to check if the account is already registered with the same username or email.

Processing: Checks whether all the data is valid(according to rules of database).

Output: Successfully registered user will be redirected to login page and if any error occurs then error will be shown on the same registration page with error message.

Post-Condition: The data is stored temporarily before verification.

R2: LOGIN

Description: It allows only authorized people to access the application. When the user logs in to the system, the user has to enter login details in the specific fields. The user clicks on the login button and if the username and password are validated, then the user is given access to the application and user profile is displayed.

Pre-Condition: User must be registered.

Input: Enter your user name or email address and password.

Processing : Checks whether the user is already registered and the entered email address and password is correct or not.

Output: If valid, then the user is given access to the application and user profile is displayed. Else an error message is displayed indicating some incorrect input.

Post-Condition : User is redirected to Home Page.

R2.1: FORGOT PASSWORD:

Description: If the user forgets the password, it can be retrieved by “Forgot Password?” button. An OTP is sent to the user on the registered email address and then using that OTP the user can set the new password.

Pre-Condition: User must be registered.

Input: Enter username.

Processing : Checks whether user data is valid and already registered in the database.

Output: An email for password recovery is sent to the user.

Post-Condition: User is given option to reset password.

R.2.1.1 RESET PASSWORD:

Pre-Condition: User must get an email to recover password.

Input: Enter new password and confirm the new password.

Processing: Checks whether both the fields contain the same password.

Output: Message – Password reset successfully.

Post-Condition: New Password is updated in the database.

R3: HOME

R3.1 Search Product/Shop :

Description: Customer can search product or item or shop whichever they want directly by entering product or item or shop name or customer can click on drop down menu to see the categories of product available.

Input: Enter product/item or select category from drop down menu.

Processing: Checks whether the entered name of product is available in the database and performs fetching.

Output: Selected product or category wise product will be displayed.

R.3.1.1 PRODUCT PAGE:

Pre-Condition: To view the product page of any product the product must be present in the database and after search it should appear.

Input: To view the product page the user must click on the product displayed after search.

Processing: Entire data for that product is fetched in the database.

Output: Product information is displayed along with the add to cart option.

R.3.1.1.1: PRODUCT INFORMATION:

Pre-Condition: Product Information must be available in the database.

Output: Product information is displayed.

R3.1.1.2: ADD TO CART:

Description: Customers can add products/items into cart which they want to purchase.

Pre-Condition: Check whether product is available or not and user must be logged in the account.

Input: Select product and quantity and click on add to cart symbol.

Processing: Checks whether the quantity that user wants is available or not.

Output: Item is added to your cart.

Post-Condition: Cart data is entered in the database.

R.3.2: SHOPPING CART:

Description: User can view the cart and perform operations on cart.

Pre-Condition: If the user wants to purchase so first product must be added to cart.

Input: Click on the Cart shown on the Home Page.

Processing: Fetches the data from the database if the user has added products to cart.

Output: User cart is displayed with all added products.

R3.2.1: EDIT PRODUCT:

Description: Customers can increase or decrease the item quantity.

Pre-Condition: Product must be there in the cart.

Input: Click button for increasing or decreasing item quantity.

Processing: Checks whether the changed quantity is available and also updates the summary (price) accordingly.

Output: Item quantity is updated.

Post-Condition: The change must be reflected in the database.

R3.2.2: REMOVE PRODUCT:

Description: After adding item to the cart customer can removed the item from the cart.

Pre-Condition: Product must be there in the cart.

Input: Select “Remove from cart” button so the item will be removed.

Output: Item is removed.

Post-Condition: Product is removed from cart also database will be updated.

R.3.2.3: PLACE ORDER:

Description: After entering the items into the cart, Customer clicks on Place Order to purchase the items.

Pre-Condition: Product must be there in the cart.

Input: Click on the next to complete the purchase.

Output: Next Page Shipping details are displayed to complete purchase.

R.3.2.3.1: SHIPPING DETAILS:

Pre-Condition: Customer must click on next on the shopping cart to complete purchase.

Input : Customer enters shipping details - First Name, Last Name, Phone, Email Address, Address, Town/City, State, Postal Code. Also selects payment method and clicks on Place Order Button(Next).

Processing: Checks whether all the data entered is valid(according to rules of database).

Output : Entered data is saved.

Post-Condition: Database is updated.

R.3.2.3.2: PAYMENT

Description: For customer there are many types of secure billing will be prepaid as debit or credit card, paytm wallet, UPI, etc. The security will provide by the third party actor Paytm.

Pre-Condition: This is the last step to complete purchase so till now all the steps should be completed.

Input: Enter any one method through which the user wants to make the payment. Enter your card details, wallet details, bank details(if necessary).

Processing: Checks the payment mode and performs validation.

Output: The order is finally placed if payment is done else message will be shown “payment is failed.”

Post-Condition: Order is entered in the database.

R.3.2.3.2.1: ONLINE PAYMENT:

Pre-Condition: Customer must be on the payment page to select online payment

Input: Click on Online payment mode and Enter your card details, cvv, card holder name, date(if necessary).

Processing: Checks whether all the data entered is valid(according to rules of database).

Output: The order is finally place if payment is done else message will be shown “payment is failed.”

Post-Condition: Order is entered in the database.

R3.3: USER PROFILE:

Description : Contains all the details of the customer – First Name, Last Name, Mobile Number, Email Address, Shipping Address.

Pre-Condition: Customers must be logged in and have an account.

Input: Select from Profile or My Orders.

Processing: Based on the selection data is fetched from the database.

Output: The selected page is displayed.

R.3.3.1: PROFILE:

Pre-Condition: Customers must be logged in and have an account.

Input: Click on Profile to see the customers personal data.

Processing: Data is fetched from database.

Output: Profile of the customer is displayed.

Post-Condition: Customers profile page is displayed.

R3.3.1.1: EDIT PROFILE:

Description: Customer can change their profile details after the login to application and going to profile page.

Pre-Condition: User must first have a profile.

Input: Click on Edit Profile to edit your profile detail like name, email, contact no etc.

Processing: Checks whether edited data satisfy the validation rules.

Output: Profile is updated.

Post-Condition: User Profile is updated in the database.

R.3.3.2: MY ORDERS:

Description : Customer can see the all the ordered product information and complete ordered history.

Input: Select My Orders option.

Processing: Data is fetched from database.

Output: Display ordered products information.

R.3.3.2.1: SUBMIT REVIEWS/CUSTOMER REVIEWS OF THE PRODUCT:

Description: The experience of the customer after using the application is taken in terms of stars and also given their experience by writing the comment of the product that the user purchased.

Pre-Condition: Customers have to purchase the product to write a review.

Input: Write product reviews and rate.

Output: review added.

Post-Condition: Reviews are added to the database and your reviews are displayed at the bottom of products which you have purchased and shown to all users.

R.3.4: LOGOUT

Description: After the payment or surf the product the customer can log out using the logout button.

Pre-Condition: User must be logged in.

Input: Click on logout.

Output: Customer is redirected to Log in Page

Post-Condition: Customer's changes are reflected in the database and the session is expired.

ADMIN

R1: LOGIN

Description: It allows only authorized people to access the application. When the admin logs in to the system, the admin has to enter login details in the specific fields. The admin clicks on the login button and if the username and password are validated, then the admin is given access to the application and admin dashboard is displayed.

Pre-Condition: admin must be registered.

Input: Enter your user name or email address and password.

Processing : Checks whether the entered email address and password is correct or not.

Output: If valid, then admin is given access to the application and admin dashboard is displayed. Else an error message is displayed indicating some incorrect input.

Post-Condition : admin is redirected to Dashboard.

R2: MANAGE PRODUCT DETAILS:

Description: Admin can see all the product details and he can add new product details and edit the existing product details.

R2.1: ADD PRODUCT DETAILS:

Description: When the admin clicks on the add new button he can add the product details.

Pre-Condition: Admin has to click on add new button.

Input: Enter product name, shop name, price, product description, select category and product type, upload image and status.

Processing: Checks whether all the entered fields are correct or not according to the database.

Output: Product added message will be displayed.

Post-Condition: Product details have to be added to the database.

R2.2: EDIT PRODUCT DETAILS:

Description: If the admin wants to edit the product details he has to click on the edit for that product and then information of the product will be changed.

Pre-Condition: Admin has to click on edit.

Input: Change the required information of products.

Processing: Checks if the edited information is valid or not.

Output: Edited information will be displayed.

Post-Condition: Edited information has to update on the database.

Processing: Checks if the edited information is valid or not.

R3: VIEW CUSTOMERS:

Description: Admin can view the detailed information of customers.

Input: Admin has to click on the view customer.

Output: Detailed information of customers will be displayed.

R4: VIEW REVIEWS:

Description: Admin can see the reviews given by the customers for the products and shops.

Input: Clicks on the reviews.

Output: All the reviews will be displayed and admin can see the all reviews.

R5: AUTHORIZATION:

Description: The entered id and password are checked in the database and if it is valid then the user is allowed to login.

Input: The id and password which are the inputs of the login module are passed to the database.

Output: positive reply if password is correct.

R6: LOGOUT

Description: After the required changes admin can log out.

Pre-Condition: User must be logged in.

Input: Click on logout.

Output: admin is redirected to Log in Page

Post-Condition: admin's changes are reflected in the database and the session is expired.

4.1.2 NON-FUNCTIONAL REQUIREMENT:

- Secure access of confidential data by username and password. The application is secure for every kind of its users, because if any user logout from any session then nobody will be able to access his profile without knowing his confidential password.
- 24*7 availability.
- Better component design to get better performance at peak time.
- The database used here is robust, reliable and fast. So users will have to wait for the output for a very short time.
- There is no case of redundancy in the database so it will not take extra memory space.

4.2 USE CASE DIAGRAM:

4.2.1 CUSTOMER

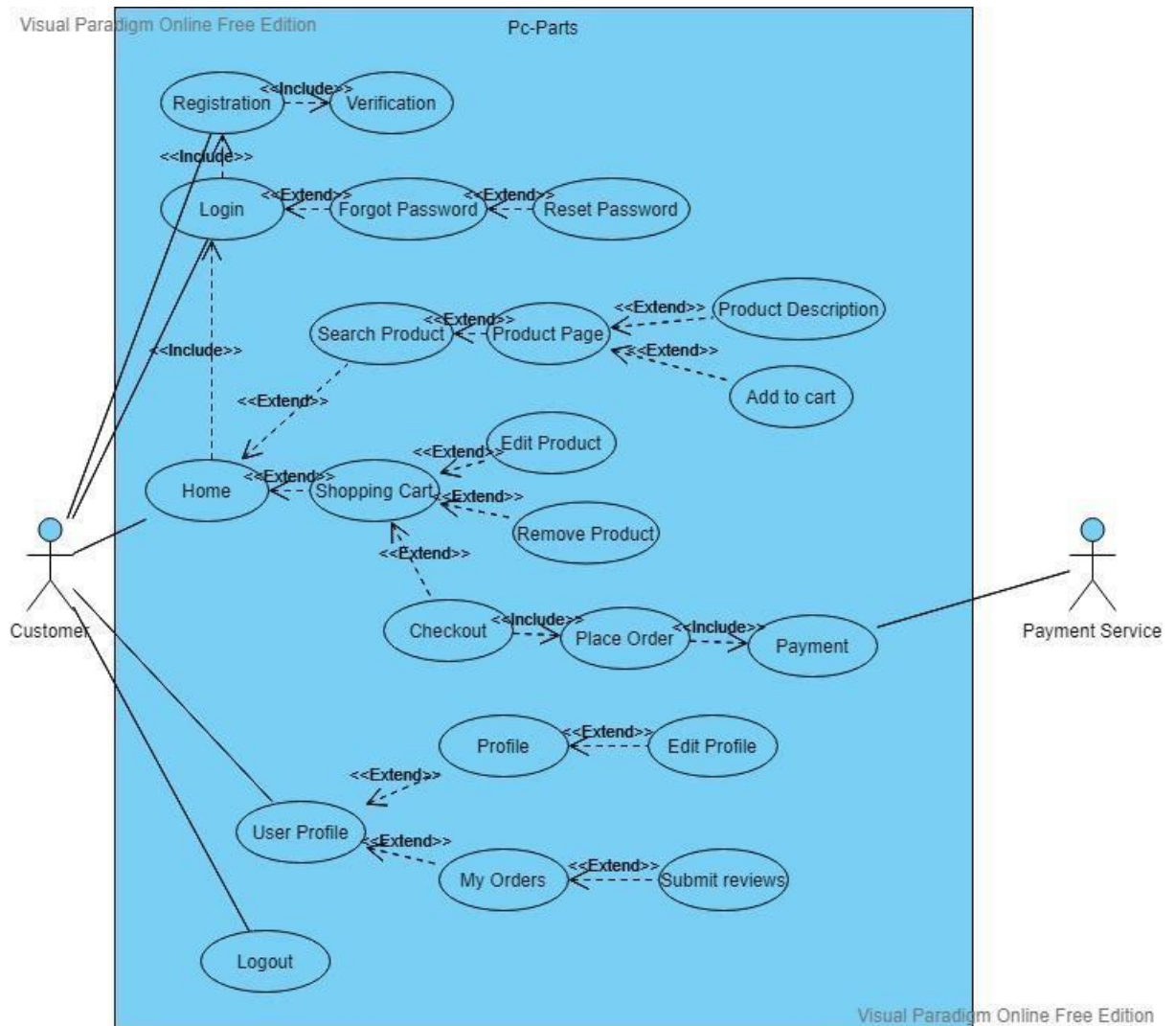


Figure 4.1 Use Case Diagram for Customer

4.2.2 ADMIN

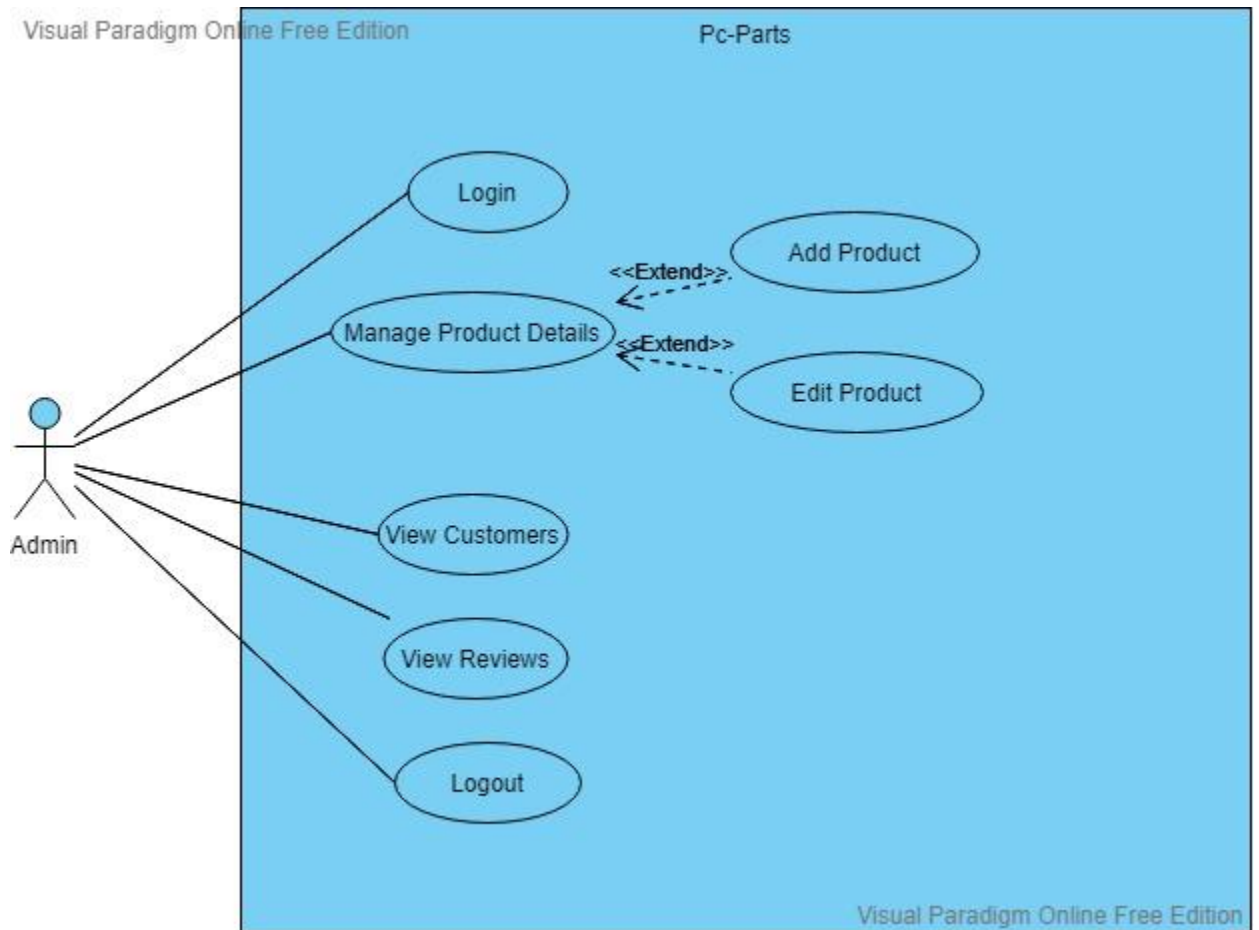


Figure 4.2 Use Case Diagram for Admin

4.3 Data dictionary/ER diagram:

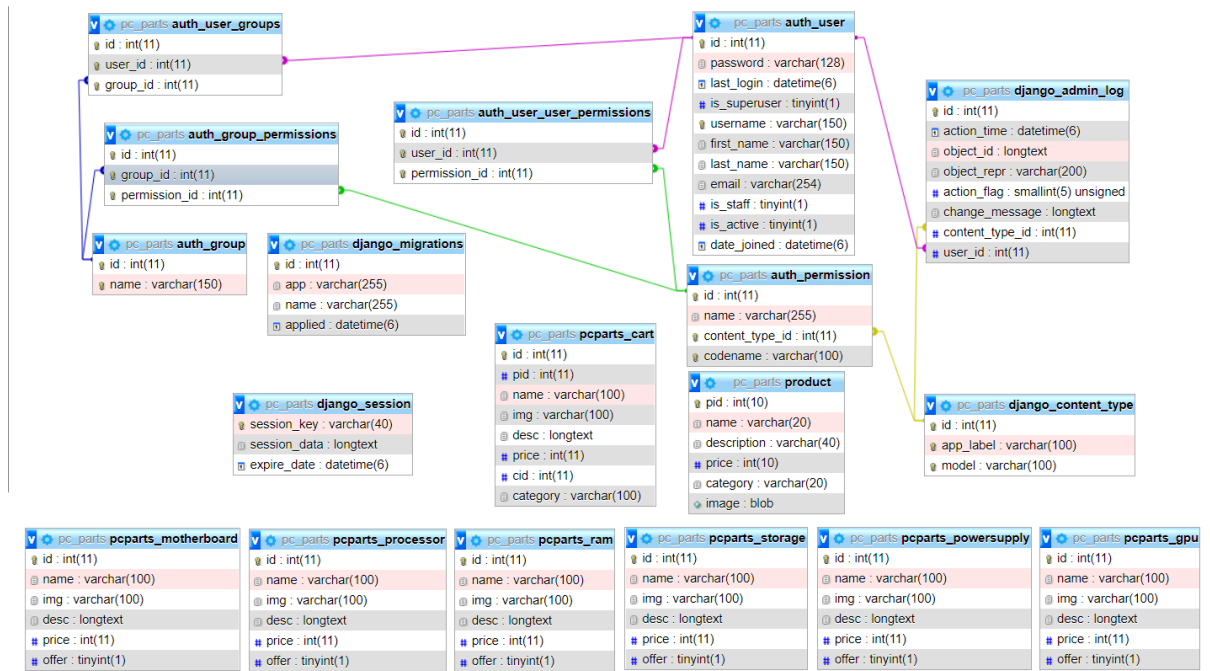


Figure 4.3 ER Diagram

CHAPTER 5 - SYSTEM DESIGN

5.1 System Architecture Design

5.1.1 Class Diagram (Design level with considering impl. Environment MVC based)

5.1.2 Sequence Diagrams (Design level with considering impl. Environment MVC based)

5.1.3 Deployment Diagram

5.2 Database Design/Data Structure Design

5.2.1 Data Dictionary

5.3 Input/Output and Interface Design

5.3.1 State Transition/UML Diagram

5.1 - SYSTEM ARCHITECTURE DESIGN:

5.1.1 - CLASS DIAGRAM(Design level with considering impl. Environment MVC based):

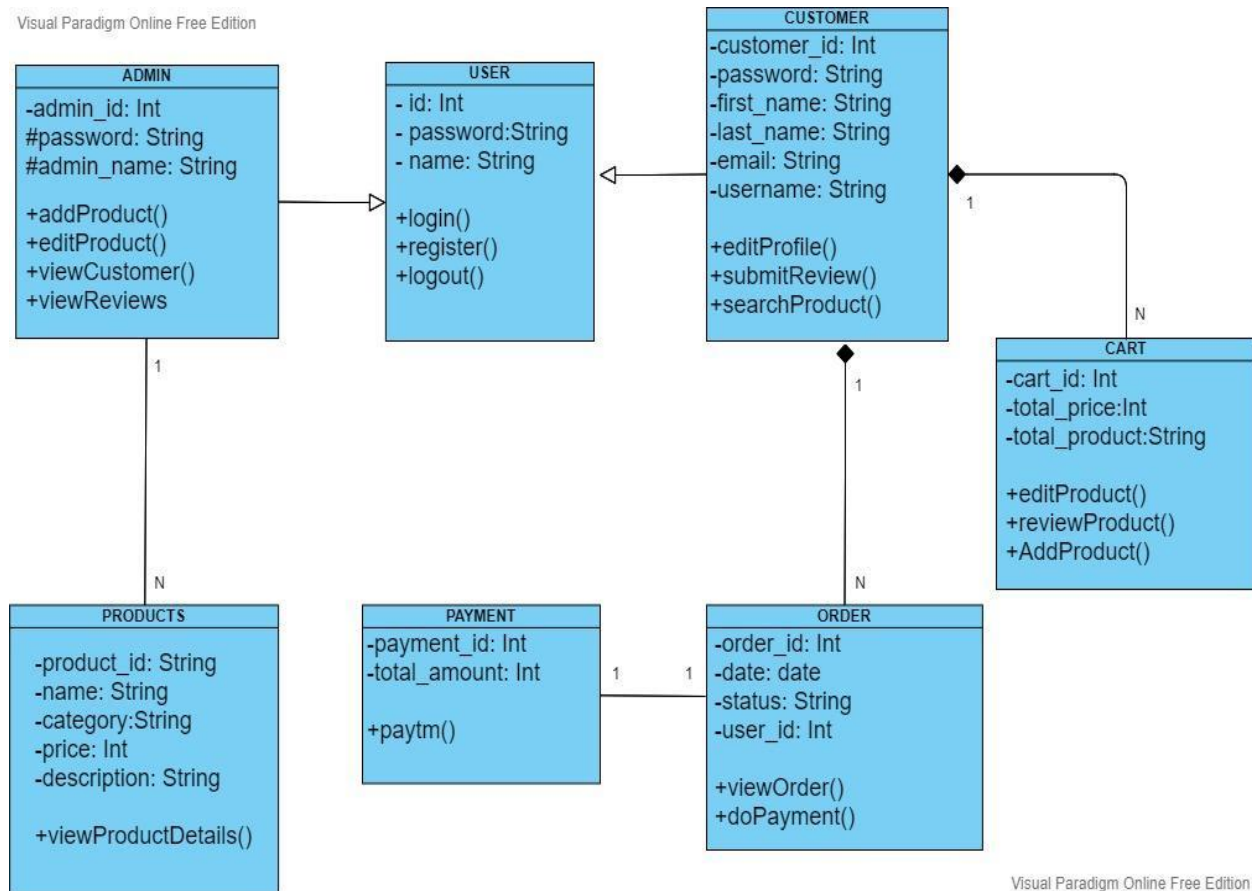


Figure 5.1 Class Diagram of system

5.1.2 - SEQUENCE DIAGRAMS:

CUSTOMER SEQUENCE DIAGRAMS

1. Registration and Verification:

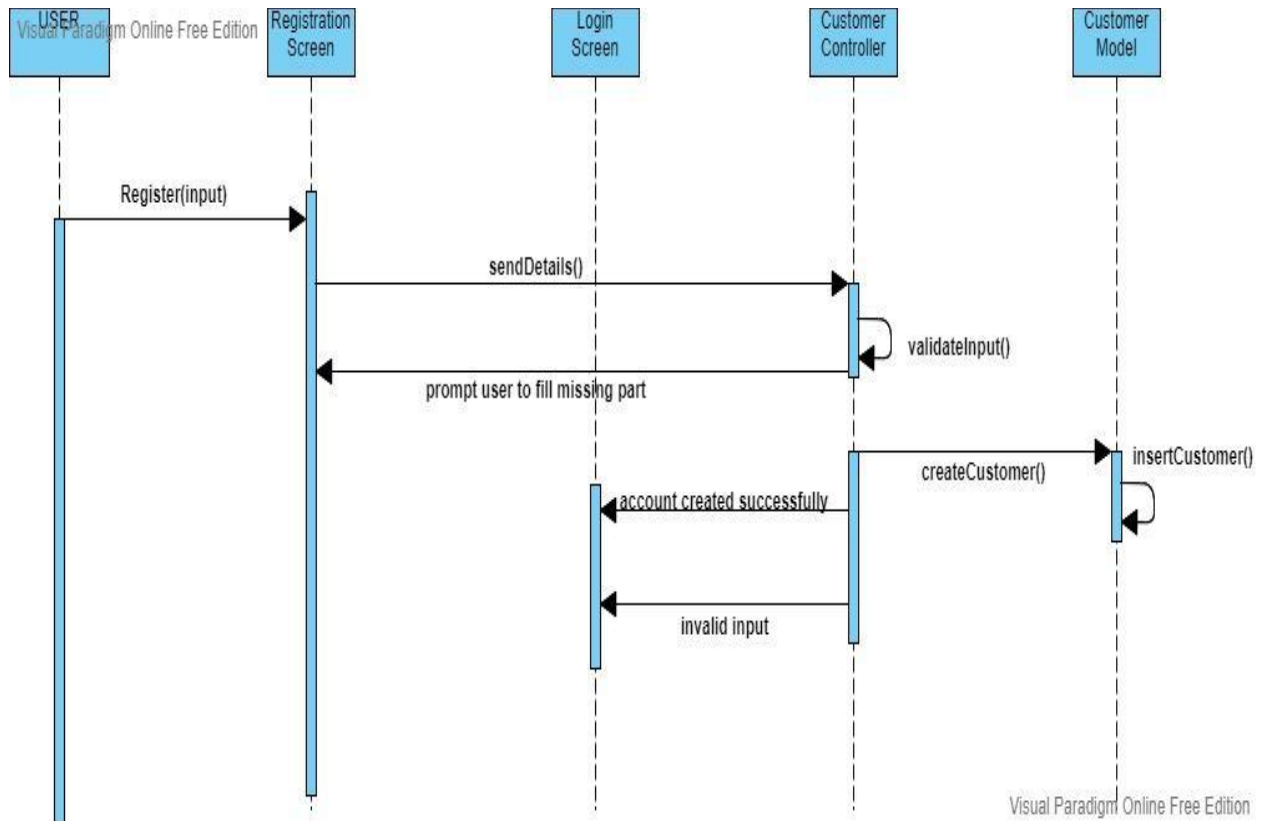


Figure 5.2 - Sequence diagram for Registration and Verification

2. LogIn:

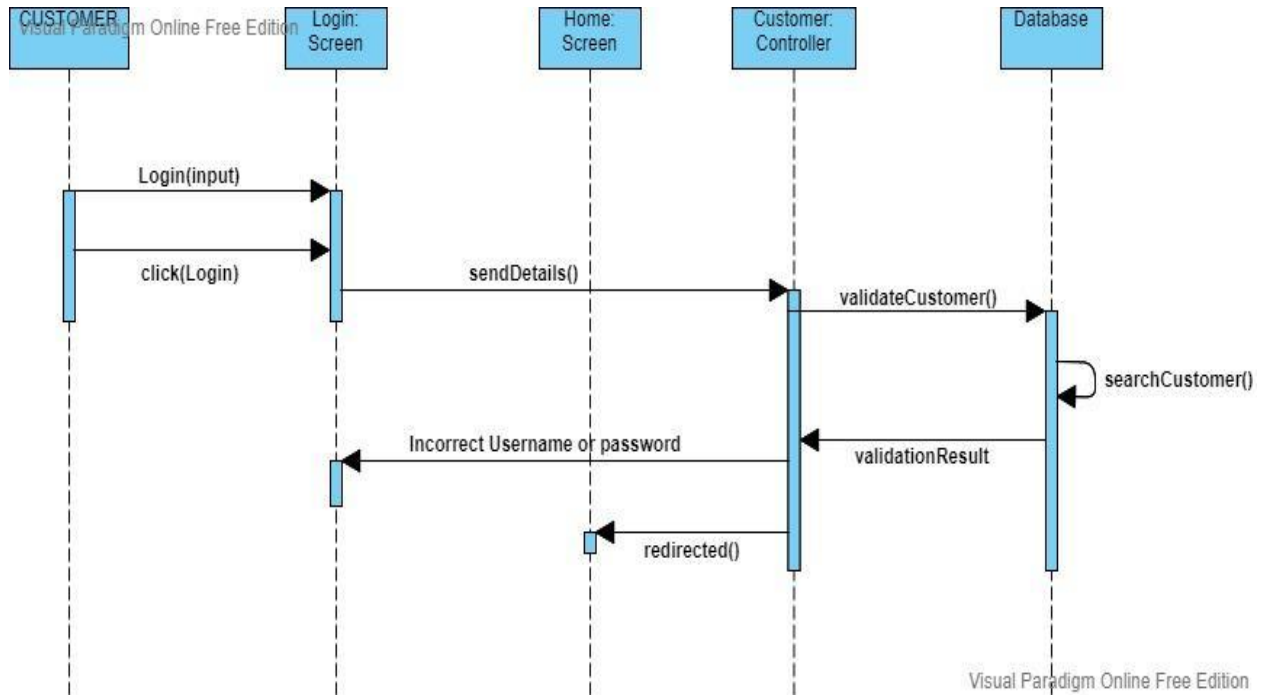


Figure 5.3 - Sequence diagram for Login

3. Forgot Password and Reset Password:

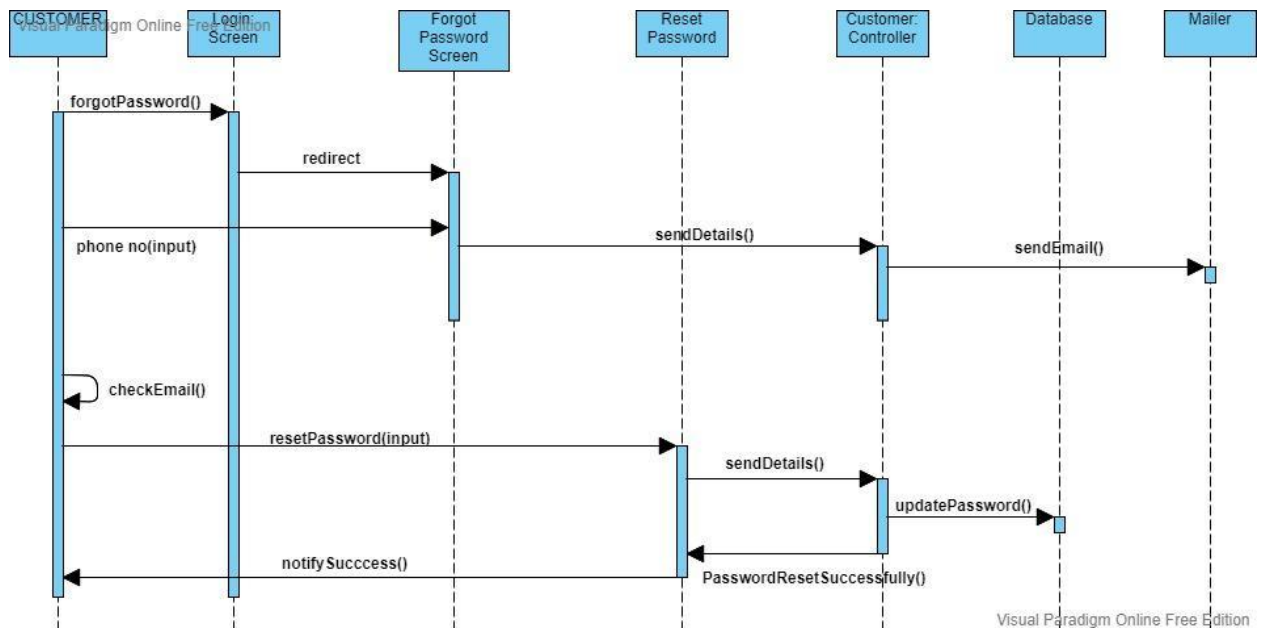


Figure 5.4 - Sequence diagram for Forgot Password and Reset Password

4. Search Product:

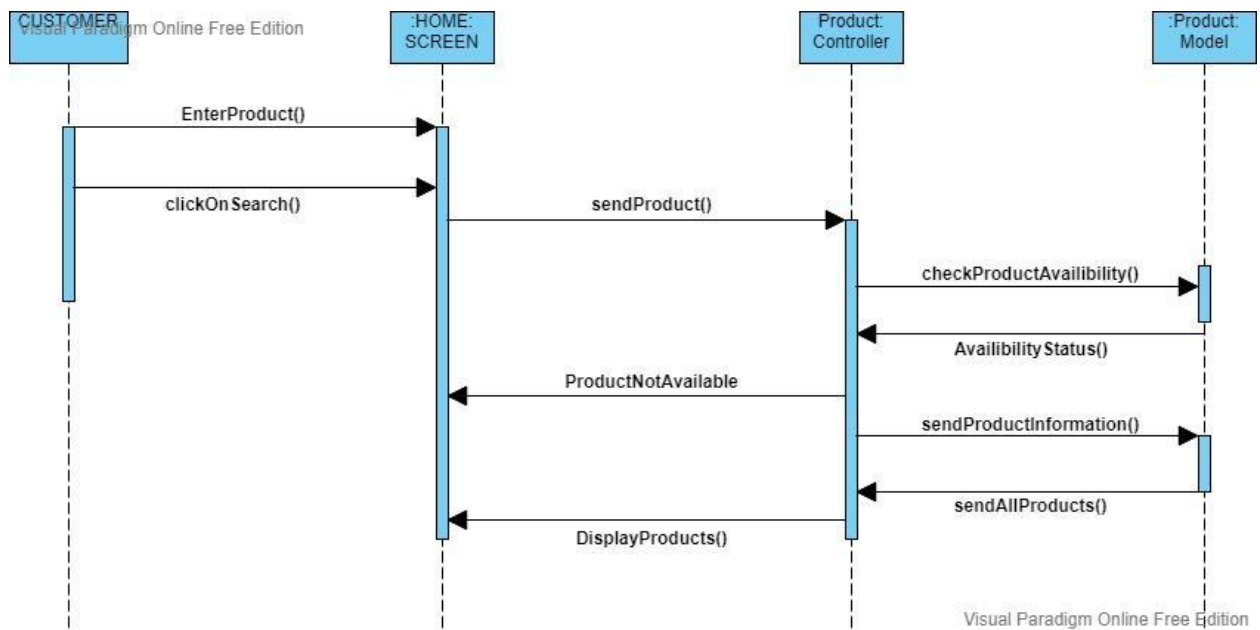


Figure 5.5 Sequence Diagram for Search Product

5. Cart:

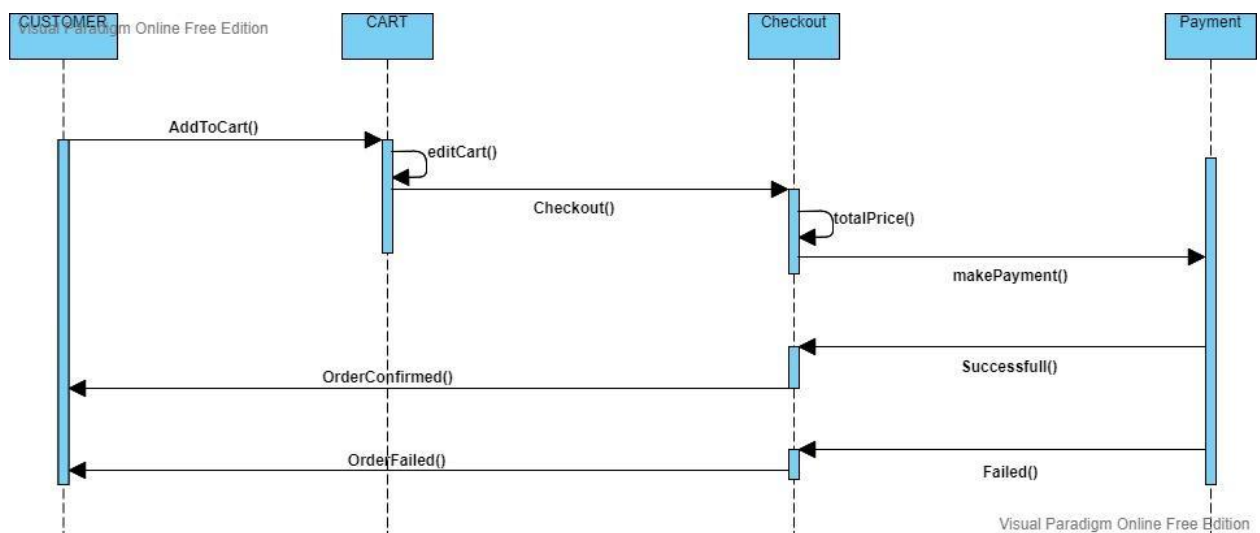


Figure 5.6 Sequence Diagram for Cart

6. Add to Cart:

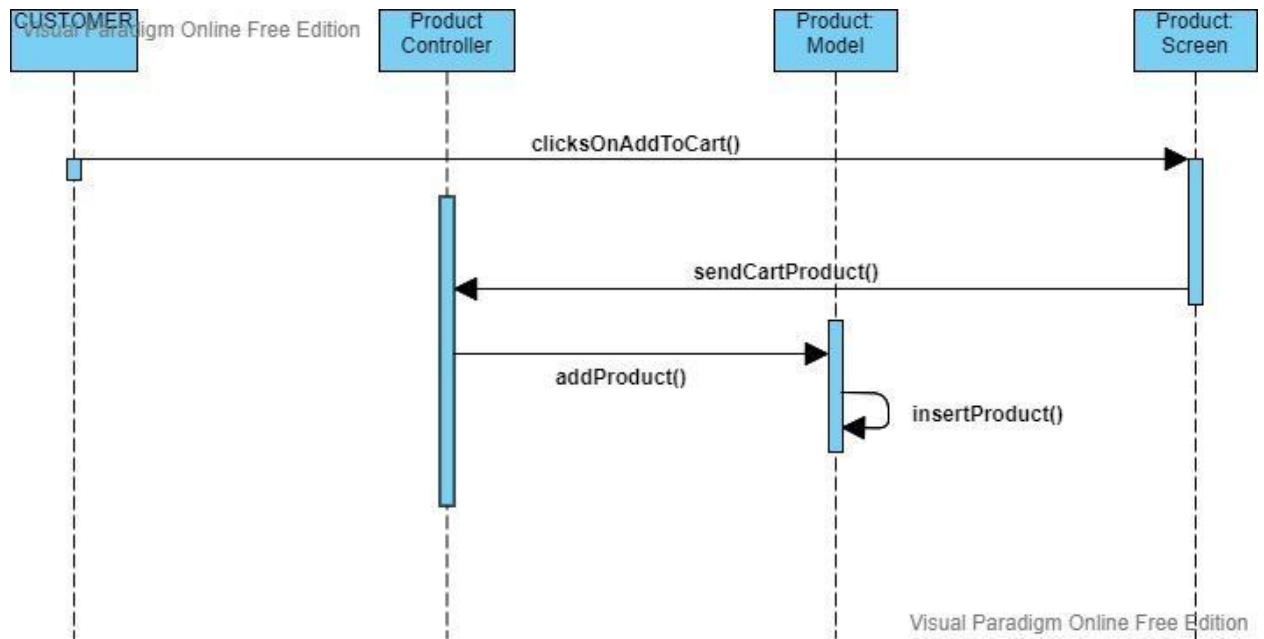


Figure 5.7 Sequence Diagram for Add to Cart

7. Shopping Cart – Edit/Remove Product:

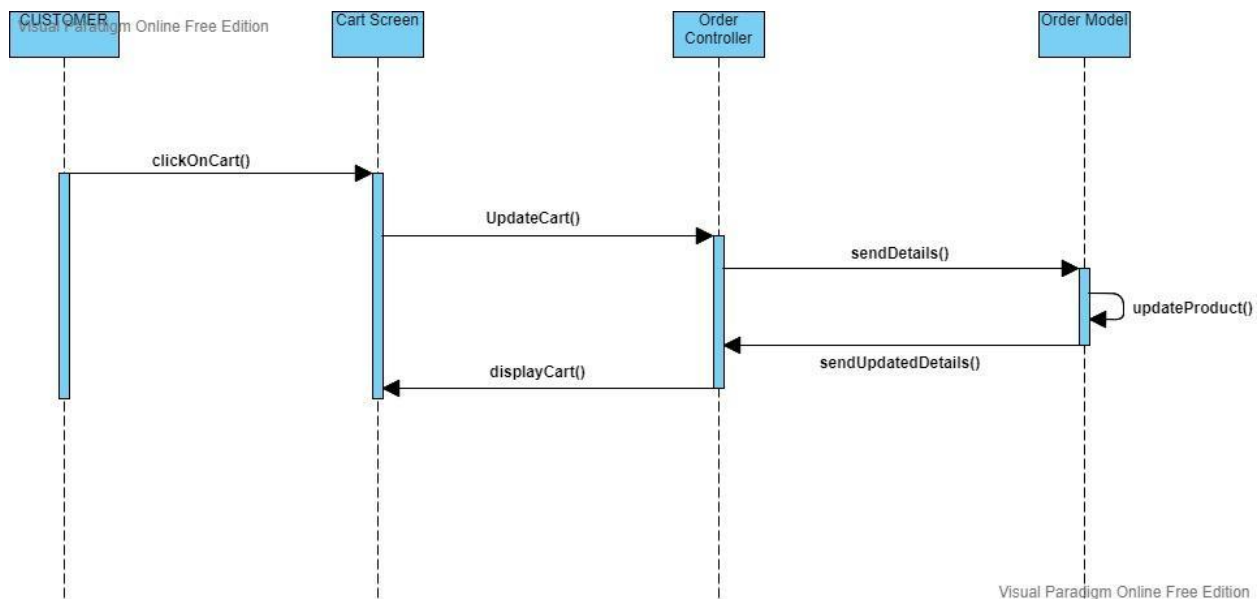


Figure 5.8 Sequence Diagram for Edit/Remove Product in Cart

8. Logout:

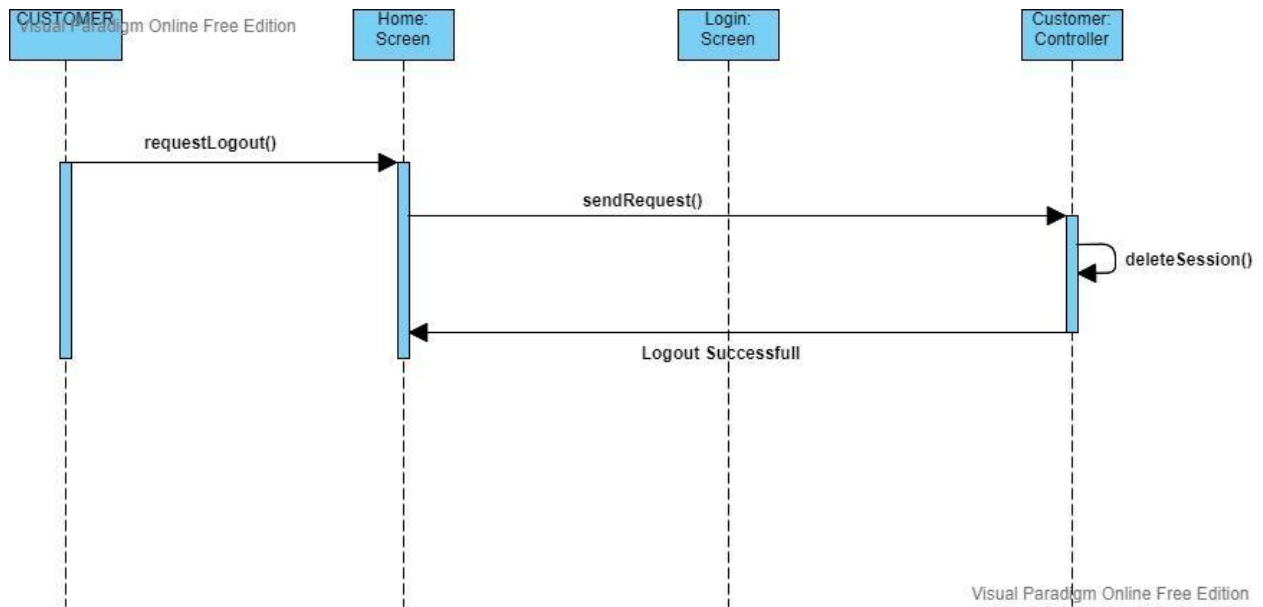


Figure 5.9 Sequence Diagram for Logout

SEQUENCE DIAGRAMS FOR ADMIN:

1. Add Product:

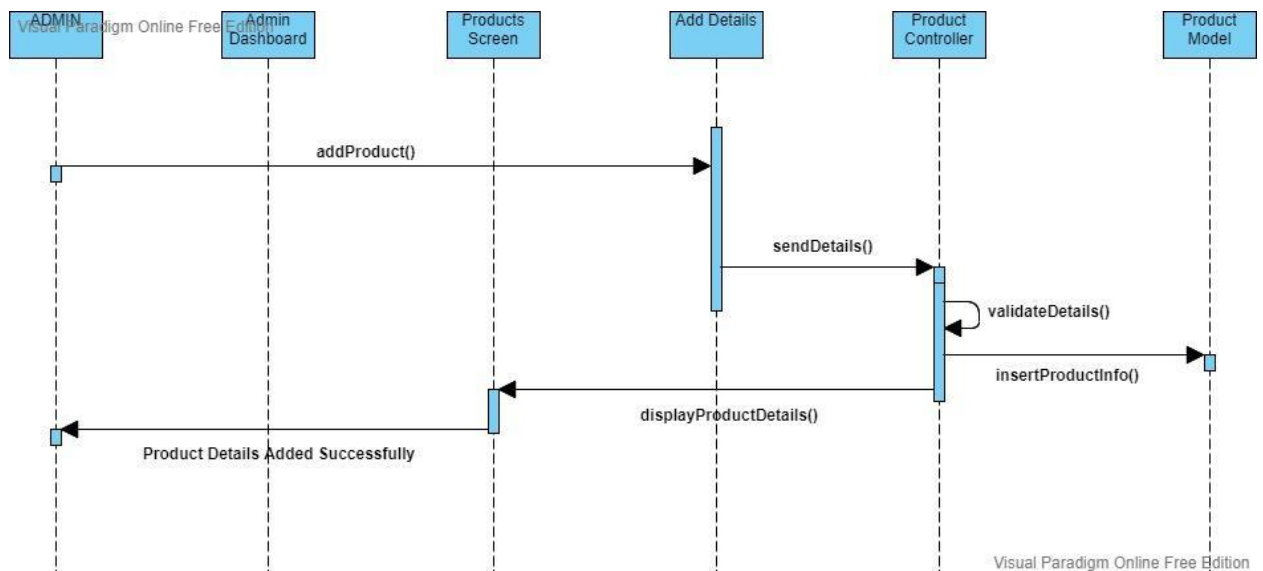


Figure 5.10 Sequence Diagram for Adding Product(Admin)

2. Edit Product:

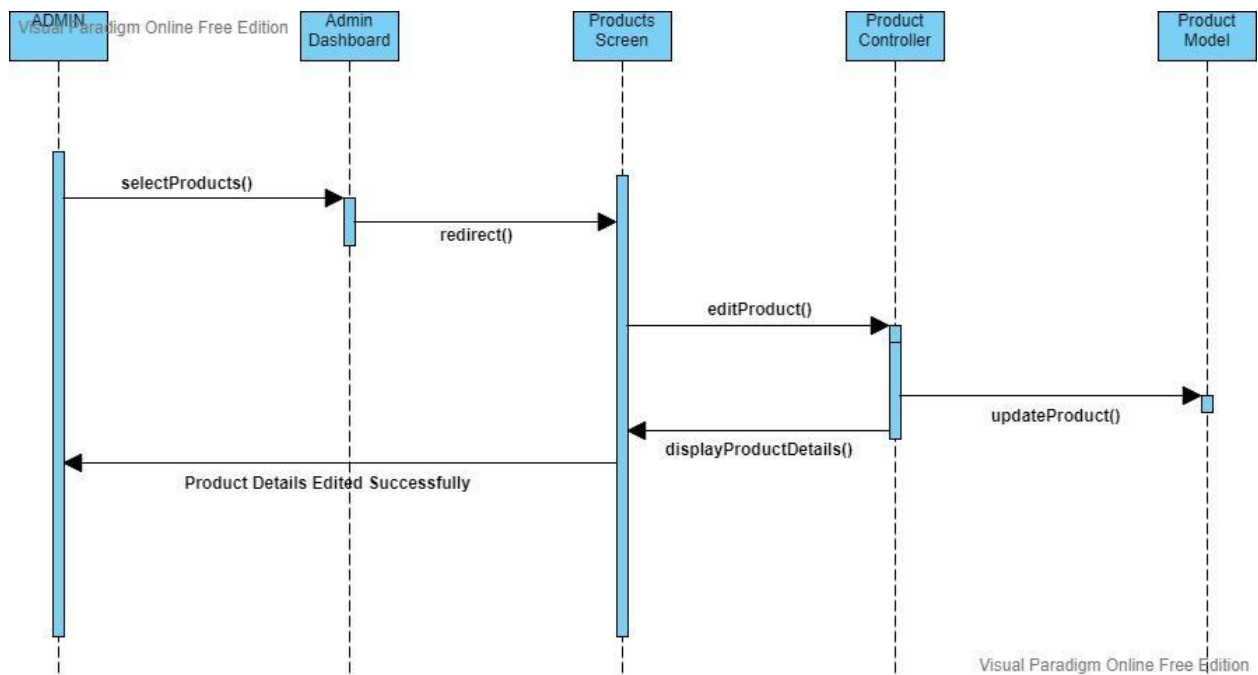


Figure 5.11 Sequence Diagram for Editing Product(Admin)

5.1.3 DEPLOYMENT DIAGRAM:

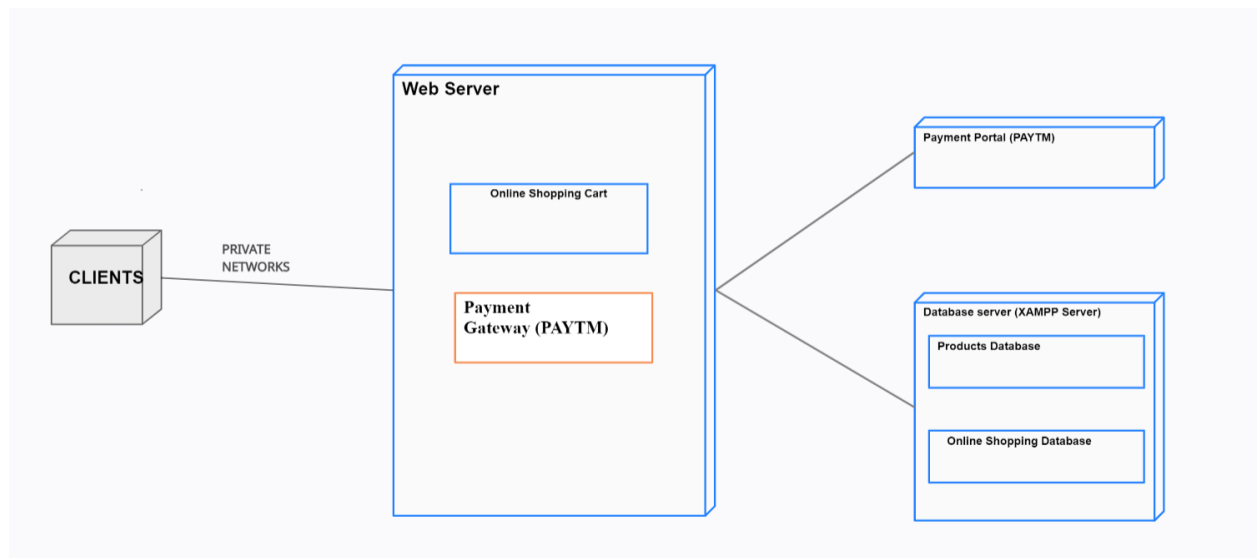


Figure 5.12 Deployment Diagram

5.2 DATABASE DESIGN/DATA STRUCTURE DESIGN:

5.2.1 DATA DICTIONARY:

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
password	varchar(128)	NO		NULL	
last_login	datetime(6)	YES		NULL	
is_superuser	tinyint(1)	NO		NULL	
username	varchar(150)	NO	UNI	NULL	
first_name	varchar(150)	NO		NULL	
last_name	varchar(150)	NO		NULL	
email	varchar(254)	NO		NULL	
is_staff	tinyint(1)	NO		NULL	
is_active	tinyint(1)	NO		NULL	
date_joined	datetime(6)	NO		NULL	

Figure 5.13 Data Dictionary for USER

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
pid	int(11)	NO		NULL	
name	varchar(100)	NO		NULL	
img	varchar(100)	NO		NULL	
desc	longtext	NO		NULL	
price	int(11)	NO		NULL	
cid	int(11)	NO		NULL	
category	varchar(100)	NO		NULL	

Figure 5.14 Data Dictionary for CART

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
name	varchar(100)	NO		NULL	
img	varchar(100)	NO		NULL	
desc	longtext	NO		NULL	
price	int(11)	NO		NULL	
offer	tinyint(1)	NO		NULL	

Figure 5.15 Data Dictionary for different categories of Product

5.3 Input/Output and Interface Design:

5.3.1 STATE TRANSITION/UML DESIGN:

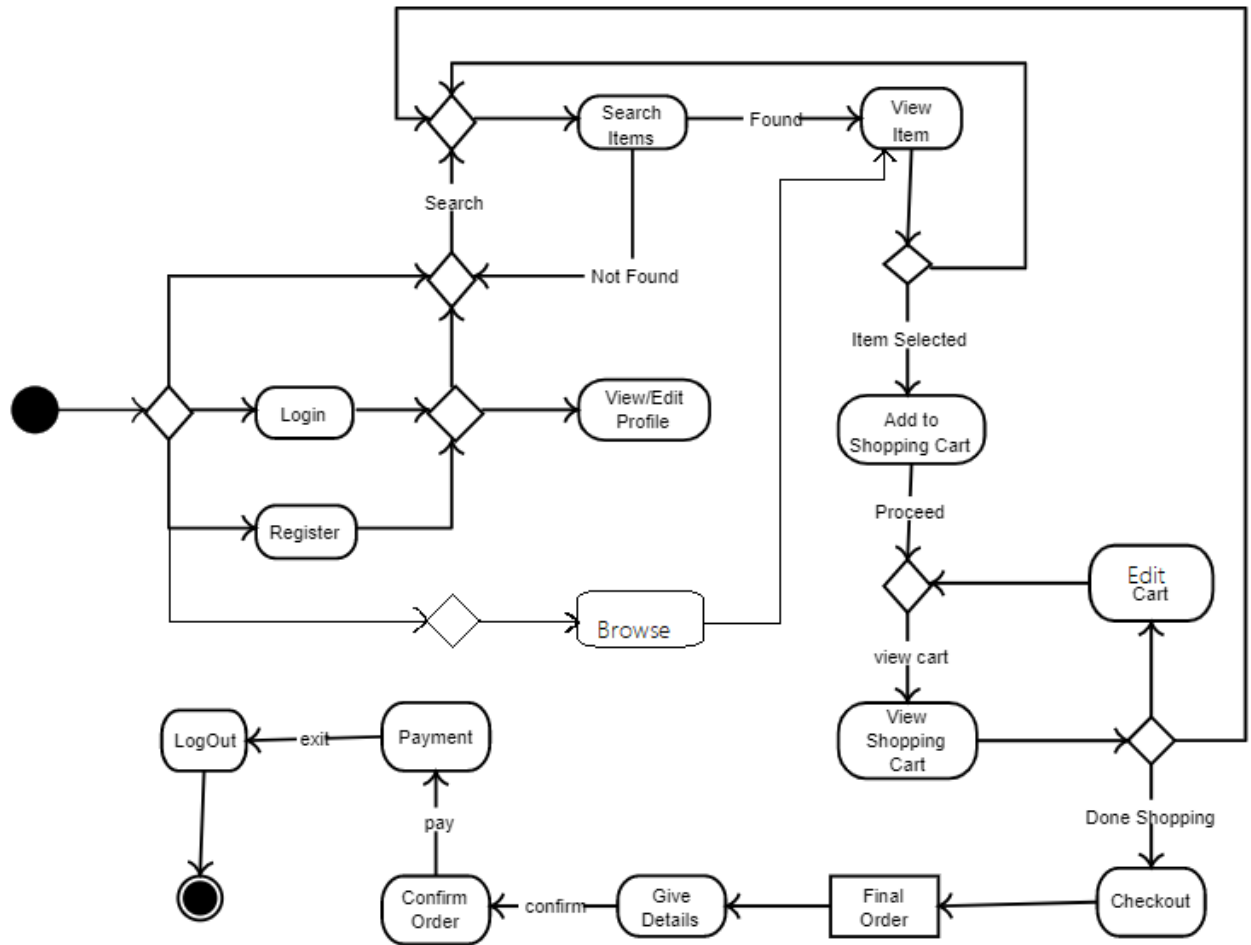


Figure 5.16 STATE DIAGRAM

CHAPTER - 6 - IMPLEMENTATION PLANNING

6.1 Implementation Environment (Single vs Multi User, GUI vs Non GUI)

6.2 Program/Modules Specification

6.3 Coding Standards

CHAPTER - 6 - Implementation Planning

6.1 Implementation Environment (Single vs Multi User, GUI vs Non GUI)

For Implementation we have used:

- Python as Programming Language
- Visual Studio Code as Platform Framework
- MySQL for storing data.

GUI based vs. non-GUI based:

In GUI based applications it is very easy for users to understand the overall content and the previous and next step of the action. Also, GUI based application does not make issues like navigation, ambiguities in data selection and entry. GUIs have become the established alternative to traditional forms-based user interfaces. GUIs are the assumed user interface for virtually all the systems development using modern technologies. There are several reasons why we have used GUI based application:

1. GUIs provide the standard look and feel of an application.
2. GUIs are so flexible to use in application areas.
3. The GUI provides seamless integration of custom and package applications.
4. The user has a more natural interface to applications: user understanding is improved.

Our Application is GUI based and a multi-user system. In our system all connections with the database are done by the process of designing. There is proper and efficient coding for connection with the database.

6.2 Program/Modules Specification:

- MySql database Server
- VS Code
- OS: Windows & MacOS

6.3 Coding Standards:

We've followed standard Python indentation and coding standards for Django coding for Django Web development.

=> Code snippet of forget password and confirming otp received in email:

```
def forgot(request):
    return render(request, 'forgot_password.html')

def forgot_password(request):
    username = request.POST['user_name']
    request.session['forgot_user'] = username
    try:
        user = User.objects.get(username=username)
        email_id = user.email
        print(email_id)
        rno1 = random.randint(100000, 999999)
        request.session['OTP1'] = rno1
        msg = 'Your OTP For Password Reset is ' + str(rno1)
        send_mail('OTP for Password Reset', msg, 'pcpartsweb@gmail.com', [email_id],
fail_silently=False)
        return render(request, 'forgot_otp.html')
    except user.DoesNotExist:
        messages.info(request, 'Invalid Username')
        return render(request, 'forgot_password.html')

def set_passwords(request):
    new_pass = request.POST['pass2']
    user = User.objects.get(username=request.session['forgot_user'])
    user.password = make_password(new_pass)
    user.save(update_fields=['password'])
    user.save()
    messages.info(request, 'Password successfully reseted!!')
    return render(request, 'login.html')
```


CHAPTER - 7 - TESTING

7.1 TESTING PLAN

7.2 TESTING STRATEGY

7.3 TESTING METHODS

7.4 TEST CASES

7.1 TESTING PLAN:

The testing technique that is going to be used in the project is black box testing. In black box testing the expected inputs to the application are applied and only the outputs are checked.

7.2 TESTING STRATEGY:

The development process repeats this testing sub-process a number of times for the following phases.

- Unit Testing.
- Integration Testing

Unit Testing tests a unit of code (module or program) after coding of that unit is completed. Integration Testing tests whether the various programs that make up a system, interface with each other as desired, fit together and whether the interfaces between the programs are correct. System Testing ensures that the system meets its stated design specifications. Acceptance Testing is testing by the users to ascertain whether the system developed is a correct implementation of the Software Requirements Specification.

Testing is carried out in such a hierarchical manner to ensure that each component is correct and the assembly/combination of components is correct. Merely testing a whole system at the end would most likely throw up errors in components that would be very costly to trace and fix. We have performed both Unit Testing and System Testing to detect and fix errors. A brief description of both is given below.

Unit Testing

Objective:

The objective of Unit Testing is to test a unit of code (program or set of programs) using the Unit Test Specifications Test Specifications, after coding is completed. Since the testing will depend on the completeness and correctness of test specifications, it is important to subject these to quality and verification reviews.

Input: Unit Test Specifications

Testing Process:

- Checking for availability of Code Walk-thru reports which have documented the existence of and conformance to coding standards. ▪ Review of Unit Test Specifications
- Verify the Unit Test Specifications conform to the program specifications.
- Verify that all boundary and null data conditions are included.

7.3 TESTING METHODS:

Black-box and White-box Testing:

In black-box testing a software item is viewed as a black box, without knowledge of its internal structure or behavior. Possible input conditions, based on the specifications (and possible sequences of input conditions), are presented as test cases.

In white-box testing knowledge of internal structure and logic is exploited. Test cases are presented such that possible paths of control flow through the software item are traced. Hence more defects than black-box testing are likely to be found.

The disadvantages are that exhaustive path testing is infeasible and the logic might not conform to specification. Instrumentation techniques can be used to determine the structural system coverage in white box testing. For this purpose, tools or compilers that can insert test probes into the programs can be used.

Code Coverage:

The way to make sure that you have got all the control flow covered is to cover all the paths in the program during the testing(via white-box testing). This implies that both branches are exercised for an 'if' statement, all branches are exercised for a case statement, the loop is taken once or multiple times as well as ignored for a while statement, and all components of complicated logical expressions are exercised. This is called Path Testing. Branch Testing reports whether the entire Boolean expression tested in control structures evaluates to both true and false.

Additionally, it includes coverage of switch statement cases, exception handlers and interrupts handlers. Path testing includes branch testing as it considers all possible combinations of individual branch conditions. A simpler version is Statement Testing which determines if each statement in the program has been executed at least once.

7.4 Test Cases:

Table 7.4.1 Test case of Login and Forgot Password:

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Login	Username and Password not insert	Validation error displayed	As expected	Pass
	Password is not correct	Validation error is displayed	As expected	Pass
	Username is not correct	Validation error is displayed	As expected	Pass
	Email and Password is correct	Redirect to User's Home Page and welcome message is displayed	As expected	Pass
Forgot Password	Mobile number is Not correct	Error message displayed	As expected	Pass
	Mobile number is correct	OTP sent to email linked with phone number	As expected	Pass

	Click on submit button	Redirect to new page for entering OTP	As expected	Pass
	Enter wrong OTP	Display error message	As expected	Pass
	Enter correct OTP	Password successfully changed and redirect to login page	As expected	Pass

Table 7.4.2 Test case of Update profile

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Update User Profile	Required field is missing	Validation error displayed	As expected	Pass
	All fields are correctly filled and clicked on submit button	Details Updated	As expected	Pass

Table 7.4.3 Test case of registration of user

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Registration	Any details missing	Validation error is displayed	As expected	Pass
	Username taken	Validation error is displayed	As expected	Pass
	Email taken	Validation error is displayed	As expected	Pass
	Email and Password is correct	Redirect to User's Home Page and welcome message is displayed	As expected	Pass
	All details filled correctly	Success message displayed	As expected	Pass

Table 7.4.4 Test case of adding data to cart

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Click add to cart button	Button clicked one time	1 item added to cart	As expected	Pass
	Button clicked multiple time	multiple item added to cart	As expected	Pass

Table 7.4.5 Test case of search

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Click search button after filling search textbox	Empty search box	No items are to be displayed	As expected	Pass
	Valid category name entered	Proceed to page with all those products	As expected	Pass
	Invalid name entered	Display message no product found	As expected	Pass

Table 7.4.6 Test case of checkout

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Click checkout button	Any missing details	Validation error is displayed	As expected	Pass
	All details filled correctly	Proceed to checkout page	As expected	Pass

Table 7.4.7 Test case of adding product by admin

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Click “+add” button beside any category	Any missing details	Validation error is displayed	As expected	Pass
	All details filled correctly	Item added message displayed	As expected	Pass

Table 7.4.8 Test case of logout

Test Object Description	Test Condition (input)	Expected result	Actual Result	Pass/Fail
Click logout	Click on logout button	Successfully logout and redirect to home page	As expected	Pass

CHAPTER - 8 - USER MANUAL

8.1 USER MANUAL

CHAPTER - 8 - USER MANUAL

8.1 USER MANUAL

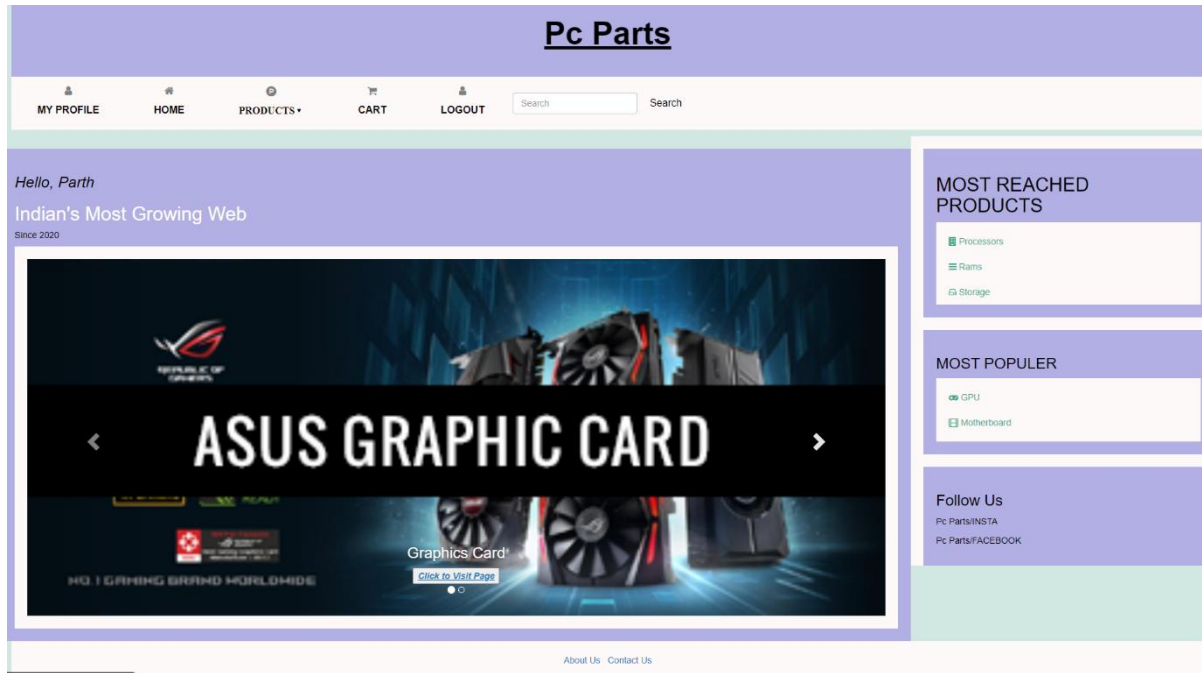


Figure 8.1 Home Page

DESCRIPTION: This is the home page for customer users. Here one user can browse, search products or can login/logout.

Pc Parts

Please Fill in this Form to create an account.

Firstname

Enter Your First name

Last name

Enter Your Last name

Password

Enter your Password

Password2

Enter your Re-Password

Mobile-No

Enter Your Mobile-No

Email

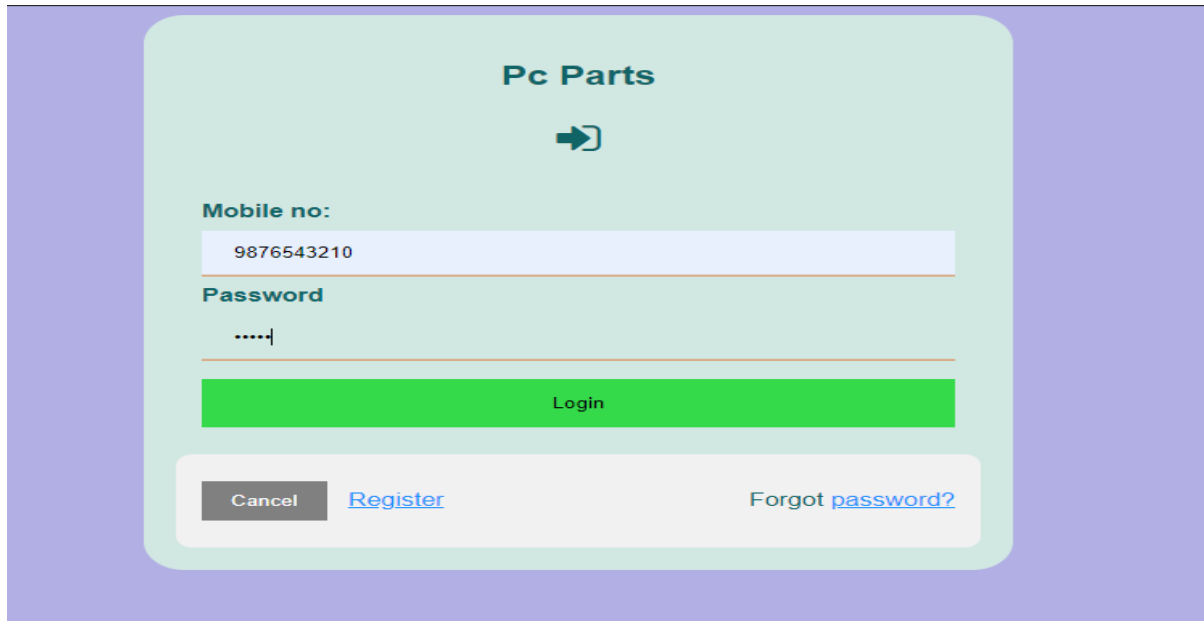
Enter Your Email

Register

Already have an account? [Login](#)

Figure 8.2 Registration Page

DESCRIPTION: This is the registration page for users. Here customers can register themselves.



Pc Parts

➔

Mobile no:

9876543210

Password

....

Login

Cancel [Register](#) [Forgot password?](#)

Figure 8.3 Login Page

DESCRIPTION: This is the login page for users. Here customers can login if registered.



First name:	Parth
Last name:	Patel
Mobile No:	7016771560
email:	patelparth29957642000@gmail.com
Address line 1:	B-2035, Street-8
Address line 2:	B-2035, Street-8
City:	Bhavnagar
State:	Gujrat

update profile

[Home](#)

Figure 8.4 My Profile Page

DESCRIPTION: This is my profile page for users. Here customers can view their profile data and also can modify it by clicking on update profile.



Figure 8.5 Show Product Page

DESCRIPTION: This is my show product page for users. Here customers can view the products by searching or selecting any product category from the product drop down menu. Users can also add items to cart by clicking on the “Add To Cart” button if the user is logged in.

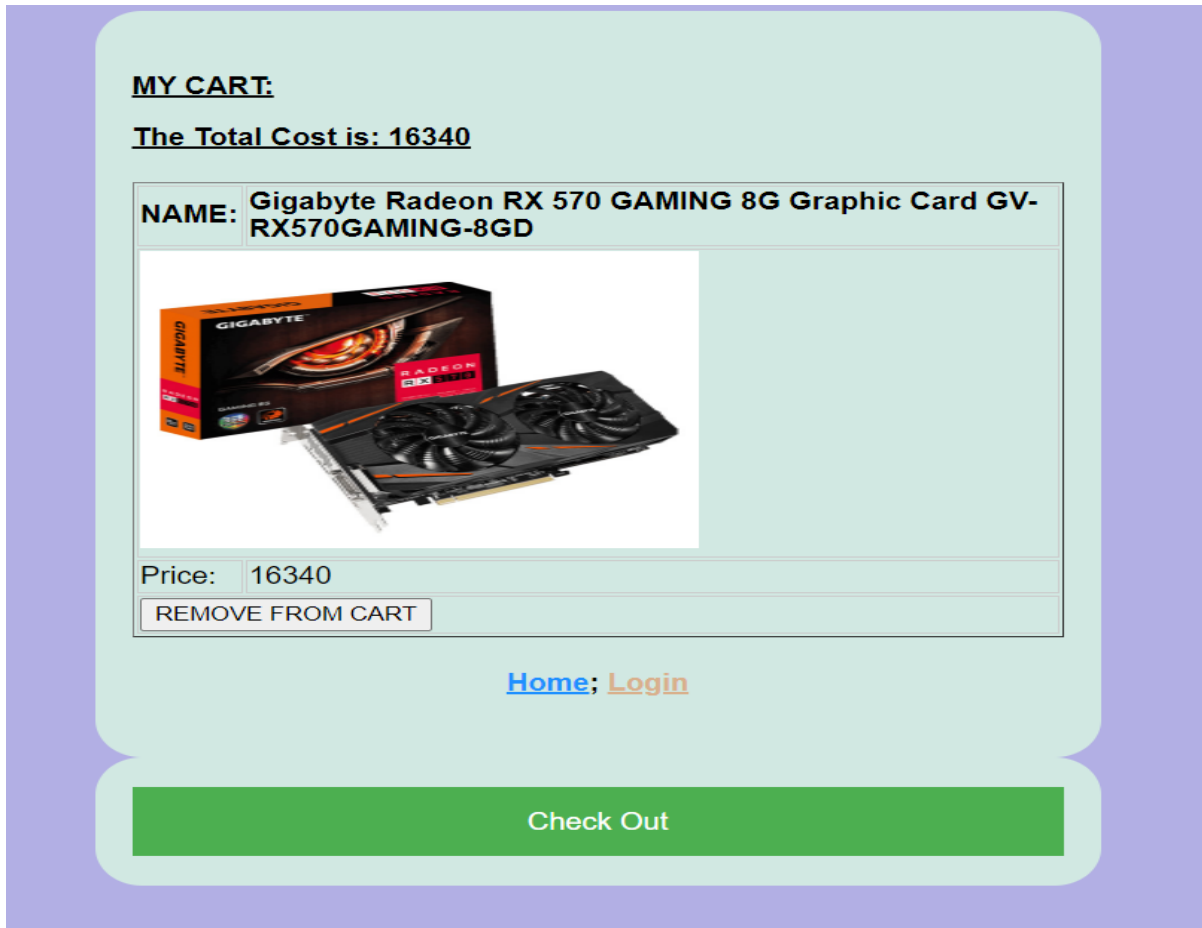



Figure 8.6 My Cart Page

DESCRIPTION: This is the my cart page only for logged in users. Here customers can view the products added to their cart and can also remove products from cart. From here if users wish to buy products in their cart they can buy them by clicking on “Check Out” button.



price	43780
Description	ASUS ROG Strix GeForce RTX 2060 SUPER Advanced Edition 8GB GDDR6 Graphic card ROG-STRIX-RTX2060S-A8G-GAMING. ROG Strix GeForce® RTX 2060 SUPER™ Advanced edition 8GB GDDR6 with powerful cooling for higher refresh rates and a super performance boost

Add To Cart

REVIEWS

Parth :

->awsm GPU for running valorant,

Parth :

->Expensive but totally the worth

poojan :

->Worth it!

Review :

Submit your review

Figure 8.7 Give Review on Products

DESCRIPTION: Users can give review on products and view reviews of other users.

Checkout - Pc Parts Cart

Step 1 - Pc Parts Checkout - Review Your Cart Items

1. Your Cart Total Is **Rs.** . Enter your details below & place your order. Thanks for using Pc Parts !

Step 2 - Enter Address & Other Details:

Name

Email

Address

Address line 2

City

State

Zip

Phone Number

Figure 8.8 Checkout Page

DESCRIPTION: This is the checkout page. Users can place orders from here. Users will be redirected to paytm gateway for payment from users can pay from UPI, Wallet money, Credit card, Debit Card etc.

The screenshot displays the Paytm Gateway page for a user named Parth Patel. At the top, there is a header with the name 'Parth Patel' and a 'GO BACK' link. Below this, the order details are shown: 'Parth Patel Order' with a transaction ID of 106, and the amount to be paid is ₹16,340. The main section is titled 'PAY INSTANTLY USING QR CODE' and instructs the user to scan the QR code using their Paytm app. A QR code is displayed on the right, with a 'Click to enlarge' link below it. The Paytm logo is also visible. Below the QR code section, there is a section titled 'SELECT AN OPTION TO PAY'. The first option is 'paytm', which is selected by default. It includes the text 'Pay easily using your saved payment methods' and 'Mobile number registered with Paytm'. A text input field contains the mobile number '+91 7777777777', and a blue 'Proceed' button is next to it. Below this, there are three other options: 'Credit Card', 'Debit Card', and 'Net Banking', each with an unselected radio button. At the bottom, there is a green checkmark icon and the text '100% Secure Payments Powered by Paytm'. On the right side of the bottom, there are logos for various payment methods: NetBanking, PCI-DSS, RuPay, MasterCard, SafeKey, and Verified by Visa.

Figure 8.9 Paytm Gateway Page

DESCRIPTION: This is the Paytm Gateway page from here user can select which mode he/she prefers for payment. Then it will send OTP to your registered mobile number.

Parth Patel

< GO BACK

Parth Patel Order

Transaction ID: 106


Amount to be paid

₹16,340

PAY INSTANTLY USING QR CODE

Scan QR code using your Paytm app

paytm



Click to enlarge

SELECT AN OPTION TO PAY

☒

paytm

Pay easily using your saved payment methods

Enter OTP sent to mobile number +91 7777777777 [Change Number](#)

498760

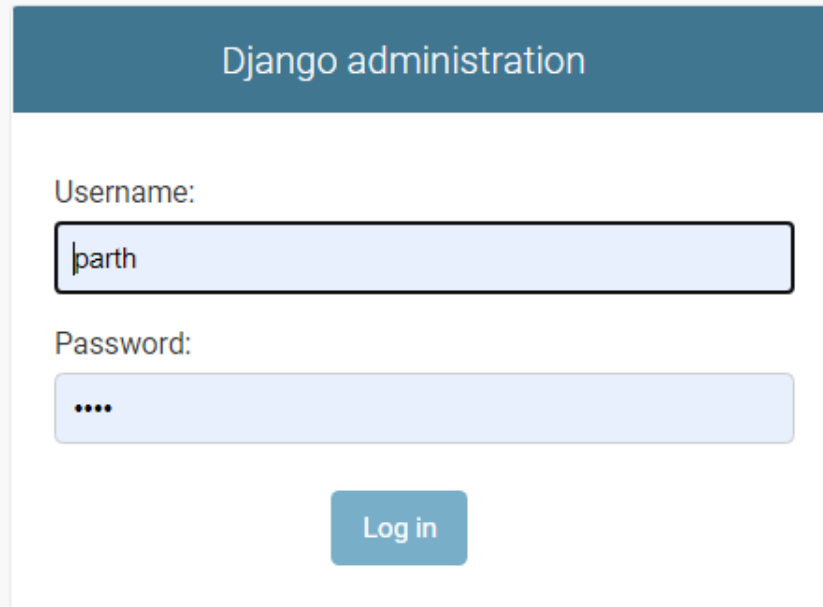
Verify

OTP not received? [Request Another OTP](#)

Figure 8.10 Paytm Gateway Confirm OTP Page

DESCRIPTION: This is the Paytm Gateway Confirm OTP page from here user has to enter OTP received in their registered mobile to complete payment. If a user enters the wrong OTP then payment will be terminated and the user will be redirected to the My Cart page.

ADMIN SECTION

The image shows the Django administration login interface. It features a dark blue header with the text "Django administration". Below the header, there is a white box containing the login form. The form has two input fields: "Username:" with the text "parth" entered, and "Password:" with four dots indicating a masked password. A blue "Log in" button is positioned below the password field.

Django administration

Username:

parth

Password:

....

Log in

Figure 8.11 Login Page for admin

DESCRIPTION: This is the login page for admin. Here only administrators registered as admins can login.

Django administration

Site administration

AUTHENTICATION AND AUTHORIZATION		
Groups	+ Add	Change
Users	+ Add	Change

PCPARTS		
Carts	+ Add	Change
Extendedusers	+ Add	Change
Gpus	+ Add	Change
Motherboards	+ Add	Change
Powersupplies	+ Add	Change
Processors	+ Add	Change
Rams	+ Add	Change
Storages	+ Add	Change

Recent actions

My actions

- + extendeduser object (1)
Extendeduser
- + ram object (3)
Ram
- ram object (2)
Ram
- + processor object (4)
Processor
- + processor object (3)
Processor
- + gpu object (7)
Gpu
- gpu object (5)
Gpu
- + powersupply object (4)
Powersupply
- + powersupply object (3)
Powersupply
- + gpu object (6)
Gpu

Figure 8.12 Home Page for admin

DESCRIPTION: This is the home page for admin. Here admin can add products or modify existing products. Also admin view users and modify if needed.

CHAPTER - 9 - LIMITATION AND FUTURE ENHANCEMENT

9.1 LIMITATION

9.2 FUTURE ENHANCEMENT

CHAPTER - 9 - LIMITATION AND FUTURE ENHANCEMENT

9.1 LIMITATION:

- System is limited to online payment only with paytm gateway.
- System is limited to delivery only in India.
- Cloud backup facility is not available to back up the hidden data.
- System is limited to usage as a website only.
- Database is on localhost.

9.2 FUTURE ENHANCEMENT:

- System can be further expanded to provide delivery internationally.
- System can be expanded to provide cash on delivery options.
- System can be expanded to provide more payment gateways like pay-pal or google-pay.
- System can be developed as a mobile application.

CHAPTER - 10 - CONCLUSION AND DISCUSSION

10.1 Conclusions

10.2 Discussion

10.2.1 Self Analysis of Project Viabilities

10.2.2 Problem Encountered and Possible Solutions

10.2.3 Summary of Project work

10.1 Conclusion:

The current system has many loopholes like only online payment and only through paytm could me uncomfortable for some users. Also required high speed internet and computer so it can be little inconvenient.

The proposed system is capable of efficiently eradicating the problems like keeping track of the cart and purchases also after the user logout so terminating the condition where the user has to add items every time they login.

The user can search/browse products at ease and can buy any suitable item without facing an offline issue where the user has to ask for a description of every item. Also users can get ideas from reviews which are not available offline.

In this project, we developed a reliable, easy, cheap and convenient system for buying parts used in building PCs.

10.2 DISCUSSION:

10.2.1 Self-Analysis of Project Viabilities:

According to us, this projected is completed with the primary functionalities as specified earlier but then again there is a lot more than this which can be done.

10.2.2 Problem Encountered and Possible Solutions:

The problems encountered during the design and the development phase of the project.

- Installation of Django needed some level of effort like it has to install with the specific version of python.
- Styling of any content could be done by adding a style attribute to the HTML tag
- according to the documentation. But the styling was not effective in case of
- hierarchical tags. Adding a styling to the parent element solved the problem in case of hierarchical
- tags
- The payment methods i.e.paytm needed merchant account for payment acceptance
- Cart was giving problems with removing items i.e it was only removing the last product which we successfully solved.
- MySQL database is not updating after making migrations so we had to make a few tables manually.

10.2.3 Summary of project work:

We have completed our project work using software engineering and system analysis and design approach. We have done work with pre planned scheduling in accordance with the given time and produced the result-oriented progress in project

development. We started by learning Django, javascript, HTM etc required in our system then we moved to making front end pages then we connected pages and connected our website with MYSQL localhost database using xampp software later we started to implement all the functionalities.

REFERENCES

WEB RESOURCES

- [w3schools.org](https://www.w3schools.org)
- developer.google.com
- stackoverflow.com
- github.com
- primeagb.com