E-COMMERCE APPLICATION USING FLUTTER

A

Project Report

submitted

in partial fulfillment

for the award of the Degree of

Bachelor of Technology

in Department of Computer Science and Engineering

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Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Department of Computer Science and Engineering

CERTIFICATE

This is to certify that Ms. Prachi Jain and Mr. Nayan Agrawal, students of B.Tech(Computer Science & Engineering) VII semester have submitted their Project Report entitled ”E-COMMERCE APPLICATION USING FLUTTER” under my guidance.

Mentor

Ms. Kajal Mathur

(Assistant Prof.)

Signature:

Coordinator

Dr. Mukesh Kumar Gupta

(Head of Department)

.

Ms. Anjana Sangwan

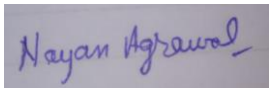
(Associate Prof.)

DECLARATION

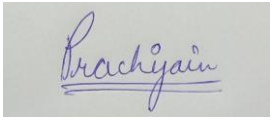
We hereby declare that the report of the project entitled ”E-COMMERCE APPLICATION USING FLUTTER” is a record of an original work done by us at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur under the mentorship of ”Ms. Kajal Mathur” (Dept. of Computer Science and Technology) and coordination of ”Dr. Mukesh Kumar Gupta”(HOD) and ”Ms. Anjana Sangwan” (Dept.of Computer Science and Technology). This project report has been submitted as the proof of original work for the partial fulfillment of the requirement for the award of the degree of Bachelor of Technology (B.Tech) in the Department of Computer Science and Technology. It has not been submitted anywhere else, under any other program to the best of our knowledge and belief.

Team Members **Signature**

Nayan Agrawal [17ESKCS104]



Prachi Jain [17ESKCS114]



Acknowledgement

A project of such a vast coverage cannot be realized without help from numerous sources and people in the organization.We take this opportunity to express our gratitude to all those who have been helping us in making this project successful.

We are highly indebted to our faculty mentor Ms. Kajal Mathur. She has been a guide, motivator source of inspiration for us to carry out the necessary proceedings for the project to be completed successfully. We also thank our project coordinator Ms. Anjana Sangwan for her co-operation, encouragement, valuable suggestions and critical remarks that galvanized our efforts in the right direction.

We would also like to convey our sincere thanks to Prof. Dr. Mukesh Gupta, HOD, Department of Computer Science and Engineering, for facilitating, motivating and supporting us during each phase of development of the project.Also, we pay our sincere gratitude to all the Faculty Members of Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur and all our Colleagues for their co-operation and support.

Last but not least we would like to thank all those who have directly or indirectly helped and cooperated in accomplishing this project.

Team Members:

Nayan Agrawal (17ESKCS104)

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Chapter 1

Project Chapter

1.1 Problem Statement and Objective

The project is aimed to deliver a mobile application that can be used for e-commerce purposes. We can access the application from any remote location with the basic requirement of internet connection. The application focus on the needs of customer and add or delete product as per their liking.

1.2 Investigation and Analysis

Investigation and Analysis shows that this project can provide us with a efficient way to shop or sell our product.

Mobile and e-commerce applications are tools for accessing the Internet and for buying products and services. These applications are constantly evolving due to the high rate of technological advances being made. This paper provides a new perspective on the types of applications that can be used. It describes and analyses device requirements, provides a literature review of important aspects of mobile devices that

can use such applications and the requirements of websites designed for e-commerce.

The internet has changed many aspects of society, from business to recreation, from culture to communication and technology, as well as shopping and travelling. This new form of communication has provided new ways of doing business with the help of technological development.

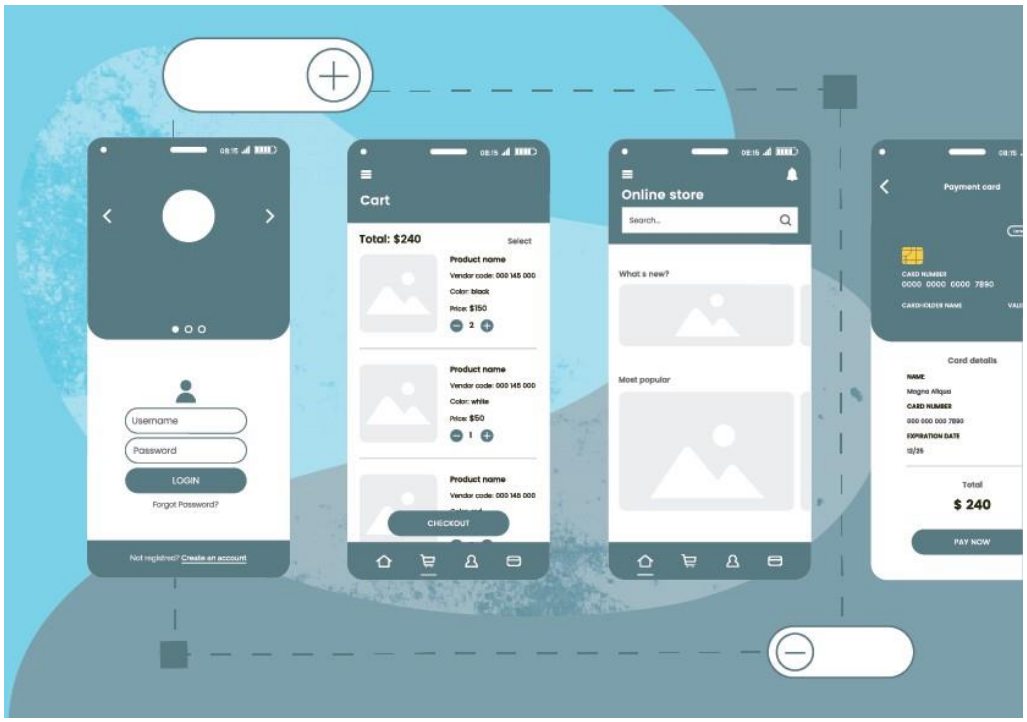
E-commerce is the new way of shopping and doing business. Technology has allowed companies to promote and sell their products on new markets, overcoming geographical borders as never before. Consumers have access to a wider market of products when they use wireless and internet technologies. Mobile devices with wide access to the Internet have allowed companies to reach consumers in more diverse ways, thus ensuring deep market penetration.

1.3 Introduction to Project

This application provides a portal which will allow formal and informal merchants to advertise and sell their goods on the internet.This would permit rural communities to make their wares available to rest of the world using World Wide Web.

The Objective of this project is to create a e-commerce web portal with a content management system which would allow product information to be updated securely using a mobile device.

1.4 Proposed Solution and Device



This diagram guides us through flutter and its components. The language used by flutter is dart. Everything in flutter is Widget. Widget can be accessed from widget Tree. The aim is to deliver application through internet and then the application is used by users.

1.5 Scope of the Project

This app will enable users to comply with the digital needs and provide a platform where purchasing and selling products is efficient and hassle free.

• The app is easy to use due to its intuitive User Interface.

• The user can upload products as per need.

• The products can be added to the cart in well organized manner .

• This app provides us with facility of sorting products according to user liking’s.

Chapter 2

Software Requirement Specification

2.1 Overall Description

The proposed system helps in building a website to buy, sell products or goods online 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 of goods online, user 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 wider market. It Provides consumers with more choices. Customer can purchase Products Online.

The purpose regarding to this is considerable with a good number of parameters. Here are some parameters that describe the purpose of how this project can provide a platform for quick and easy e-shopping

or selling of a product.

- Using this application a user can upload a product, as well as view other products online.
- The user can sort product according to his/her wishlist.
- This application will be using a cart system where user can add or delete product as per convenience.

2.1.1 Product Perspective

2.1.1.1 System Interfaces

Registration: The user has to be registered first and then he/she can login and logout from the application according to his/her will.

Digital Cart: This shows cart where all the items are added and deleted as per convenience.

User authentication: User login , User signup

Product Screen: Display where all the products uploaded can be viewed altogether. Also user can upload our product for selling. sorted list of products according to categorized specification of user.

Selection : Here user can add the selected product to the cart. It sums up amount of all the products added to the cart ,and shows the final amount to be paid. This is the screen where user can access all the added items together and see the final amount. The deletion of product takes place on this page itself.

Manage products: Add button: The user can his/her product for selling here. The user can add description of product. Also they can add the demanded price for the product with its image.

Order's made: Here the users can view the previous orders made by them.

2.1.1.2 User Interfaces

User interface is the platform through which user can easily interact with the system. In our application, we have a dashboard that is user friendly and can be accessed through login id and password .

2.1.1.3 Hardware Interfaces

- **Mobile**

• **Power supply**

2.1.1.4 Software Interfaces

• **Frontend:** Flutter ToolKit

• **Database:** Firebase Database(Realtime)

• **Backend:** Firebase Authentication

2.1.1.5 Memory Constraints

The number of requests that Application can handle is limited to 10000 and since, it is a prototype, that amount of requests are sufficient in order to serve our purpose.

2.1.1.6 Operations

The proposed system helps in building a website to buy, sell products or goods online 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 of goods on-line, user 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 ven-dors to reach wider market. It Provides consumers with more choices.

Customer can purchase Products Online.

2.1.1.7 Project Functions

1. User authentication:
   - User login
   - User signup

2. Product Screen:
   - Display where all the products uploaded can be viewed altogether. Also user can upload our product for selling.
   - sorted list of products according to categorized specification of user.

3. Selection :
   - Here user can add the selected product to the cart.
   - It sums up amount of all the products added to the cart ,and shows the final amount to be paid.
   - This is the screen where user can access all the added items together and see the final amount.
   - The deletion of product takes place on this page itself.

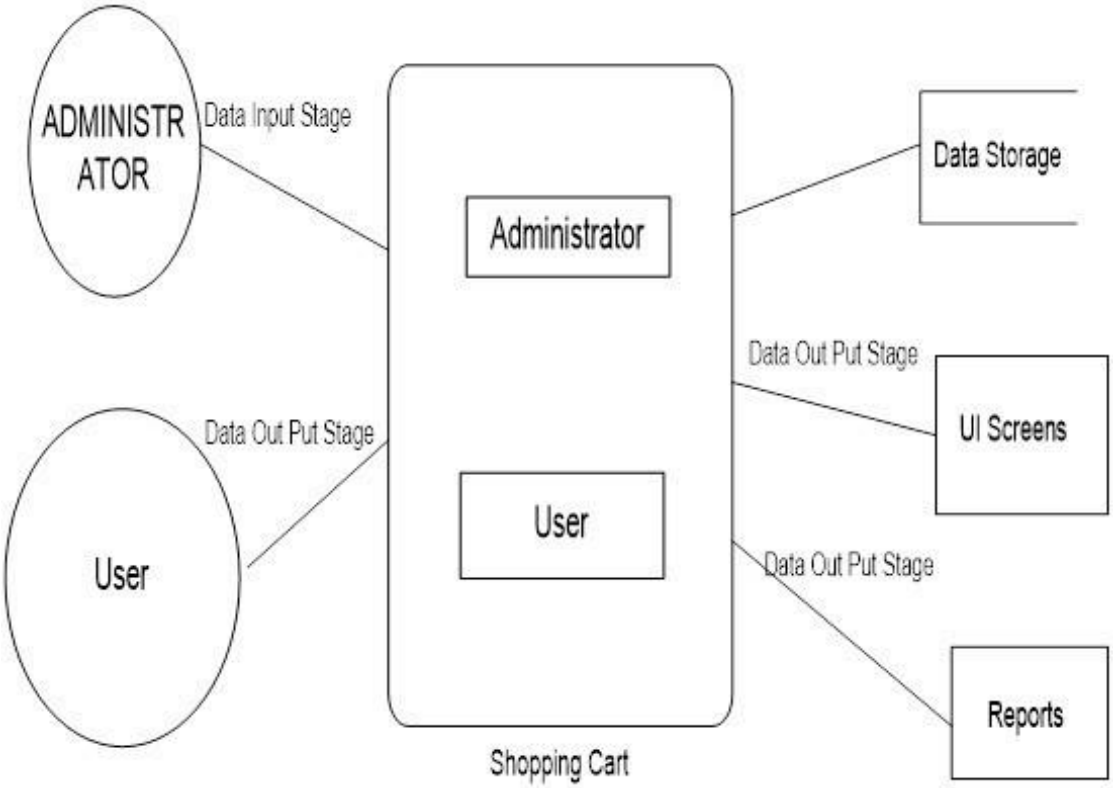
4. Manage products:
   - Add button: The user can his/her product for selling here.

- The user can add description of product.

- Also they can add the demanded price for the product with its image.

5. Order's made:

   - Here the users can view the previous orders made by them.



2.1.1.8 User Characteristics

The user documentation will include a manual for managers, employee as well as technicians. User manual for this application will guide them how to exactly use our application interface and produce more output. It will also teach that how one gets notified in case there is a fault. Manual of user will include the details about how and what are the features that are associated with our application and how one can use them in the most efficient way.

2.1.1.9 Constraints

There are no such barriers ,only constraint is loss of internet connection.This is the most important step for accessing the application on mobile phones.

2.1.1.10 Assumption and Dependencies

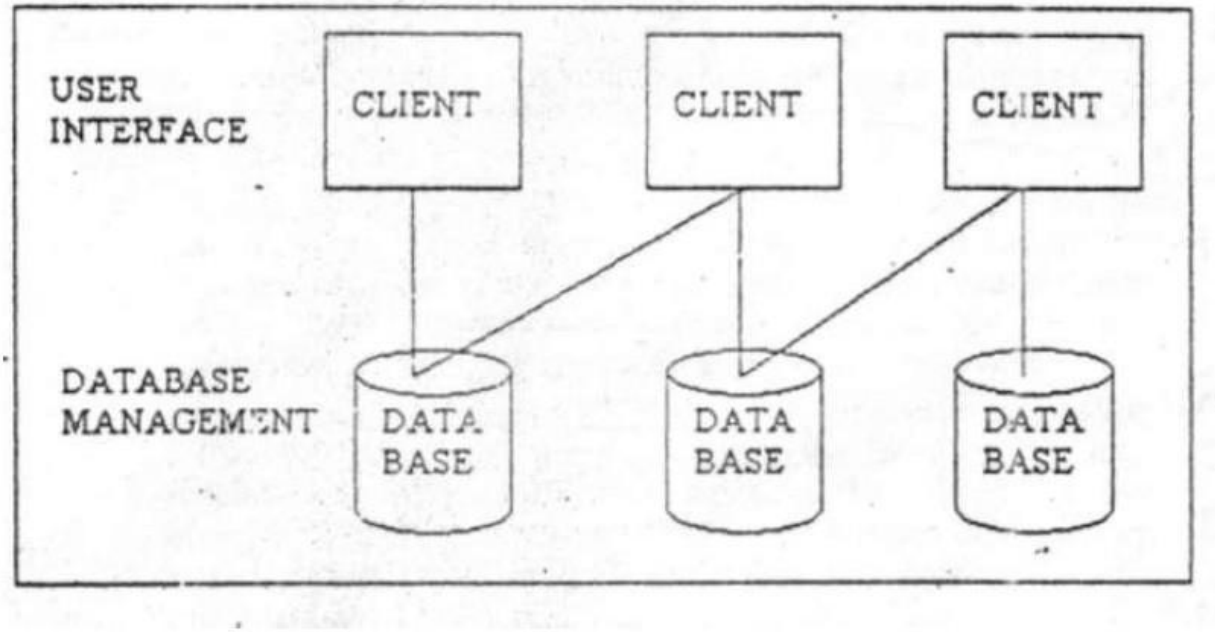
It is assumed that the internet provided to the gateway has a good stability and the user should have a good internet connection in order to run the application. The person using this application is assumed to be the one who know the basics of computer and know how to operate an application.

Since our project is not dependent on any other project, there is no dependency.

Chapter 3

SYSTEM DESIGN SPECIFICATION

3.1 System Architecture

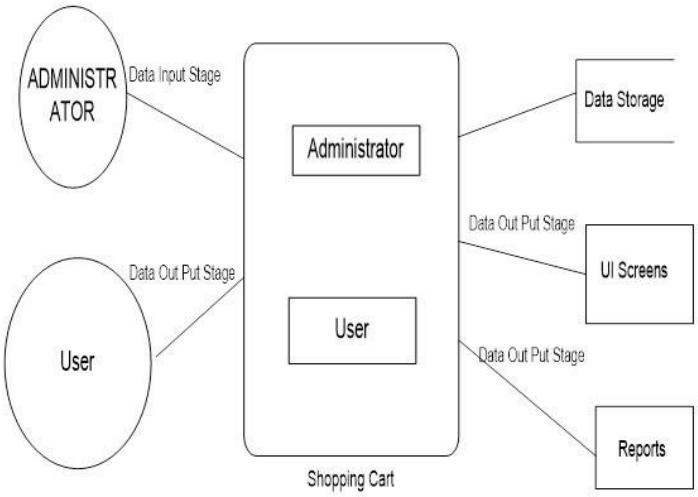


In two-tier client-server architecture the user interface runs on the client and the database is stored on the server. The business application logic can either run on the client or the server. The user application logic can either run on the client or the server. It allows the client processes to run separately from the server processes on different computers.

The client processes provide an interface for the customer that gather and present the data on the computer of the customer. This part of the application is known as presentation layer. The server processes provide an interface with the data store of the business.

This part of the application is known as data layer. The business logic, which validates data, monitors security and permissions and performs other business rules, can be kept either on the client or the server. The following Figure shows the e commerce system two-tier architecture diagram.

3.2 Module Decomposition Description



3.3 High Level Design Diagrams

3.3.1 Activity Diagram (Login)

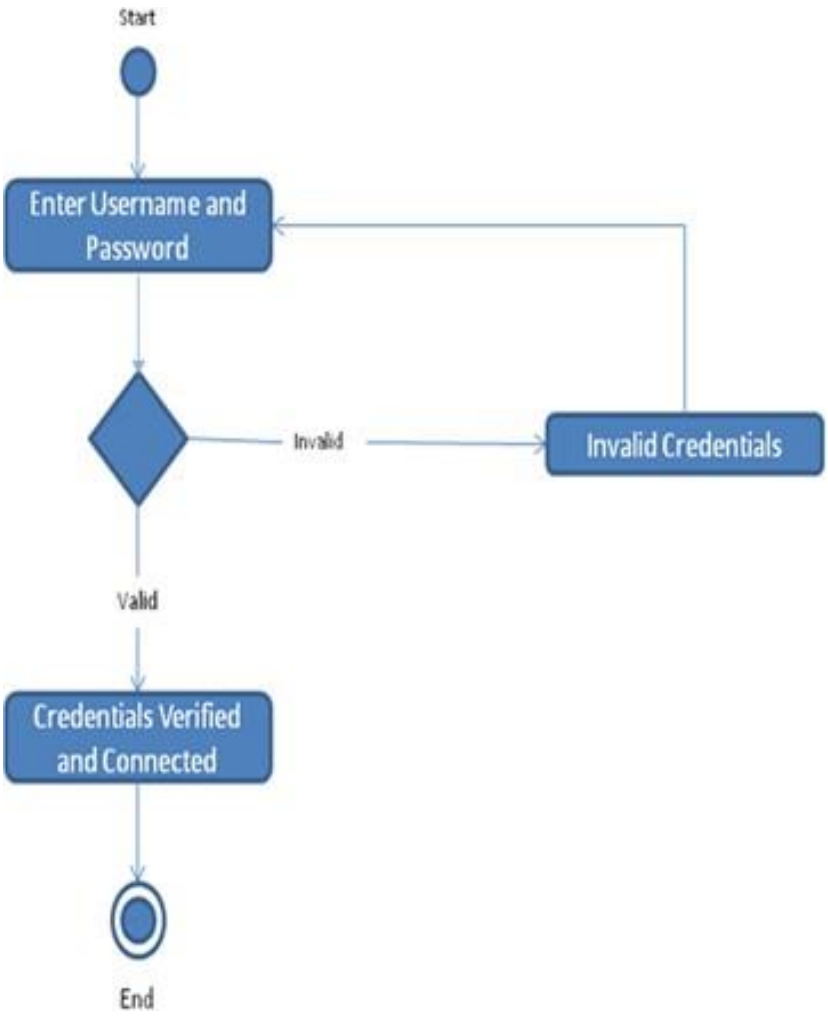


Figure 3.1: Login Activity Diagram

3.3.2 Activity Diagram (Registration)

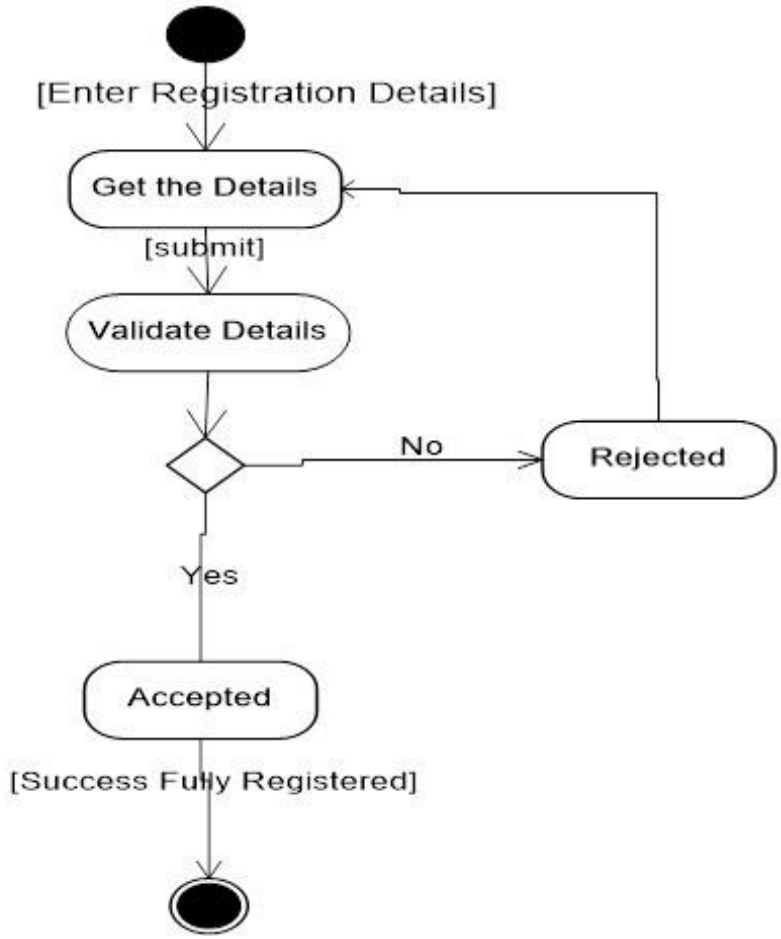


Figure 3.2: Registration Activity Diagram

3.3.3 Activity Diagram (User)

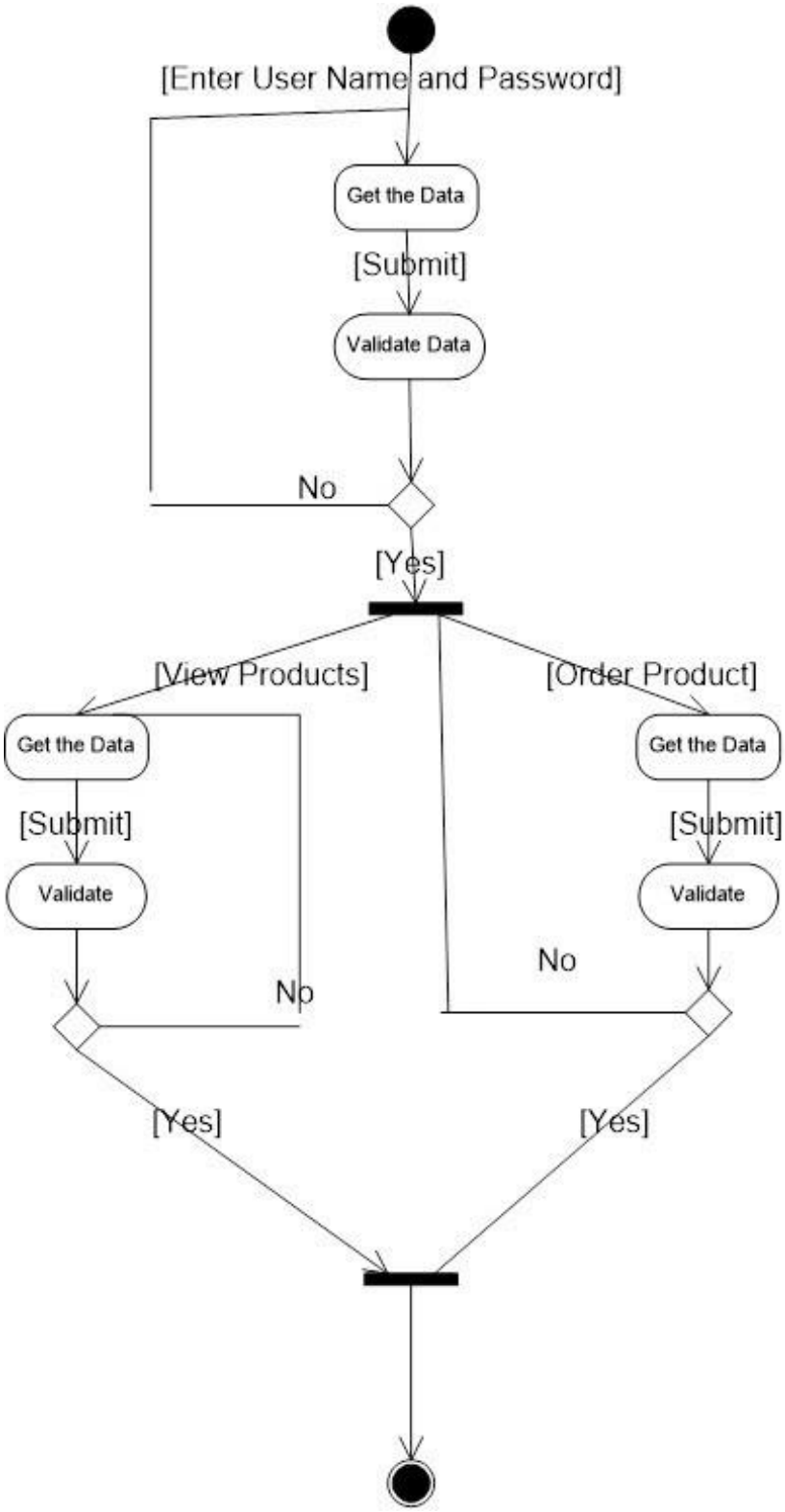


Figure 3.3: User Activity Diagram

3.3.4 Activity Diagram (Admin)

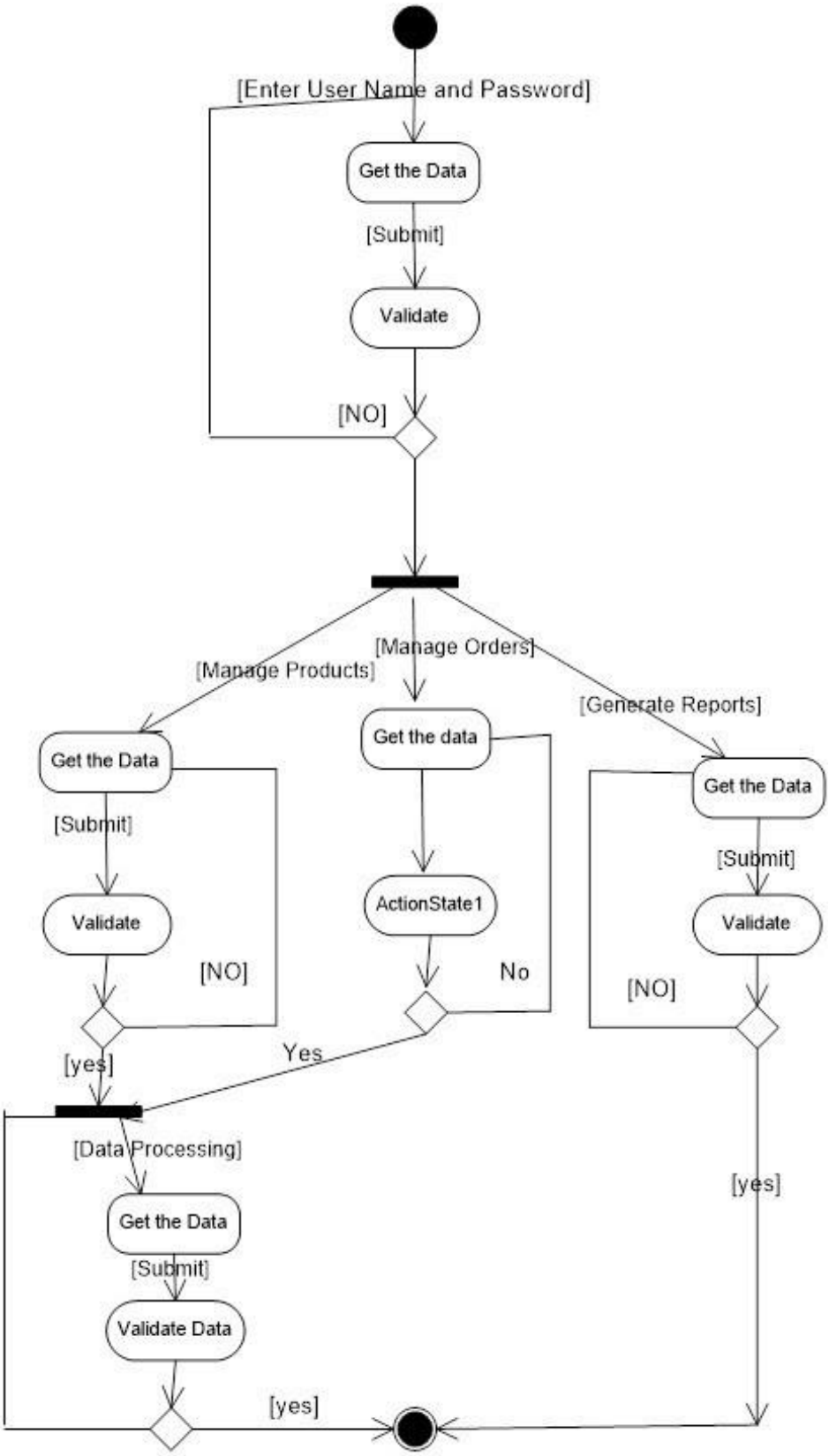


Figure 3.4: Admin Activity Diagram

3.3.5 Activity Diagram (User DFD)

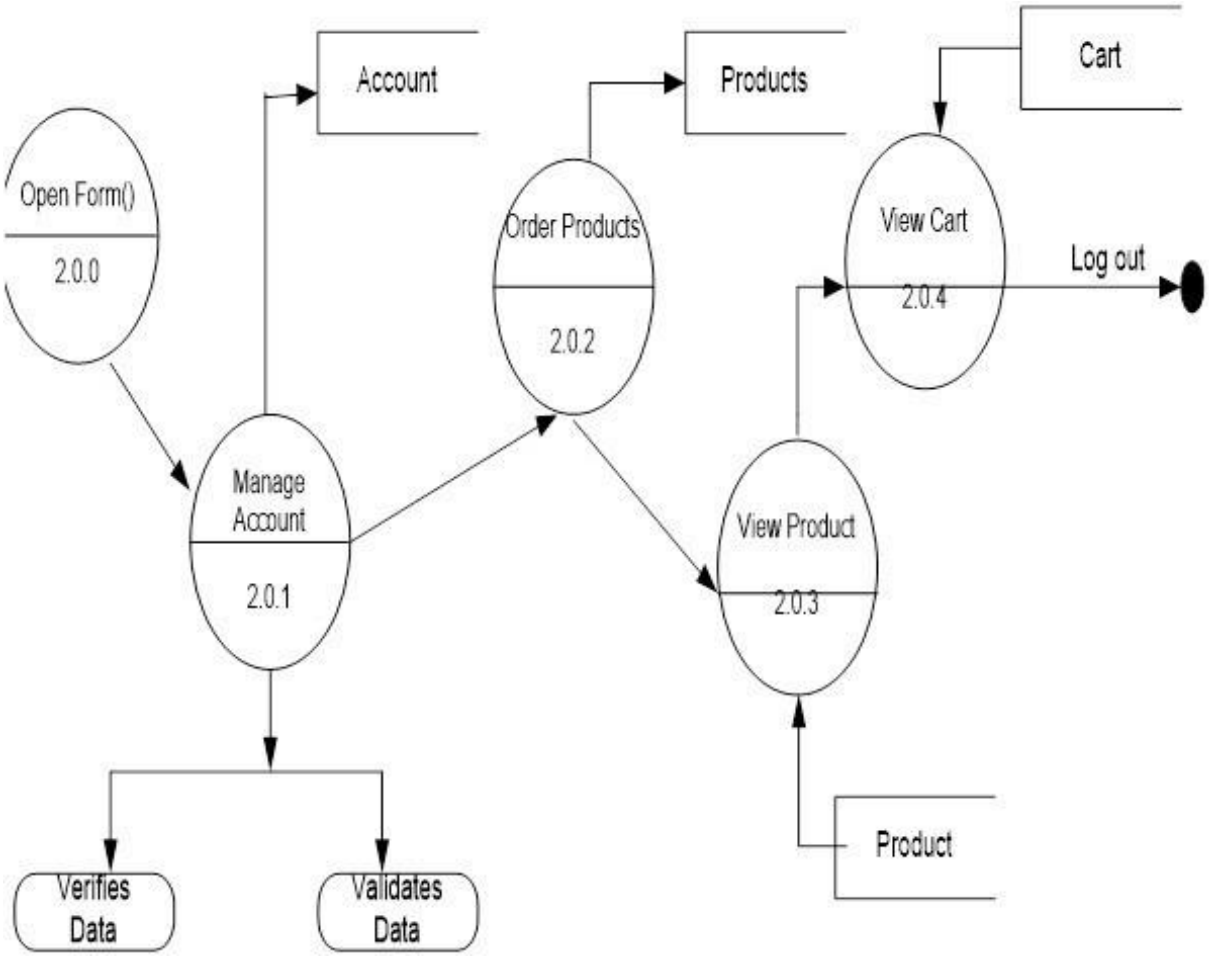


Figure 3.5: User DFD Activity Diagram

Chapter 4

METHODOLOGY AND TEAM

4.1 Introduction to Waterfall Framework

The Waterfall Model was first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases. The waterfall Model illustrates the software development process in a linear sequential flow; hence it is also referred to as a linear-sequential life cycle model. This means that any phase in the development process begins only if the previous phase is complete. In waterfall model phases do not overlap. In ”The Waterfall” approach, the whole process of software development is divided into separate phases. In Waterfall model, typically, the outcome of one phase acts as an input for the next phase sequentially. Following is a diagrammatic representation of different phases of waterfall model.

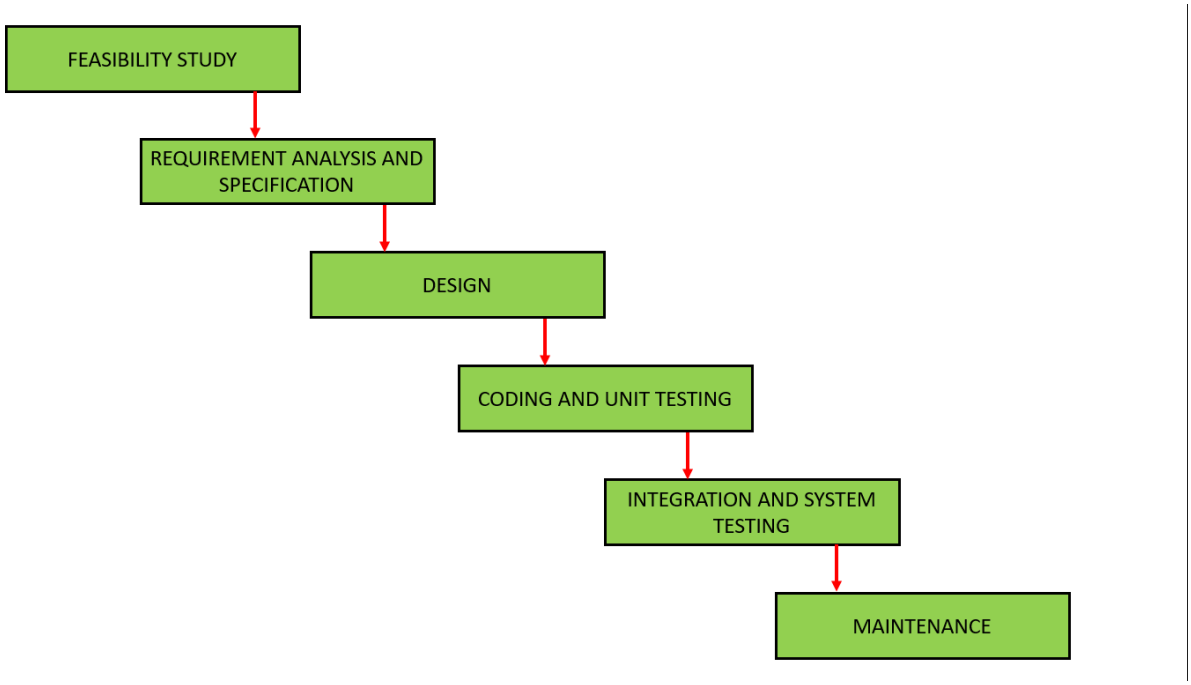


Figure 4.1: WaterFall model

The sequential phases in Waterfall model are-

1. **Requirement Gathering and analysis:** All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification doc.

2. **System Design:** The requirement specifications from first phase are studied in this phase and system design is prepared. System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.

3. **Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

4. **Integration and Testing:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

5. **Deployment of system:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

6. **Maintenance:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards (like a waterfall) through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name ”Waterfall Model”. In this model phases do not overlap.

Waterfall Model Pros Cons

Advantage The advantage of waterfall development is that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one. Development moves from concept, through design, implementation, testing, instal-

lation, troubleshooting, and ends up at operation and maintenance. Each phase of development proceeds in strict order.

Disadvantage The disadvantage of waterfall development is that it does not allow for much reflection or revision. Once an application is in the testing stage, it is very difficult to go back and change something that was not well-documented or thought upon in the concept stage.

4.2 Team Members, Roles & Responsibilities

Nayan Agrawal:

Module:

-Coding and Unit Testing

-Integration and System Testing

-Maintenance

Prachi Jain:

Module:

-Feasibility Study

-Requirement Analysis Specification

-Design

Chapter 5

System Testing

The designed system has been testing through following test parameters.

5.1 Functionality Testing

In testing the functionality of the device, the following features were tested:

1. User Registration
   (a) User signed-up using sign up screen is tested.
   (b) User Login using login screen.
2. Product View
   (a) Product overview screen is tested.
   (b) Direction of user to Product detail screen.
3. Product Cart
   (a) Testing whether the products are added to the cart when cart icon is clicked upon.

(b) Removal of product from the cart.

4. Order

   (a) Testing whether the products are added to this screen when ordered from the cart.

   (b) Testing the total amount generated.

5. Manage Product

   (a) Testing whether the products are added to the product screen when new product details are entered.

   (b) Changes made in the current products are tested.

6. Logout

   (a) Logout functionality is tested.

5.2 Performance Testing

- Testing for the loss of data .
- Testing for the connectivity of the internet and the speed of data transmission.
- Testing for the regular login activity.
- Testing the updation of the products in cart when added or deleted.

5.3 Usability Testing

- The application is portable enough to be moved into different segments of the industry.
- The equipment is smart enough to push the notifications.
- The system have an option to log all the events to provide clarity to the end users.
- Usability in terms of displaying data, processing data, pushing job tasks from the devices tested thoroughly.

Chapter 6

TEST EXECUTION SUMMARY

Execution Test Summary Report is an overall review of Testing Process from start to end. Test Plan comes at the starting of project while Test Summary Report comes at the end of the testing process.

The Test Summary Report contents are :

1. S.No.
2. No. of items added
3. No. of Order recieved
4. No. of registration
5. No. of request
6. Final Status

S.No	Items added	Order Received	Registration	Request	Final Status
1	100	100	2200	100	PASS
2	150	150	2200	100	PASS
3	75	75	2200	75	PASS
4	125	125	2200	125	PASS
5	200	200	2200	200	PASS

Table 6.1: Text Execution Summary Table

Chapter 7

PROJECT SCREENSHOTS

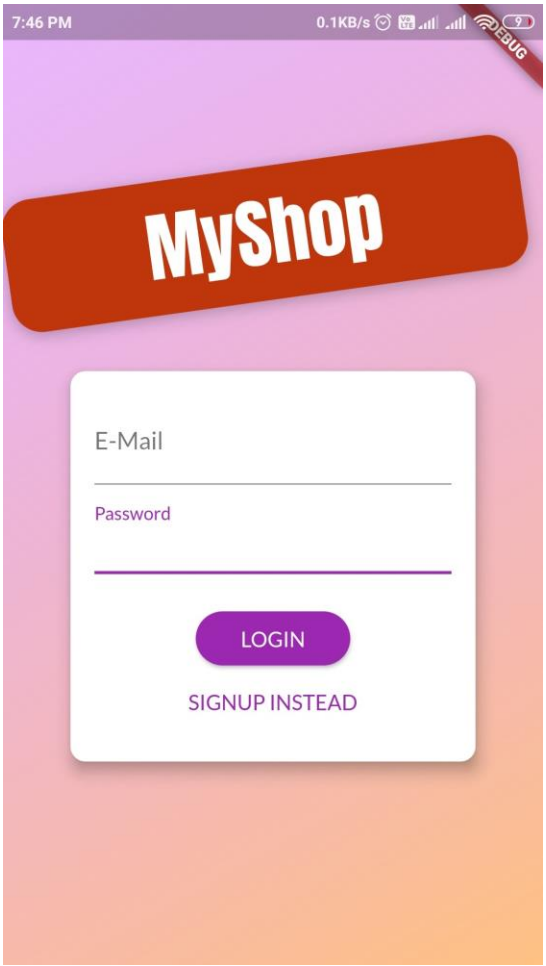


Figure 7.1: Project Screenshots(Main Page)

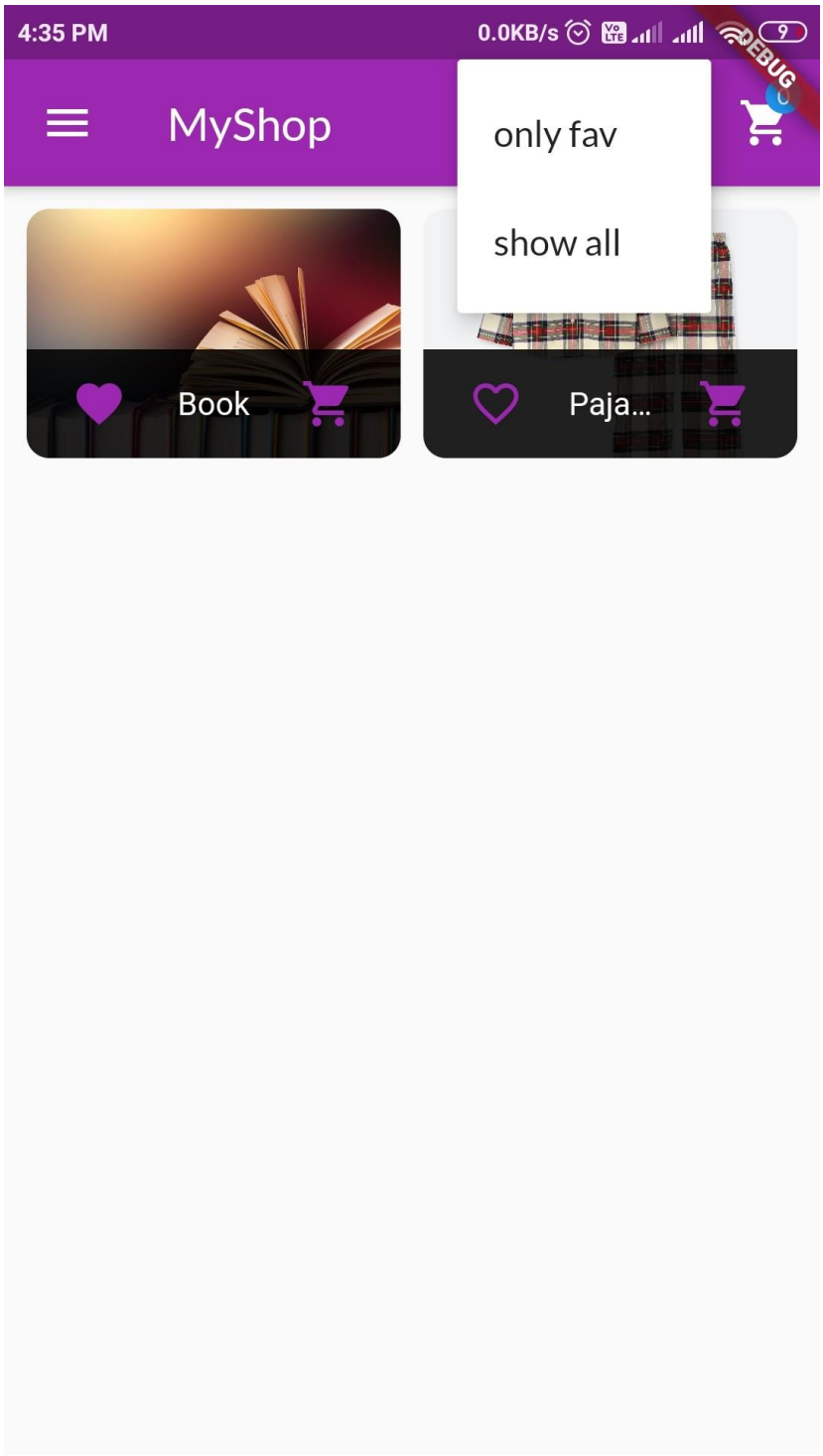


Figure 7.2: Project Screenshots

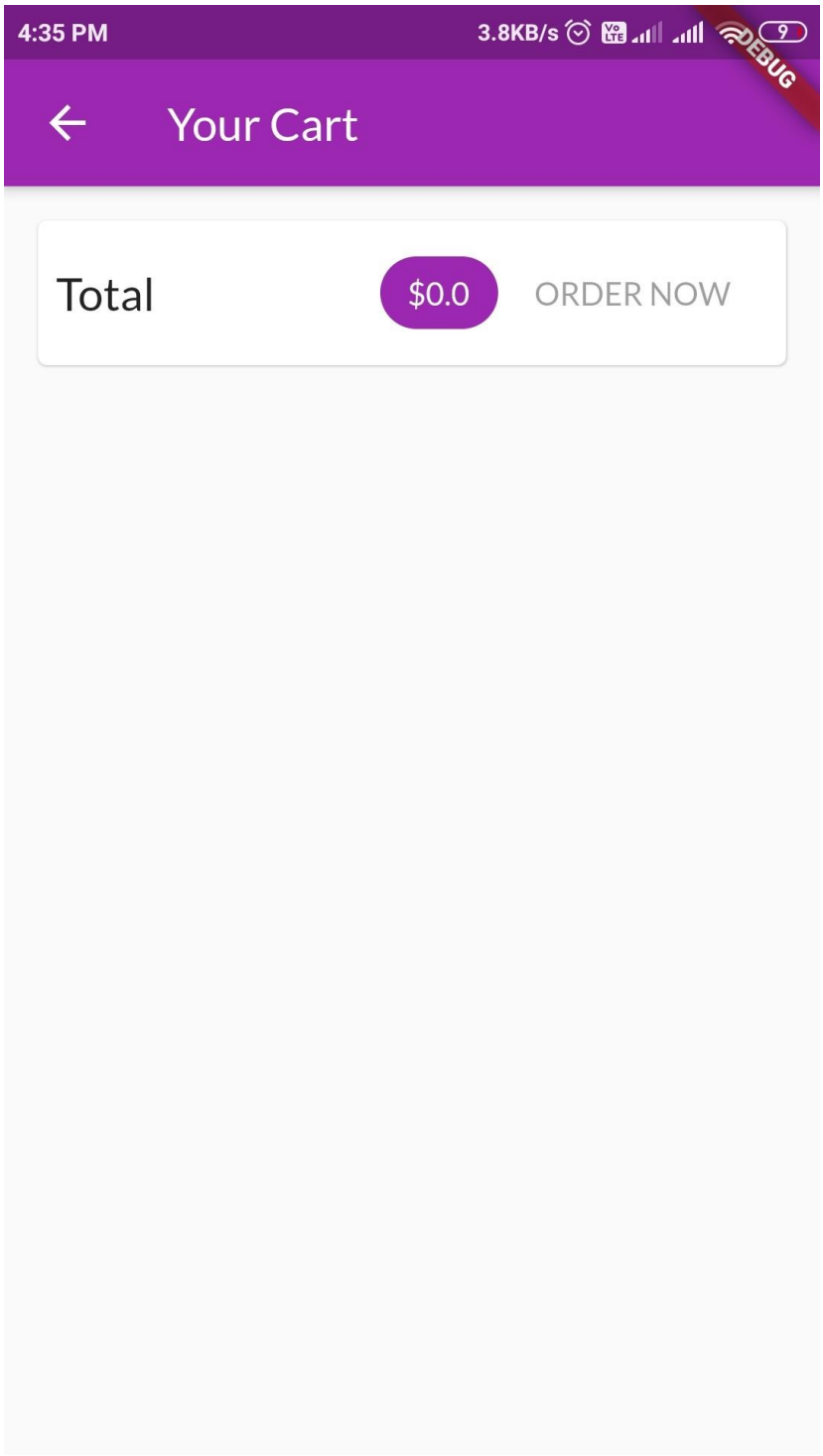


Figure 7.3: Project Screenshots(cart)

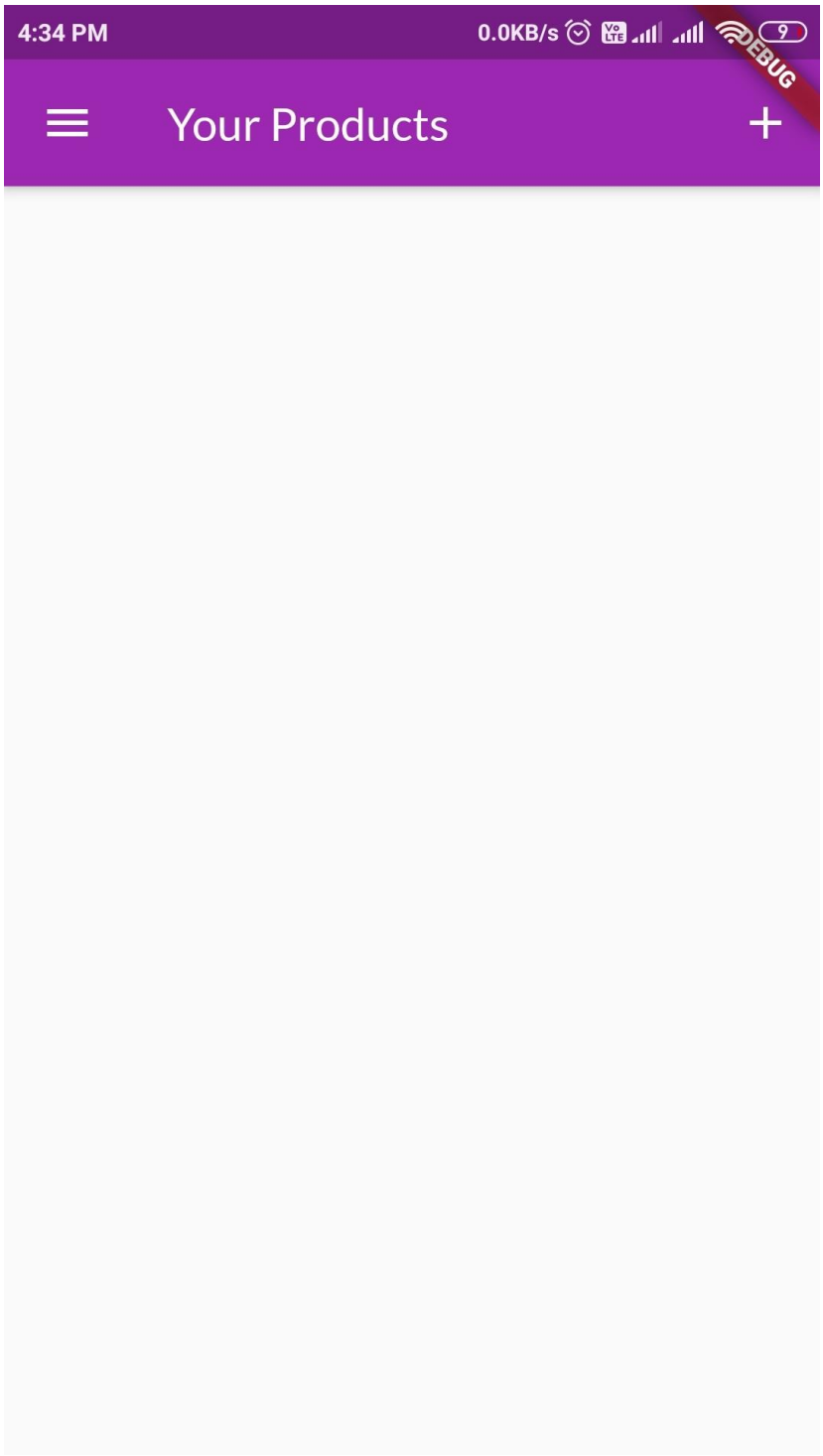


Figure 7.4: Project Screenshots

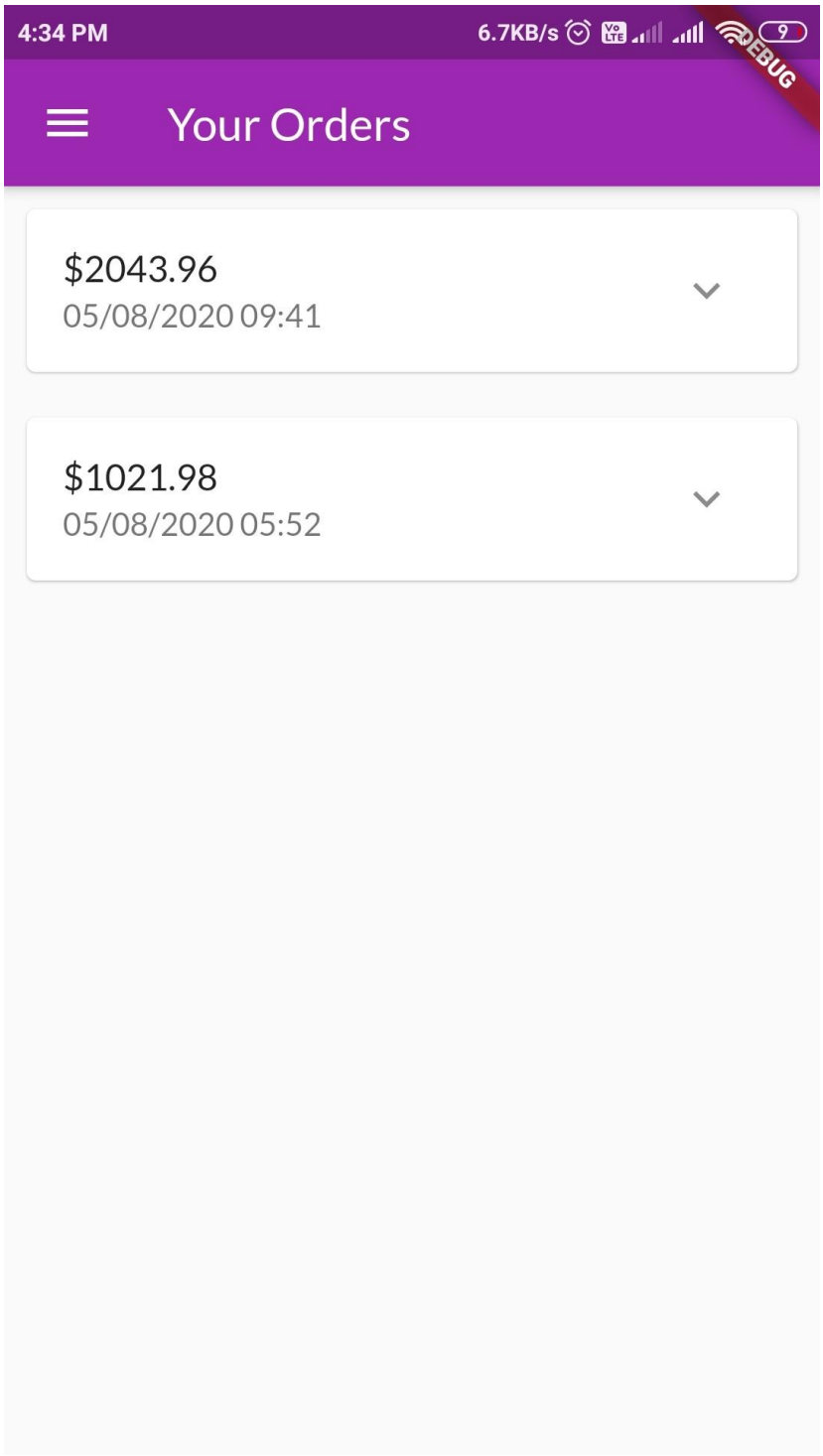


Figure 7.5: Project Screenshots

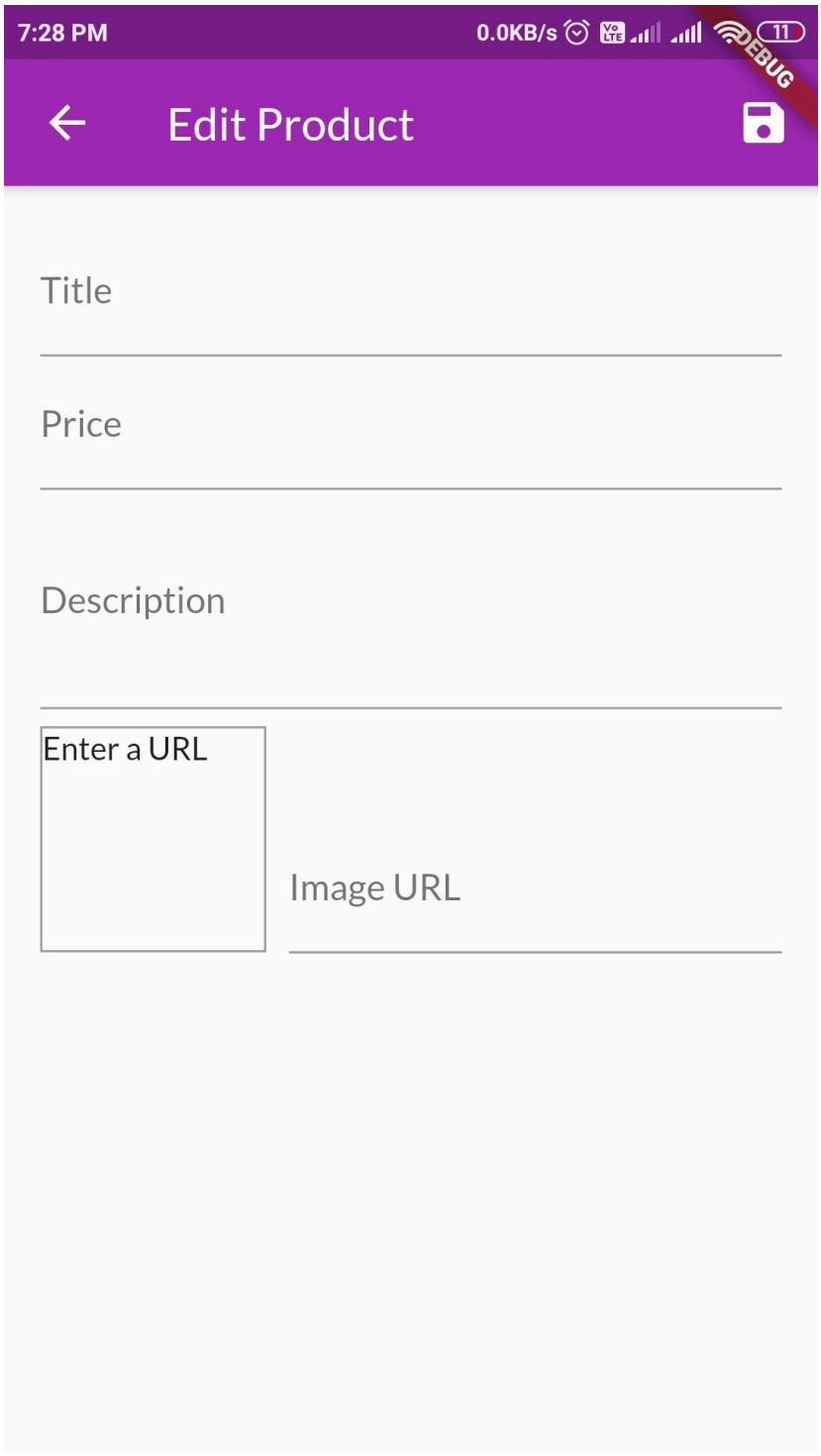


Figure 7.6: Project Screenshots

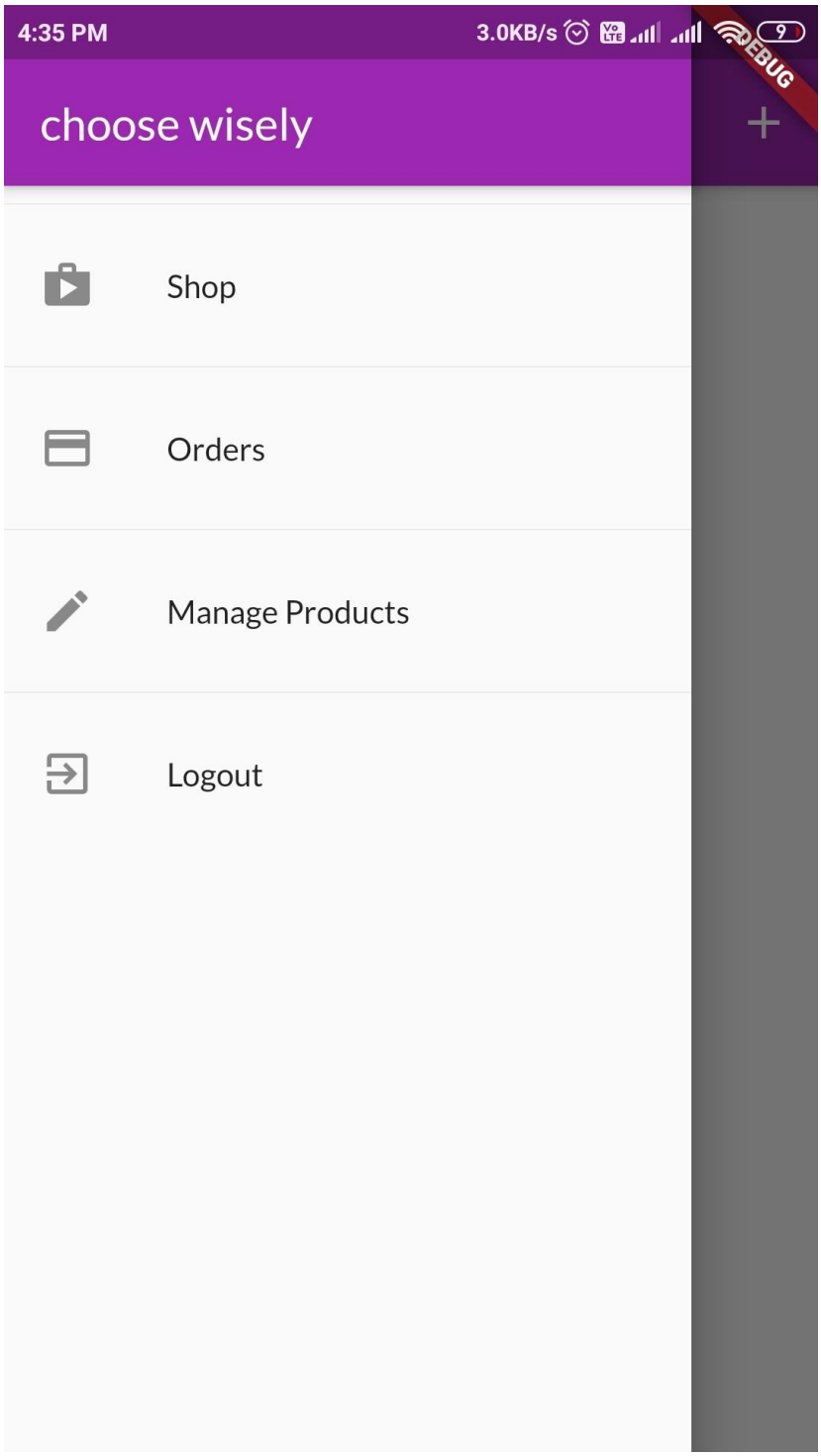


Figure 7.7: Project Screenshots

Figure 7.8: Project Screenshots

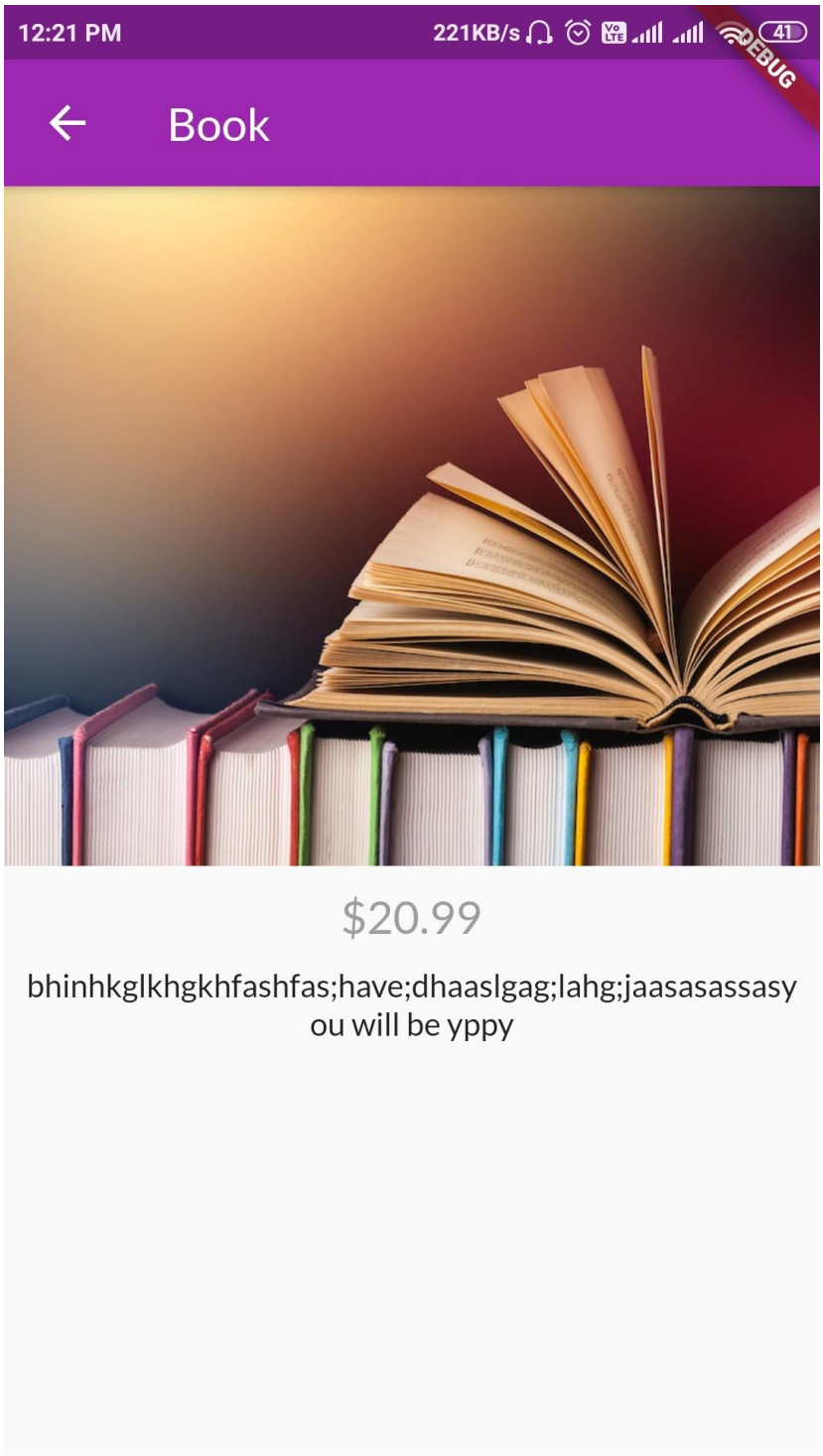


Figure 7.9: Project Screenshots

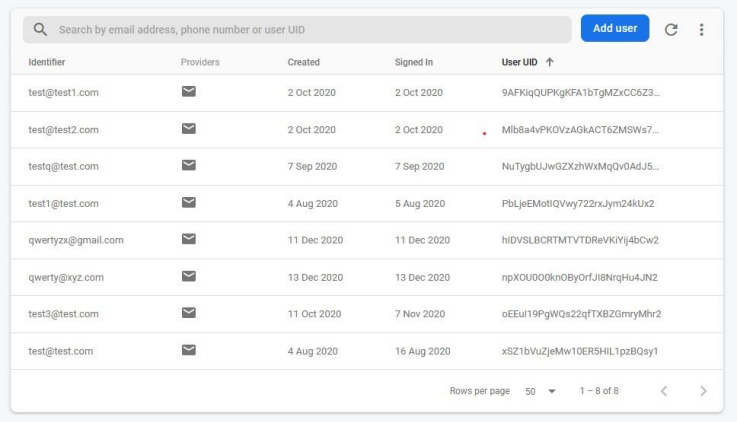


Figure 7.10: Project Screenshots

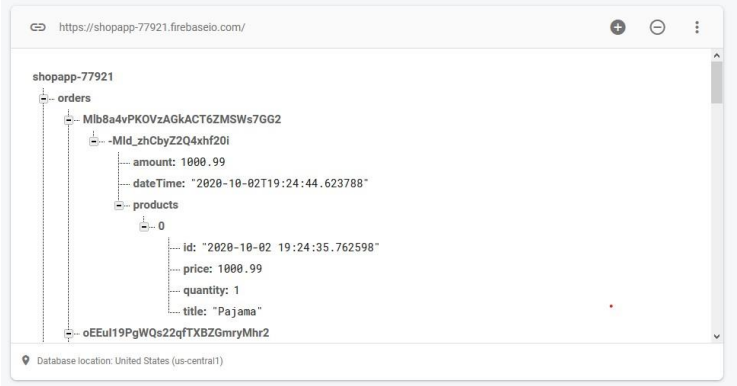


Figure 7.11: Project Screenshots

Chapter 8

PROJECT SUMMARY AND CONCLUSIONS

8.1 Conclusion

The project is considerable with a good number of parameters. Here are some parameters that describe the purpose of how this project can handle real-time issues and provide efficient solutions for them.

- Mobile and e-commerce applications are tools for accessing the Internet and for buying products and services. These applications are constantly evolving due to the high rate of technological advances being made. This paper provides a new perspective on the types of applications that can be used. It describes and analyses device requirements, provides a literature review of important aspects of mobile devices that can use such applications and the requirements of websites designed for e-commerce.

Chapter 9

FUTURE SCOPE

This app will enable users to comply with the digital needs and provide a platform where purchasing and selling products is efficient and hassle free.

• The app is easy to use due to its intuitive User Interface.

• The user can upload products as per need.

• The products can be added to the cart in well organized manner .

• This application provides us with the facility of sorting products according to user liking's.

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