



**FINAL SEMESTER ASSESSMENT
(FSA) B.TECH. (CSE)
VI SEMESTER**

**UE18CS355 – OBJECT ORIENTED ANALYSIS AND
DESIGN WITH SOFTWARE ENGINEERING
LABORATORY**

**PROJECT REPORT
ON**

Online shopping system

SUBMITTED BY

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**JANUARY – MAY 2021
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INDIA**

TABLE OF CONTENTS		
Sl.No	TOPIC	PAGE No
	ABSTRACT	1
1.	SOFTWARE REQUIREMENTS SPECIFICATION (Reworked completely by our team)	2
2.	PROJECT PLAN (As received from team J4)	21
3.	DESIGN DIAGRAMS	26
4.	MODULE DESCRIPTION	33
5.	TEST CASES	34
6.	SCREEN SHOTS OF OUTPUT	44

1) ABSTRACT

The Online Shopping System that we have designed is an application intended for online retailers and customers interested in online shopping. The main objective of this application is to make it interactive with a simple GUI, and ensure ease of use. This application is built to allow users to manage products, add products as well as manage their online shopping cart. The implementation has been done in a manner wherein all the aforementioned distinct functionalities are seen clearly in the application and can be tested and reworked by software developers pretty easily.

Our online shopping system is an application which has been built on the Android Studio integrated development environment. Building it on such an interactive environment allowed the team to understand what the users see as a product, and alter the UI as well as the functionalities in order to ensure maximum ease of use for the customers.

This project is an attempt to provide the advantages of online shopping to customers of a real shop. This system can be further extended in implementation terms to any shop in the locality or to multinational brands having retail outlet chains. Thus, regular updates to the UI and the functionalities of this application will be a key goal of the team in order to ensure that the user always has a seamless experience.

Software Requirements Specification

for

Online shopping system

Prepared by:

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01 April 20201

Table of Contents

Table of Contents	ii
Revision History	ii
1. Introduction	1
1.1 Purpose	1
1.2 Intended Audience and Reading Suggestions	1
1.3 Product Scope	1
1.4 References	1
2. Overall Description	2
2.1 Product Perspective	2
2.2 Product Functions	3
2.3 User Classes and Characteristics	4
2.4 Operating Environment	4
2.5 Design and Implementation Constraints	4
2.6 Assumptions and Dependencies	5
3. External Interface Requirements	5
3.1 User Interfaces	5
3.2 Software Interfaces	6
3.3 Communications Interfaces	6
4. Analysis Models	6
5. System Features	8
5.1 Create User account	8
5.2 Search items	9
5.3 Add items to Cart	10
5.4 Proceed to checkout	11
5.5 Payment	11
5.6 Track order	12
6. Other Nonfunctional Requirements	14
6.1 Performance Requirements	14
6.2 Safety Requirements	14
6.3 Security Requirements	14
6.4 Software Quality Attributes	14
6.5 Business Rules	15
7. Other Requirements	15
Appendix A: Glossary	15
Appendix B: Field Layouts	15
Appendix C: Requirement Traceability matrix	16

1. Introduction

1.1 Purpose

The Purpose of this document is to provide a complete and detailed description of requirements and specifications for an Online Shopping System. This document essentially entails but is not limited to describing the various concepts and different types of functionalities with relevant information that have been implemented as a part of this software.

Developers should only consult this document and its revisions as the source of requirements for the Online Shopping System software. No developer should consider any requirements statements, written or verbal as valid until they appear in this document or a revision of the same document.

1.2 Intended Audience

Intended Audience essentially involves enlisting various parties/individuals who will be reading this document. This includes the following but is not limited to the following:

- **Developers:** In order to ensure that the software that is being developed, is in line with solving the problems and meeting the requirements laid out in this document.
- **Testers:** In order to ensure that they have an exact list of the features and functions that will be provisioned based on stimulus, according to requirements and provided diagrams.
- **Users:** In order to improve familiarity with the idea of the software and further suggest other features that would make it even more functional.
- **Documentation Writers:** In order to allow for them to know what the features of the software are and the manner and extent to which they have to be explained. To ensure explanation from their end on the security technologies required and the actual responses of the system to varied stimulus.
- **Database Administrator:** In order for them to lay out their expectations from the system, to build effective mechanisms for fault tolerance through analysis of right inputs, outputs and response in error situations mentioned in further sections of this document.

1.3 Product Scope

The Online Shopping System software is essentially meant to streamline and provide ease-of-access for online selling and buying of goods. Our software supports basic and sophisticated features of an Online Shopping system like product search, shopping cart and product check out. It further secures all the sensitive information regarding the transaction and account data so as to make purchase decisions with a peace of mind.

The objective of this document therefore is to formally describe the system's high-level requirements including functional requirements, non-functional requirements and constraints. The sections in this report have been tailored to convey a general description of the product, user characteristics, general constraints, and any assumptions for this system with further inclusion of the User and System Requirements.

1.4 References

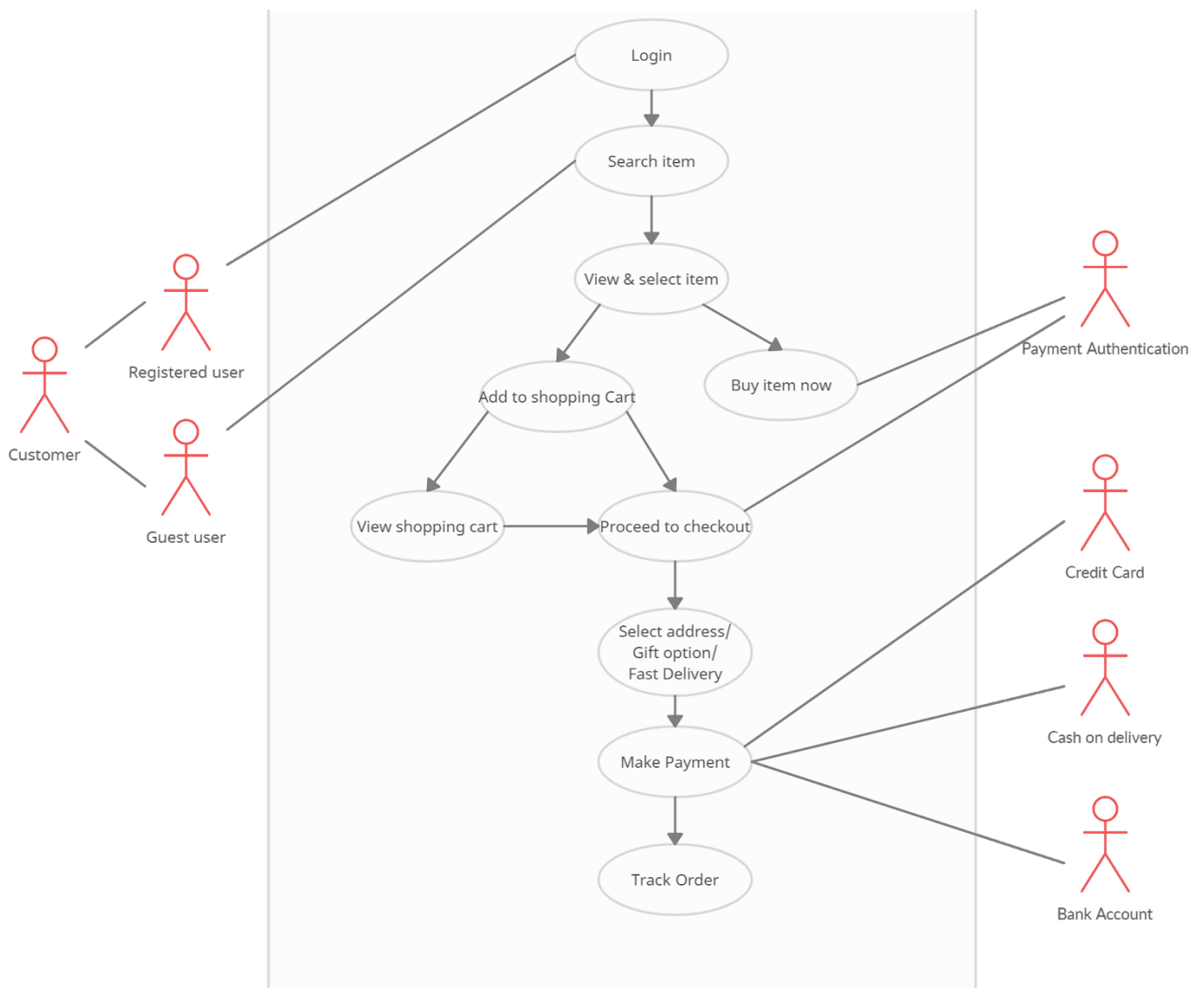
- SRS document format
<https://www.c-sharpcorner.com/article/software-requirements-specification/>
- Online shop requirements
<https://www.websitedesigns.co.za/online-shop-requirements/>
- Tool used for Diagrams
<https://app.creately.com/>
- E-commerce website used for reference
<https://www.amazon.in/>

2. Overall Description

2.1 Product Perspective

The Online shopping system is a stand-alone product, targeted towards both vendors and their respective customers.

This product envisions to bridge the gap between the seller, retailer and the customer. The product being on a digital platform makes it more convenient to all the users involved, since physical presence is not required for most of the product's operations. The product must be available to any user that can access a web browser. It is a user-friendly one stop for millions of products online where purchases happen in a secure and efficient manner.



2.2 Product Functions

The following are the functions of Online Shopping system

- Sign up for new users
- Login for existing users
- Search for items
- Buy the items
- Add the item to cart
- View cart
- Proceed to checkout
- Address for delivery
- Method of payment
- Track ordered item

2.3 User Classes and Characteristics

2.3.1 Customer (Buyer)

The customer is a verified user of the website who browses through the catalogue of items and makes a purchase from the seller. They are the most important user class for this product. The customer can either make a purchase as a guest or by being a verified user via username and password constructs. If the customer is a registered user of the website, he gets additional benefits of recommendations of similar products or products that other customers have frequently bought together.

2.3.2 Vendor (Seller)

The seller is a verified person who is allowed to sell items over the platform. The details of the seller are stored in a database along with the products he is selling. The seller is responsible for updating quantity, price and product descriptions.

2.3.3 Administrators

The admins look after and monitor the functioning of the website. They are responsible for maintaining the platform. They do not contribute to the buying and selling, they merely enable it in a smooth manner. Admins are responsible for reporting any fraudulent sellers and transactions.

2.4 Operating Environment

The application must be able to run smoothly on

- iOS(11 onwards) and
- Android (Version 10 onwards)

The software must be downloaded as an application from the Google Play or Apple App Store. Further the Web Application must be able to run smoothly on

- Microsoft windows (Windows 8 onwards),
- Linux (Version 5.10) and
- Mac OS (BigSur)

The web application must be able to launch and integrate successfully with the corresponding versions of

the Web Browsers - Mozilla, Safari, Chrome, etc.

2.5 Design and Implementation Constraints

2.5.1 Hardware Constraints

The system works on desktop and laptop computers which support JavaScript and HTML5.

2.5.2 Software Constraints

The system will be intended to run on Firefox 4 and above, Google Chrome 10 and above and Internet Explorer 8 and above.

2.5.3 Language Constraints

The website will originally be constructed in the English language. However, third-party translation tools can be implemented to offer a variety of languages.

2.5.4 Performance Constraints

Server might be incapable of handling high traffic bursts.

2.5.5 Quality Constraints

Product image may vary from actual product due to inaccuracies on the seller's side. Reviews may not always be reliable.

2.6 Assumptions and Dependencies

1. Customers and sellers must have basic knowledge of computers and the English Language. They must have a stable internet connection with proper web browsers installed on their respective systems.
2. The seller is not a fraud and all items are bought as new. The product details as stated by the seller match the customer's product when delivered. The customer leaves an accurate and a reliable review, unbiased and uninfluenced.
3. Third-party payment gateway applications are safe, secure, reliable and will not store any sensitive information of either the seller or the customer.
4. Third-party translation applications will translate the English language into a variety of different languages whilst being fully accurate and not causing any miscommunication between the seller, customer and admins due to incorrect, ambiguous or misleading translations.

3. External Interface Requirements

3.1 User Interfaces

The Online Shopping System should have the following user interfaces:

- **Login page** for authenticating registered users. It should accept email addresses, passwords and authenticate against authentication systems. It also provides features for New user registration and Forgot password.
- **Search page** is for registered users who can search products based on product attributes. User can also search by product name, brief description, and product category
- **Products list page** displayed once we get result for the searched item
- **Product page** is shown once the user clicks on an item in the products list page. This should give an option to add the product to cart or buy the product.
- **Shopping cart page** displays the items in cart and also the total price.
- **Checkout page** gives the total amount to be paid and gives various methods of payment. It also gives options to mark the product as a gift and fast delivery.

Once the payment is done , it displays the details of the order and the estimated delivery date.

3.2 Software Interfaces

Online Shopping system should integrate the following interfaces:

- **Product database** to get product details. A database will be created using MySQL relational database to store the product details. Using APIs is the most preferred way of integration.
- **Pricing System** to get the product pricing, in real-time for the selected products.
- **Web server** will be used to accept all requests from the user and forward it accordingly.

Additionally, the software required to build this application include:

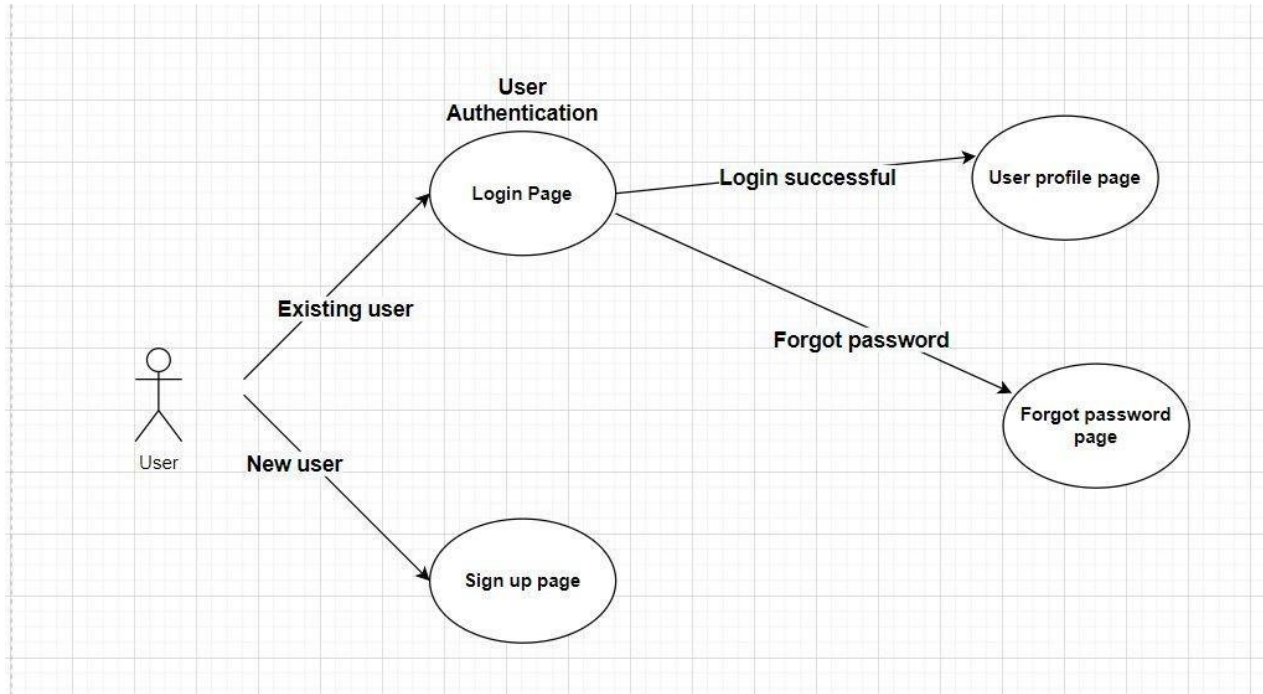
- My SQL Community Server
- Apache web server 2.4+
- PHP 5.5+
- NodeJS 15.0+
- React 16.0+
- Remote web host
- FileZilla for easy FTP transfer between localhost and web host.
- Adobe Dreamweaver
- Modern internet browser (Not IE)

3.3 Communications Interfaces

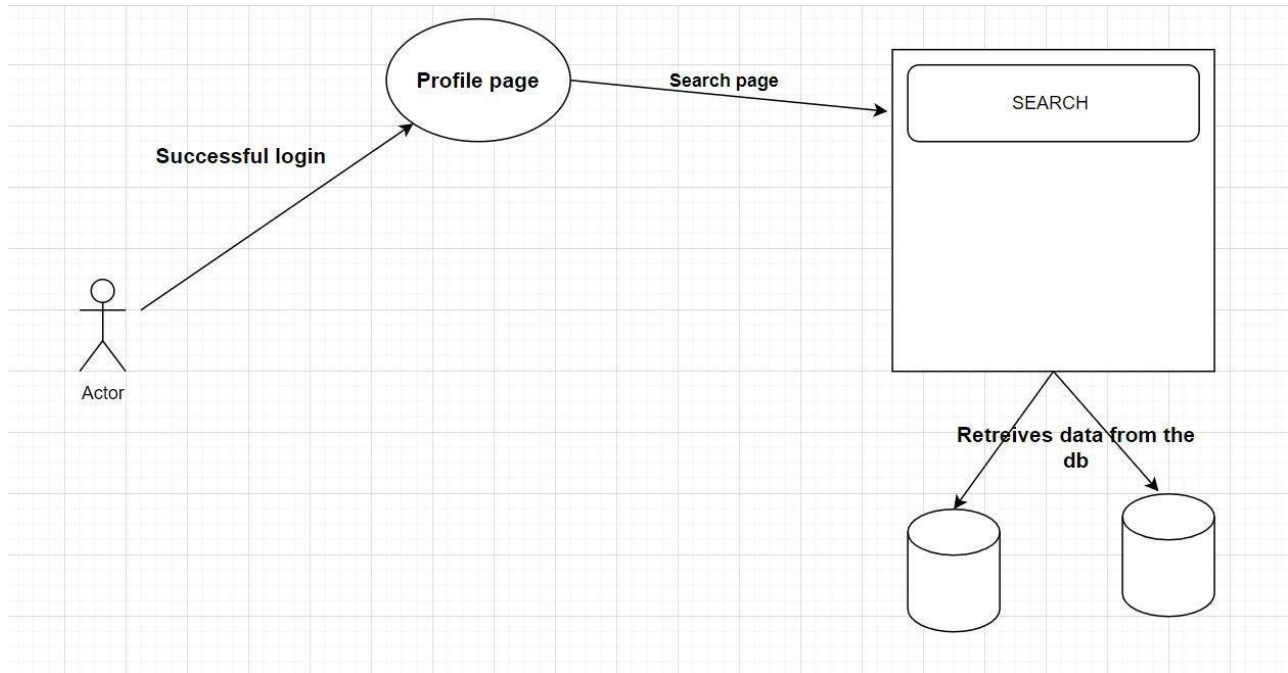
HTTP/HTTPS: Used to send and receive requests. Also used to send and receive forms through HTTP GET and POST Methods and finally support communications between the client and the server.

4. Analysis Models

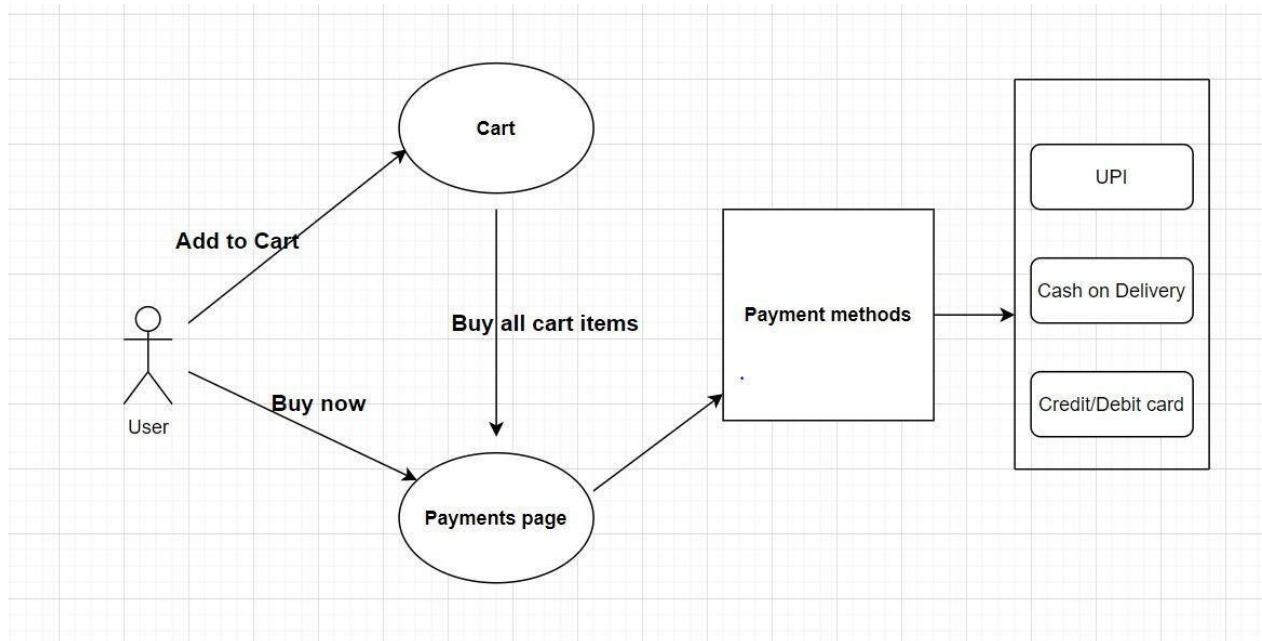
4.1 Login



4.2 Search



4.3 Payment



5. System Features

5.1 Create User account

5.1.1 Description and Priority

The user will be given an option to view the website as a guest or through a verified account. Creating an account has the advantage of faster checkout, giving reviews and rating and is helpful for a more personalized shopping experience.

This will also be useful for the organisation to send suggestions and offers to customers through mail or messages.

Priority : Medium, and on a scale of 1 to 9, it would be scaled to 7.

5.1.2 Stimulus/Response Sequences

Stimulus : The user must enter the name, phone number and email address and optional residential address. An OTP verification must be done either through mobile number or email address. A password must be created by entering the password twice.

Response : A User Account is created and the user can start searching and buying products.

5.1.3 Functional Requirements

Requirement Title	Create a User account
Required Input/Action	A User must provide the following details User Name, Email address, Phone number, Password, Residential Address
Expected Response	A User account must be created and the particular user's details should be added to the database and the user should be given access to the account and the privileges to rate a product , add it to a cart and also buy the product. Invalid email address or phone number and not meeting the password requirements will lead to error in creation of the account

Exception Scenarios	Input which doesn't follow the requirements for the field may lead to error in creation of account
----------------------------	--

REQ-1: Creation of user account

5.2 Search items

5.2.1 Description and Priority

As the User searches for an item , It should display the list of all products which match the product name given and also give some products which are related to them.

Priority : High and on a scale of 1 to 9, it would be scaled to 8.

5.2.2 Stimulus/Response Sequences

Stimulus : The user must enter the name of the product or the details of the product

Response : The products which match the query given by user should be displayed

5.2.3 Functional Requirements

Requirement Title	Search items
Required Input/Action	The user must enter the name of the product or the details of the product in the search bar of the home page.
Expected Response	The product should be searched in the database and the product with the details of the product should be displayed , some recommendations to the product must also be displayed.
Exception Scenarios	Invalid terms or terms which are not identified by the search Engine results to a page showing items not found

REQ-2: Search items

5.3 Add items to Cart

5.3.1 Description and Priority

As the User decides to buy an item and wants to explore many more similar or different products , they should have the option to keep all these products in a cart. Each User should have a separate Cart which contains only the items he/she chooses.

Priority : High and on a scale of 1 to 9, it would be scaled to 8.

5.3.2 Stimulus/Response Sequences

Stimulus : The user must select a product and click on the option “Add to Cart”.

Response : The product and its details with the price should be added to the cart and the cart must display the total price.

5.3.3 Functional Requirements

Requirement Title	Add Items to Cart
Required Input/Action	The Products page should be displayed , the User should click on the product and click on the option “Add to Cart”.
Expected Response	The product should be added to the cart of the user and the details of the product with price and the Cart total should be displayed. Some recommendations related to the products should be displayed.

REQ-3:Add items to cart

5.4 Proceed to checkout

5.4.1 Description and Priority

When User adds some items to the cart, there should be an option to add more items and proceed to checkout.

Priority : High and on a scale of 1 to 9, it would be scaled to 8.

5.4.2 Stimulus/Response Sequences

Stimulus : When the user clicks on the option proceed to checkout

Response : The cart should be reviewed and payment methods should be displayed

5.4.3 Functional Requirements

Requirement Title	Proceed to checkout
Required Input/Action	User clicks on the option “Proceed to checkout”
Expected Response	The Order review page should be shown and the payments options such as UPI, Cash on delivery, Credit and Debit card should be displayed
Exception Scenarios	If there are no items in the cart, it doesn't show this option

REQ-4: Proceed to checkout

5.5 Payment

5.5.1 Description and Priority

The payment page gives options such as cash on delivery , UPI and Credit/Debit card. The user must choose one of them and enter the details for the payment to be done.

Priority : High and on a scale of 1 to 9, it would be scaled to 7.

5.5.2 Stimulus/Response Sequences

Stimulus : Click on any of the methods of payment and enter the corresponding details for the payment method.

- Credit card - Card details such as credit card , CVV , name on the card
- UPI - UPI ID

Response : The Payment process should start and the payment should be done.

5.5.3 Functional Requirements

Requirement Title	Payment
Required Input/Action	User clicks on any of the methods of payment and enter the corresponding details for the payment method
Expected Response	The Payment process should start and verification should be done for card details by sending an OTP to the registered mobile number associated with the card. Once the payment is successful an invoice along with an option to track the order should be displayed.
Exception Scenarios	If the Payment details are invalid the payment will be unsuccessful

REQ-5: Payment

5.6 Track order

5.6.1 Description and Priority

Once the payment is successful the user must be updated in real time with the status of the order by giving the details of the estimated delivery time. It should display in which of the following phases is the product in

- Picked up by courier
- Shipped
- Arrived at OSS (Online Shopping system)facility
- Left the OSS facility
- Out for delivery
- Delivered

Priority: Medium, and on a scale of 1 to 9, it would be scaled to 7.

5.6.2 Stimulus/Response Sequences

Stimulus : Click on track your order

Response : The product details with the current phase , i.e., picked or arrived is displayed

5.6.3 Functional Requirements

Requirement Title	Track order
Required Input/Action	User clicks on Track order for a particular product ordered
Expected Response	The product details with the current phase, i.e., Picked up by courier or Shipped or Arrived at OSS (Online Shopping system)facility or Left the OSS facility or Out for delivery will be displayed along with the timestamp.
Exception Scenarios	If there is no order placed , this option will not be displayed

REQ-6:Track order

6. Other Nonfunctional Requirements

6.1 Performance Requirements

The system should be available at all times, so that users can access it using a web browser. It must be able to support multiple users concurrently and it should be reliable. Connections to the servers will be made available 24/7 based on the attributes of the user like his location, internet connectivity etc. This also depends on the hardware components of the customer.

6.2 Safety Requirements

The use of software should not lead to any event that could cause possible economical or occupational losses that are considered non-desirable. There shouldn't be a situation of data loss. Validated users should be allowed to use the extra benefits.

6.3 Security Requirements

The system must use password encryption and should not be exposed to security attacks. All transactions that include any confidential and sensitive data of the customer must use SSL (secured socket layer) to prevent a malicious user on the internet from seeing and modifying data, therefore further protecting the data flowing through the web browser.

6.4 Software Quality Attributes

The additional quality characteristics for the product that will be important to either the customers or the developers are:

- **Reliability:**
The backup of the database is continuously monitored and updated to reflect the most recent changes.
- **Flexibility:**
Software should be made available across multiple channels and devices
- **Maintainability:**
Software design must be such that it can be maintained efficiently. In case of failure re-initialization of the program is recommended.
- **Portability:**
Any system using any web browser should be able to use the features of the software and should be compatible with other platforms.
- **Adaptability:**
It should be able to adapt to all the modifications that might be done to the software in future.
- **Robustness:**
Software should have the capability of adapting to newer technologies.

6.5 Business Rules

- User can be a guest and start searching for a product and see the product details
- User must be registered for personalized suggestions and give rating or reviews
- A user can search for a product by name or details of a product. However these cannot be modified by a user
- User can add any item to a cart and any number of items(restricted to a limit to prevent mass re-selling)
- The Cart items can be proceeded to checkout by a registered user.
- The Payment can be done in any trusted methods such Credit or Debit card , UPI Payment , Cash on Delivery
- User can track the ordered items
- User has the option to cancel the order due to reasons such as unsatisfactory, wrong product etc.(Before the item has been shipped). After shipping, items can only be returned once they have been delivered.

7. Other Requirements

There are no other requirements except the ones mentioned.

Appendix A: Glossary

Cart - A virtual shopping basket which has all the products the user is interested in.

Checkout - The process of confirming the order, selecting address and making the payment.

Delivery - The item will be dispatched and given to the customer at the specified address by a delivery man.

OSS - Abbreviation for Online Shopping System.

Appendix B: Field Layouts

Sign up for an account

Field	Length	Data Type	Description	Is Mandatory
Customer id	20	Alphanumeric	Unique ID for a customer	Y
Customer name	50	String		Y
Phone number	10	Numeric	Phone number for verification	Y

Email address	30	Alphanumeric	Email address	N
Password	10	Password		Y
Address	200	Alphanumeric	Address for delivery	N

Login to an account

Field	Length	Data Type	Description	Is Mandatory
Phone number	10	Numeric	Phone number for verification	Y
Email address	30	Alphanumeric	Email address	Y
Password	200	Password		Y

Make payment

Field	Length	Data Type	Description	Is Mandatory
Payment method	15	String	Method used for payment	Y
Amount	6	Numeric	Total bill amount	Y

Appendix C: Requirement Traceability Matrix

Sl. No	Requirement ID	Brief Description of Requirement	Architecture Reference	Design Reference	Code File Reference	Test Case ID	System Test Case ID
1	REQ-1	Create User account	AR – 1.02	DR – 3	MainActivity.Java	TC-1	ST-01
2	REQ-2	Search items	AR – 1.03	DR - 2	MainActivity.Java	TC-5	ST-05
3	REQ-3	Add items to cart	AR – 1.04	DR - 1	Cart.Java	TC-8	ST-08
4	REQ-4	Proceed to checkout	AR – 1.05	DR - 4	Cart.Java	TC-18	ST-18
5	REQ-5	Payment	AR – 1.07	DR – 6	MainActivity.Java	TC-18	ST-18
6	REQ-6	Track order	AR – 1.01	DR - 5	DBSync.Java	TC-26	ST-26

PROJECT PLAN
PROJECT ID : J4
PROJECT TITLE : Online Shopping (Amazon)

SRN and Name of the team members

SRN : PES1201801585

Name : Sneha B M

SRN : PES1201801517

Name : Srija T

SRN : PES1201801103

Name : Ashitha T R

Methodology(Lifecycle)

Waterfall model: Waterfall model is used for this project

Reasons:

Requirements for my project are very well known, clear and fixed

Product definition is stable

Technology is understood

There are no ambiguous requirements

Ample resources with required expertise are available freely

Project is not so long

Tools used at different phases of SDLC

Planning tool: Planning focuses on the scope of the project. The outputs of the planning phase include: project plans, schedules, cost estimations, and procurement requirements.

BigCommerce

Shopify

Design tool: Once the requirements are understood, the design process takes place. It makes use of established patterns for application architecture and software development.

Canva

Adobe color

Google fonts

Version control: Git

Development tool: This phase produces the software under development.

Frontend:

HTML

CSS

Javascript

REST API

Backend:

Server: Apache web sever

Database: MySQL

IDE:

VS code

Bug Tracking: Bugs and defects discovered in production must be reported.

Airbrake

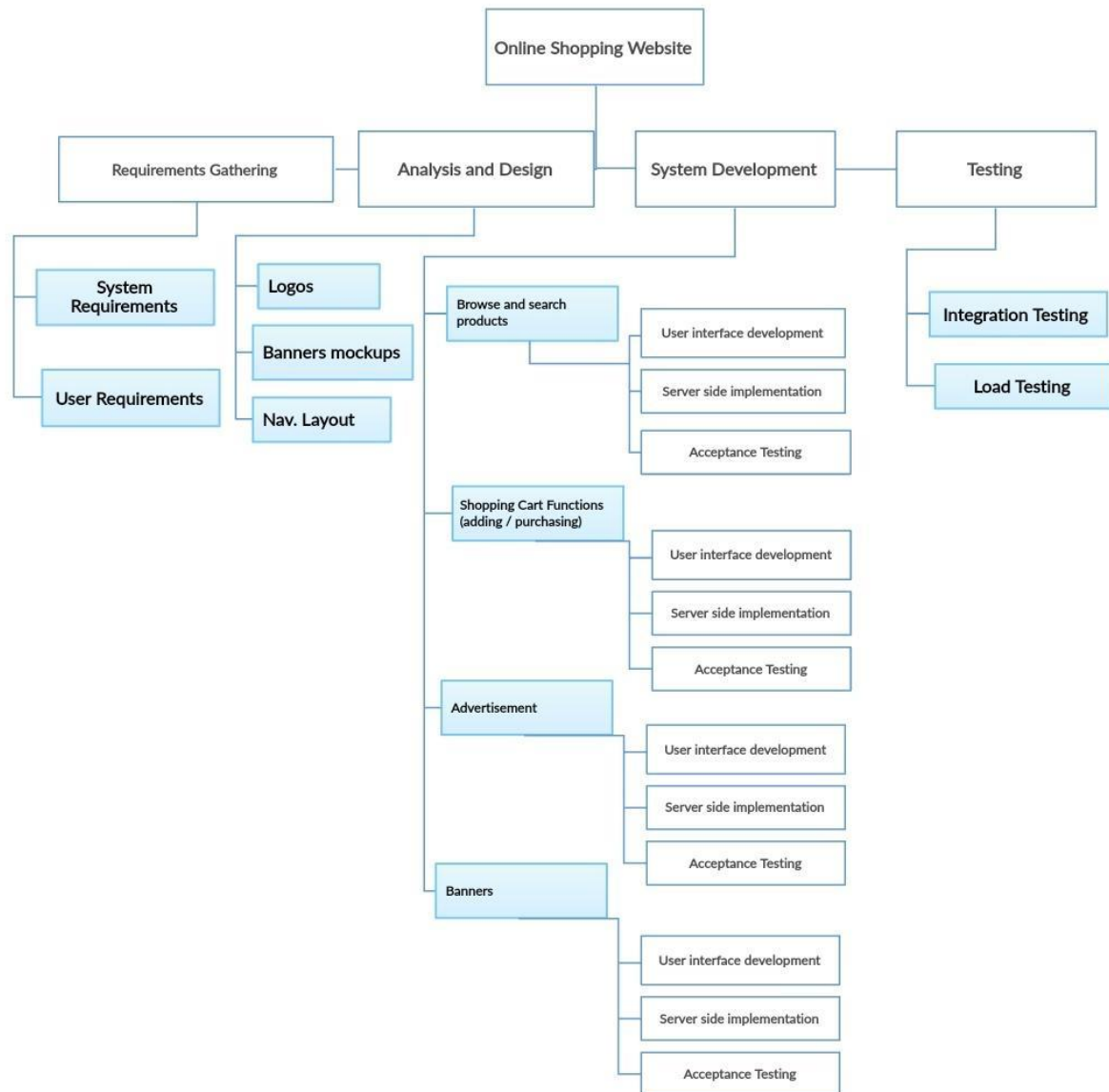
Redmine

Testing tool: It is impossible to deliver quality software without testing. Methods for testing include code quality, unit testing, integration testing, performance testing.

ClickHeat

Spur

Work Breakdown Structure



Deliverables

Provide :

- Sign up and Login operation : Build
- List of Products and category : Reuse
- Search operation : Build
- Shopping cart operation : Build

Checkout operation : Reuse
Administrator access : Build

Individual progress

Team member 1: Backend (Apache server and database)
Team member 2: Frontend (Coding)
Team member 3: API

Month-wise tasks

February:

1.Designing the Project:

- 1.Activity diagram
- 2.Sequence diagram
- 3.System architecture

March:

1.Continuation of designing the Project:

- 1.State diagram
- 2.Class diagram
- 3.Component diagram

2.Generating test cases for covering all the functionalities

April:

- 1.Implementation of the project
- 2.Testing with the designed test cases
- 3.Generation of the report

Gantt chart

February:

Designing the project:

- 1)Activity diagram
- 2)Sequence diagram
- 3)System Architecture

April:

- 1.Implementation of the project
- 2.Testing with the designed
test cases
- 3.Generation of the report



March:

**1.Continuation of designing
the Project:**

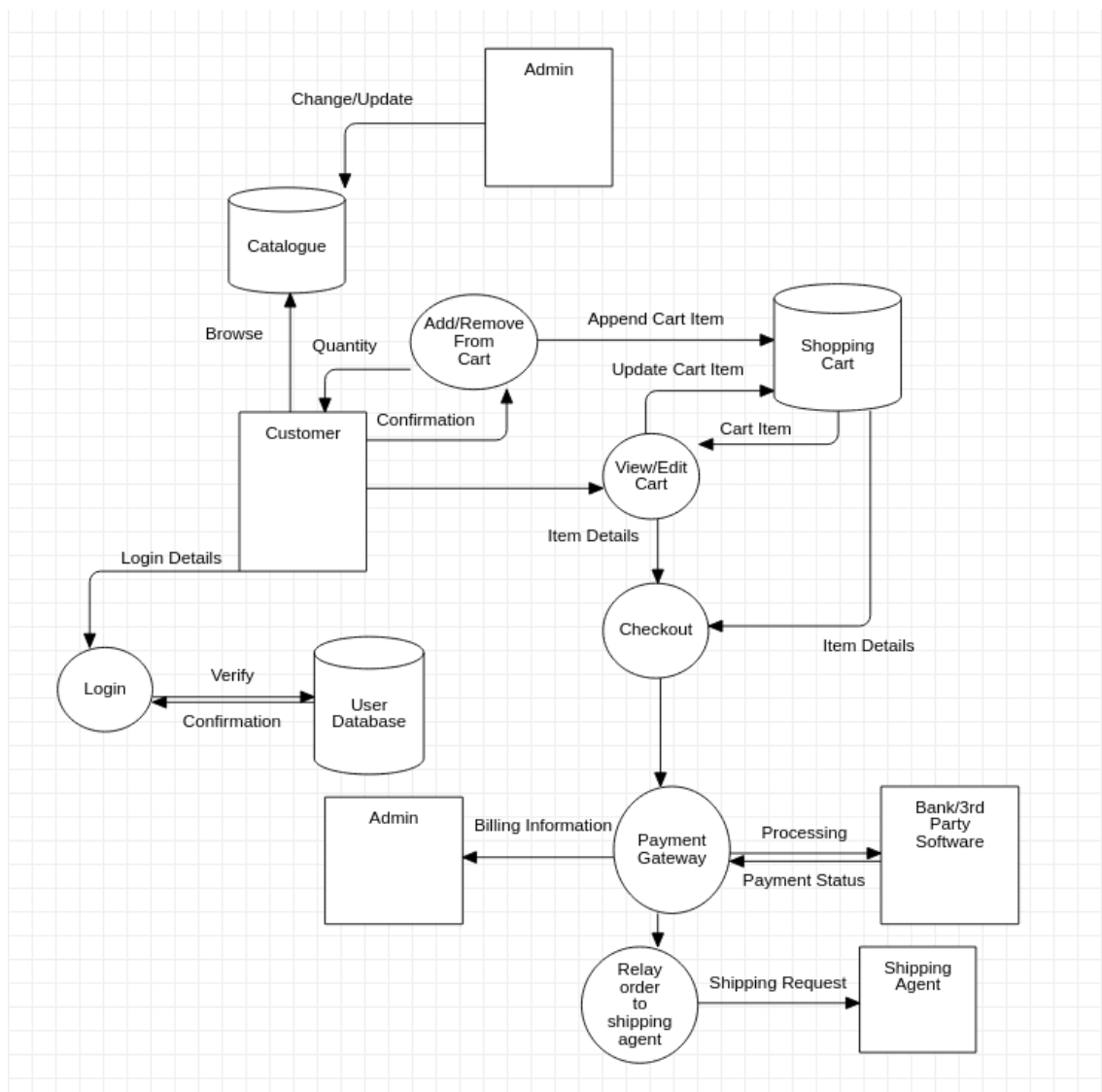
- 1.State diagram
- 2.Class diagram
- 3.Component diagram

**4.Generating test cases for
covering all the functionalities**

DESIGN DIAGRAMS

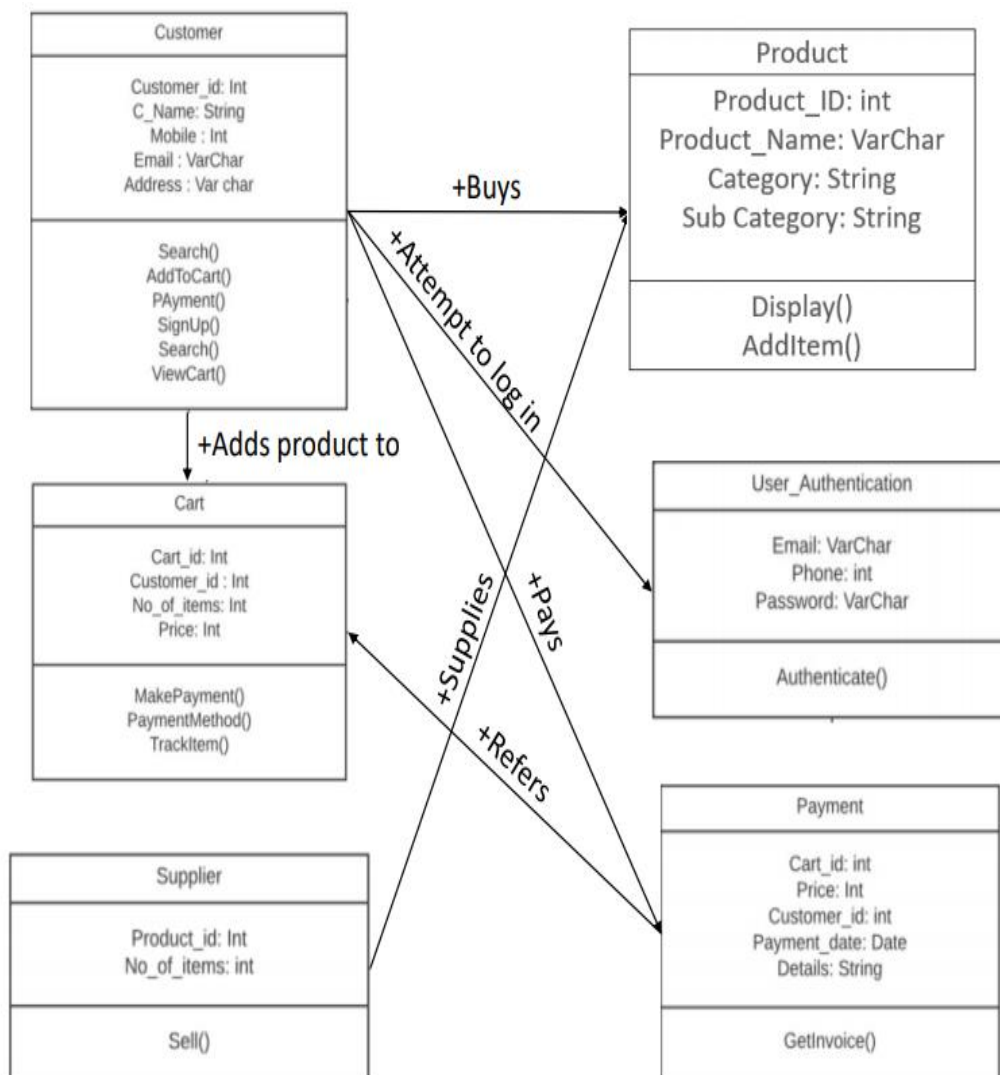
1) SYSTEM ARCHITECTURE

This is a system architecture diagram of a system that is used to abstract the overall outline of the software system and the relationships, constraints, and boundaries between components for our online shopping system. It is an important tool as it provides an overall view of the physical deployment of the software system and its evolution roadmap.



2) CLASS DIAGRAM

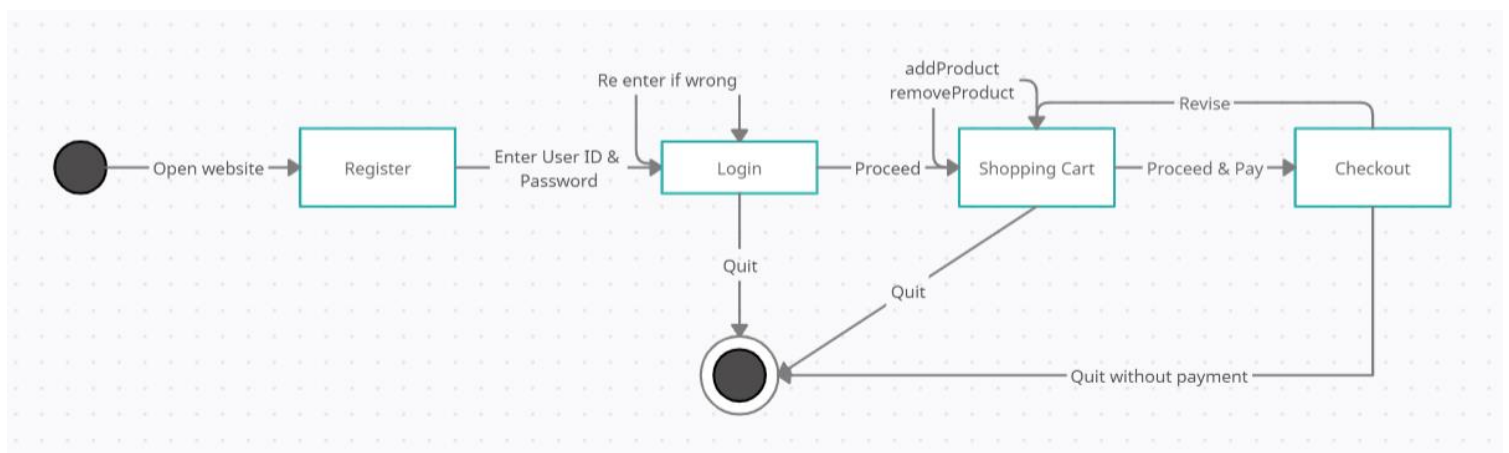
This is a class diagram, which is the main building block of object-oriented modeling for our online shopping system. It is used for general conceptual modeling of the structure of the application, and for detailed modeling translating the models into programming code.



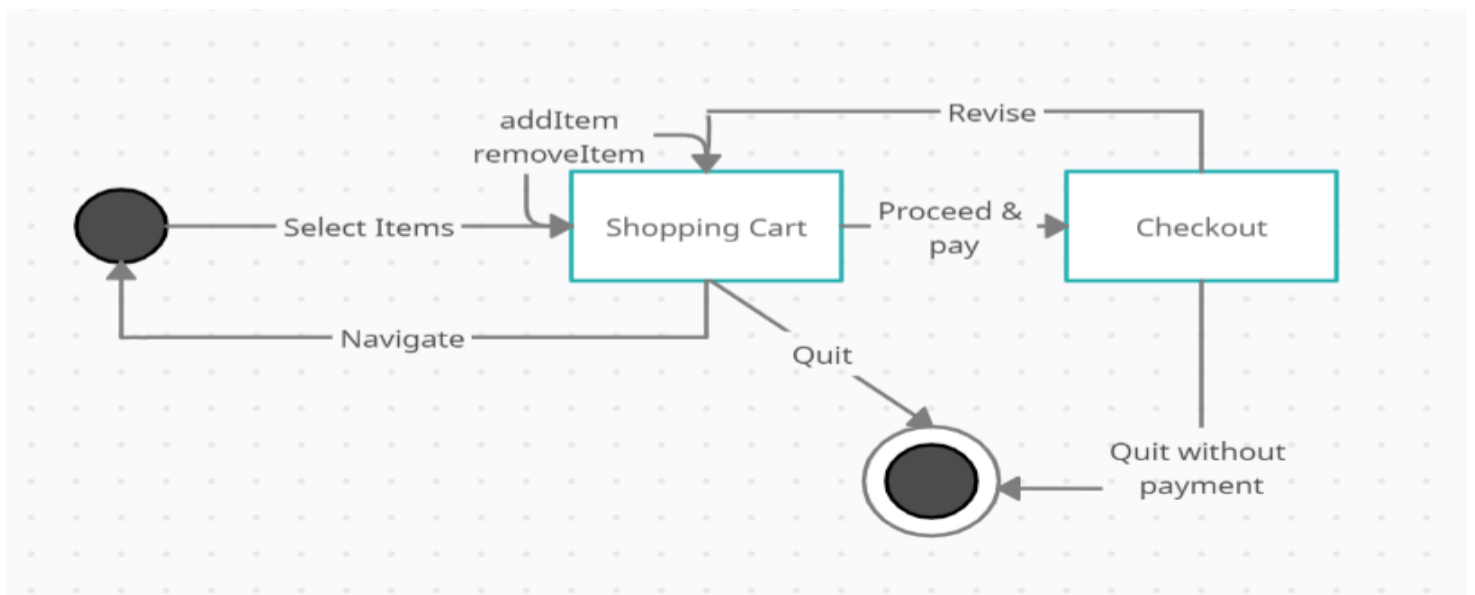
3) STATE DIAGRAM

This state diagram is used in software engineering and related fields to describe the behavior of systems. State diagrams require that the system described is composed of a finite number of states, which is the case for our online shopping system.

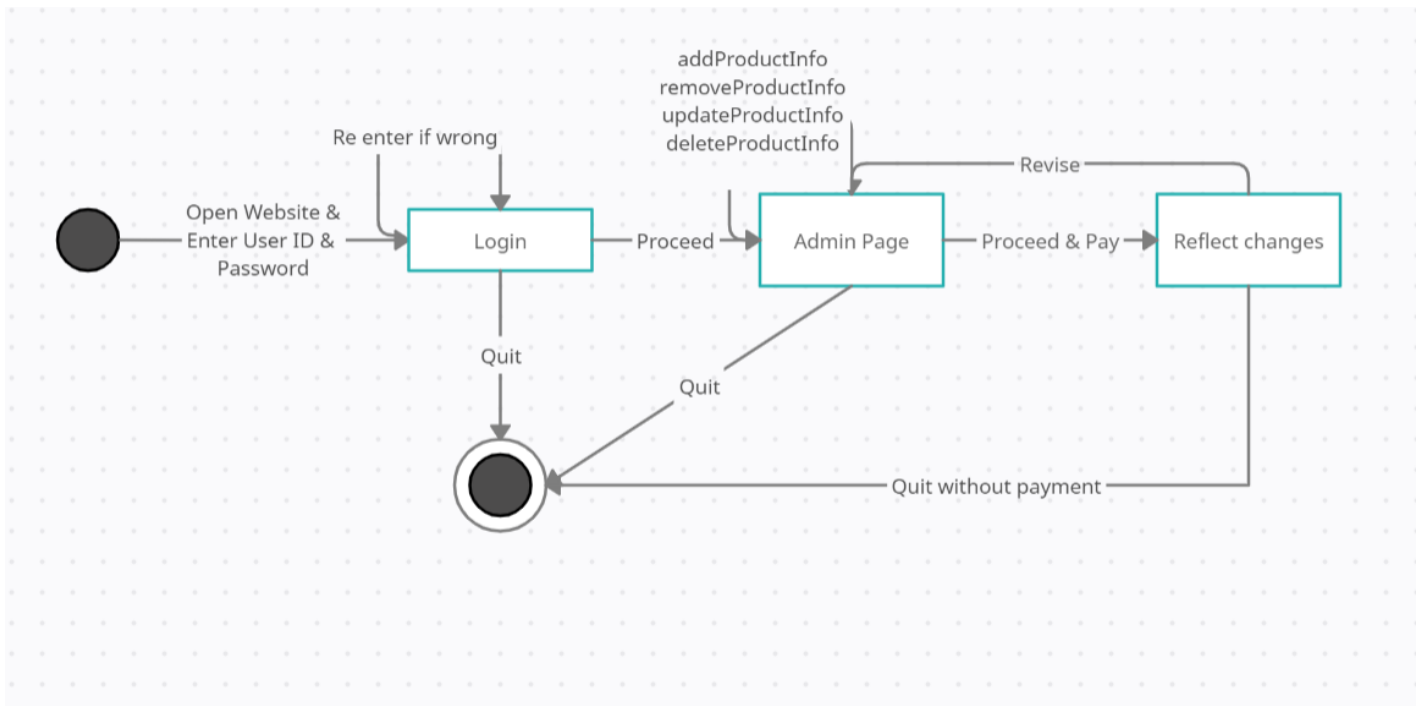
i) State diagram for customer



ii) State diagram for shopping cart



iii) State diagram for Administrator

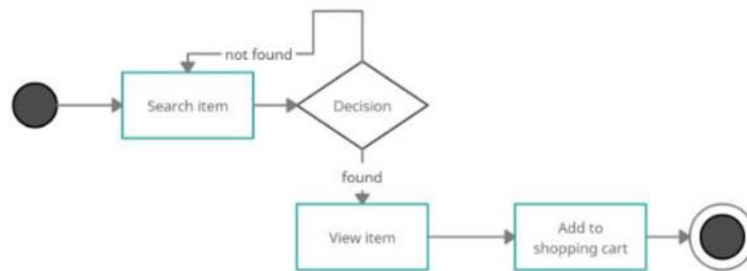


4) 3 ACTIVITY AND SEQUENCE DIAGRAMS

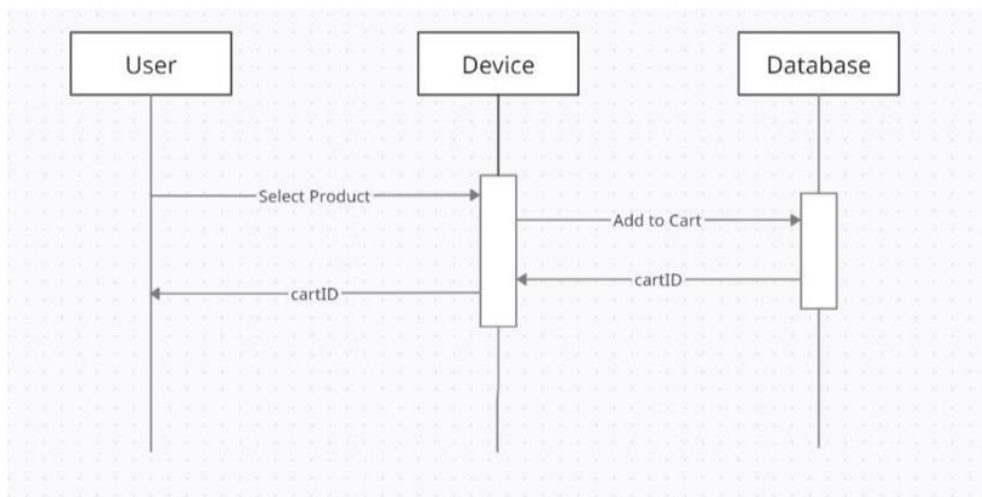
We have made 3 activity diagrams for the purposes of this project, which is a behavioral diagram depicting the behavior of our Online Shopping system. Our activity diagrams portray the control flow from a start point to a finish point for the 3 main use cases we have implemented, to show the various decision paths that exist while the activity is being executed.

We have made 3 sequence diagrams for the purposes of this project, depicting interaction between objects in a sequential order i.e. the order in which these interactions take place. We have made 3 sequence diagrams for the 3 main use cases we have implemented, each describing how and in what order the objects in a system function.

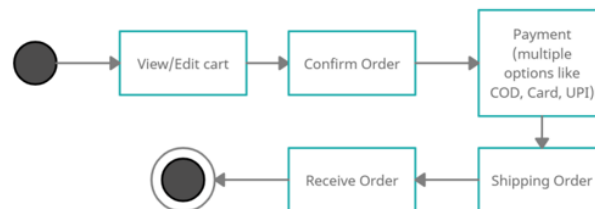
ACTIVITY DIAGRAM 1 - ADDING TO CART



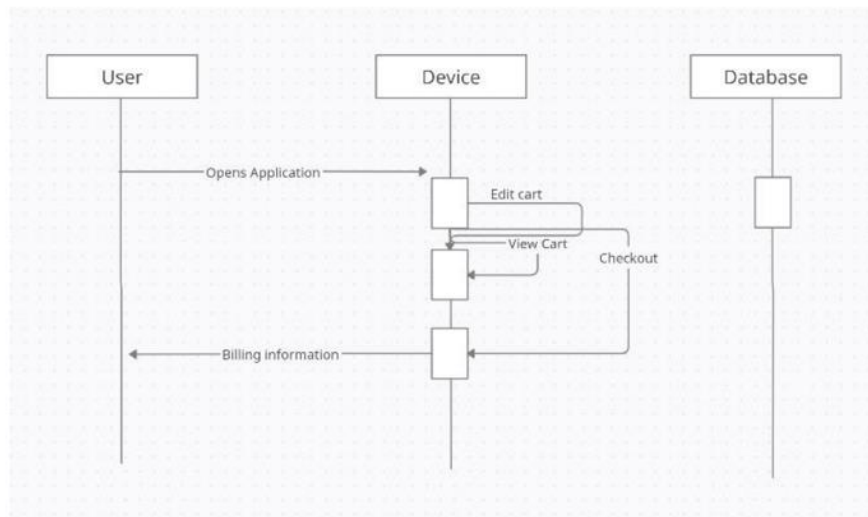
SEQUENCE DIAGRAM 1 – ADDING TO CART



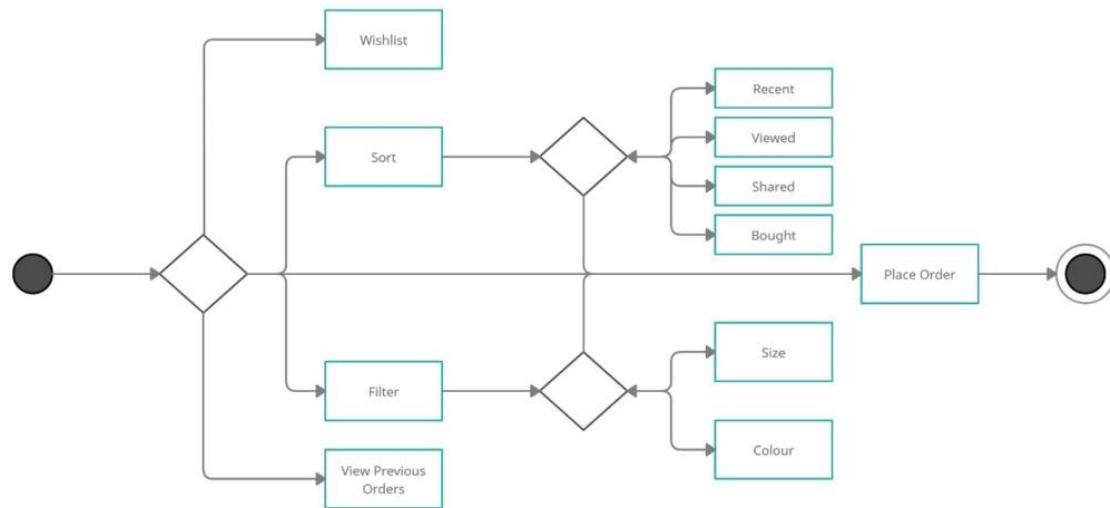
ACTIVITY DIAGRAM 2 - MANAGING CART



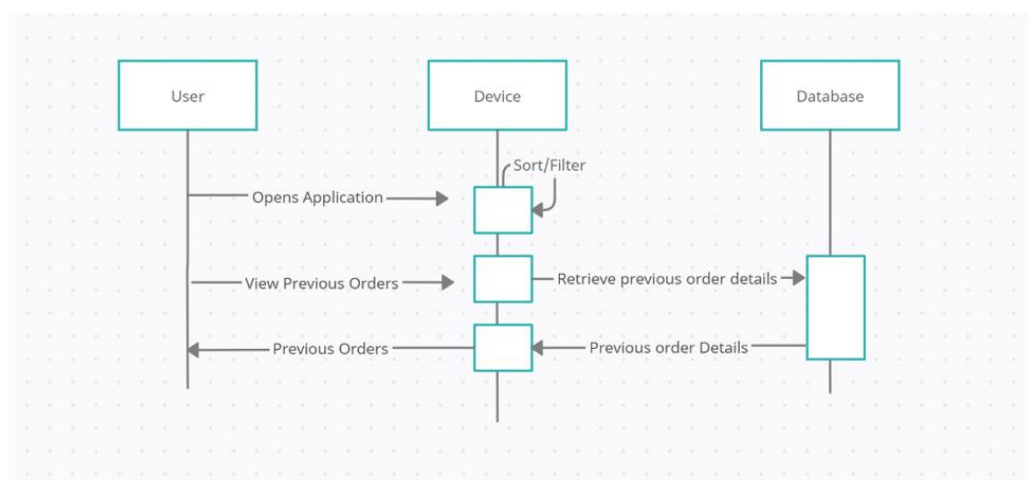
SEQUENCE DIAGRAM 2 – MANAGING CART



ACTIVITY DIAGRAM 3 – PRODUCT MANAGEMENT



SEQUENCE DIAGRAM 3 – PRODUCT MANAGEMENT



Modules Implemented

The Use Cases we have implemented for our online shopping system are:

1) Item selection and Adding to Cart:

Item selection covers the aspects where the user is able to search for his items of choice by:

- 1) Category
- 2) Sub-category
- 3) Item of choice

Adding to Cart covers the aspects where the user has an option to add the items he wants to purchase to a cart from where the order can be placed. User must ensure that all attributes of the item are selected, only after which will the user be allowed to add it to the cart.

2) Managing Cart:

The Managing Cart use case is essential for the user to manage the items that have been added to the cart. User has an option to add or reduce quantity of the already present items, add more items, remove certain items etc. The bill amount dynamically changes as and when the user makes changes to the items present in the cart

Once all changes are made, user can view the final selected items with the individual item cost and the total bill amount and can place the order.

3) Product Management:

The Product Management use case is needed for the user to place his items in a Wishlist for the user's future reference. Our implemented model also allows the user to filter items based on certain constraints and also allows the user to sort items based on:

- Most shared items
- Most viewed items
- Most recent items
- Most bought items

Additionally, the user has an option to view all the previously placed orders from that account.

Object Oriented Analysis and Design with Software Engineering Laboratory

Subject Code: UE18CS355

1) Use Case: Item Selection and Adding to cart

Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result
UT-01	User registration module	To test the sign-up functionality	1) Access to Mobile Phone with internet and Android OS	1. Open application on mobile phone 2. Click on Sign up button 3. Enter full name, mobile number, email ID, password 4. Click on Sign up	Full name: Sunit Koodli Mobile no: 9901587404 Email ID: ks@gmail.com Password: abc123	Sign-up should be successful with app home screen being displayed	Sign-up successful with app home screen being displayed	Pass
UT-02	User login module	To test the login functionality	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Click on Login button 3. Enter email ID, password 4. Click on Login	Email ID: ks@gmail.com Password: abc123	Login should be successful with app home screen being displayed	Login successful with app home screen being displayed	Pass
UT-03	Category Selection module	To test if various main categories are operational with relevant items & sub-categories under it	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen	To select footwear category under menswear from the other various categories	A catalogue of sub categories under the selected category (footwear under menswear) should be displayed	A catalogue of sub categories under the selected category (footwear under menswear) is displayed	Pass
UT-04	Sub category selection module	To test if various sub categories are operational with relevant items under it	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories	To select casual sub-category under the footwear main category	A catalogue of all casual footwear under the selected main footwear category should be	A catalogue of all casual footwear under the selected main footwear category is displayed	Pass

				which are available and displayed on the screen 5. Select a sub-category under the selected category		displayed		
UT-05	Item selection module	To test if various items are displayed with relevant stock information	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category	To select adidas trousers	All relevant information regarding the adidas trousers should be displayed on the screen	All relevant information regarding the adidas trousers is displayed on the screen	Pass
UT-06	Item selection module	To test if appropriate size & colour are being displayed for the particular item	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Select the item size, based on which available colours are displayed	To select adidas trousers in size 40 and colour white	Appropriate size and colour of the adidas trouser should be highlighted	Appropriate size and colour of the adidas trouser is highlighted	Pass
UT-07	Item selection module	To test if appropriate size & colour are being displayed for the particular item	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under	To select adidas trousers in size 44 and colour white	On selecting size 44 adidas trousers, white colour option shouldn't appear on the screen	On selecting size 44 adidas trousers, white colour option isn't appearing on the screen	Pass

				the sub-category 7. Select the item size, based on which available colours are displayed				
UT-08	Cart module	To test if select items are getting added to the cart	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Select the item size, based on which available colours are displayed. 8. Select the item's quantity 9. Click on the "add to cart" button	To add 2 adidas trousers in size 40 and colour white to the cart	Successfully added to cart message should be displayed on the cart	Successfully added to cart message is displayed on the cart	Pass
UT-09	Cart module	To test if items are added to the cart without selecting relevant details	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Click on the "add to cart" button	To add 2 adidas trousers to the cart	Please select size message should be displayed on screen.	Please select size message is displayed on screen.	Pass

2) Use Case: Managing Cart

Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result
UT-10	Cart module	Viewing the cart when it is empty	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. Click on the cart icon on the top right-hand corner	No items in the cart	Cart is empty message should be displayed on the screen	Cart is empty message is displayed on the screen	Pass
UT-11	Cart module	Viewing the cart when it has an item in it	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Click on the “add to cart” button 8. Click on the cart icon on the top right-hand corner	To view iPhone 7+ of colour black in the cart	Cart containing an iPhone 7+ of colour black should be displayed with its relevant details	Cart containing an iPhone 7+ of colour black is displayed with its relevant details	Pass
UT-12	Cart & item selection module	Adding multiple items to the cart and viewing the cart	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the	To view iPhone 7+ of colour black and printed shirt of size 40 and colour black in the cart	Cart containing an iPhone 7+ of colour black and printed shirt of size 40 and colour black should be displayed with its relevant details	Cart containing an iPhone 7+ of colour black and printed shirt of size 40 and colour black is displayed with its relevant details	Pass

				selected category 6. Select an item under the sub-category 7. Click on the “add to cart” button 8. Follow the same procedure for adding more item(s) to the cart 9. Click on the cart icon on the top right-hand corner				
UT-13	Cart module	Changing the quantity of item(s) present in the cart	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Click on the “add to cart” button 8. Follow the same procedure for adding more item(s) to the cart 9. Click on the cart icon on the top right-hand corner 10. Click on the ‘+’ icon present near the item quantity in the cart screen	To change the quantity of iPhone 7+ of colour black and printed shirt of size 40 and colour black in the cart	Cart containing an iPhone 7+ of colour black and printed shirt of size 40 and colour black should be dynamically updated according to the user’s quantity input	Cart containing an iPhone 7+ of colour black and printed shirt of size 40 and colour black is dynamically updated according to the user’s quantity input	Pass
UT-14	Cart module	Remove an item(s) present in the cart	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category	To remove an iPhone 7+ from the cart	Cart containing an iPhone 7+ should be empty after the phone is removed from the cart	Cart containing an iPhone 7+ is empty after the phone is removed from the cart	Pass

				<p>7. Click on the “add to cart” button</p> <p>8. Follow the same procedure for adding more item(s) to the cart</p> <p>9. Click on the cart icon on the top right-hand corner</p> <p>10. Click on the ‘X’ icon present at the top right-hand corner of the item information in the cart screen</p>				
UT-15	Cart module	Appropriate bill amount displayed which dynamically changes when item(s) are added or removed	<p>1) Access to Mobile Phone with internet and Android OS.</p> <p>2) A valid account on the app</p> <p>3) Items in the cart</p>	<p>1. Open application on mobile phone</p> <p>2. Login to your account</p> <p>3. At the bottom pane, choose the categories button</p> <p>4. Select one of the various categories which are available and displayed on the screen</p> <p>5. Select a sub-category under the selected category</p> <p>6. Select an item under the sub-category</p> <p>7. Click on the “add to cart” button</p> <p>8. Click on the cart icon and view the current bill amount</p> <p>9. Add more item(s) to the cart</p> <p>10. Click on the cart icon and view the updated bill amount</p>	To see the bill amount dynamically change when iPhone 7+ is added and then see the updated bill amount when a printed shirt is added	Cart containing an iPhone 7+ should have bill of amount 78,004 rupees and when a printed shirt is added, the bill amount should change to 80,008 rupees	Cart containing an iPhone 7+ has bill of amount 78,004 rupees and when a printed shirt is added, the bill amount changes to 80,008 rupees	Pass
UT-16	Cart module	Items are available in the cart after the app is closed and opened again	<p>1) Access to Mobile Phone with internet and Android OS.</p> <p>2) A valid account on the app</p> <p>3) Items in the cart</p>	<p>1. Open application on mobile phone</p> <p>2. Login to your account</p> <p>3. At the bottom pane, choose the categories button</p> <p>4. Select one of the various categories which are available and displayed on the screen</p> <p>5. Select a sub-category under the selected category</p> <p>6. Select an item under the sub-category</p> <p>7. Click on the “add to cart” button</p>	To see the iPhone 7+ being present in the cart after the app is closed and opened again	Cart containing an iPhone 7+ should contain the iPhone 7+ even after the app is closed and opened again	Cart containing an iPhone 7+ contains the iPhone 7+ even after the app is closed and opened again	Pass

				8. Click on the cart icon and view the items present in the cart 9. Exit the app 10. Open the app and view the items present in the cart				
UT-17	Cart module	Items are available in the cart after logging out and then logging in to your account on the app	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Click on the “add to cart” button 8. Click on the cart icon and view the items present in the cart 9. Click on the profile icon in the bottom pane 10. Once on the profile screen, log out of your account on the app by clicking the log out button 10. Log back in to your account on the app 11. View the items present in the cart	To see the iPhone 7+ being present in the cart after logging out and then logging in to your account on the app	Cart containing an iPhone 7+ should contain the iPhone 7+ even after the user logs out and then logs back in to the app	Cart containing an iPhone 7+ contains the iPhone 7+ even after the user logs out and then logs back in to the app	Pass
UT-18	Cart module	To place an order from the cart using the place order button	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app 3) Items in the cart	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the	To see the order being placed from the cart using the place order button	When the place order button is clicked from a cart containing an iPhone 7+, “order successfully placed” message should be displayed	When the place order button is clicked from a cart containing an iPhone 7+, “order successfully placed” message is displayed	Pass

				<div>selected category</div> <div>6. Select an item under the sub-category</div> <div>7. Click on the “add to cart” button</div> <div>8. Click on the cart icon and view the items</div> <div>9. After reviewing the items finally, click on the place order button</div>				
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3) Use Case: Product Management

Test Case ID	Name of Module	Test case description	Pre-conditions	Test Steps	Test data	Expected Results	Actual Result	Test Result
UT-19	Wishlist module	To add select item(s) to the Wishlist	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the selected category 6. Select an item under the sub-category 7. Click on the heart icon present on the top right-hand corner of the item	To see Lee Cotton Jeans placed under the Wishlist tab	When the heart icon present on the top right-hand corner of the Lee Cotton Jeans is clicked, Lee Cotton Jeans should be added to the Wishlist tab	When the heart icon present on the top right-hand corner of the item(s) is clicked, item(s) are added to the Wishlist tab	Pass
UT-20	Filter module	To filter out items based on certain filtration criteria	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. Choose the filter option 4. Filter based on colour	To see all items which are Blue	All items which are available in Blue colour should be displayed	All items which are available in Blue colour are displayed	Pass
UT-21	Filter module	To filter out items based on certain filtration criteria	1) Access to Mobile Phone with internet and Android OS. 2) A valid account on the app	1. Open application on mobile phone 2. Login to your account 3. Choose the filter option 4. Filter based on size	To see all items which are size 40	All items which are available in size 40 should be displayed	All items which are available in size 40 are displayed	Pass
UT-22	Sort module	To sort items based on most bought items	1) Access to Mobile Phone with internet and Android OS	1. Open application on mobile phone 2. Login to your account 3. Choose the sort option	To see items being sorted based on most bought items	Most bought items should be displayed in descending order of frequency of	Most bought items are displayed in descending order of frequency of	Pass

			2) A valid account on the app 3) Data from previous orders	4. Sort based on most bought items		purchase	purchase	
UT-23	Sort module	To sort items based on most viewed items	1) Access to Mobile Phone with internet and Android OS 2) A valid account on the app 3) Data from previous orders	1. Open application on mobile phone 2. Login to your account 3. Choose the sort option 4. Sort based on most viewed items	To see items being sorted based on most viewed items	Most viewed items should be displayed in descending order of frequency of item viewership	Most viewed items are displayed in descending order of frequency of item viewership	Pass
UT-24	Sort module	To sort items based on most shared items	1) Access to Mobile Phone with internet and Android OS 2) A valid account on the app 3) Data from previous orders	1. Open application on mobile phone 2. Login to your account 3. Choose the sort option 4. Sort based on most shared items	To see items being sorted based on most shared items	Most shared items should be displayed in descending order of frequency of items shared	Most shared items are displayed in descending order of frequency of items shared	Pass
UT-25	Sort module	To sort items based on most recent items	1) Access to Mobile Phone with internet and Android OS 2) A valid account on the app 3) Data from previous orders	1. Open application on mobile phone 2. Login to your account 3. Choose the sort option 4. Sort based on most recent items	To see items being sorted based on most recent items	Most recently viewed items by your account should be displayed	Most recently viewed items by your account is displayed	Pass
UT-26	Cart module	Viewing the order details after it is placed	1) Access to Mobile Phone with internet and Android OS 2) A valid account on the app 3) Data from previous orders	1. Open application on mobile phone 2. Login to your account 3. At the bottom pane, choose the categories button 4. Select one of the various categories which are available and displayed on the screen 5. Select a sub-category under the	To view details of previously placed orders on the account	Previous order details of the account holder should be displayed	Previous order details of the account holder are displayed	Pass

				<div>selected category</div> <div>6. Select an item under the sub-category</div> <div>7. Click on the “add to cart” button</div> <div>8. Click on the cart icon and view the items present in the cart</div> <div>9. Click on the profile icon in the bottom pane</div> <div>10. Click on the My Orders option to view your previous order(s)</div>				
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Screenshots of Output

Following are screenshots as seen on the emulator:

i) Home screen visible on login



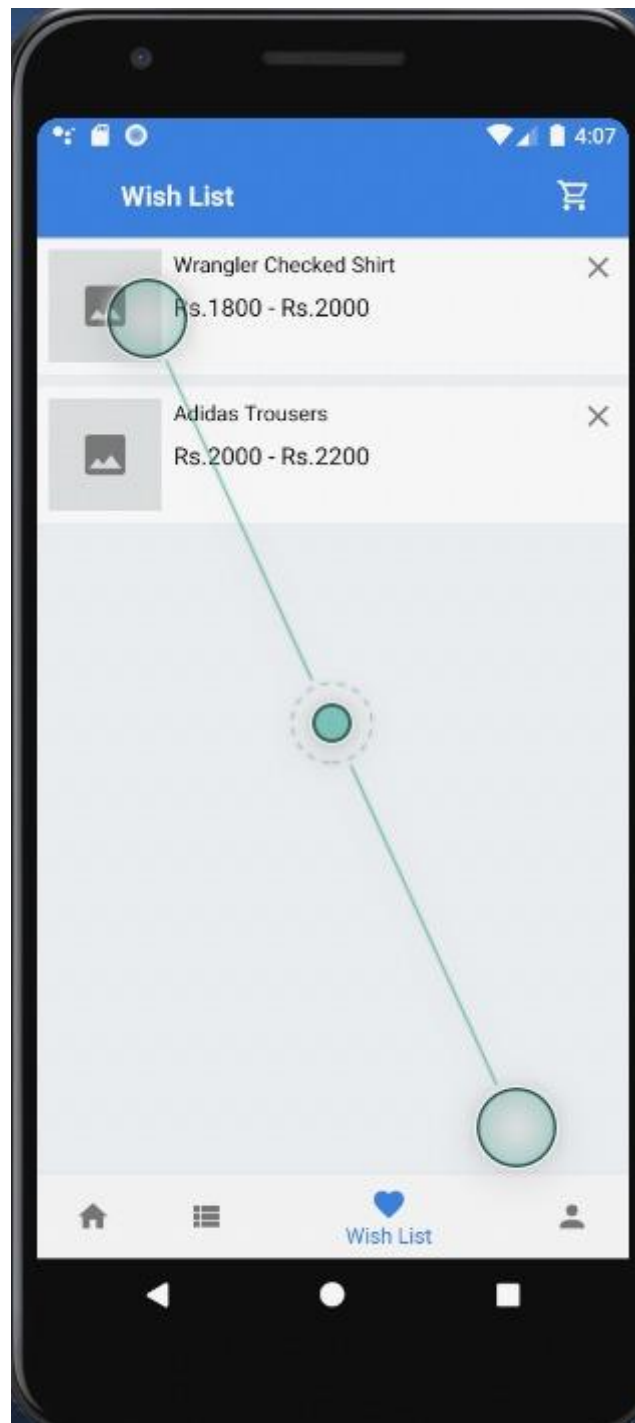
ii) Categories View



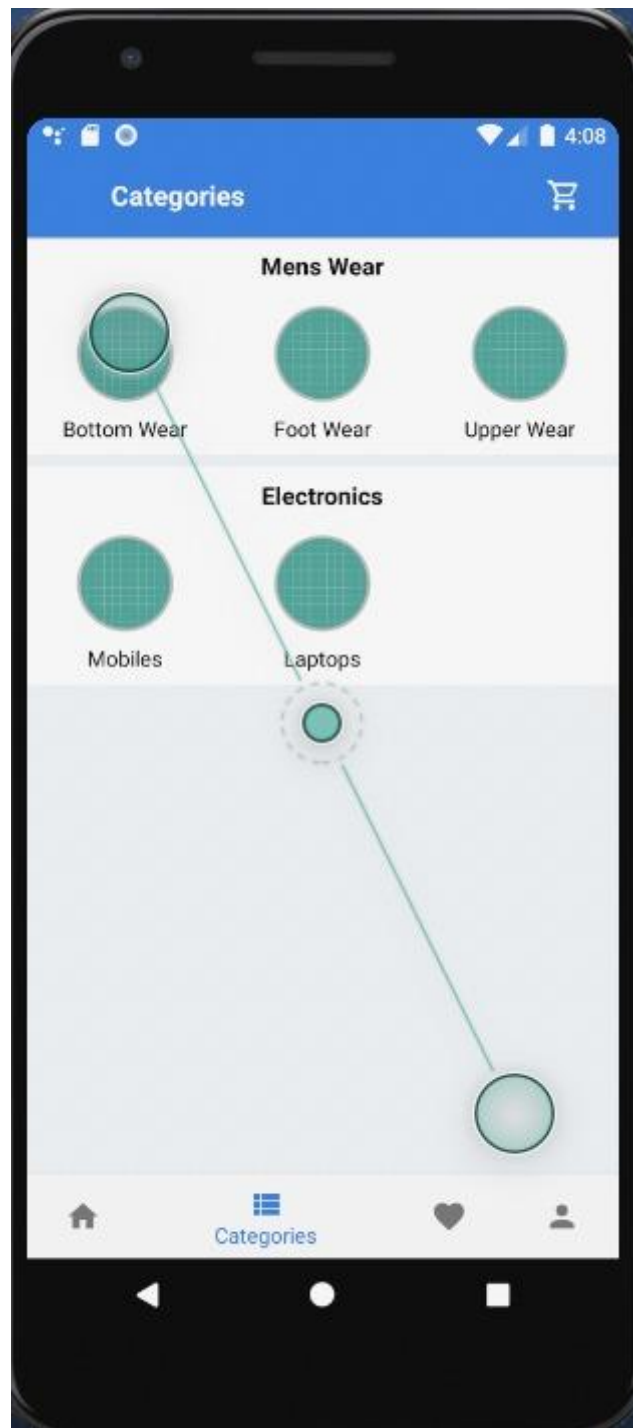
iii) Adding products to Wishlist by tapping the heart icon



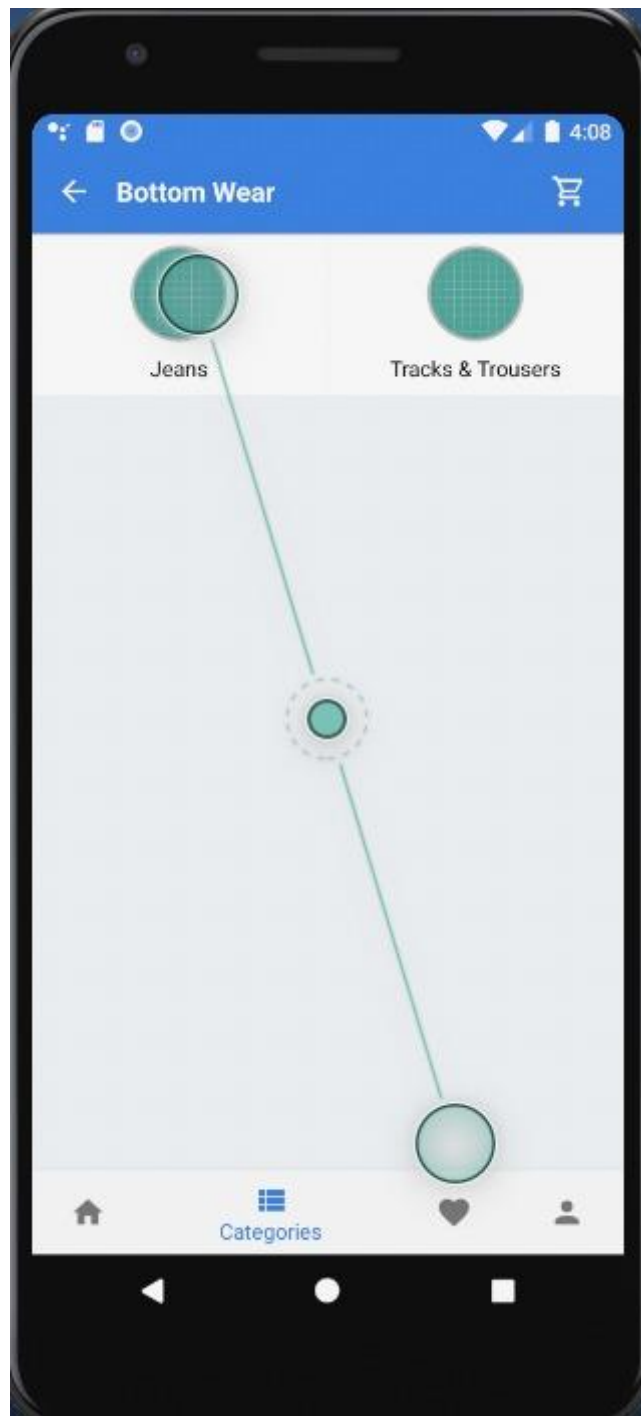
iv) Viewing Products on Wishlist



v) Selecting a Category from the ones available



vi) Choosing a Sub-Category

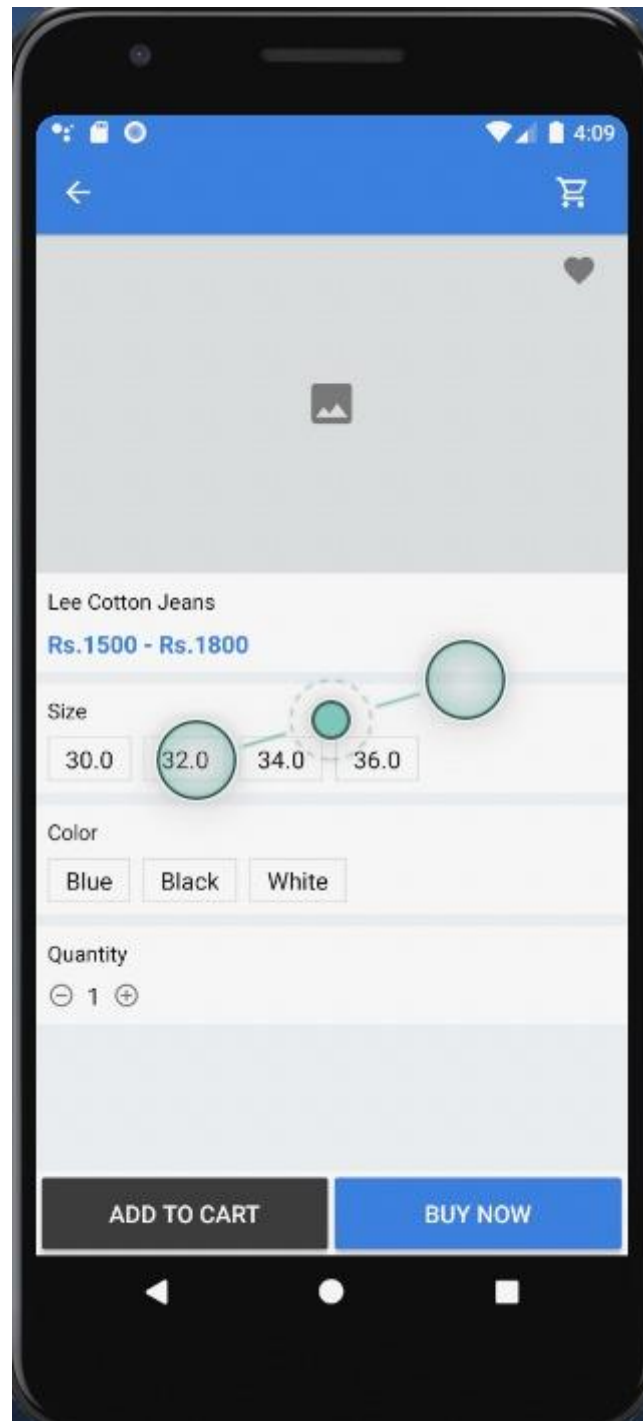


vii) Product selection from available products

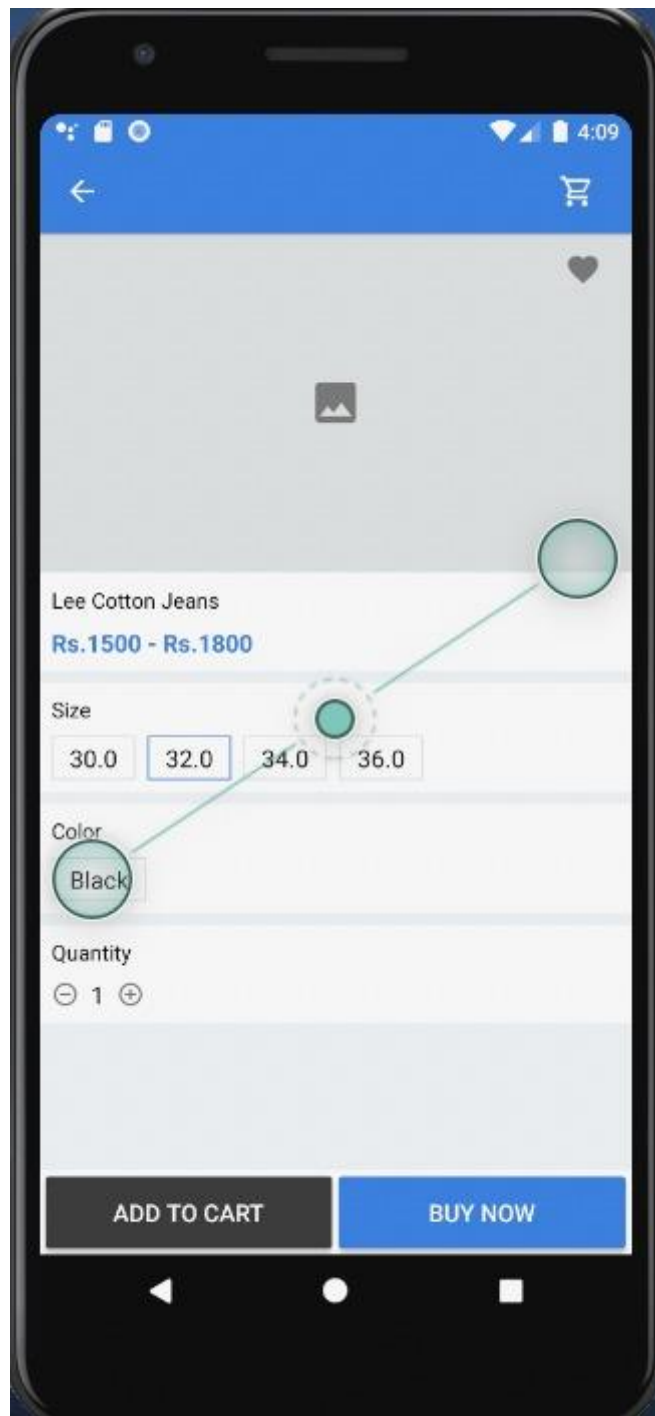


viii)

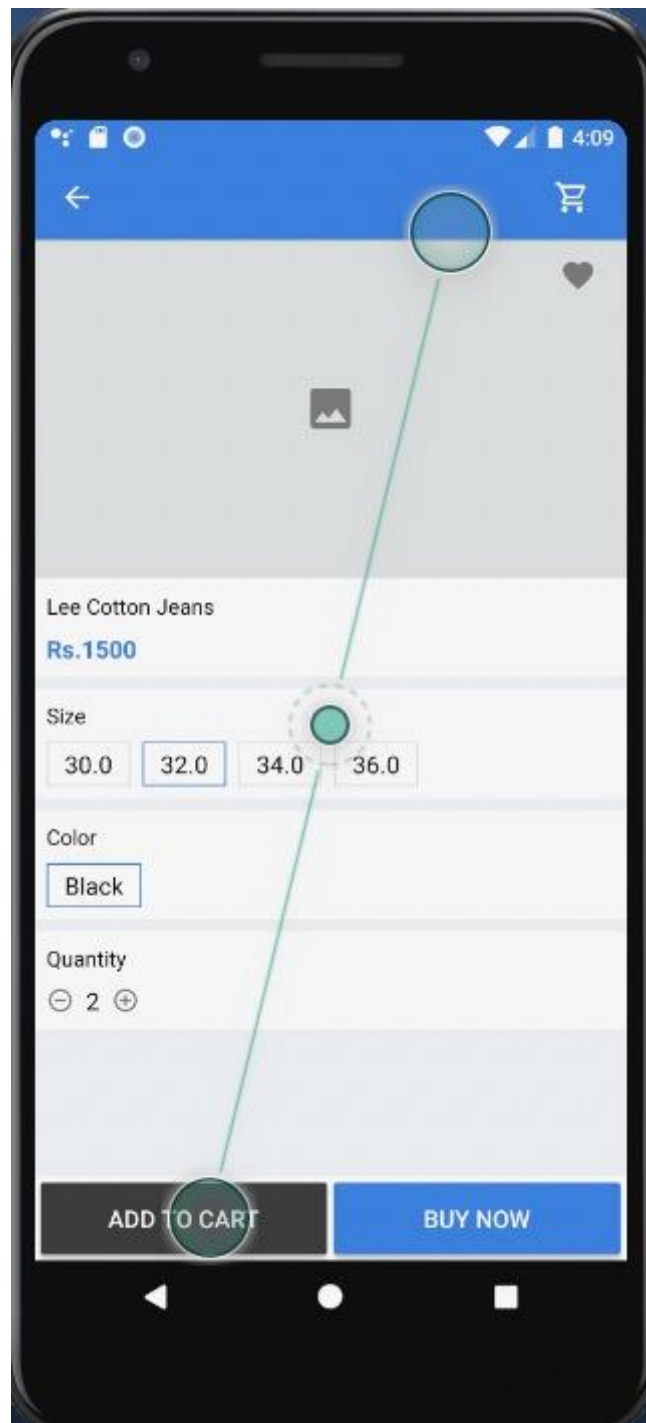
a) Selecting Product details



b) Selecting Product Details through available database crosscheck



ix) Adding Product to Cart after selecting details

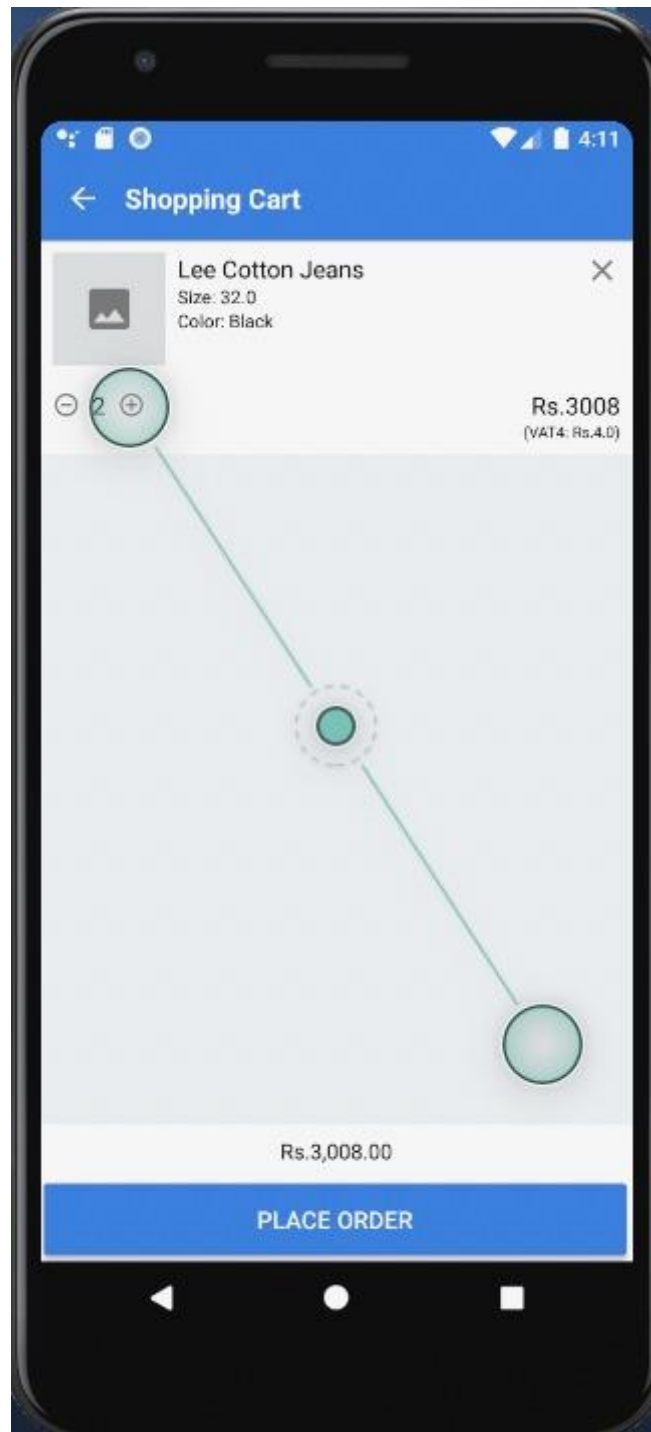


x) Viewing Product Price based on quantity



xi)

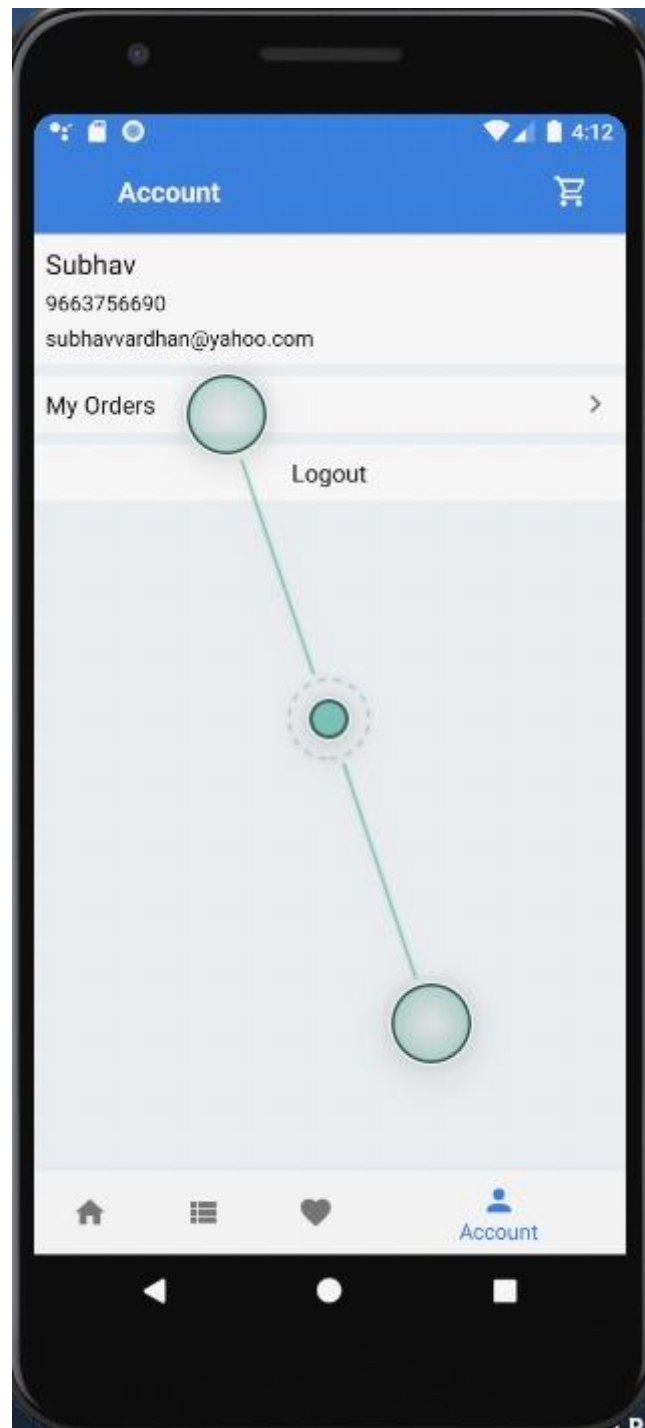
a) Modifying Product Quantity in Cart



b) Viewing Total order amount after altering quantities



xii) Viewing Orders Placed



xiii) Logging Out of Account

