CHAPTER 1: INTRODUCTION

1. INTRODUCTION

Just using the camera to shop will give users a new way of shopping experience. Now-a-days many companies are developing the mobile app which give their user a new way of user experience and which is easy to use and QR Code is also the new thing used now a days. Where QR Code stores some data like Plain Text, URL, etc. We can find QR Code everywhere on products in the shopping mall or Toy box and many other products where the information of that product is placed. QR Codes are also used for identification.

1.1. Project Scope:

Our system consists of some technologies where we are using Mobile camera to scan the QR Code of the Products and place the order directly. Database of the project will be stored on IBM Cloud that is IBM DB2 Warehouse and our mobile application is developed for android users and our main business logic is developed on REST API were the android application will consume the REST API to interact with the database and implement the main functionality.

We have an Admin Panel where we can create a new company and add the products for advertisement and where the products unique QR Code is generated dynamically. And from admin panel we can manage the orders and see all details like Sale's, Pending Orders, Transactions, Current Orders and many more.

1.2. Objective:

- The registered user of home store will primarily use the application, Shop while on the Move, SWIM. Each member will use the app on his/her smart phone. SWIM application will allow selection of items using QR Code (captured using phone camera), the product will directly move to shopping cart after scanning the QR code, and the placement of the order.

- The project will be completed by April 2019.

1.3. Technologies:

- Android Studio

Android Studio is an IDE used to build mobile applications. It is written in java and can be downloaded on Windows, macOS and Linux based operating systems (Android, 2019).

- Eclipse

Eclipse is an IDE used for building projects in java. It contains a base workspace and an extensible plug-in system for customizing the environment (Eclipse, 2019).

- DB2 Warehouse

IBM DB2 warehouse on IBM cloud is a managed public service used to store database with complete cloud security. This type of deployment options has a common database engine so the data workload can be moved and optimized with ease (IBM).

- Java (JSP & Servlet)

- REST API

REST stands for Representational State Transfer whereas API stands for Application program Interface. It is an architectural style for designing networked application. It can be used by virtually any programming language. Some API's require authentication to use their service. This can be free or paid (Fielding, 2008).

- IBM Cloud

IBM Cloud is a cloud computing services by IBM that offers infrastructure as a service (IaaS), platform as a service (PaaS) and storage as a service (SaaS). With IBM Cloud, one can easily build the projects using virtualized environment, manage databases, and can keep the data secured with cloud security (Rouse, 2017).

CHAPTER 2: REQUIREMENT ANALYSIS

2. REQUIREMENT ANALYSIS

2.1. Existing Solution:

Amazon is the largest online shopping website for various products.

2.1.1. Amazon.in

Amazon is the largest e-commerce website for shopping with its large number of users shopping on daily basis from this website. It is the second largest revenue generator in USA. Amazon provides almost all the products required for an individual on daily basis with great deals and offers. Amazon itself has its own cloud (AWS) with paid services. (Amazon, 2019).

Advantages of existing system:

- Widest range of products
- Convenience of online purchasing
- Competitive prices

Drawbacks of existing system:

- Do not flash particular product
- Need to search within a list of products

2.2. Target Users:

- lower class
- working class
- middle class
- upper class

CHAPTER 3: FEASIBILITY ANALYSIS

3. FEASIBILITY ANALYSIS

3.1.Technical Feasibility:

Here we have used tools and technologies that are required for developing the project have been selected on the basis of their flexibility, reliability, simplicity, scalability and robustness.

- Android Studio
- Eclipse
- Heidi SQL
- Java (JSP & Servlet)
- REST API
- IBM Cloud
- Zxing
- Volley

3.2.Time Schedule Feasibility:

Here we have made proper planning of our project so that it can be completed on time.

- We daily complete the task and then at last we have a discussion with the project guide about the module developed
- Time to time generation of reports for proper documentation.
- Updating the task sheet daily.

3.3.Operational Feasibility:

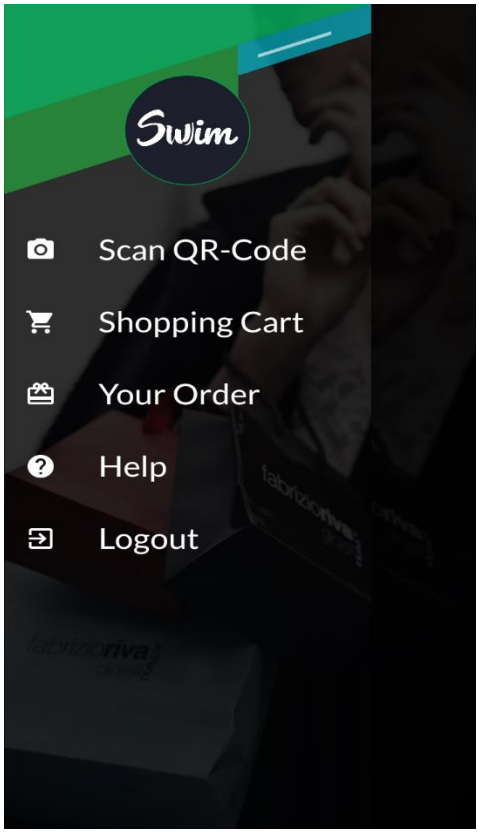
- User adds items to the order cart for the items displayed with QR Codes for public shopping while on the move. The cart is created as and how the user keeps using camera for QR Codes displayed along with the item's pictures on Advertisements. QR codes of the items are used to create the order cart by clicking the QR codes. Each order will have store details, date & time created, and line items for each item record. The line item will have QR code of the item, item description and amount in rupees. There will be one or more items in the order cart. Each item will represent default qty as 1 and price inclusive of all taxes. An order will have a status of Booked and Processed.

- To simulate system operation, dummy entries are made in the tables using DB2 Warehouse back-end.

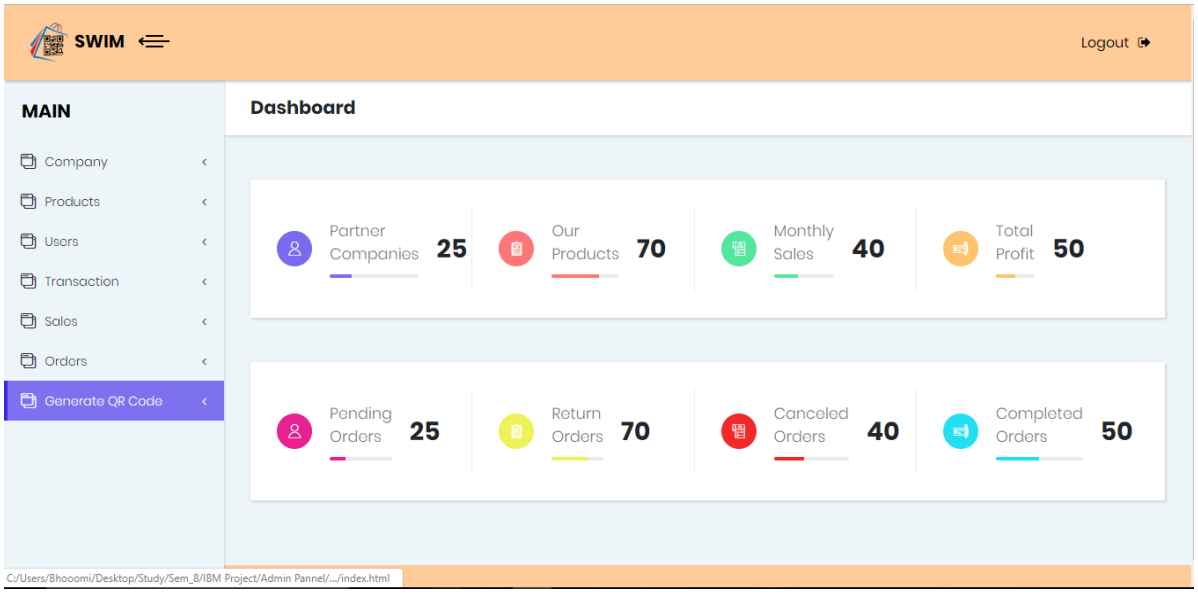
- SWIM fetches and/or updates the required information from these tables using Rest API.

3.4.Implementation Feasibility:

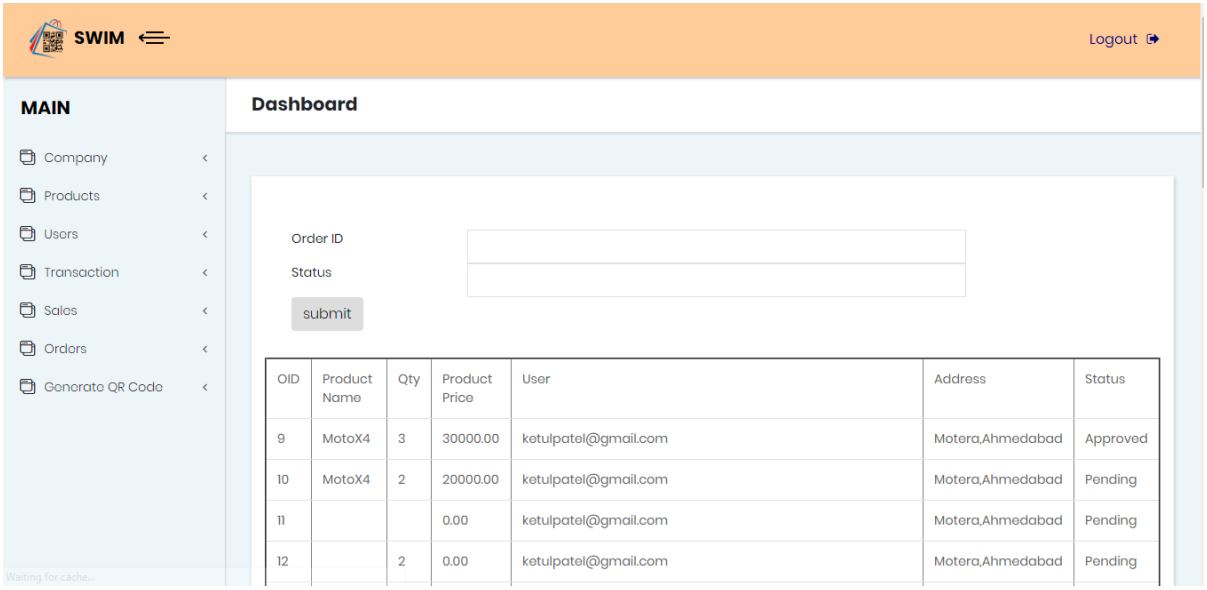
1) Main Menu of Application



2) Admin Panel Dashboard



3) Admin Page Order details



4) Database Details

Admin_User:

create table Admin_User(AdminUserID Int NOT NULL GENERATED ALWAYS AS IDENTITY (START WITH 1 INCREMENT BY 1) ,Fullname varchar(50) Not null, Mobile decimal(10,0) Not null, Adress varchar(200) Not null, EmailID varchar(50) Not null, Designation varchar(100) Not null, Passwords varchar(50) Not null , PRIMARY KEY (AdminUserID));

Company_Details:

create table Company_Details(CompanyID Int NOT NULL GENERATED ALWAYS AS IDENTITY (START WITH 1 INCREMENT BY 1) ,Companyname varchar(50) Not null, Mobile decimal(10,0) Not null, CompanyAdress varchar(250) Not null, Branch varchar(50) Null, EmailID varchar(50) Not null,
ContactPersonName varchar(50) Not null, FirmType varchar(50) Not null, Statuss varchar(10), PRIMARY KEY (CompanyID));

Product_Details:

create table Product_Details(ProductID Int NOT NULL GENERATED ALWAYS AS IDENTITY (START WITH 1 INCREMENT BY 1) ,Productname varchar(50) Not null, ProductType varchar(50) Not null,
ProductDescription varchar(250) Not null, ProductPrice decimal(10,0), Companyname varchar(50) Not null, Branch varchar(50) Null, PRIMARY KEY (ProductID));

Debit_Details:

```
create table Debit_Details(Companyname varchar(50) Not null, branch varchar(50) Not null,
PaymentReason varchar(250) Not null, TotalAmount decimal(10,0),
Dateofdebit date Not null);
```

Credit_Details:

```
create table Credit_Details(Companyname varchar(50) Not null, branch varchar(50) Not null,
PaymentReason varchar(250) Not null, TotalAmount decimal(10,0),
Dateofcredit date Not null);
```

Order:

```
create table Orders(OrderID Int NOT NULL GENERATED ALWAYS AS IDENTITY (START
WITH 1 INCREMENT BY 1)  ,Productname varchar(50) Not null, Productqty decimal(10,0) Not
null, EmailID varchar(50) Not null,Adress varchar(200) Not null,Statuss varchar(50),date
varchar(50) ,PRIMARY KEY (OrderID));
```

3.5. Economic Feasibility:

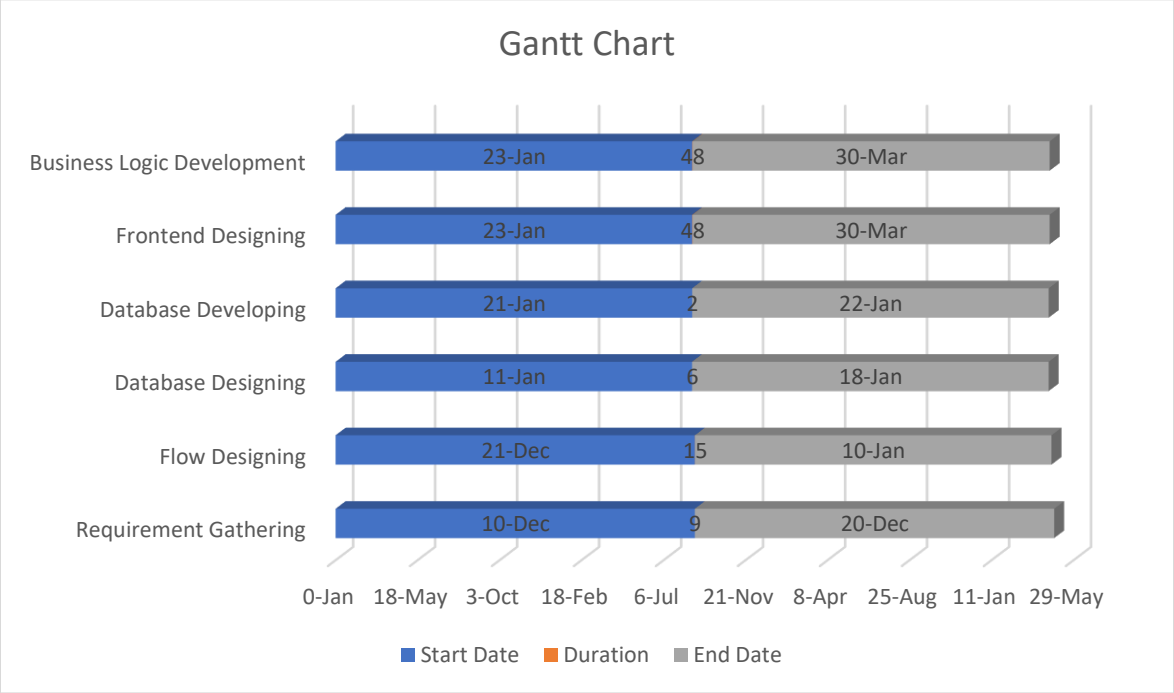
In this project there are several economic benefits as the tools and technologies used for developing this project have mostly nominal rates.

- We are going to use Eclipse which is available freely for the community version.
- Android Studio which is freely available.
- IBM db2 warehouse service which come in Pay as you go.
- Compose for MySQL which come in Pay as you go.

CHAPTER 4: PROJECT PLAN

4. PROJECT PLAN

4.1. Gantt Chart:



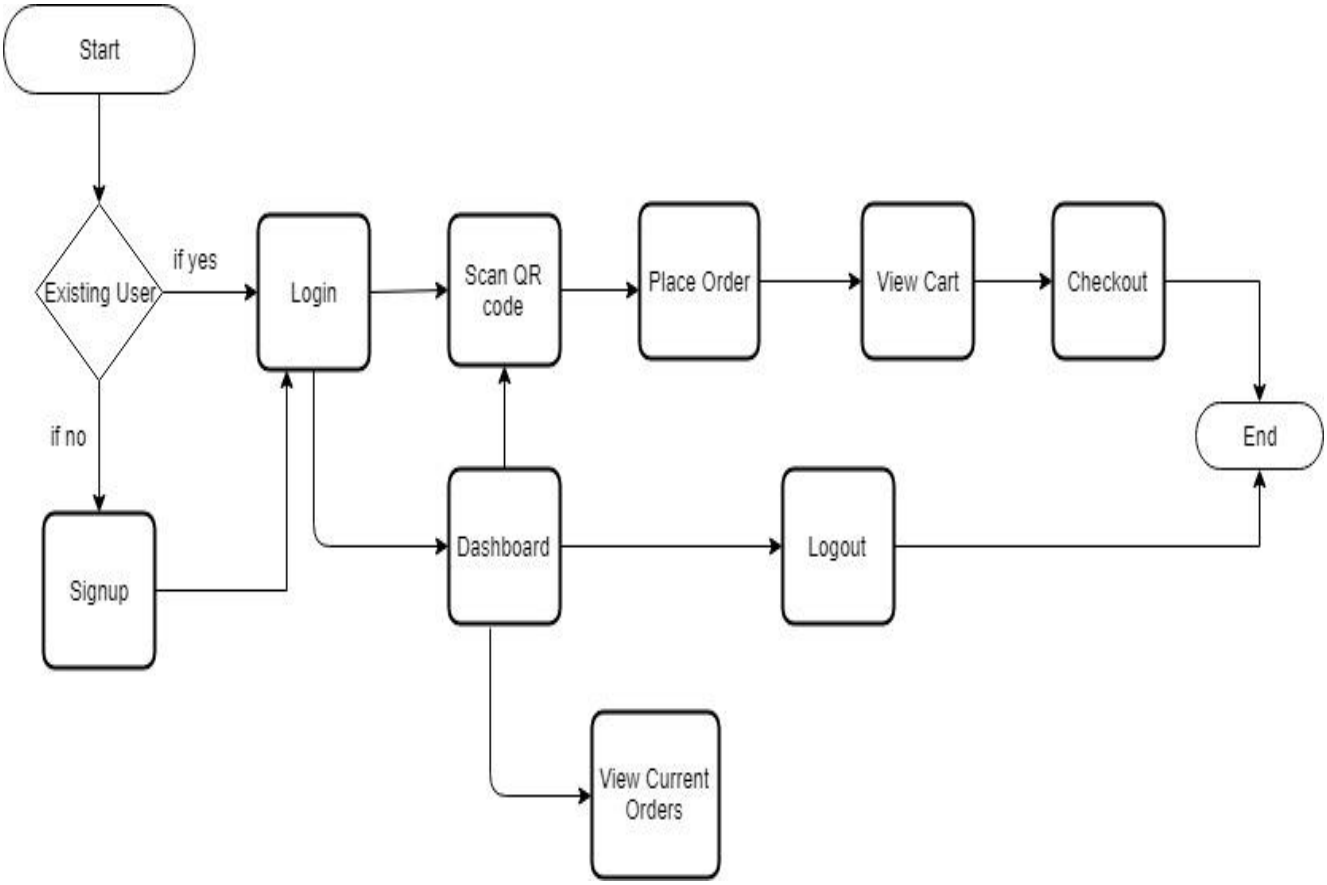
[Figure 5: Gantt Chart]

CHAPTER 5: DESIGN AND DEVELOPMENT

5. DESIGN AND DEVELOPMENT

5.1.Initial Design:

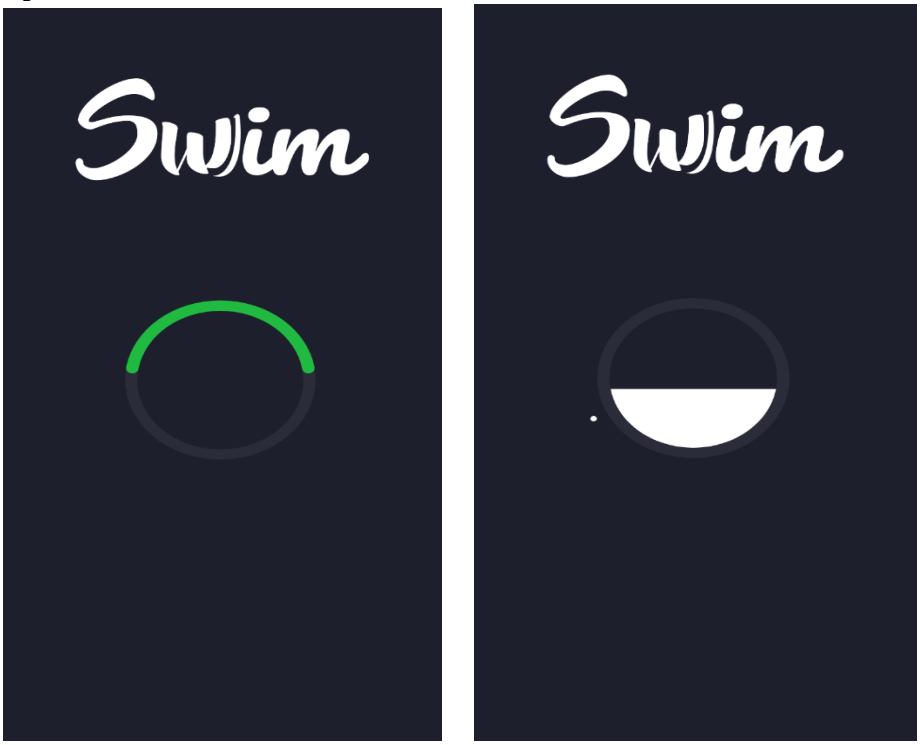
5.1.1. Initial Application Data Flow Diagram



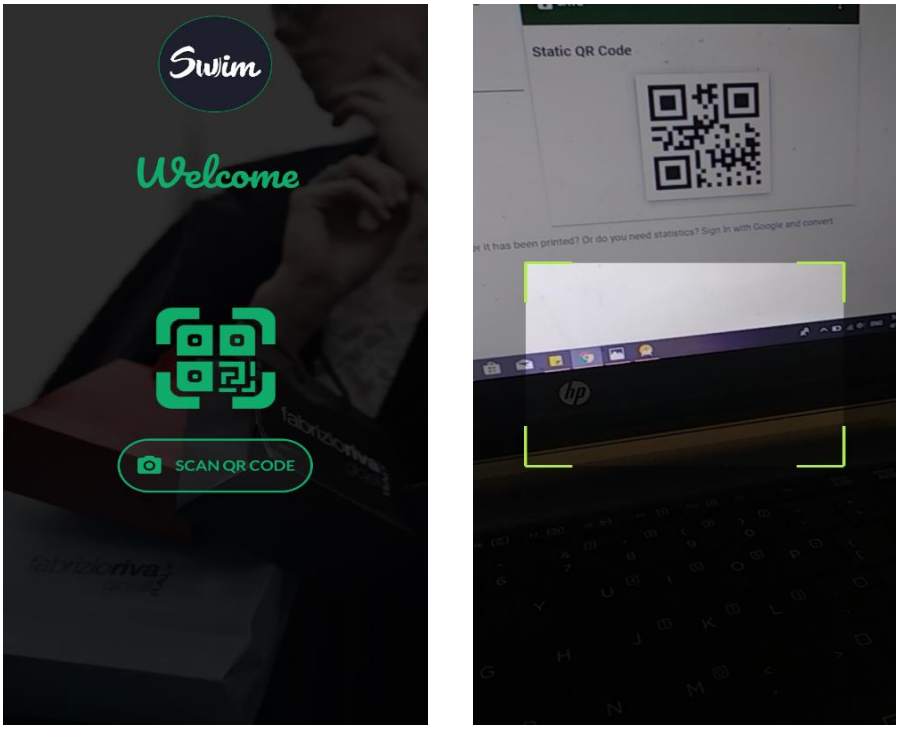
[Figure 6: Flow Chart]

5.1.2. Initial Application Interface Design

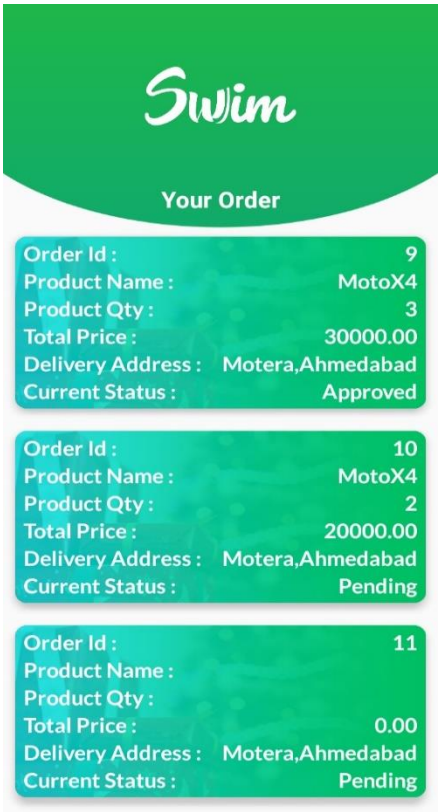
1) Splash Screen

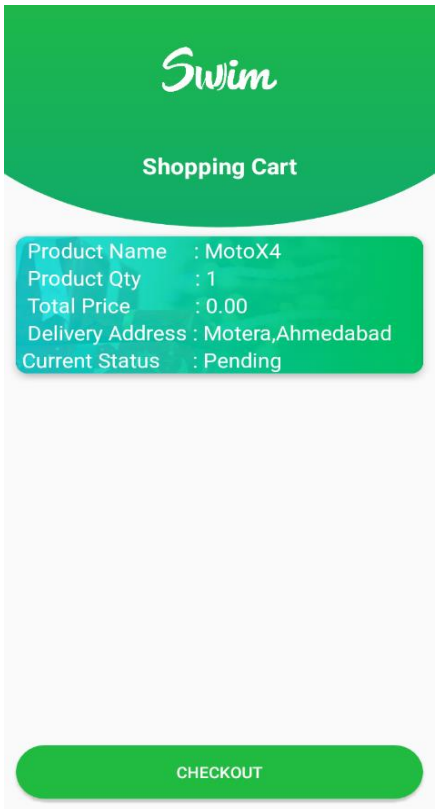


2) QR code scan screen

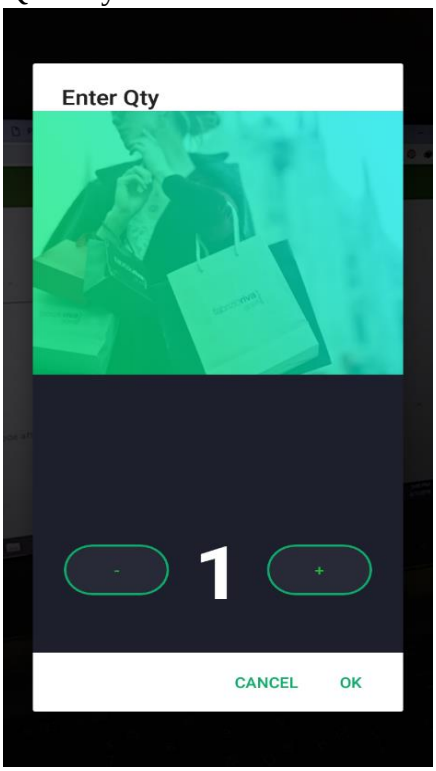


3) Product details screen





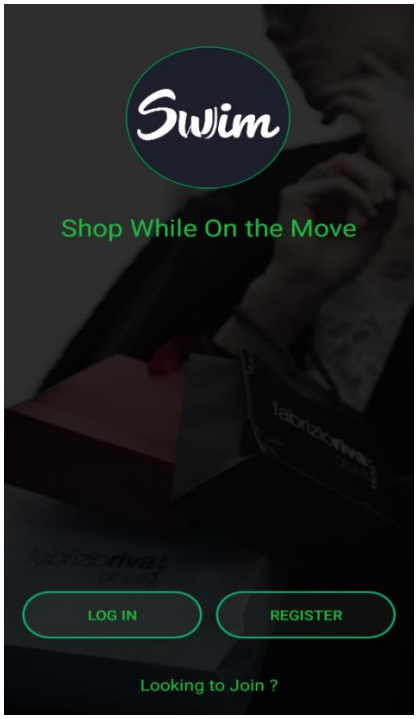
4) Quantity of Product screen

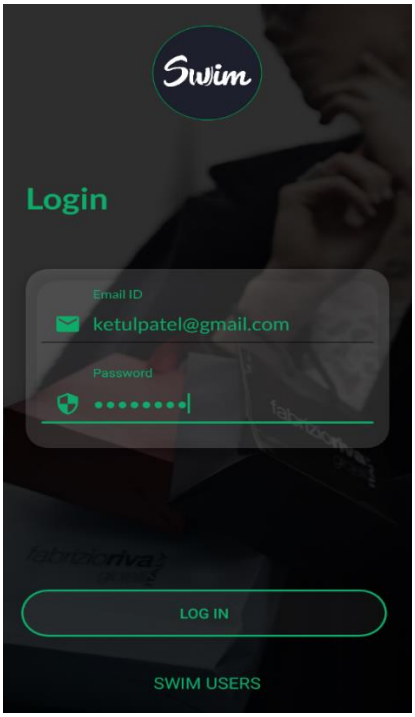


5.2.Design:

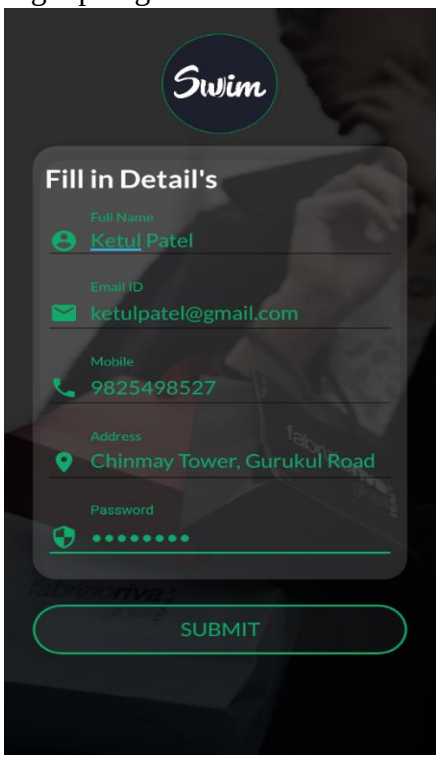
5.2.1. Application Design

1) Login Page

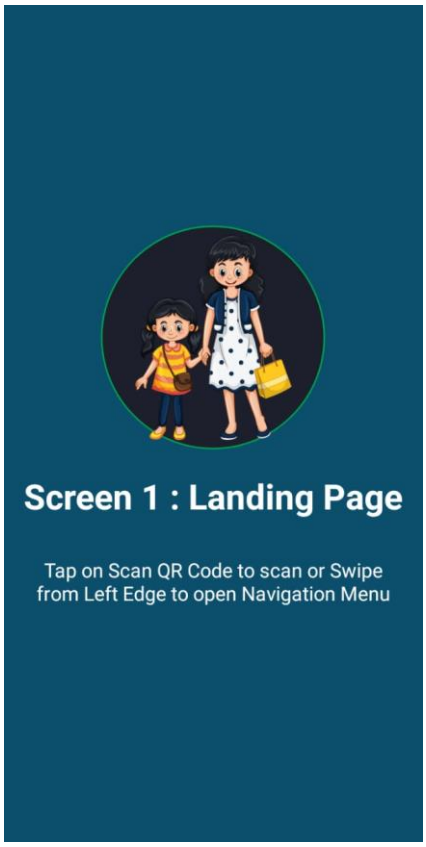


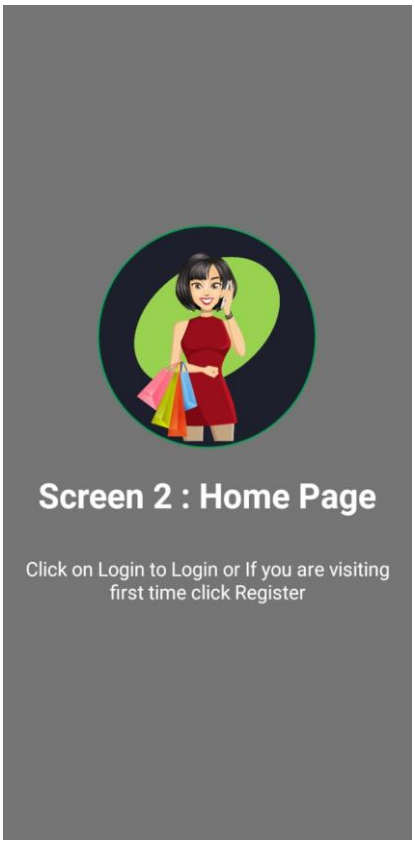


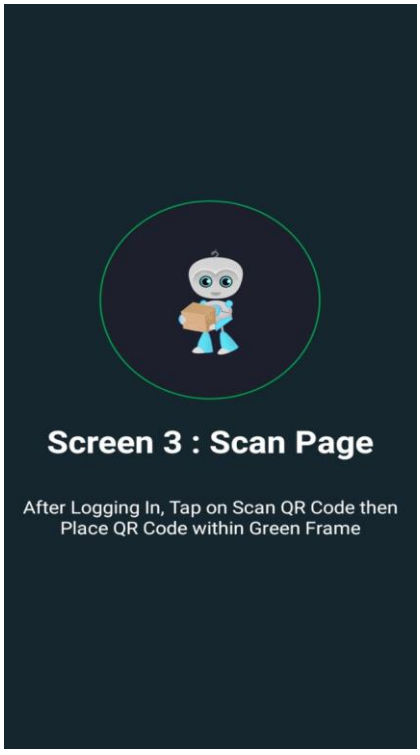
2) Signup Page

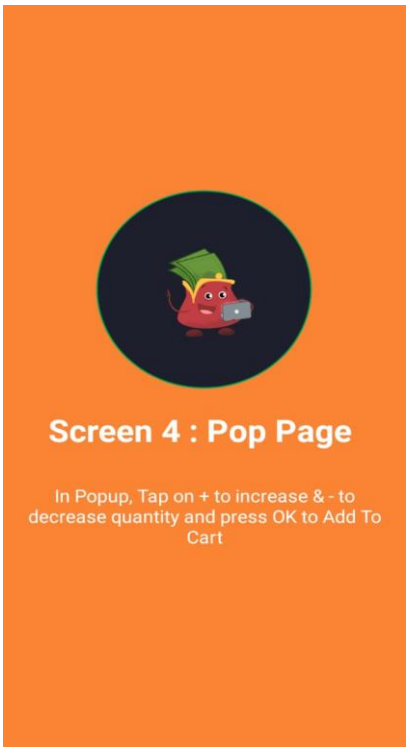


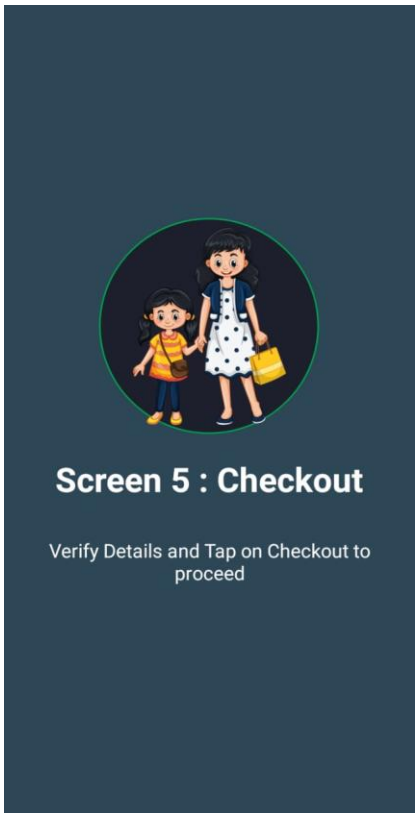
3) Help Pages


Screen 1 : Landing Page
Tap on Scan QR Code to scan or Swipe from Left Edge to open Navigation Menu


Screen 2 : Home Page
Click on Login to Login or If you are visiting first time click Register

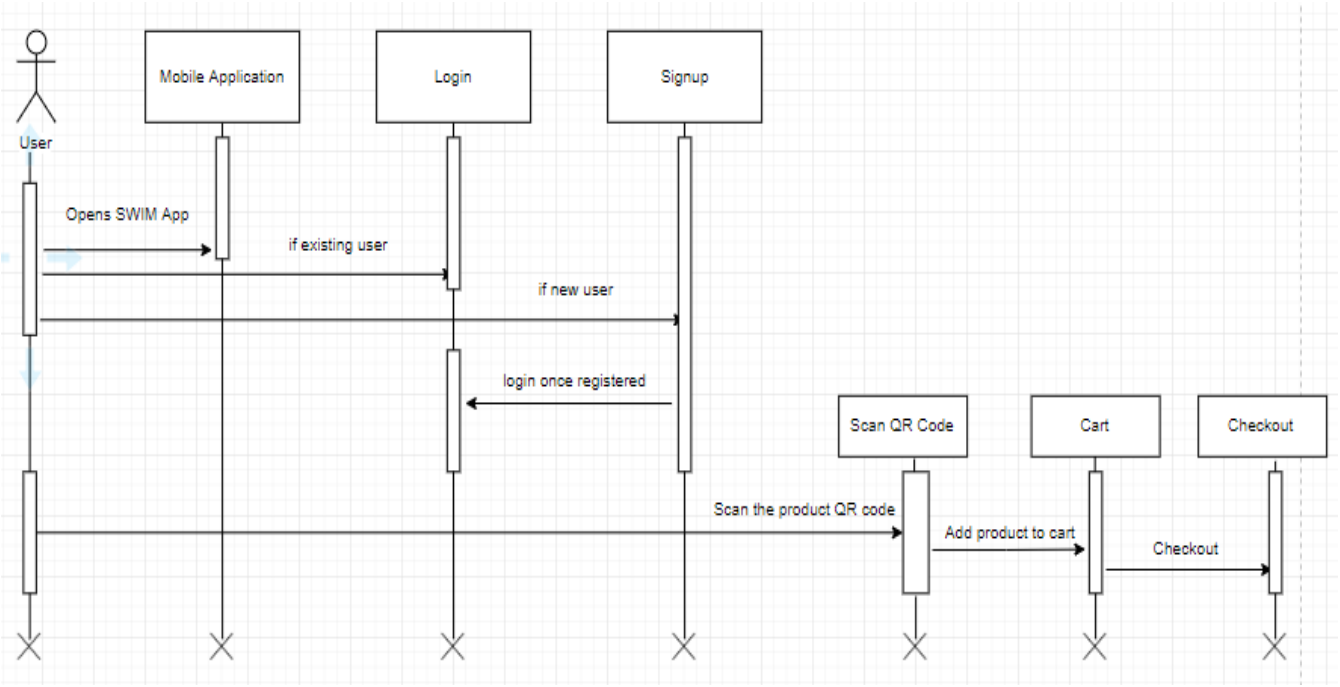

Screen 3 : Scan Page
After Logging In, Tap on Scan QR Code then Place QR Code within Green Frame


Screen 4 : Pop Page
In Popup, Tap on + to increase & - to decrease quantity and press OK to Add To Cart



5.3.Development:

5.3.1. Development Methods



[Figure 14: Sequence Diagram]

CHAPTER 6: PROCESS MODEL

6. Process Model

Agile/ incremental

In incremental model, software is developed step by step into pieces. After one functionality is completed build, the next step/process is started for development. The increment can be small or large, ranging from a login screen to a set of mobile application, websites or data management screens (cohn, 2014).

CHAPTER 7: TESTING

7. Testing

Test Case:

Screens	Test Cases	Result
Login	Valid Email ID & Password	Pass
	Invalid Email ID or Password	Fail
	Email w/o @ & domain or Password<8	
Register	Email ID with @ and domain	Pass
	Email ID without @ and domain	Fail
	Mobile No. equals 10	Pass
	Mobile No.<10	Fail
	Password>=8	Pass
	Password<=8	Fail
QR Code Scan	If QR Code Placed Inside Green Frame	Pass
	If QR Code Placed Outside Green Frame	Fail
Navigation Menu	Tap on Scan QR Code, If Login	Pass
	Tap on Scan QR Code, If Not Login	Fail
	Tap on Shopping Cart, If Login	Pass
	Tap on Shopping Cart, If Not Login	Fail
	Tap on Your Order, If Login	Pass
	Tap on Your Order, If Not Login	Fail
	Tap on Logout, If Login	Pass
	Tap on Logout, If Not Login	Fail

CHAPTER 8 & 9: CONCLUSION AND FUTURE SCOPE

8. Conclusion

The registered user of home store will primarily use the application, Shop while on the Move, SWIM. Each member will use the app on his/her smart phone. SWIM application will allow selection of items using QR Code (captured using phone camera), management of shopping cart, and the placement of the order.

9. Future Scope

- Payment gateway
- Dynamic Notifications

CHAPTER 10: REFERENCES

10.References

Amazon. (2019). *Amazon*. Retrieved from Amazon.in: https://www.aboutamazon.in/?utm_source=gateway&utm_medium=footer

Android. (2019, Feburary 25). *Android* Studio. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Android_Studio

cohn. (2014, November 11). *Agile/Incremental*. Retrieved from Mountain goat: https://www.mountaingoatsoftware.com/blog/agile-needs-to-be-both-iterative-and-incremental

Eclipse. (2019, March 2). *Eclipse*. Retrieved from Wilipedia: https://en.wikipedia.org/wiki/Eclipse_(software)

Fielding, R. (2008). Representational State Transfer.

IBM. (n.d.). *IBM*. Retrieved from www.ibm.com: https://www.ibm.com/cloud/db2-warehouse-on-cloud

Rouse, M. (2017, May). *IBM cloud*. Retrieved from Tech Target: https://searchcloudcomputing.techtarget.com/definition/IBM-Bluemix

https://www.draw.io/

PLAGARISM REPORT

Swim

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