"BAWIQ-ANDROID APPLICATION"

Project report submitted in partial fulfillment of the requirement for the degree of Bachelor of Technology

in

Computer Science and Engineering

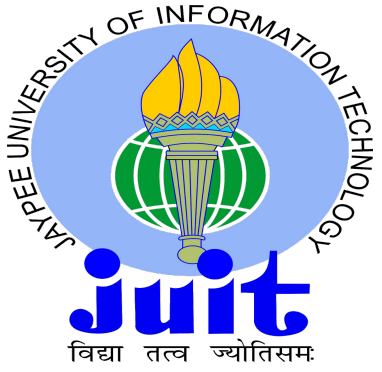
By

Sameer Kumar (151229)

Under the supervision of

Mr. Mohit Kansal

to



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Candidate's Declaration

I hereby declare that the work presented in this report entitled "BAWIQ-ANDROID APPLICATION" in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology ,Waknaghat is an authentic record of my own work carried out over a period from February 2019 to May 2019 under the supervision of Mr. Mohit Kansal(Technical Head of Android) at ClickLabs .The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Sameer Kumar (151229) ……..

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Mr. Mohit Kansal
Technical Head (Android)
ClickLabs
Dated:

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my project guide Mr. Mohit Kansal who helped me in conceptualizing the project and actual building of procedures used to complete the project. I would also like to thank my mentors for providing me this golden opportunity to work on a project like this, which helped me in doing a lot of research and I came to know about so many things.
Secondly I would like to thank our family and friends who guided me throughout the project so as to complete our project on time.

Thanking you,

Sameer Kumar (151229)

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clicklabs

BRIEF OVERVIEW OF THE ORGANIZATION

Sensing the crunch of capital for disruptive ideas, Samar Singla founded Click Labs in 2011. At its core, Click Labs is a technology solution provider which has always taken a mobile first approach since its inception.

Click Labs is a young, enthusiastic team of mobile strategists, designers and developers, dedicated to help companies of all sizes leverage the exciting and dynamic world of application development and solution consultation. Their areas of expertise include Mobile Gaming, Startups, Enterprise Mobility, and Solutions. They co-create customized solutions (mobile apps) for its clients to reach out to their audience in the most efficient way. Simply put, they create awesome digital solutions.
Its core calling is to believe in people and good ideas, to focus on achieving superb outcomes, and to work with the utmost allegiance to every project we take on.

Quality -To use the best tools and hire the best people to create the best products. To work without compromise.

Inspiration- To inspire others and open ourselves up to inspiration from their clients,their competitors, and the world of tech in general. To be a place where strong individuals come together to figure out the best solutions.

Clients choose ClickLabs as their workforce partner to solve staffing challenges that range from locating hard-to-find niche talent to completing quick-fill demands.
It combines deep technology expertise, architecture solutions capability and program management skills to help you integrate and acquire new capabilities for heterogeneous systems that span both mainstream and emerging technologies.

They can quickly deploy a team of IT experts for program management, coordination and implementation of small to large-scale projects. They work on a global basis, managing PC refreshes, Operating system upgrades, help desk/desk-side support outsourcing, and Quality Assurance testing.

1. IT SERVICES

- APPLICATION DEVELOPMENT SERVICES

We specialize in Mobile development, i.e. iPhone and Android apps. We use Objective C and Swift programming languages to create native applications for iPhone, whereas we use Android Code to develop native applications for Android devices. To create applications that work on cross-platforms, we use a number of frameworks such as Titanium, PhoneGap and JQuery mobile. We also produce mobile web applications.

Furthermore, we build web products and offer services such as web designing, layouts, responsive designing, graphic designing, web application development using frameworks based on model view controller architecture and content management system. Our services also extend to the domain of Cloud Computing, where we provide Salesforce CRM to effectively manage one's business and ease out all the operations by giving an easy platform.We make sure that we deliver performance driven products that are optimally developed as per your organization's needs.

- MOBILE APPLICATION DEVELOPMENT

Our mobile development services cater to those who desire to join the ranks of mobile app progression.In today's society, mobile applications and developments are paving the way for businesses to be reached across all platforms and in this case, that is ClickLabs's strong suit. What MobiLyte offers in the mobile world is unique and creative applications amongst IOS, Windows, and Android devices as well as hybrid devices like Titanium and/or Kony. Our team of highly skilled and dedicated designers promote creativity and exclusivity among our mobile design services.

IOS APP DEVELOPMENT

Designing an iOS app is a complex process that requires a lot of efforts and a good amount of time.The end result is high-quality design, great response and easy interactivity. ClickLabs possess expertise in Objective C and Swift that are the latest technology required to develop an app with full potential. We also understand the requirements of features, interactive elements, functionality, and hardware platform to name a few. We take care of all these needs in every app and ensure that it is a complete application. We have years of experience in iOS app design and development, and have made iPad and iPhone applications of all genres, be it finance or social network. We create revolutionary apps that captivate user interest so that your business gets the best of it! Here's what we offer:

- *iPhone App Development*
- *iPad app Development.*

ANDROID APP DEVELOPMENT

At ClickLabs, we take android app development as a new way to showcase our clients the endless possibilities to create user focused apps. We design, develop and deliver premium-quality android applications using the best technology as core. Through these applications, we focus on enhancing user experience by offering a high-quality interaction through lean-clean design and advanced features Our core work process involves your requirements combined with our straight-A experience. We have gathered immense knowledge and expertise in developing Android apps. We firmly believe that an app ismeant to invoke a long term experience with users, and that's what we provide you. Android app development has brought forward simplicity, versatility and excellent performance in one small package. With ClickLabs, you can create niche based apps that offers your users an intense experience ,whether gaming or utility apps. Our experience in Android app development can help you give your idea an existence. The android applications we produce are high in performance, which are aimed to maximize your business revenues. We offer native android app development services, where the apps are built from the scratch, given functionality and features according to the client's requirements. This way, we leverage our skills to give you the high-quality apps for your business. We ensure that all the apps are customized and built as per the instructions and inherit the qualities that are mandatory.

- ## QUALITY ASSURANCE AND TESTING SERVICES

In present technology landscape and environment, leaders of business houses understand that their business success depends upon – Quick adaptability to market dynamics & effective adaptability to market dynamics, which include:

- Ever changing customer preferences.
- Evolving ecosystem.
- Disruptive cloud and mobile technologies.
- Social media.
- Evolving regulatory and compliance standards.
- Organization demands

1.1 Who We Are

- ☆ We began as a traditional technology solution provider, developing anything under the sun. After having developed platforms in the Communication and Social Networking Space, we soon found a growing need for platforms for goods and services across different verticals.

- ☆ These new platforms required creation of value in such a way that its consumption could be fast and instantaneous. This needed a dynamic workforce with a robust, scalable and mobile first technology layer to manage that dynamic workforce.

- ☆ After developing 100s of these platforms, we realized what makes these platforms click. We use a Technology MEAN Stack that uses a nodeJS web services layer running over an Amazon cloud working with native mobile apps.

1.2 What We Do

- ☆ We have identified the common denominator to help the end platform owners save time and money and allow them to focus on their core product. They can draw comfort from the fact that the underlying technology is already driving successful platforms around the world.

- ☆ We have been working in the On Demand space building platforms for the dynamic workforce for the last 2 years. This focus has led to Juggernaut (one of the products) evolve as a platform that takes a top down approach, closer to a standard SDLC, towards the business model needs of the stakeholders.

- ☆ In addition, we are also working on Tookan, an off the shelf SAAS product for helping SMB's and early stage startups to manage their mobile workforce. Solution is designed around generalized workflows enabling applications for businesses managing field personnel, deliveries and services.

1.3 Click Labs Services

1.3.1 Enterprise:

- ☆ We help you break the growth barriers for your business through “mobile first” digital platforms.
- ☆ Irrespective of the business interests you represent, digital transformation can help you outgrow your existing growth curve. Digital platforms can help in automating processes, improve efficiency of existing workflows, make the interface with your customers and other stakeholders more transparent and get one step ahead of your competition.
- ☆ 5 years of experience in making digital platforms, a product based mindset and understanding of mobile and connected technology helps us work with you to conceptualize and build the right platforms to solve your most pressing needs.
- ☆ New trends often present opportunities that can be cashed in but the businesses have been slow in latching on these trends due to inbuilt inertia. Consumer and employee behavior is constantly changing. Smartphone penetration, emergence of cloud, commoditization of software and scalable technology stacks are the new realities that need to be embraced by every business to stay relevant.

1.3.2. Entrepreneurs:

- ☆ We help you save time and money that allows you to focus on your core product.
- ☆ Being an entrepreneur can be tough. Becomes tougher if you are building a platform that involves a lot of moving parts. We want you to get it right the first time. There are already enough variables that you are handling - customers, business model, funding, team - we can handle the technology part for you.

- ☆ Experience over the last 5 years powering 100's of platforms has helped us major in 'mobile' first platform development

1.3.3. Small Business:

Stay relevant, Stay competitive. Move ahead alongside your customers.

1.4 Click Labs Products:

1. Fugu
2. Tookan
3. Yelo
4. Hippo
5. Flightmap
6. Kato
7. Bulbul

ABSTRACT

Mobile devices and wireless technologies are making a large impact on our lives. Companies that develop mobile applications are continuously evolving their products, aiming at satisfying the customers' needs even more comprehensively and at higher levels of quality.

The BAWIQ proposed in this report is one of the tools that intends to provide a grocery ordering application on mobile devices for ordering grocery from different stores. Grocery apps are a great way for buying the grocery products irrespective of the user location. In fact, customers can choose delivery timings according to their amenity and comfort. These apps are mostly being embraced by the section of online retailer sections and used by the communities that proffer delivery services. This way user can avail the products at the moment they require.

1. INTRODUCTION

Grocery apps are a great way for buying the grocery products irrespective of the user location. In fact, customers can choose delivery timings according to their amenity and comfort. These apps are mostly being embraced by the section of online retailer sections and used by the communities that proffer delivery services. This way user can avail the products at the moment they require.

Bawiq also supports a very special feature. A user (logged in as Individual) can add his/ her family members to take advantage of this shopping app as well. This way they need not to create a separate individual account but can be logged in through a single account with the reference of their main member of the family (main user of this app), hence can take advantage of promos collectively.

Why should you have such an application?
Grocery shopping can be time-consuming, what with making a list, traveling to and from the store and then browsing through seemingly endless aisles to find what you're looking for. So it's no wonder more than 11 percent of 22,000 people surveyed in America are doing at least some of their grocery shopping online—and experts expect the numbers will continue to climb.

The Perks:-

- **1. It saves time.** Shopping online alleviates the need to walk up and down store aisles, , IL. And you can log in any time—even at 2 am—and still have the advantage of a fully stocked store. Plus, going the delivery route saves you a trip to the store, which not only saves time, but gas money as well. In fact, studies show grocery delivery services slash carbon dioxide emissions in half compared to individual household trips.
- **2. It reduces unnecessary spending.** Grocery stores are designed to maximize impulse buys. Whether your weakness is "on-sale Oreos" or a weekly tabloid in the checkout line, last minute impulse buys can increase your grocery bill by up to 60 percent. Another dodged bullet: falling prey to junk food because you're shopping on an empty stomach.
- **3. Easy access to online specials.** While you can't comparison shop or take advantage of ad matching or in-store specials, online retailers extend a myriad of benefits that in-store shoppers can't get. A bonus: Instead of driving all over

town to snag the best deals, you can save your hard-earned cash with a single click.

- **4. Coupon convenience.** Some online retailers make it easy for you to click manufacturer's coupons as you shop. Select the coupons/promos that correspond with the items in your virtual cart and you could save more online than you would at the store—particularly if you're not an avid coupon-clipper.

1.1 SCOPE OF PROJECT

- Order grocery at doorstep with a single tap or by address search
- Easy menu and product options that helps to find grocery items easily
- Login through Facebook, Google, Instagram so they don't need to register again(still in progress)
- Registration can be done as a family or as an individual
- Single checkout and orders history for easy ordering
- Rating and feedback can also be given by customer
- Order can be tracked easily as status is updated eventually as process continues
- Calling and messaging feature to facilitate the customer is also integrated
- Locations can be saved by customer for easier access
- Real time notifications for any order status change
- Otp for mobile/email verification on signup for security purposes.(in progress)
- Payment can be done by cas, cards or apple wallet.(in progress).

1.2 PROBLEM STATEMENT

To devise a collaborative system, which helps the user to manage a grocery list, shop for groceries and other essentials remotely and have it delivered as per their convenience.

Spectrum

- Managing grocery list is a big task
- Many have money but no time
- Some have both but are less able
- Lack of proper delivery system
- Domestication of technology is passive
- Students need more Income opportunities

- Opportunity for small entrepreneurs

1.3 ARCHITECTURE

MVC

Every new Android developer is exposed to a huge amount of information that is crucial to master: a new language, new frameworks, and Apple's recommended architectural pattern: Model-View-Controller, or MVC for short.

Getting up to speed with Android development can be a daunting task, and more often than not, developers don't pay MVC enough attention, sometimes leading to major headaches down the road.

From a high level, MVC is as straightforward as its name. It's made up of three layers: the model, the view and the controller.

- The ***Model*** is where your data resides. Things like persistence, model objects, parsers and networking code normally live there.
- The ***View*** layer is the face of your app. Its classes are typically reusable, since there aren't any domain-specific logic in them. For example, a **UILabel** is a view that presents text on the screen, and it's easily reusable.
- The ***Controller*** mediates between the view and the model, typically via the delegation pattern. In the ideal scenario, the controller entity won't know the concrete view it's dealing with. Instead, it will communicate with an abstraction via a protocol. A classic example is the way a **UITableView** communicates with its data source via the **UITableViewDataSource** protocol.

When you put everything together, it looks like this:

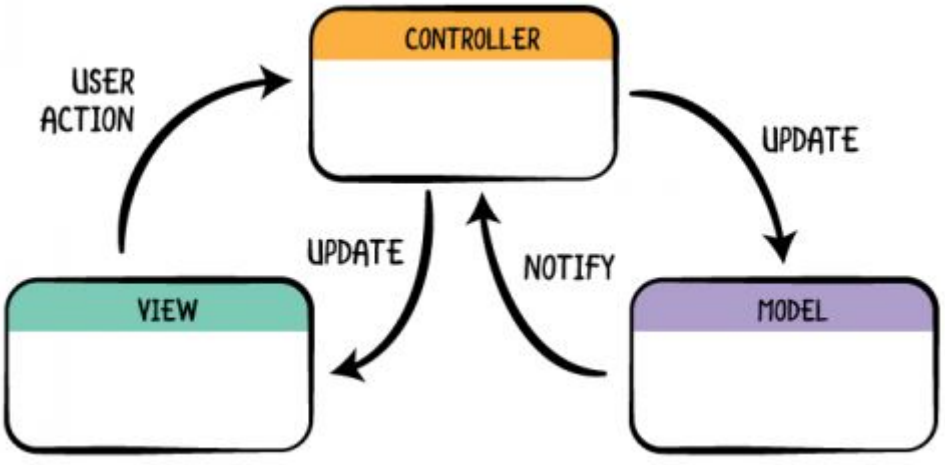


Figure 2: MVC structure

1.4 Methodology Adopted

Prototype-Rapid Application Development (RAD):

RAD approaches to software development put less emphasis on planning tasks and more emphasis on development. In contrast to the waterfall model, which emphasizes rigorous specification and planning, RAD approaches emphasize the necessity of adjusting requirements in reaction to knowledge gained as the project progresses. RAD approaches also emphasize a flexible process that can adapt as the project evolves rather than rigorously defining specifications and plans correctly from the start. In addition to James Martin's RAD method, other approaches to rapid development include Agile methods and the spiral model. RAD is especially well suited (although not limited to) developing software that is driven by user interface requirements. Graphical user interface builders are often called rapid application development tools.The waterfall solution to this was to try and rigidly define the requirements and the plan to implement them and have a process that discouraged changes to either. The new RAD approaches on the other hand recognized that software development was a knowledge intensive process and sought to develop flexible processes that could take advantage of knowledge gained over the life of the project and use that knowledge to reinvent the solution.

Advantages of Rapid Application Development Model:

Risk reduction: A prototype could test some of the most difficult potential parts of the system early on in the lifecycle. This can provide valuable information as to the feasibility of a design and can prevent the team from pursuing solutions that turn out to be too complex or time consuming to implement. This benefit of finding problems earlier in the lifecycle rather than later was a key benefit of the RAD approach. The earlier a problem can be found the cheaper it is to address.

Users: are better at using and reacting than at creating specifications. In the waterfall model it was common for a user to sign off on a set of requirements but then when presented with an implemented system to suddenly realize that a given design lacked some critical features or was too complex. In general most users give much more useful feedback when they can experience a prototype of the running system rather than abstractly define what that system should be.

Prototypes: can be usable and can evolve into the completed product. One approach used in some RAD methodologies was to build the system as a series of prototypes that evolve from minimal functionality to moderately useful to the final

completed system. The advantage of this besides the two advantages above was that the users could get useful business functionality much earlier in the process.

Better quality: By having users interact with evolving prototypes the business functionality from a RAD project can often be much higher than that achieved via a waterfall model. The software can be more usable and has a better chance to focus on business problems that are critical to end users rather than technical problems of interest to developers. The phases of RAD (James Martin Method) model are listed below:

1. **Planning**: In this phase, the tasks and activities are planned. The derivables produced from this phase are project definition, project management procedures, and a work plan.. Project definition determines and describes the project to be developed. Project management procedure describes processes for managing issues, scope, risk, communication, quality, and so on. Work plan describes the activities required for completing the project.
2. **Analysis**: The requirements are gathered at a high level instead of at the precise set of detailed requirements level. In case the user changes the requirements, RAD allows changing these requirements over a period of time. This phase determines plans for testing, training and implementation processes. Generally, the RAD projects are small in size, due to which high level strategy documents are avoided.
3. **Prototyping**: The requirements defined in the analysis phase are used to develop a prototype of the application. A final system is then developed with the help of the prototype. For this, it is essential to make decisions regarding technology and the tools required to develop the final system.
4. **Repeat analysis and prototyping as necessary**: When the prototype is developed, it is sent to the user for evaluating its functioning. After the modified Requirements are available, the prototype is updated according to the new set of requirements and is again sent to the user for analysis.
5. **Conclusion of prototyping**: As a prototype is an iterative process, the project manager and user agree on a fixed number of processes. Ideally, three iterations are considered. After the third iteration, additional tasks for developing the software are performed and then tested. Last of all, the tested software is implemented.
6. **Implementation**: The developed software, which is fully functioning, is deployed at the user's end.

2 LITERATURE REVIEW

Feasibility study is carried out to test if the proposed system is worth being implemented. Given unlimited resources and infinite time, all projects are feasible. Unfortunately, such situations are not possible in real time. Hence it becomes necessary and prudent to evaluate the feasibility of the project at earliest possible time in order to avoid unnecessary wastage of time. Feasibility study is the test of the system proposed regarding its work ability, impact or organization's ability to meet user's needs and effective use of resources. It is usually carried out by a small group of people who are familiar with the information system techniques, understand the part of business that will be involved and affective by the people that are skilled in analysis and design.

A feasibility study is conducted to select the best system that meets the performance requirements. This entails an identification description, and emulation of candidate systems and selection of best system for the job.

The factors that should be included in the feasibility assessment can be as follows.

Cost: operating, maintenance, unit

Accuracy: frequency, significance and correction of errors

Reliability: stability, durability

Capacity: average, low and peak loads

2.1 ECONOMIC FEASIBILITY:-

Economic analysis is the most frequently used method for evaluating the effectiveness of a candidate system. More commonly known as cost/benefits and saving that are expected from a candidate system and compare them with cost. If benefits outweigh costs, then the decision is made to design and implement the system.

Usually cost benefits analysis is made to find the savings or extra overheads that would arise new development. The technique of cost benefit analysis is often used as a basis for assessing economic feasibility.

The factors for evaluation are:

- Cost of operation of existing system and proposed system
- Cost of development of proposed system
- Value of benefits of proposed system.

2.2 TECHNICAL FEASIBILITY:-

Technical feasibility centers on existing computer system and to what extent it can support the proposed addition. This involves financial consideration to accumulate technical enhancement. E.g. if the current operating system is at 80% capacity and arbitrary ceiling then running another application could overload the system or require additional hardware. If the budget is serious constraint then the project is not feasible.

2.3 OPERATIONAL FEASIBILITY:-

The operational feasibility refers to the assessment of proposed system in the manner that how much this system is feasible for the end users. The system should have capabilities in it. That person with a simple knowledge can also use the system. Our proposed system is user-friendly interface. The user just have to click on the choice with the help of menu. Therefore the system is feasible on operational front too.

Our system will improve the performance and save the time. Because of the simple interface user can easily navigate to the desired information page and hence can get the desired information.

2.4 TIME FEASIBILITY :-

Time feasibility determines whether system is implemented within stipulated time. This project will be completed within stipulated time frame.

2.5 Data Flow Diagram

In our DFD, we give names to data flows, processes, and data stores. Although the names are descriptive of the data, they do not give details. So the following the DFD, our interest is to build some structured place to keep details of the contents of data flow, processes, and data store. A data dictionary is a structured repository of data about data. It is a set of rigorous definition of all DFD data element and data structure.

DFD Symbols

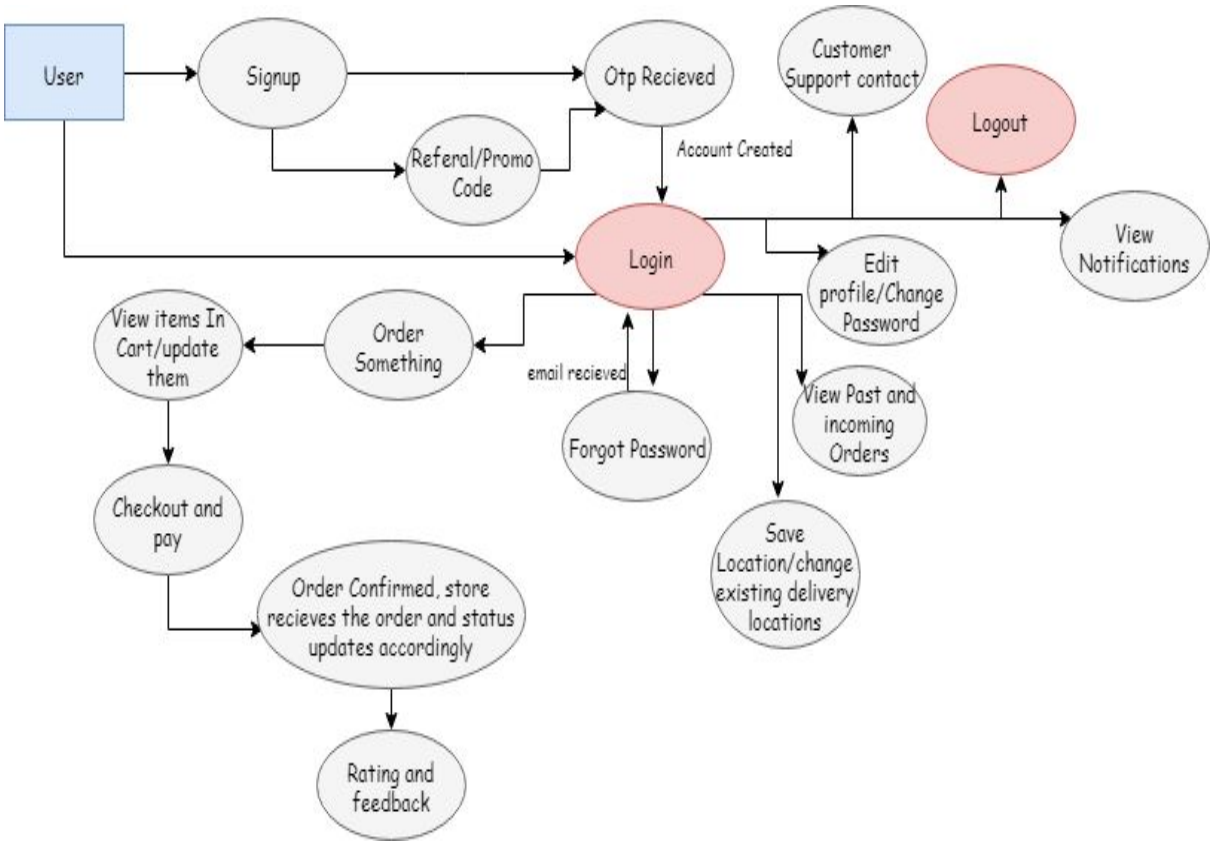
In the DFD, there are four symbols,

- A Square defines a source (originator) or destination of system data.
- An Arrow identifies data flow- data in motion .It is pipeline through which information flows.

- A circle or a bubble (or a oval bubble) represents a process that transforms incoming data flow(s) into outgoing data flow(s)
- An Open rectangle is a data store-data at rest, or temporary repository of data.

Level 0 DFD

DFD of Whole System



3. SYSTEM DEVELOPMENT

3.1 TOOLS AND TECHNOLOGIES USED

Android is a mobile operating system (OS) currently developed by Google, based on the Linux kernel and designed primarily for touch screen mobile devices such as smart phones and tablets. Android's user interface is mainly based on direct manipulation, using touch gestures that loosely correspond to real-world actions, such as swiping, tapping and pinching, to manipulate on-screen objects, along with a virtual keyboard for text input. In addition to touch screen devices, Google has further developed Android TV for televisions, Android Auto for cars, and Android Wear for wrist watches, each with a specialized user interface. Variants of Android are also used on notebooks, game consoles, digital cameras, and other electronics.

systems. At the same time, as Android has no centralised update system most Android devices fail to receive security updates: research in 2015 concluded that almost 90% of Android phones in use had known but unpatched security vulnerabilities due to lack of updates and support. The success of Android has made it a target for patent litigation as part of the so-called "Smartphone wars" between technology companies.

3.1.1 Versions

The version history of the Android mobile operating system began with the release of the Android alpha in November 2007. The first commercial version, Android 1.0, was released in September 2008. Android is continually developed by Google and the Open Handset Alliance (OHA), and has seen a number of updates to its base operating system since the initial release.

Versions 1.0 and 1.1 were not released under specific code names, but since April 2009's Android 1.5 "Cupcake", Android versions have had confectionerythemed code names. Each is in alphabetical order, with the most recent being Android 6.0 "Marshmallow", released in October 2015.

Code name	Version number	Initial release date	API level
	1.0	*September 23, 2008*	1
	1.1	*February 9, 2009*	*2*
Cupcake	*1.5*	*April 27, 2009*	*3*
Donut	*1.6*	*September 15, 2009*	*4*

Eclair	*2.0–2.1*	*October 26, 2009*	*5–7*
Froyo	*2.2–2.2.3*	*May 20, 2010*	*8*
Gingerbread	*2.3–2.3.7*	*December 6, 2010*	*9–10*
Honeycomb[a]	*3.0–3.2.6*	*February 22, 2011*	*11–13*
Ice Cream Sandwich	*4.0–4.0.4*	*October 18, 2011*	*14–15*
Jelly Bean	*4.1–4.3.1*	*July 9, 2012*	*16–18*
Kit Kat	*4.4–4.4.4, 4.4W–4.4W.2*	*October 31, 2013*	*19–20*
Lollipop	*5.0–5.1.1*	*November 12, 2014*	*21–22*
Marshmallow	*6.0–6.0.1*	*October 5, 2015*	*23*
N	*Developer Preview 3*		

3.1.2 Features

- #### *3.1.2.1 Interface*

1. Android's default user interface is mainly based on direct manipulation, using touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching, and reverse pinching to manipulate on-screen objects, along with a virtual keyboard.

Game controllers and full-size physical keyboards are supported via Bluetooth or USB.

2. The response to user input is designed to be immediate and provides a fluid touch interface, often using the vibration capabilities of the device to provide haptic feedback to the user.Internal hardware such accelerometers, gyroscopes and proximity sensors are used by some applications to respond to additional user actions, for example adjusting the screen from portrait to landscape depending on how the device is oriented, or allowing the user to steer a vehicle in a racing game by rotating the device, simulating control of asteering wheel.

3. Android devices boot to the home screen, the primary navigation and information "hub" on Android devices that is analogous to the desktop found on personal computers. (Android also runs on regular personal computers, as described below). Android home screens are typically made up of app icons and widgets; app icons launch the associated app, whereas widgets display live, auto-updating content, such as the weather forecast, the user's email inbox, or a news ticker directly on the home screen. A home screen may be made up of several pages, between which the user can swipe back and forth, though Android's home screen interface is heavily customizable, allowing users to adjust the look and feel of the devices to their tastes. Third-party apps available on Google Play and other app stores can extensively re-theme the home screen, and even mimic the look of other operating systems, such as Windows Phone. Most manufacturers, and some wireless carriers, customize the look and feel of their Android devices to differentiate themselves from their competitors. Applications that handle interactions with the home screen are called "launchers" because they, among other purposes, launch the applications installed on a device.

4. Along the top of the screen is a status bar, showing information about the device and its connectivity. This status bar can be "pulled" down to reveal a notification screen where apps display important information or updates, such

as a newly received email or SMS text, in a way that does not immediately interrupt or inconvenience the user. Notifications are persistent until read by tapping it, which opens the relevant app, or dismissed by sliding it off the screen. Beginning on Android 4.1, "expanded notifications" can display expanded details or additional functionality; for instance, a music player can display playback controls, and a "missed call" notification provides buttons for calling back or sending the caller an SMS message.

5. Android provides the ability to run applications that change the default launcher, and hence the appearance and externally visible behavior of Android. These appearance changes include a multi-page dock or no dock, and many more changes to fundamental features of the user interface.

3.1.2.2 Applications

-

- Applications ("apps"), which extend the functionality of devices, are written using the Android software development kit (SDK) and, often, the Java programming language that has complete access to the Android APIs. Java may be combined with C/C++, together with a choice of non-default runtimes that allow better C++ support; the Go programming language is also supported since its version 1.4, which can also be used exclusively although with a restricted set of Android APIs.

- The SDK includes a comprehensive set of development tools, including a debugger, software libraries, a handset emulator based on QEMU, documentation, sample code, and tutorials. Initially, Google's supported integrated development environment (IDE) was Eclipse using the Android Development Tools (ADT) plugin; in December 2014, Google released Android Studio, based on IntelliJ IDEA, as its primary IDE for Android application development. Other development tools are available, including a native development kit (NDK) for applications or extensions in C or C++, Google App Inventor, a visual environment for novice programmers, and

various cross platform mobile web applications frameworks. In January 2014, Google unveiled a framework based on Apache Cordova for porting Chrome HTML 5 web applications to Android, wrapped in a native application shell.

- Android has a growing selection of third-party applications, which can be acquired by users by downloading and installing the application's APK (Android application package) file, or by downloading them using an application store program that allows users to install, update, and remove applications from their devices. Google Play Store is the primary application store installed on Android devices that comply with Google's compatibility requirements and license the Google Mobile Services software. Google Play Store allows users to browse, download and update applications published by Google and third-party developers; as of July 2013, there are more than one million applications available for Android in Play Store.

As of July 2013, 50 billion applications have been installed. Some carriers offer direct carrier billing for Google Play application purchases, where the cost of the application is added to the user's monthly bill.

- Due to the open nature of Android, a number of third-party application marketplaces also exist for Android, either to provide a substitute for devices that are not allowed to ship with Google Play Store, provide applications that cannot be offered on Google Play Store due to policy violations, or for other reasons. Examples of these third-party stores have included the Amazon Appstore, GetJar, and SlideMe. F-Droid, another alternative marketplace, seeks to only provide applications that are distributed under free and open source licenses.

3.1.2.3 Memory management

- Since Android devices are usually battery-powered, Android is designed to manage processes to keep power consumption at a minimum. When an

application is not in use the system suspends its operation so that, while available for immediate use rather than closed, it does not use battery power or CPU resources.

- Android manages the applications stored in memory automatically: when memory is low, the system will begin invisibly and automatically closing inactive processes, starting with those that have been inactive for longest. Life hacker reported in 2011 that third-party task killers were doing more harm than good.

3.2 HARDWARE AND SOFTWARE REQUIREMENTS

Hardware Requirements:

- x86-64 processor (64-bit Mac with an Intel Core 2 Duo, Intel Core i3, Intel Core i5, Intel Core i7, or Xeon processor)
- 8 GB of RAM
- 150 GB of internal storage
- Network interface card
- Mac OS X version 10.7 and above

Software Requirements:

1. IDE
   ·Android Studio
2. Database
   ·MySQLite
3. Testing Tools
   · Android Emulator and an Android phone

4. Operating System
   - mac OS X
5. Concepts of

   a. Android

b. JAVA
c. Google APIs
d. MVC(Model View Controller)

3.3 REQUIREMENT SPECIFICATIONS

Requirement analysis is a software engineering task that bridges the gap between system level software analysis and software design. Requirement analysis enables the system engineer to specify software function and performance indicate s/w interface with other system elements and establish constraints that software must meet. Requirements analysis allows the software engineer to refine the software allocation and build modules of the data, function and behavior domain that will be treated by software. Requirement specification provides the description to the developer and the customer with the mean to access quality rule.

There are four basic elements in system requirements analysis:

- **Output** First of all, we must determine what the objectives or goals are, what do we intend to achieve, what is the purpose of our work; in other words what is the main aim behind the system. Defining aim is very vital in system work. If we do not know where we want to go, we will not know when we have reached there; we shall be unnecessarily wasting our time and energy in the system. The user department has to define these objectives in terms of their needs. These become the output, which the system analyst keeps into mind.
- **Input**

Once we know the output, we can easily determine when the inputs should be sometimes, it may happen that the required information may not be readily available in the proper form. This may be because of the existing terms we are not properly designed. Sometimes, it may not be possible to get the required information without the help of top management. If the information is vital to the system, we should make all possible help of top management.

- **Accuracy**

If the data is not accurate the output will be also not be correct.

- **Timeliness**:-If data is not obtained in time, the entire system is considered to be a bad system.

3.4 SYSTEM ANALYSIS

Analysis is a detailed study of the various operations performed by a system and their relationship within and outside of the system. In general view system is collection of people, procedures and equipments. People are not the only important component of any information system. Information is produced and used by people in an organization in their everyday activities to make decisions. Information system establishes procedures ensuring that right people receive right data at right time. These procedures determine what is to be done at it enter and passed through the system. System analysis is the method that is used to analyze the system, design them and build them. Analysis is used to gain an understanding of existing and what is required in system. The analysis phase ends with the system description and a set of requirement of the new system. Analysis is a process of diagnosis the situation with the boundaries of system kept in mind to produce a report based own findings.

For our project Analysis we used DFD.

3.5 SYSTEM DESIGN

On the bases of above analysis the project is divided into following Modules:-

User Profile:

Log-in and registration can be defined as the very first section. Log-in with the email account or social network credentials for starting with a seamless approach.

Add Family Members:

It allows the user to add his/her family members to take benefit for shopping through this app. . This way they need not to create a separate individual account but can be logged in through a single account with the reference of their main member of the family (main user of this app).

Browse Products

Select a particular product form the all the categories of food and grocery products that are listed down with a detailed description.

Search Products

It allows the shoppers to easily identify their goods and items by applying appropriate filters, sorting and search criteria's.

Order Management and Order tracking

This comes as great tool for placing the orders in a very convenient way. Shoppers can easily glance their order history and can place the same orders when required.
Order tracking is also provided by timely updation of status of process by the departmental store to whom your order is given.

Multiple Payment Options

All the payment options are integrated that allows the users to make the payment in the reliable and convenient way.

Offer Zone

This is a very interesting section that displays all the offer and discount details for the shoppers for allowing them to enjoy the latest deals and offers.

Feedback & Settings

It contains all the relevant feedbacks and ratings that are given by the users pertaining to their shopping experience.

3.6 DATABASE DETAILS

Database Type: Node.js
Database Used: MySqlite

On the app end, we need to hit the API'S provided by the database manager and as a result we get response in the form of json data which we have to parse into arrays of dictionaries to format the data into a readable format and hence use these dictionaries in the app to display data to the user.

Some of the api's are :-

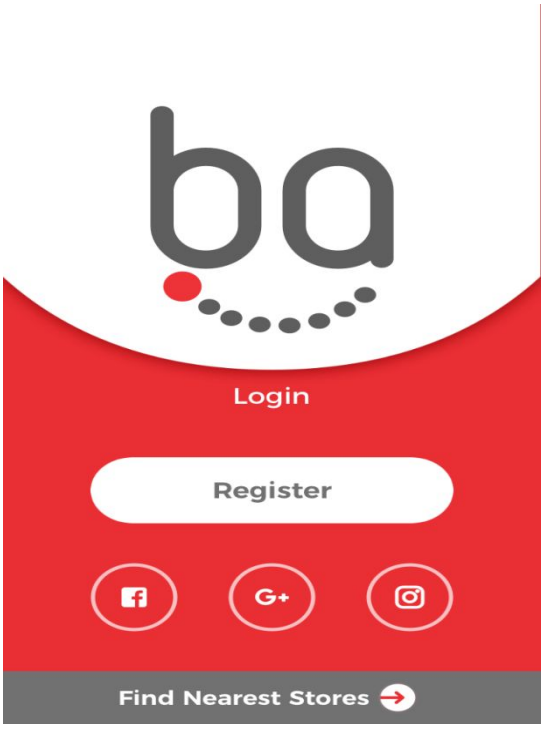
1. "fleet_login"
2. "fleet_access_token_login"
3. "update_fleet_location"
4. "fleet_forgot_password_from_email"
5. "add_task_details"
6. "update_task_detail"
7. "delete_task_detail"
8. "fleet_logout"
9. "update_custom_fields"

10. "fleet_change_password"
11. "change_fleet_status"
12. "user_login"
13. "upload_reference_images"
14. "fleet_create_task"
15. "view_all_push_notifications “
16. "get_fleet_history"
17. "view_tasks_for_date"
18. "change_job_status"
19. "fleet_signup"
20. "verify_fleet_signup_otp"
21. "resend_signup_otp"
22. "add_ratings"
23. "get_support_email"

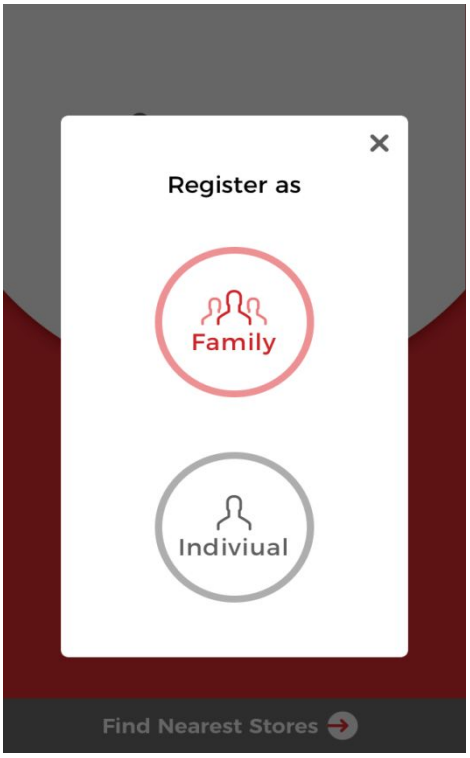
4. SCREENSHOTS

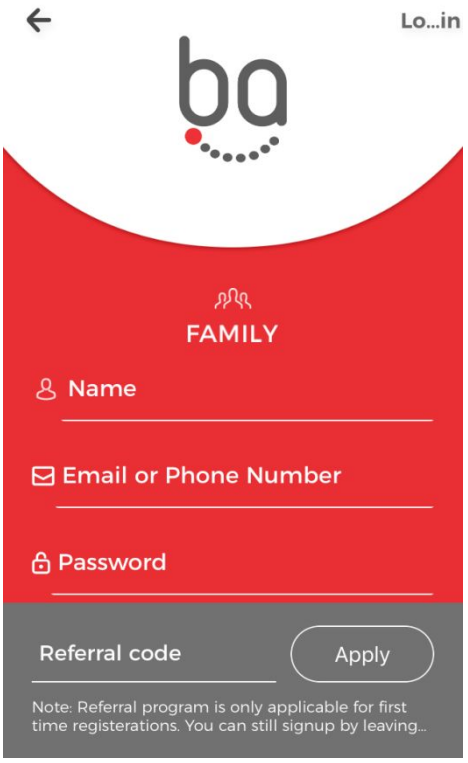
1. Splash Screen

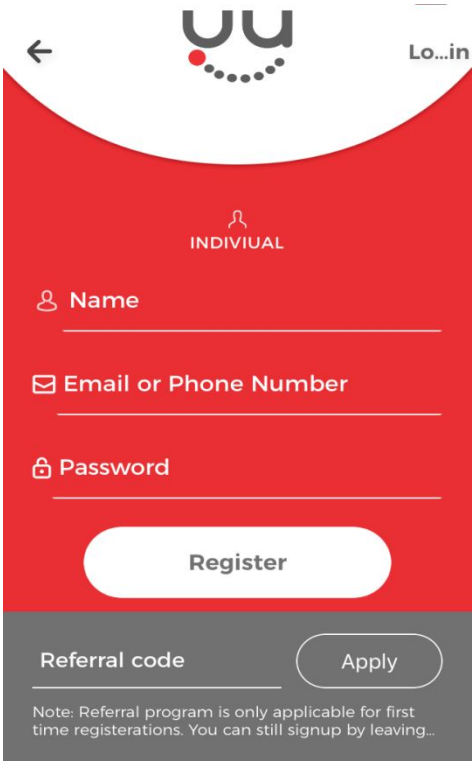
2. Onboarding screens



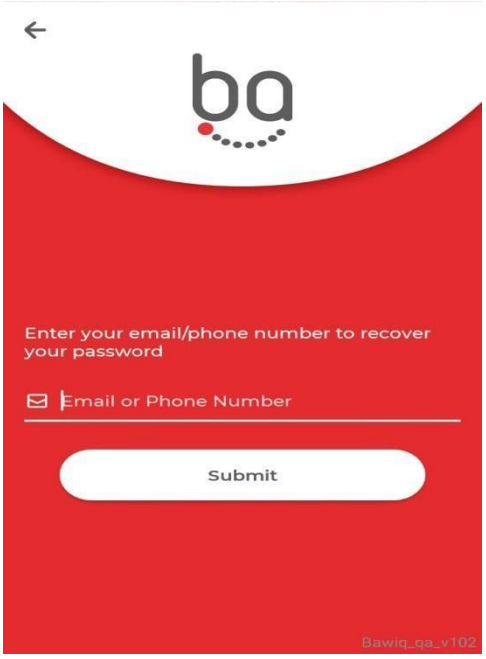
2.1 Login


Register as
Family
Indiviual
Find Nearest Stores

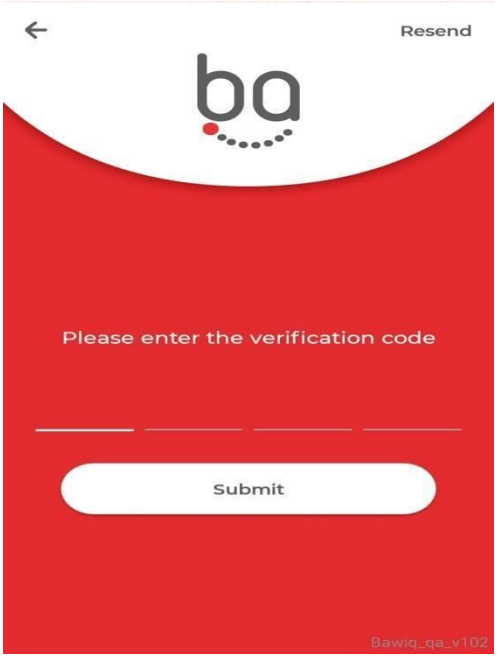

Lo...in
FAMILY
Name
Email or Phone Number
Password
Referral code
Apply
Note: Referral program is only applicable for first time registerations. You can still signup by leaving...


Lo...in
INDIVIUAL
Name
Email or Phone Number
Password
Register
Referral code
Apply
Note: Referral program is only applicable for first time registerations. You can still signup by leaving...

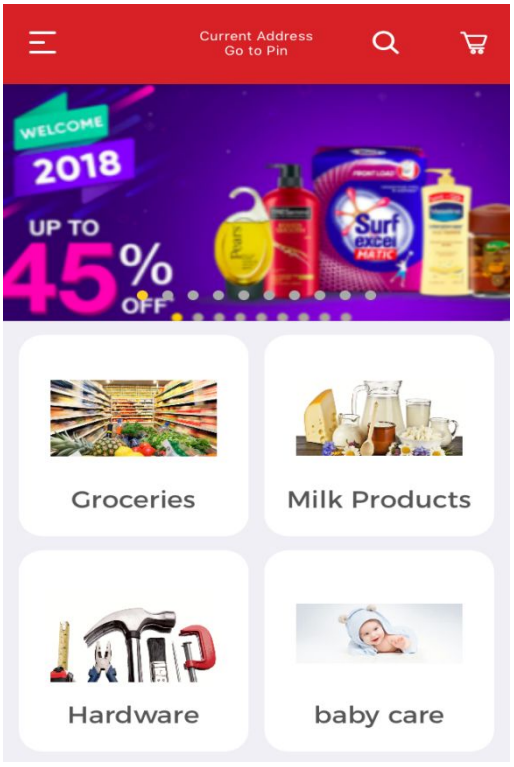
3.Forgot Password



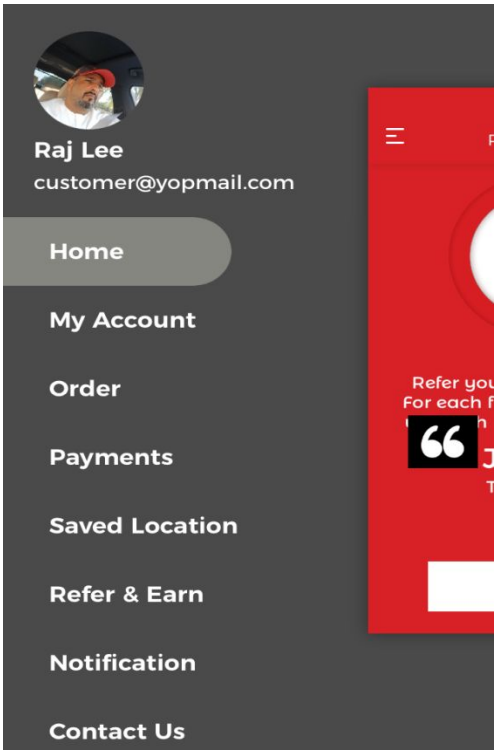
4.OTP Screen



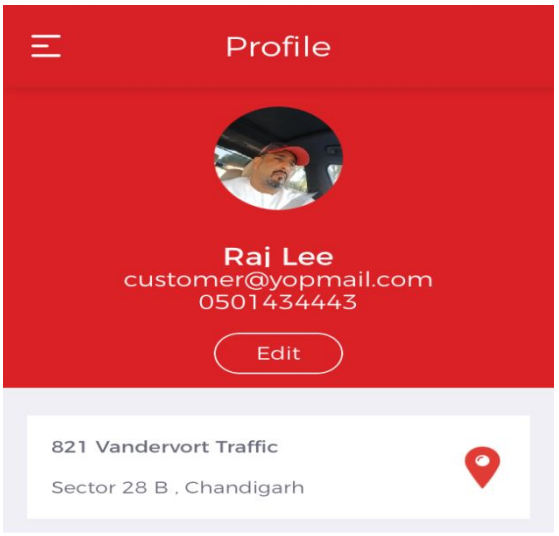
1. Home Screen



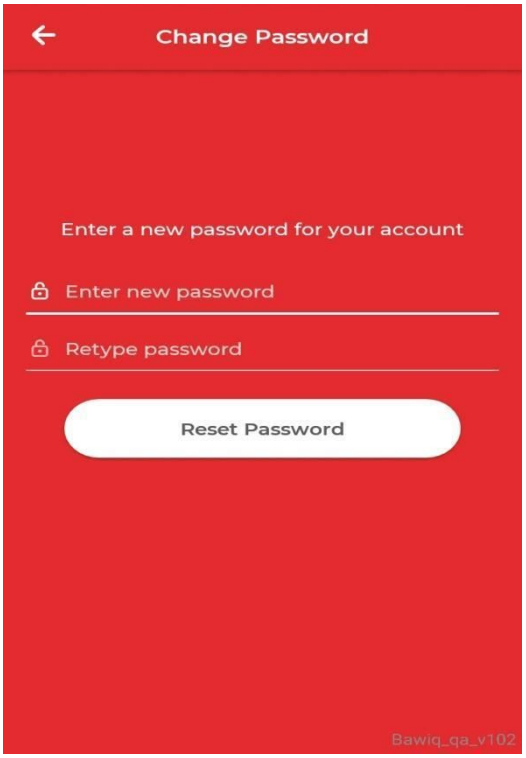
6.Side Menu



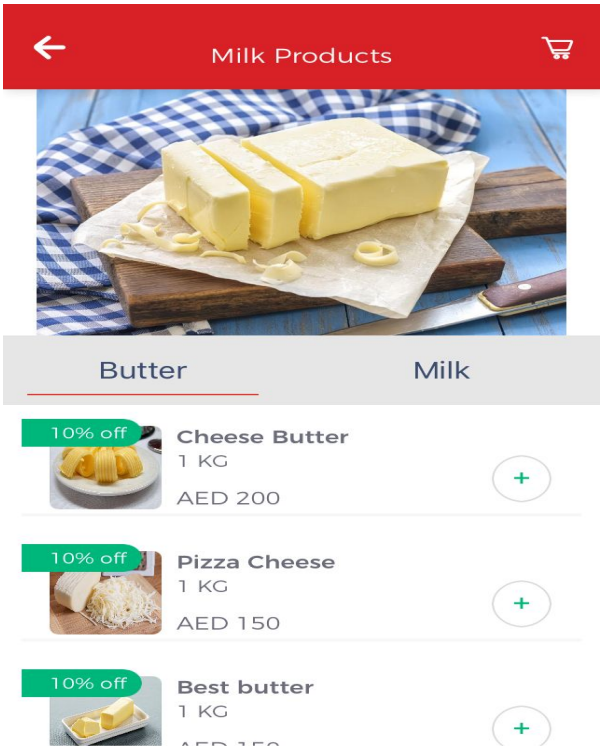
7.Profile View

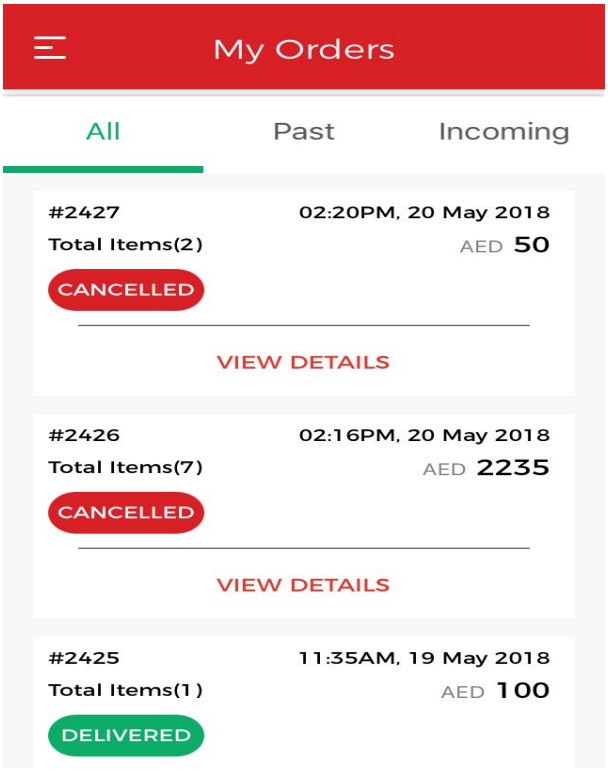


8. Change Password Screen



9. Orders

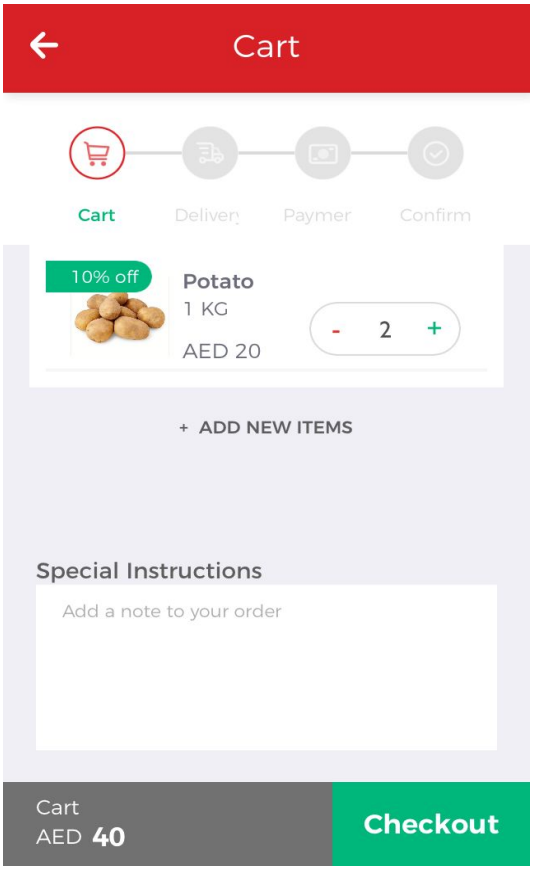




10. Order History and Upcoming Orders

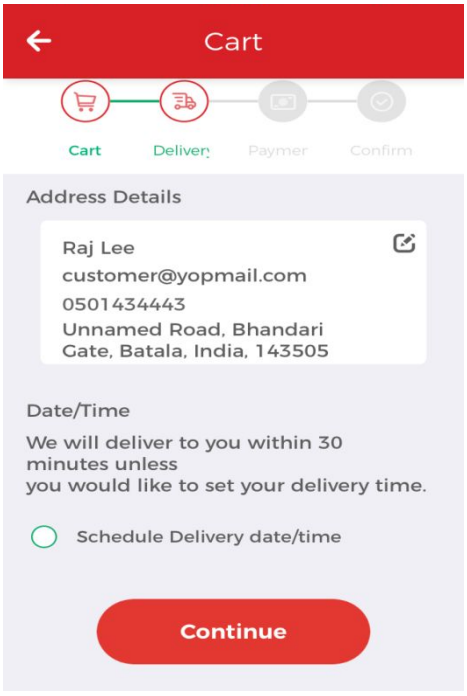
ff

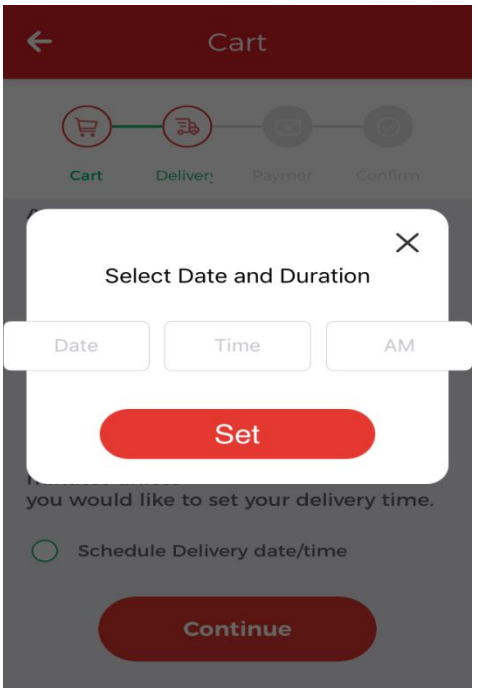
11. Empty Cart

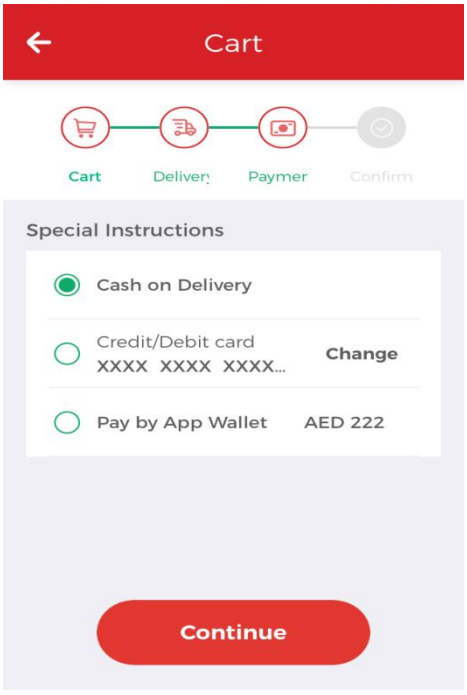


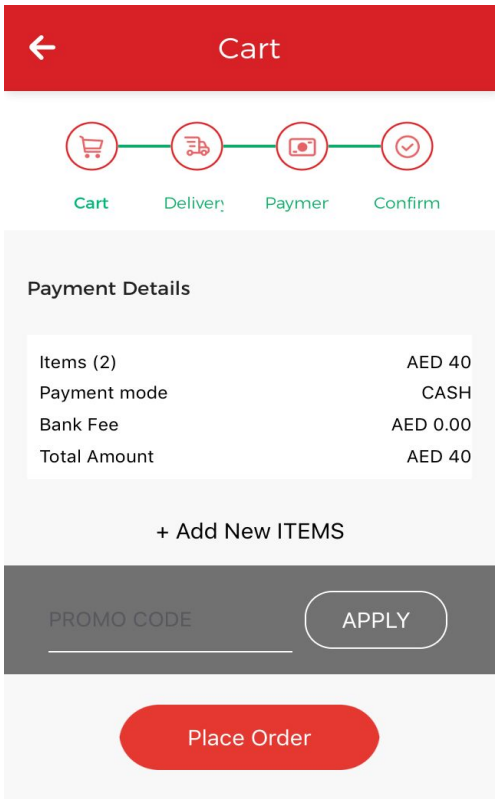
12. Cart View

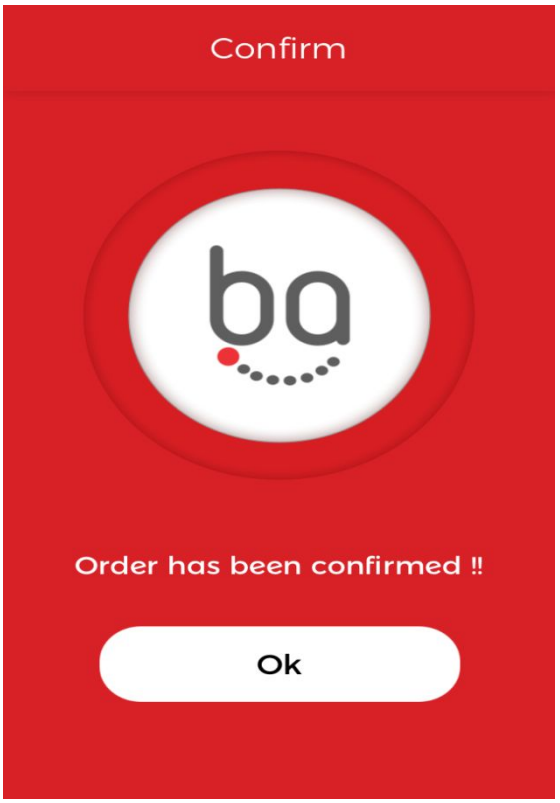
13. Checkout Screens



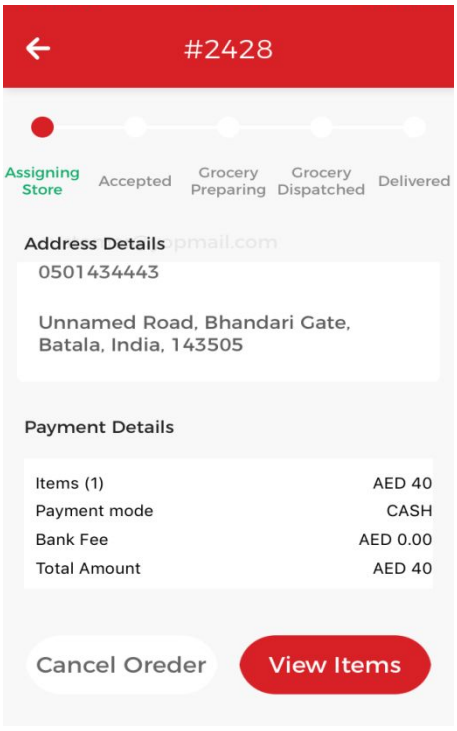


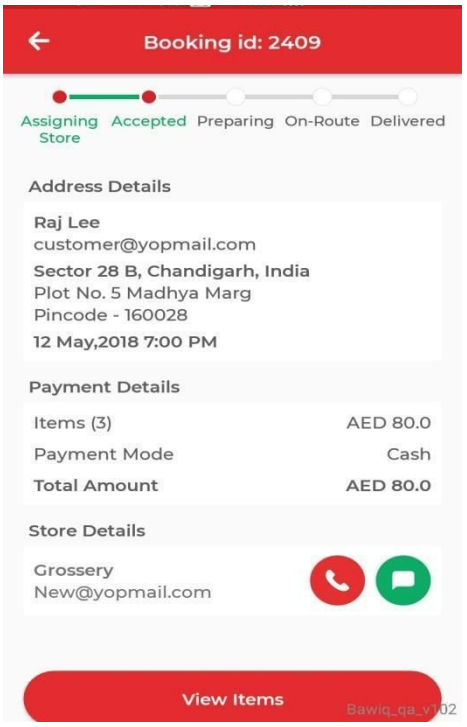


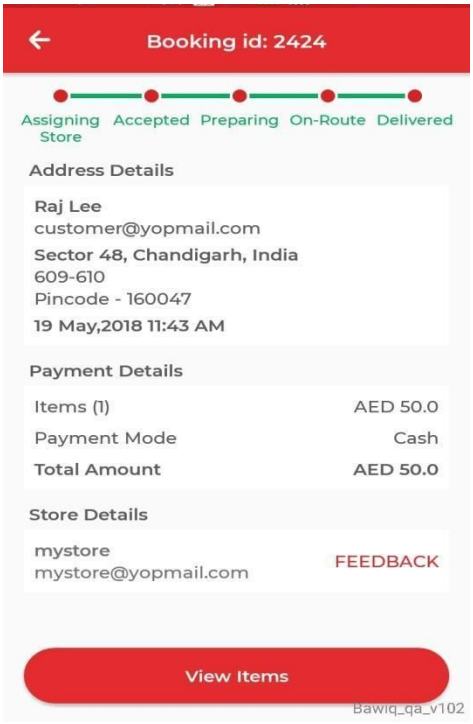




14. Order Status updates

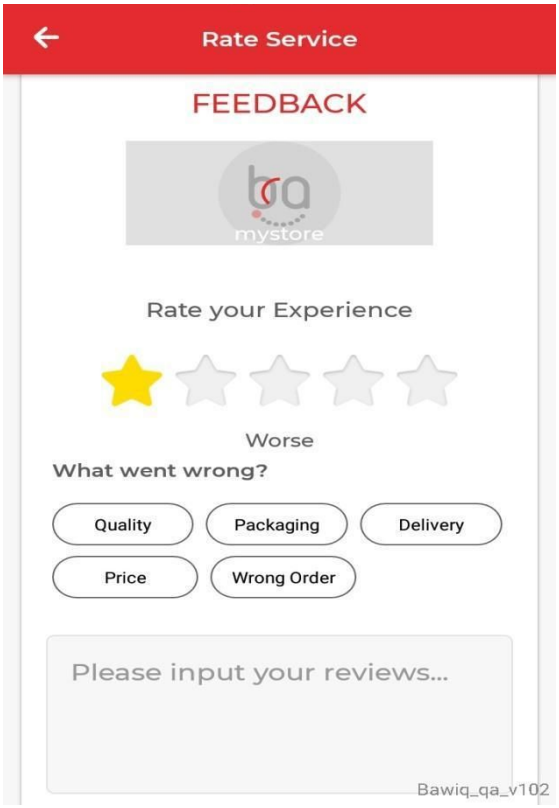


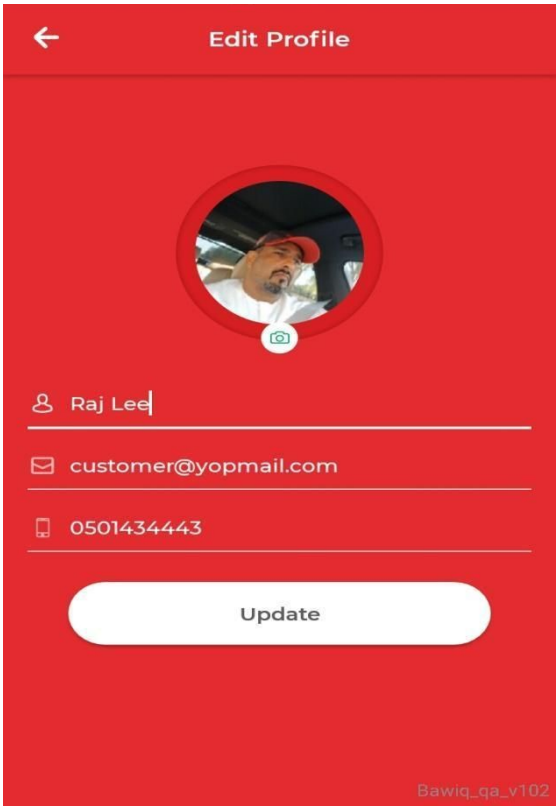




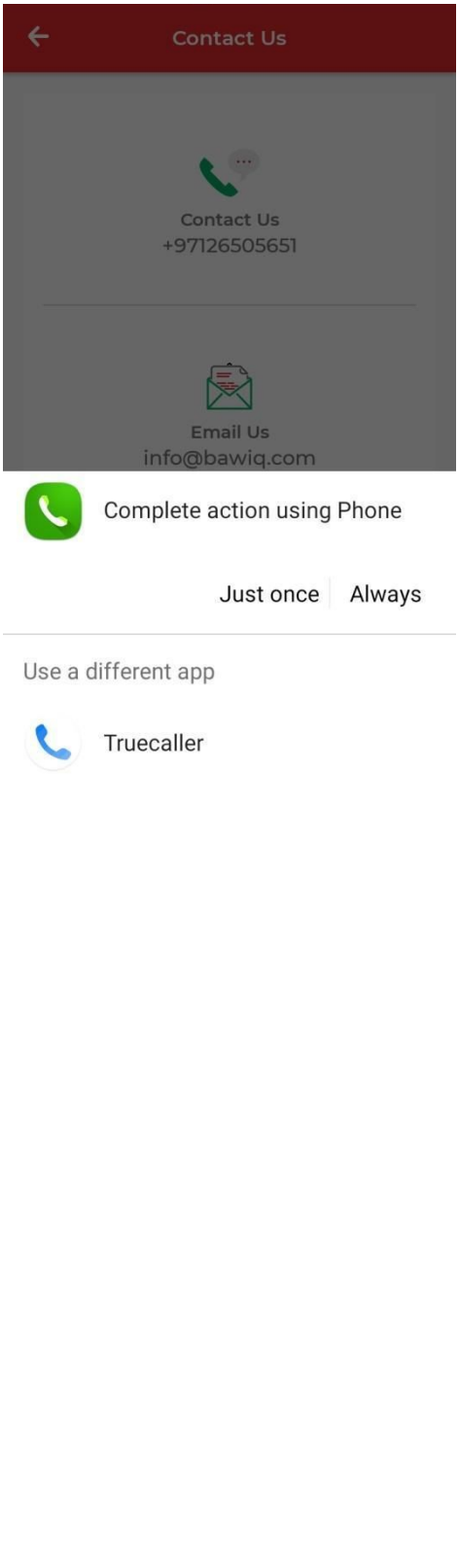
15. Rating And Feedback Screen

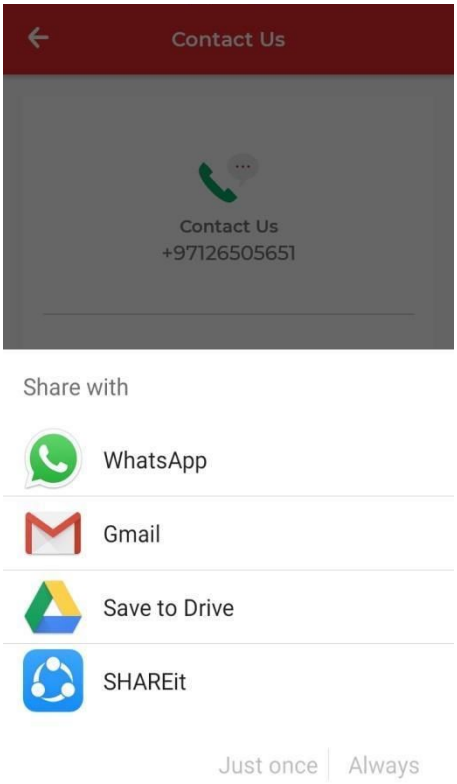
16. Edit Profile Screen





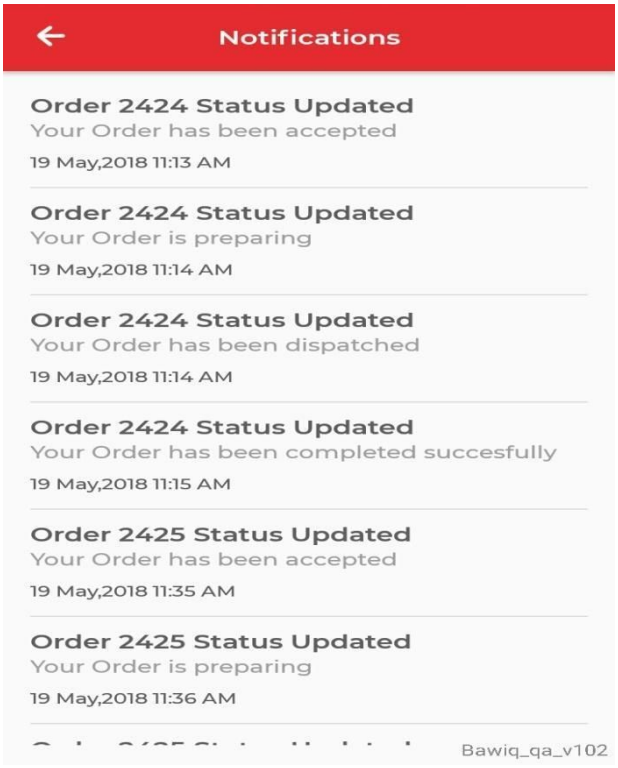
17. Contact Us Screen

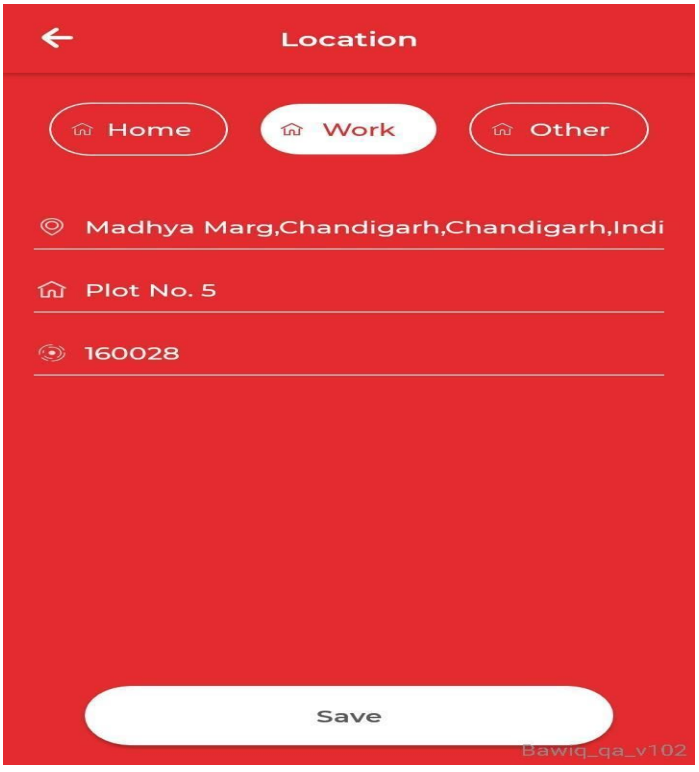




18. Notification Screen

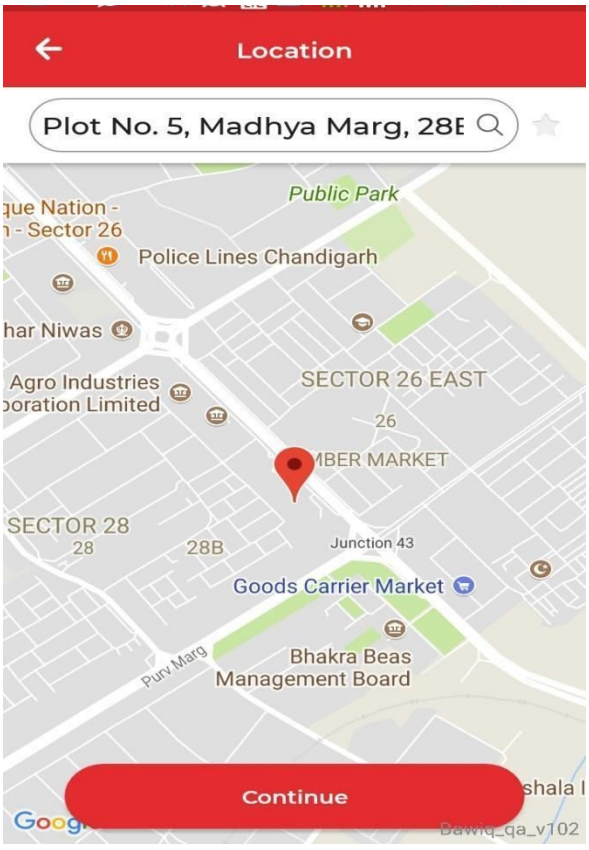
19. Location Save

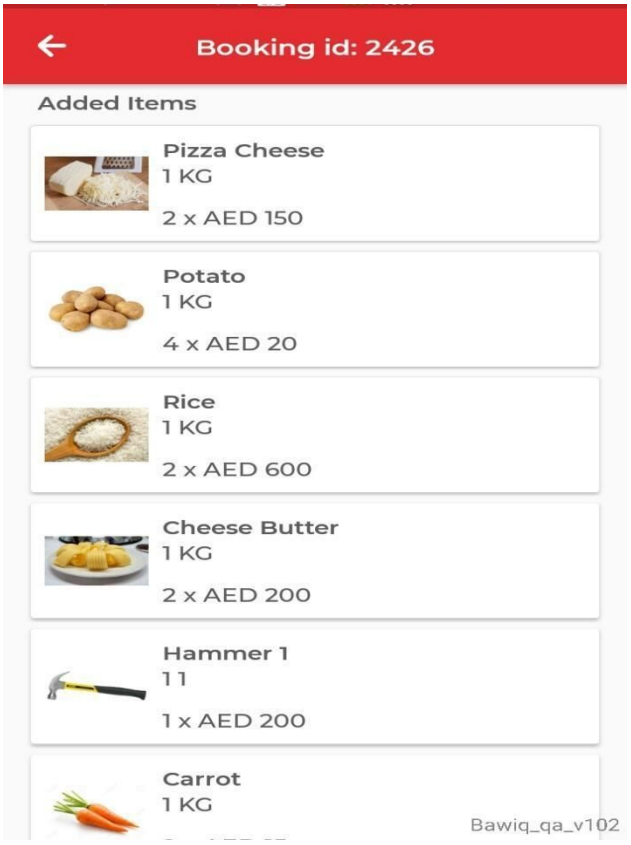




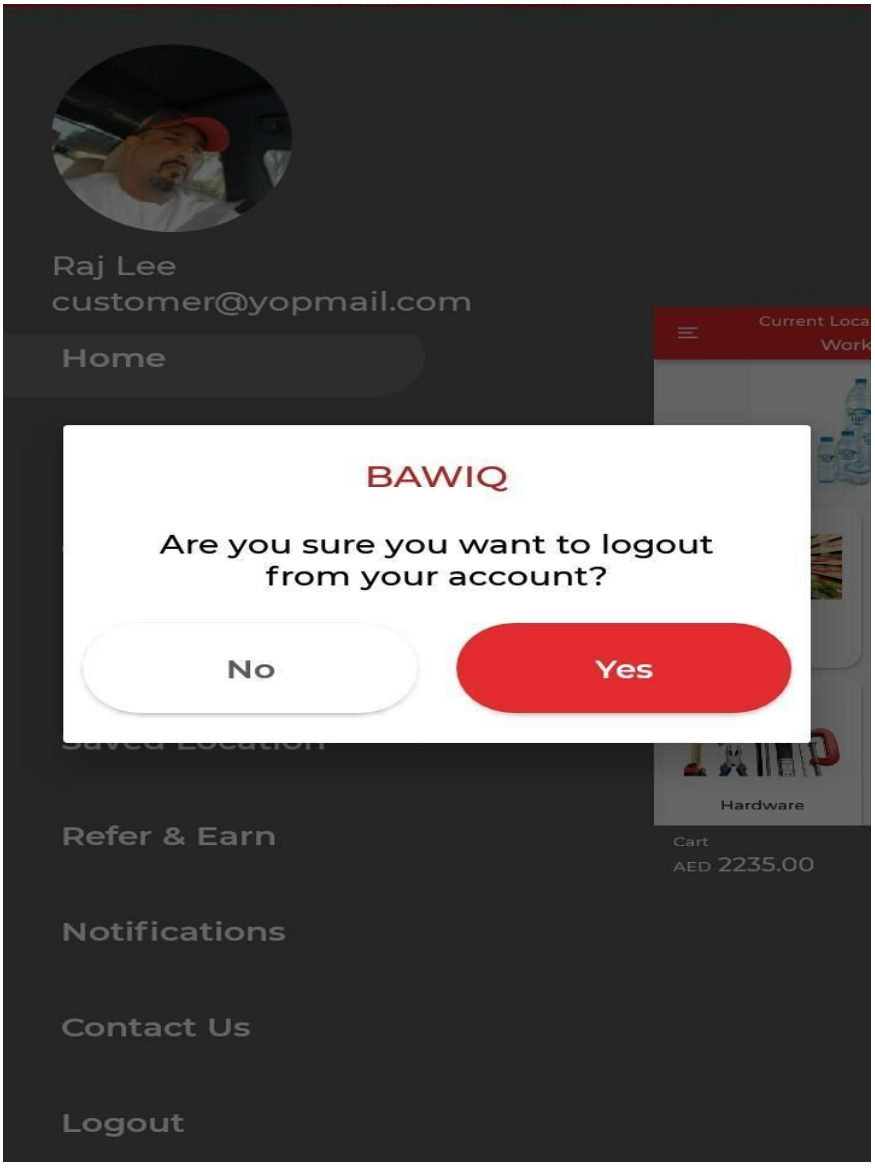
20. Select Location From Map

21. View All Orders


Location
Plot No. 5, Madhya Marg, 28E
Public Park
Police Lines Chandigarh
Agro Industries
SECTOR 26 EAST
26
SECTOR 28
28
28B
Junction 43
Goods Carrier Market
Bhakra Beas
Management Board
Continue
Bawiq_qa_v102


Booking id: 2426
Added Items
Pizza Cheese
1 KG
2 x AED 150
Potato
1 KG
4 x AED 20
Rice
1 KG
2 x AED 600
Cheese Butter
1 KG
2 x AED 200
Hammer 1
11
1 x AED 200
Carrot
1 KG
Bawiq_qa_v102

22. Logout Menu Option



5. Testing:-

1. Planning

This involves writing and reviewing unit, integration, functional, validation and acceptance
test plans. Planning in testing of Application.

2. Execution

This involves executing these tests plans, measuring, collecting data and verifying if it meets
the quality criteria set in the quality plan. Data collected is used to make appropriate changes
in the plan related to development and testing. We have used the prepared documentation for
the testing of Application.

Functional testing:-

The next level of testing is the functional testing which consist of integrated and system testing .The integration testing many tested modules is combined into sub-systems, which are then tested. The goal there is to see if the modules can be integrated properly, the emphasis being on testing interfaces between modules. This activity can be considered as testing the design, and hence the emphasis on testing module interactions and in system testing the entire software system is tested. The reference document for this process is requirement document, and the goal is to see if the software meets its requirements. This is essentially a validation exercise.

Structural testing:

The first level of testing is structural testing which is also known as unit testing. In this different modules are tested against the specifications produced during design for the modules. Structural testing is essential for verification of the code produced during the coding phase and hence the goal is to test the internal logic of the modules.

Levels of Testing

In order to uncover the errors present in different phases, we have the concept of levels of
testing. The basic levels of testing are:

·**Unit Testing**

This focus on verification effort on smallest unit of Campus Portal application designed the software component or module. In this we can take User Authentication

module is considered to be as unit testing part. Using component level design, description as a guide important control path is tested to uncover errors. The module interface is tested to ensure that information properly flows into and out of the program unit under test. Data structure is locally examined to ensure that data stored temporarily maintains its integrity during all the steps in execution of algorithm. Boundary conditions are tested to ensure that module is operating properly at boundaries which are established to limit or restrict processing. All independent paths through control structure are exercised to ensure that all statements in module are executed at least once. Finally all error-handling paths are tested. In unit testing of shopping mall website we tested each and every page of website individually. If error comes then we corrected that error and then we proceeded to next step i.e. testing of next page.

Integration Testing

In this process of testing it is incremented approach to construction of program structure. Modules are integrated moving downward beginning with main control module. Modules subordinate structure to main control module is incorporated into structure. This form of testing is performed of software in five steps: -.

Main module “Student” is tested after integrating and linking the
pages of online submission and records.

After testing of main module we proceed to other modules one by one. Other modules are teacher and authentication.Tests are conducted as each component is integrated. On completing each set of tests another stub is replaced.

Top-Down Integration Testing

In well-factored program structure decision-making occurs at upper levels in hierarchy and therefore encountered first. If major control problem do exist, early recognition is essential.This is termed as.

Bottom-up integration testing

It begins construction and testing with atomic modules as the components are integrated from the bottom-up, processing required for components subordinate to a given level is always available and the need for stubs is eliminated.

System Testing

Here the entire software system is tested. The reference document for this process is the requirements document, and the goal is to see if software meets its requirements. Here entire Software has been tested against requirements of project and it is checked whether all requirements of project have been satisfied or not. At last when unit testing and integration testing is completed then we go for system testing i.e. after combining all modules of the website of mall we test it for the proper

functioning and proper data flow between different modules of the project. If the dataflow and the operations between different modules are working correctly then product is ready to deliver to customer.

Acceptance Testing

Acceptance Testing is performed with realistic data of the client to demonstrate that the software is working satisfactorily. Testing here is focused on external behavior of the system; the internal logic of program is not emphasized. Test cases should be selected so that the largest number of attributes of an equivalence class is exercised at once. The testing phase is an important part of software development. It is the process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. The client tests the website of hotel to check the requirement given to the software developer's team and the working of the actual project. If the website fulfills the requirements of the client the it satisfies the acceptance testing and if client find something wrong in the product then he can ask the developers to correct that problem in project.

Testing of Project:-

Unit Testing is done on app side by developer.

For testing purpose following Test cases are considered:-

Test Case ID	Test Case Description	Input Data	Expected Result	Actual Result	Pass/Fail
1.	If incorrect user name or password	Wrong inputs	Error Message	Error given	Pass
2.	Selection of category with no products available	Valid selection	Error Message	Error given	Pass
3.	Information added Correctly on registering new user	Valid values	Added in D/B Server	Added	Pass
4.	Change Password	New Password	Password Changed	Password has changed	Pass
5.	On selection of products, products added into cart	Valid inputs	Cart displays the products selected	Products get displayed in cart	Pass
6.	Call the driver on order confirmation	Valid inputs	Driver gets a call	Driver gets call	Pass
7.	Otp on Sign up	Valid inputs	Otp received	Otp received	Pass
8.	Referral code entered, exist on D/B server or not	Wrong inputs	Error Message	Error given	Pass
9.	Delivery date and Time greater than ordering time or not	Wrong inputs	Error Message	Error given	Pass
10.	Order when given by customer is received by the departmental stores	Valid inputs	Order Received	Order received	Pass

6. CONCLUSION

TECHNICAL AND MANAGERIAL LESSONS LEARNT

Domain Experience

ClickLabs pvt. Ltd. is working on various technologies. Also the individual responsibilities are more. So, I have learnt a lot.

Exposure to entirely different technology

This period of 6 months of my industrial training would be very helpful for my career. I worked on two different technologies – **Java** and **Android App Development**.
In my initial two months of training, I learnt about Java and its wide applications and parallel to that, I worked on my various assignments and tasks

In the next months of my training, I was designated to an **Intern** from a **Trainee** at ClickLabs Private Ltd. I worked on Android App Development there using JAVA. I learnt a lot and I was a part of the team who was working on **Bawiq** – An Online Grocery Delivery App.
This app is a greatway for buying the grocery products irrespective of the user location. In fact, customers can choose delivery timings according to their amenity and comfort. This way user can avail the products at the moment they require.

I am very obliged to all of you to give me an opportunity to undergo such a useful trainings.

6.1 FUTURE SCOPE

Completion of the development process of the project will result in a software package that will provide user-friendly environment, which is very easy to work with, even for people with very little knowledge of computer.

Management of various tasks is incorporated in the package and will deliver the required information in a very easy to use and easy to access manner.

This package will provide accuracy, efficiency, speed and easiness to the end user. Since the system is verified with valid as well as invalid data and is run with an insight into the necessary modifications that may require in the future, it can be maintained successfully without much efforts.

7. Bibliography

Catalogues

- Training Session Conducted by Company Itself.

Books:-

- System Analysis and Design by Elias M. Awad

For java:-

- DBMS by Anshuman Sharma
- Java Complete Reference By Herbert Schildt

Websites:-

For java:-

- https://docs.oracle.com/javase/tutorial/
- https://www.javatpoint.com/
- https://dev.mysql.com/doc/mysql-tutorial-excerpt/5.7/en/

For Android:-

- www.developers.google.com
- www.edx.org
- www.developers.android.com

For git:-

- https://git-scm.com/book/en/v2/Getting-Started-Git-Basics