

ASSIGNMENT 2

TEAM PROJECT

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ABSTRACT

This module has been really challenging throughout the second semester, enabling students to put their specific experience and knowledge together as one team to form a piece of functional software in this case an android application. We produced an outcome with great enthusiasm by each group member and efforts.

We had initially as a group of five decided to change the case study to create a responsive web application by using variety of different web development technologies such as HTML, PHP and Javascript to complete and implement the core concept of this online service portal between members of the public and the local boiler installation, enabling the clients to enter their address in order for the web application to find a local and reliable boiler installer who has passed certifications and also have the background checks. Unfortunately, due to lack of time frame we decide not to proceed with this project.

We decided to do an android application which has been developed for real startup business called **Morning**. Whilst Morning responsive web application could adapt to any device size and screen, an android dedicated mobile application would allow users to achieve the following functionalities:

- Login via social media or create an account.
- Search for products in database.
- Browse through different categories of products.
- Add products to shopping basket.
- Pay via an online merchant such as PayPal, Strip etc.
- Use of social media power to promote and market the application.
- An admin panel (CMS) for staff to engage without any programming background
- Loyalty scheme system to encourage clients for future business.

The main technologies used to create this project are Android Studio for the core developments, adobe illustrator/Photoshop for user interface/experience design, variety of ready SDK's from technology companies such Facebook, PayPal, client and server side scripting languages such as JavaScript and PHP, GitHub online repository to share every stage of development with others, UWL blackboard, Word to count the days and meetings achieved.

The main motivation behind this project was aimed on cooperating with other team members who may not have appropriate set of skills individually to accomplish the final software solitary, but having to share the skills and the work towards the same goal to develop a fully functional android application which will be available publicly

OUR TEAM MEMBERS

PROJECT MANAGER/DEVELOPER – ASID HUSSAIN

- PROJECT IDEA
- AIMS AND TARGETS BEING SET
- MEETING OF GROUPS
- UI/UXD & DOCUMENTATION
- IN APP & ONLINE MARKETING KEEPING TRACK OF EVERY CLIENT PURCHASE.

TESTER / DEVELOPER- POUYA SHAHVERDI-MOGHADDAM

- TEST PLANNING & DESIGN
- PHYSICAL & EMULATOR TEST EXECUTIONS
- TEST REPORTS AND BUGS IDENTIFICATION

UX DESIGNER/DEVELOPER – BIKENDRA GURUNG

- PRODUCT PLANNING
- DESIGN OF INTERACTION

PROGRAMMER – LUCIEN AMON

- RELATIONAL DATABASE DESIGN & IMPLEMENTATION
- SERVER SIDE PROGRAMMING
- ADMIN PANEL DESIGN & IMPLEMENTATION
- MAINTENACE & UPDATES

RESEARCHER/DEVELOPER – REHMAN SHARE

- APP FRAMEWORK DESIGN
- CORE FUNCTIONALITIES DEVELOPMENT
- CLIENT SIDE PROGRAMMING

- STRUCTURAL DESIGN AND DEVELOPMENT
- SUPPLIER COMPONENTS DESIGN AND IMPLEMENTATION

INTRODUCTION

Morning android mobile application contains various of different components explained in the abstract section of this documentation. The basic development of this mobile app has started back in the first semester, as part of Mobile Application development module project. Since formation of our team in second semester part of team project module, further invaluable lessons and techniques have been learnt to achieve this fully functional and complex ecommerce application.

Gaining different set of skills every week as part of team project module learning materials and applying them into the actual project, working individually on every different component of this application yet collaborating as unified team towards the same goal must be the greatest achievements of this project.

Every component of this application has been prudently designed and tested based on given case study requirements to fit the client and staff needs at Morning. This report will also contain individual technical documentation embedded within, explaining every step taken by every group member in the application development cycle.

The overall weighting of this assignment is 30% emphasising on individual contributions towards the final project which will be submitted electronically via turnitin on UWL's blackboard on or before 04.05.2018.

TEAM MINUTES OF MEETING WITH AIMS FOR TEAM DEVELOPMENT

09 February 2018

Today we have organized a group, our group is 2. We will be a group of 5 and will be organizing the tasks and have regular meeting to complete the project. Our first aim is to organize a bit bucket account, where we would organize the groups input and output towards the project. Bitbucket is a straightforward repository which keeps all the records of all the previous commits of the work. Today we also decided as a group which member of the group would contribute as a role. Each member of the group gave a statement regarding their roles towards their contribution towards the project. We will be communicating on a regular basis by using WhatsApp.

TEAM MEMBERS – GROUP2

PROJECT MANAGER – ASID HUSSAIN

RESEARCHER – ABDUL REHMAN

UX DESIGNER – BIKENDRA GURUNG

PROGRAMMER – LUCIEN AMON

TESTER – POUYA SHAHVERDI-MOGHADDAM

12th February 2018

Today we researched our roles further and made plans for the project by incorporating the Gantt Chart. A Gantt chart is a horizontal bar chart developed as a production control tool in 1917 by Henry L. Gantt. We completed the meeting for three hours and decided to meet tomorrow to research and web designs for our project.

PROJECT PLANNING

Project planning is vital and relevant set of activities which has cost, time, resources and quality in a form of set of activities. Project management is important as you and the team members would be reporting, organizing, leading and completing an assignment project. Planning the project amongst the team members is greatly emphasized which gives aims and targets with a guide. It is a basis for systematic plan medication and a mechanism for efficient communications. The project is constrained by a scope, which as aims and targets to achieve. It also as time constrain by how long it should take to complete and costs of the project. All these outcomes are achieved and managed by the project manager. Project management process requires planning a project and requires the mechanics of putting together a plan with tools as Work Breakdown Structure (WBS), GANTT, PERT charts.

Tracking plan progress is vital part of progression which would have a follow-up meetings and communication amongst our Group2, with a complete project involving management and control.

We will be using Microsoft Excel and Microsoft Project as a project management software with Bitbucket as our repositories.

The mechanism of planning is defining project objective and Work Breakdown Structure (WBS). (WBS) is identifying the tasks and subtasks which are delivered and the lowest element involving the stand alone work package. Identifying the tasks relationship and identifying the possible risks is really vital. Estimating work package (people, time etc.) and then creating initial schedule with iterate plans and finally a documented final project.

Teamwork is most effective when all the individuals involved contribute and work towards a common goal. We as a Group 2 must follow these sixteen ethics and principles to have a successful team project:

1. Every member is responsible for the team's progress and success.
2. Attend all team meetings and be on time.
3. Come prepared.
4. Carry out assignments on schedule.
5. Listen to and show respect for the contributions of other members and be an active listener.
6. Constructively criticize ideas, not persons.
7. Resolve conflicts constructively.
8. Pay attention; avoid disruptive behaviour.
9. Avoid disruptive side conversations.
10. Everyone participates; no one dominates.
11. Be succinct; avoid long anecdotes and examples.
12. No rank in the room.
13. Respect those not present.
14. Ask questions when you do not understand.
15. Attend to your personal comfort needs at any time, but minimize team disruption.
16. Having fun and enjoying the team assignment.

The only way we will achieve these principles is to keep a team charter. We would have each member with the roles and each team member have a mission statement with anticipated results (goals). We will also have a specific tactical objectives and ground rules/guiding principles for team participation. Our team group2 would have a shared expectations/aspirations with the purpose of having a successful outcome.

STAGES OF TEAM GROWTH

We as a team member must know that teams don't just form and immediately begin to work in a team members and start working together to complete the assignment. There are hierarchy stages for the growth and teams must be provided time to complete the stages and become effective. Team development and growth are formed into four stages.

Stage 1 : Forming

Forming in a team is important and when a team is forming, the members cautiously explore the boundaries of acceptance group behavior. The team members would search for their position within the group and test the leader's guidance. It is usually normal for less progress to occur.

Team leaders must encourage and maintain open communication. Leaders must set an good example and motivate team members with the task to be focused. The leader usually facilitates problem solving and collaboration. Maintaining healthy group dynamics with encouraging creativity and risk taking.

Stage 2 : Storming

Storming is immensely difficult stage for the group. Members would often become impatient about the lack of progress, but are still inexperienced with working as a team. Group2 members have much of their energy to focus on each other instead of achieving the goal.

Stage 3 : Norming

At this stage team members have accepted the team and began to reconcile the differences. The emotional conflict is reduced as the relationships become more cooperative. The team is also able to fully concentrate more on the work and begin to make progress.

Stage 4 : Performing

Team 2 must at this stage have discovered and accepted each other's strength and weaknesses and also learned what roles they have. Each team members are open and trusting and many good ideas and suggestions. The team members begin to feel comfortable using decision making tools to evaluate the ideas, prioritize tasks and solve problems. We must have accomplished and each team satisfaction and loyalty to have high expectations.

13th February 2018

After conducting the meeting with all 5 members of the team present we decided to call our project 'Morning' because it sound fresh in the morning. We also decide to complete the project by using Android Studio because each member of the team has used the Android Studio before for previous assignment and have knowledge of java. Web page would be new and the team members have no knowledge of java script.

Successful Team Work

We must follow the following rules to be successful in the project. We must be committed to have a shared goals and objectives. Have clear define roles and responsibilities by using best skills and allowing each other to develop in all areas. We have to have an effective

system and processes by having a clear communication. We must have a beneficial team behaviors, well defined decision procedure and ground rules. We will have to have a balanced participation and awareness of the group process.

PROJECT LIFE CYCLE

Pervailing view of the project life cycle is that projects would be going through certain phases:

- Conceiving and defining the project
- Planning the project
- Implementing the plan
- Completing and evaluating the project
- Operating and maintaining project

PROJECT PLANNING

A statement of work is the beginning stage (SoW) which is provided by the client. SoW is a description of the work which is required for the project. The next stage of planning is a project charter which is developed. Planning would start with the development of a Work Breakdown Structure (WBS).

14th February 2018

We conducted a meeting with all five members of the team present. After consideration we decided to use power point for our presentation on 23 February 2018. Logo page was designed today and Gantt chart was updated. Research was conducted and we will have a app design to be started for 16th February 2018.

16th February 2018

We had a group meeting today with all five members present at the second floor library. We completed the designing of the app and improved the power point slide for the presentation on 23rd February 2018.

19th February 2018

We had a group meeting today with all five members present at a booked room on the second floor. We completed the presentation slides today and finalized each team member role contributions and how the presentation would be conducted.

22nd February 2018

All five members of the team were present today in the booked second floor. We previewed our Power point slides and practiced our presentation. We are confident and able to present the slides with demonstrations.

23rd February 2018 – PROJECT PRESENTATION

We have successfully completed our presentation today and really pleased with the outcome. Slides were explained in details and with great enthusiasm. I am confident we have achieved a good result and outcome.

26th February 2018

Had a group meeting with all the five members of the team present. We made plans to complete the app according to the timeline we decided today which is before 13th April 2018. Some members of the team had problems with Android Studio assignment in the last semester and were slightly unconfident starting the project. We decided that to complete the project we have to study Android Studio further. Each member of the team is tasked with designing the app and it is relevant that the app is completed one week before the second presentation deadline. Peer to peer review was demonstrated by 5 member of the team. Each members reviewed each other and without consulting each other, gave a review of 5. The review was best out of 25 for each teams and each team member of group 2 achieved 5.

28th February 2018

We had a group meeting with all five members of the team present. At this stage we are communicating with each other regarding learning further to enhance our skills with Java. We are helping each other and guiding towards a completed app.

01st March 2018

We had a group meeting today and all five members of the team were present at the booked room on floor 2. Today we tried to start the app coding and each member of the team were allocated with the task to be completed on Android Studio. We have further enhanced our knowledge on Android Studio and all five members of the team are confident to complete the tasks.

Rehman Share – Activity 1

Asid Hussain – Activity 2

Pouya Shahverdi-Moghaddam – Activity 3

Bikendra Gurung – Activity 4 and 6.2

Lucien Amon – Activity 5

02nd March 2018

We had a group meeting today and all five members were present. We conducted the meeting for one hour to achieve each other opinions and how we are coping with the project app. We decided to leave the next meeting for 09th March 2018, because it will give us time to complete our given tasks.

09th March 2018

We had a meeting today and all five members were present at the second floor booked room. During the meeting all the five team members were struggling with the team project and other assignments. We decided to have a meeting on Monday 12th March 2018, so we can help each other with the problems in more details.

12th March 2018

We had a group meeting today at the booked second floor meeting room. Today we spent time in more details and the problems that are occurring with the project. The Java code is complicated for some team members and we provided hints and guidance to each other to overcome the problem. Putting the code together and the activities of each team members would be another stage of complication.

16th March 2018

We had a group meeting today, with all five members available at the meeting. Each team members were improving their activities and the coding to run the app.

21st March 2018

We had a group meeting today with all five team members present. We discussed the outcome of using Android Studio and how the app is finalizing. All the five members of the group were pleased so far. We will be meeting next, to put the activities of each team members in one running app.

26th March 2018

We had a group meeting today with all five team members present. Today all the team members had completed their task of activities and were ready to combine the activities into one running app. We viewed each other activity and offered our own opinion to each other, regarding the Java coding. We decided to meet on the 09th April 2018, because of Easter Holidays.

09th April 2018

We had a meeting today at the booked meeting room on the second floor library. All five members of the group were present. After spending hours, we managed to get the app running with all five members activities successfully coded. We were extremely pleased and

relieved for the successful running of the Morning app. At our next meeting on 12 April 2018, we would begin with the presentation slides.

12th April 2018

We had a meeting today with all five members present. We completed the presentation slides successfully and at the same time started to practice the presentation. We were proud of our outcome and efforts with a successful app running.

13th April 2018 – PROJECT PRESENTATION

Today we had our presentation. We are immensely pleased and proud of the final outcome. We successfully demonstrated the app and completed our presentation with an outstanding outcome.

PROJECT MANAGER

ASID HUSSAIN

STUDENT ID: 10367545

INTRODUCTION – Project Manager

My role is a project manager. I was responsible for the team members to complete their part of the project and according to their deadlines.

Component Description

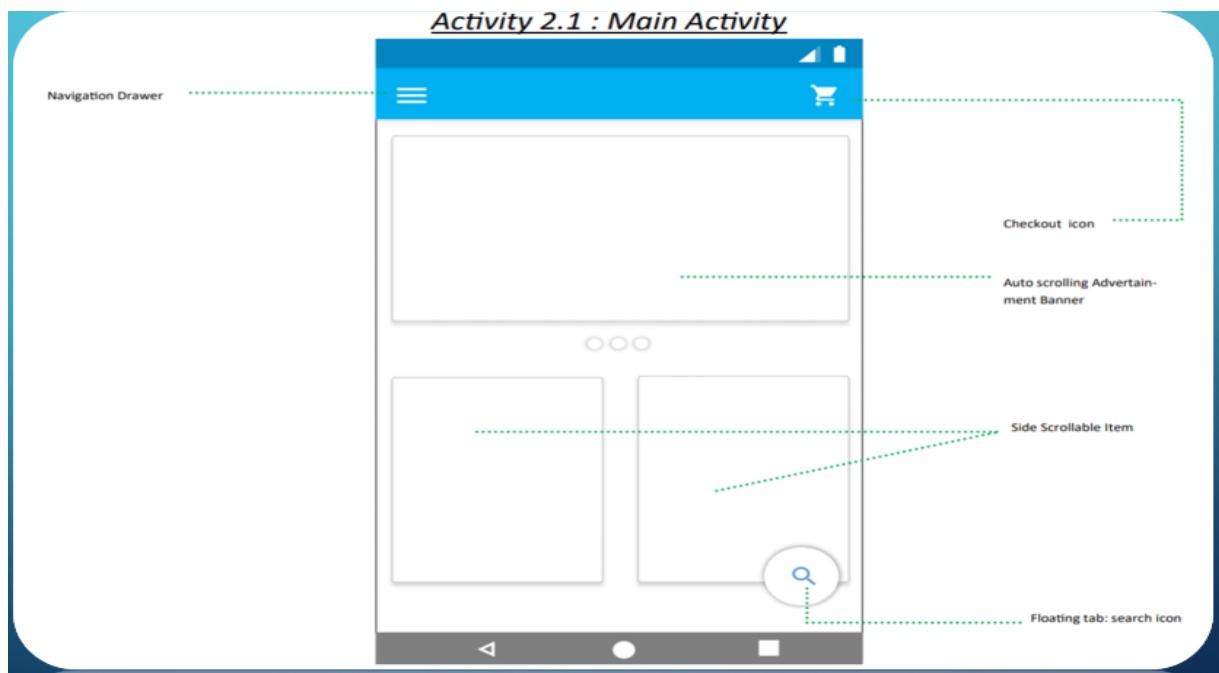
The interface and visual elements in this app are designed to grab user's attention by use of welcoming colour theme and logo. Marketing component of this app is designed to identify clients by use of social media and direct account registration within the application, store data into the customer table in database, enabling admin staff to create marketing emails.

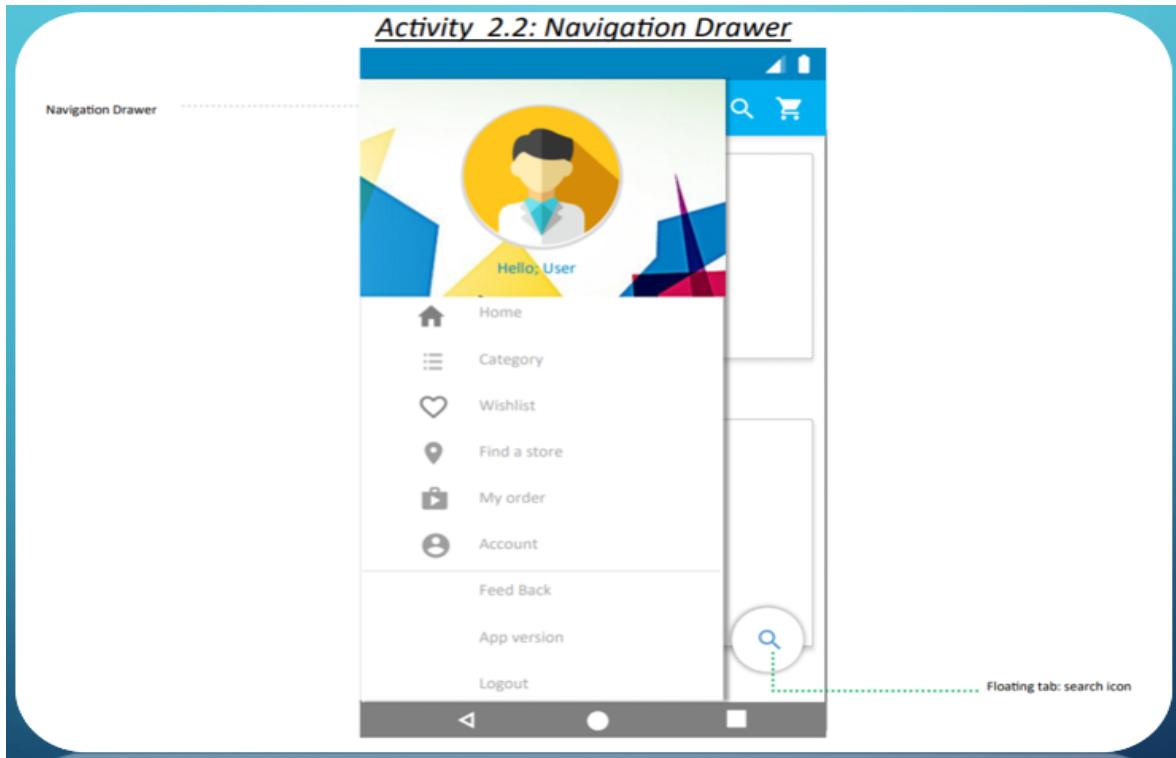
Requirements

The design aspects of this app required to be in sync with current ethics of the company together with marketing solutions based on power of big data on social media and registered users to collect customer data such as emails and addresses for marketing purposes.

In the next section of this document various charts and diagrams for the marketing components of Morning app core, such as use case activity diagram, risk register and Gann charts will be demonstrated which will also be included in individual report section of this project.

I was assigned to complete the programming of the main activity, section 2. The image below is my main activity screen. I had the navigation drawer on the left top corner of the main activity. With the checkout icon present on the right corner of the screen. You can scroll an item and browse.



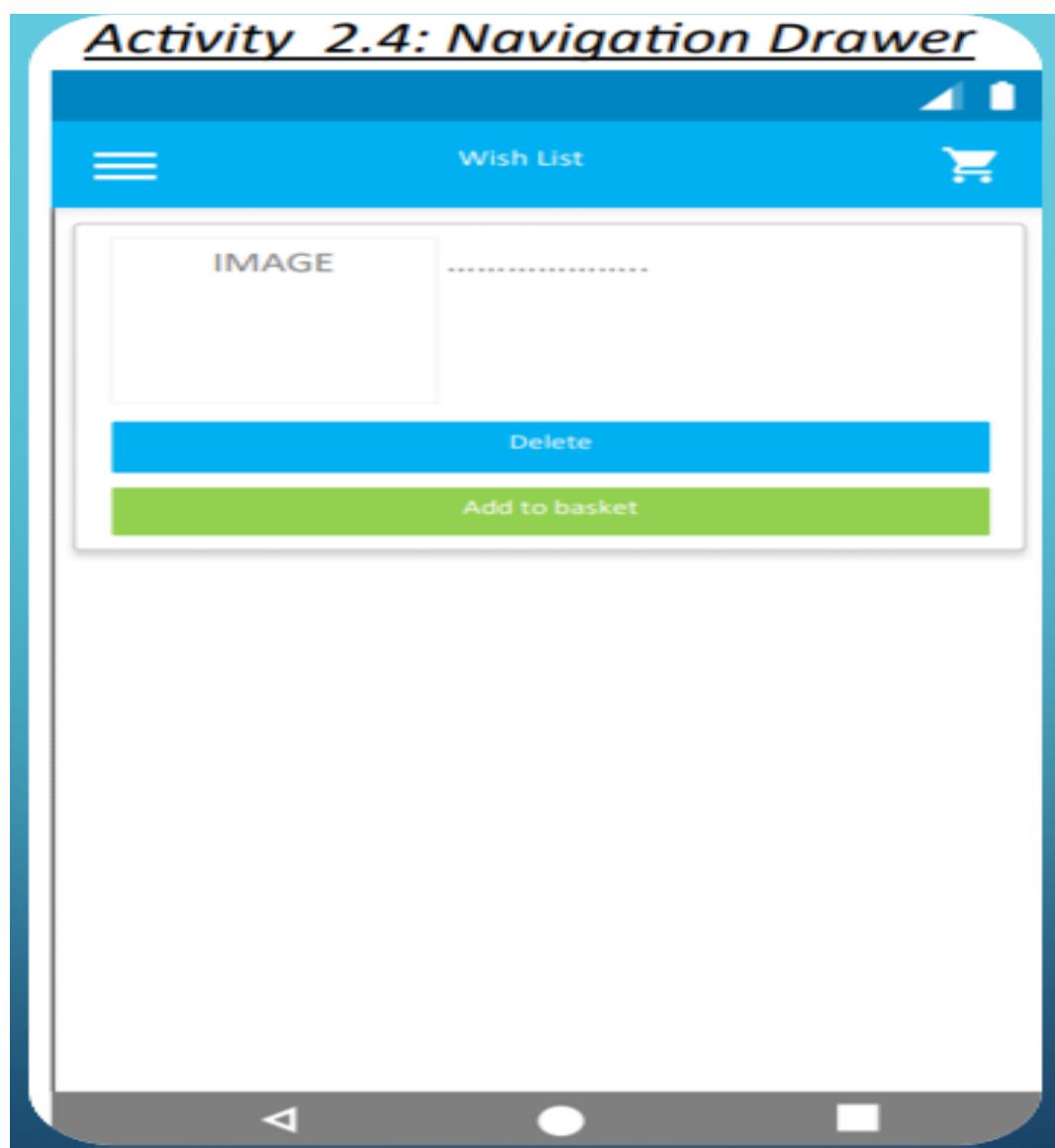


The navigation drawer above is the main home screen. You could browse the category list, wish list, find a store, my order and account details. You have the logout on the bottom would you wish to logout. I have also the feedback browser where the client could review comment and ratings of the store.

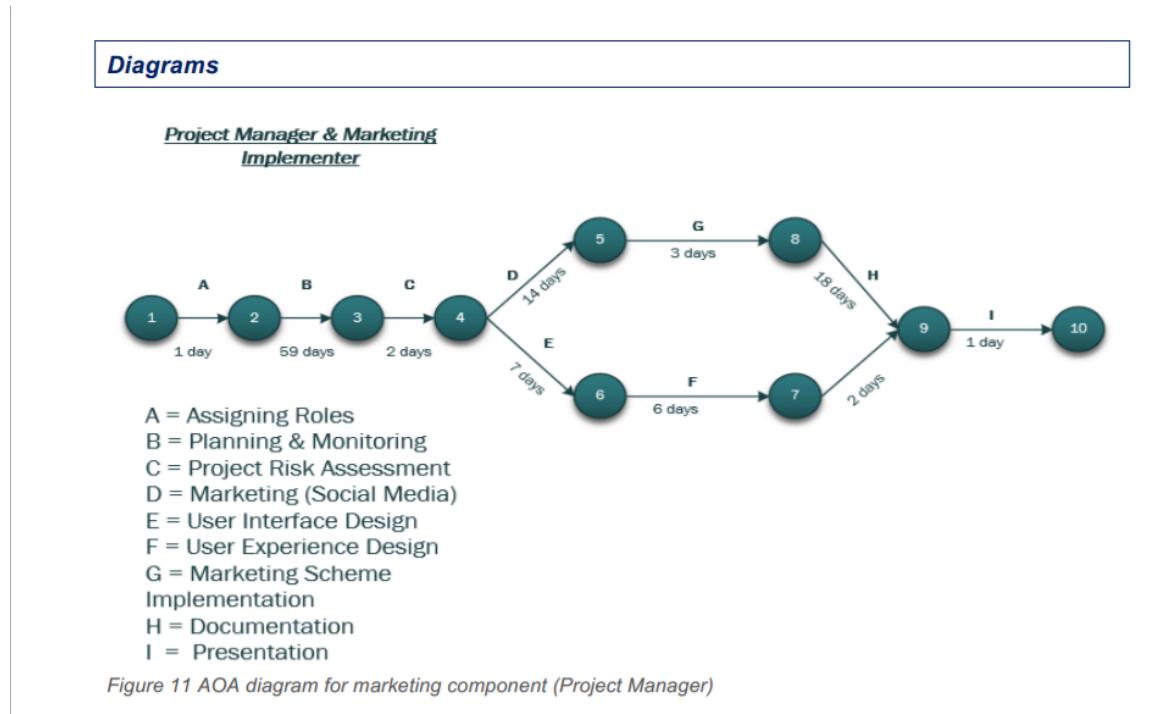


Navigation drawer activity 2.3 shows MyOrder. You could order the product with the details and image. You would have the delivery date and the cost of the product with the tracking icon to track the products deliver period. You could scroll products and choose the selected item.

Activity 2.4 Navigation Drawer is the wish list. You could add the products to the basket or delete the product from the wish list, the product would also have an image.



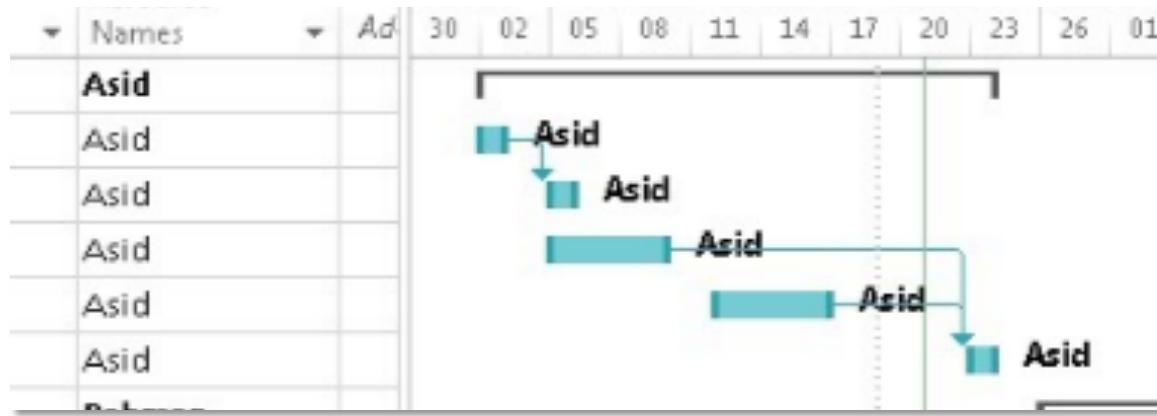
THE AOA DIAGRAM



This is the general diagram assigning the roles and planning and monitoring the roles. The AOA diagram also shows the project risk assessment.

GANTT CHART

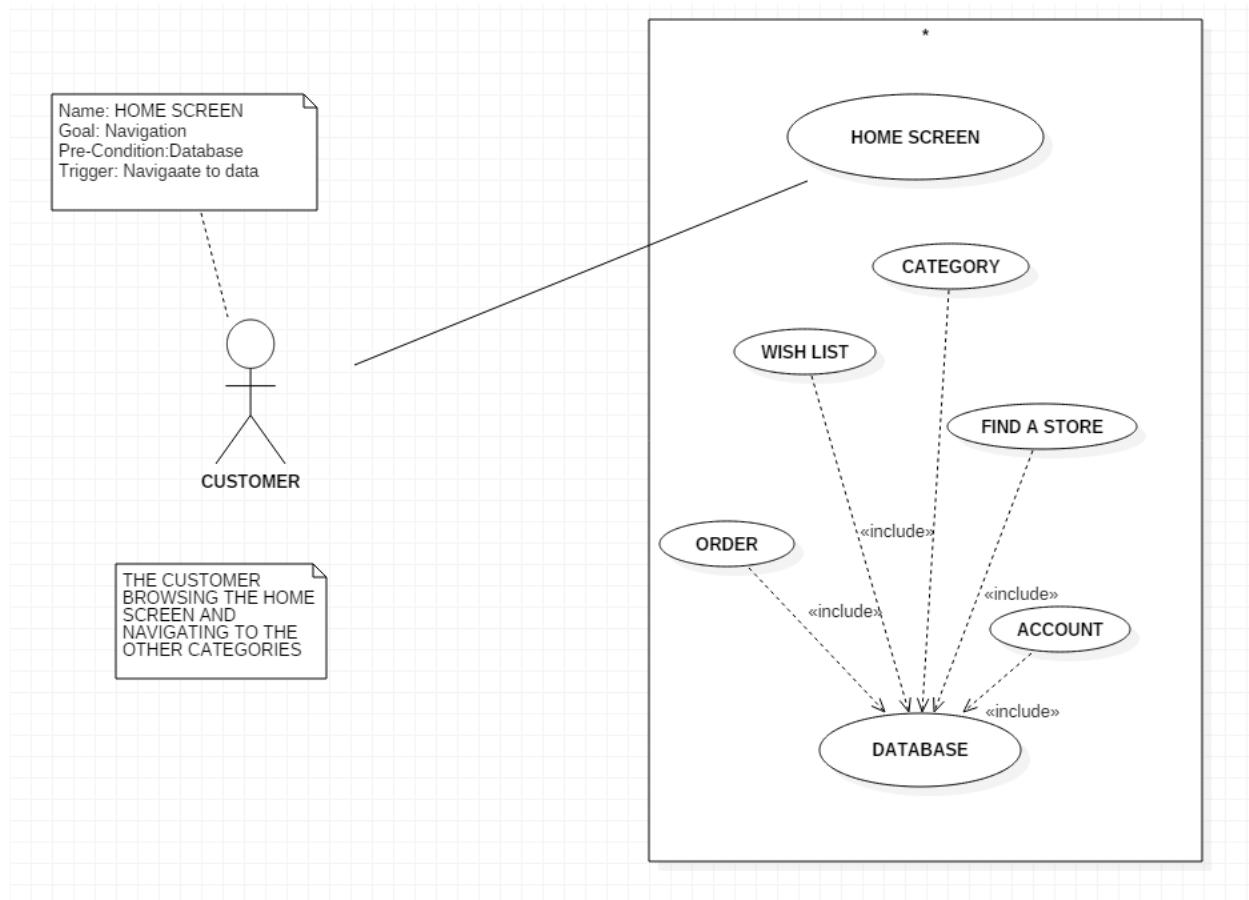


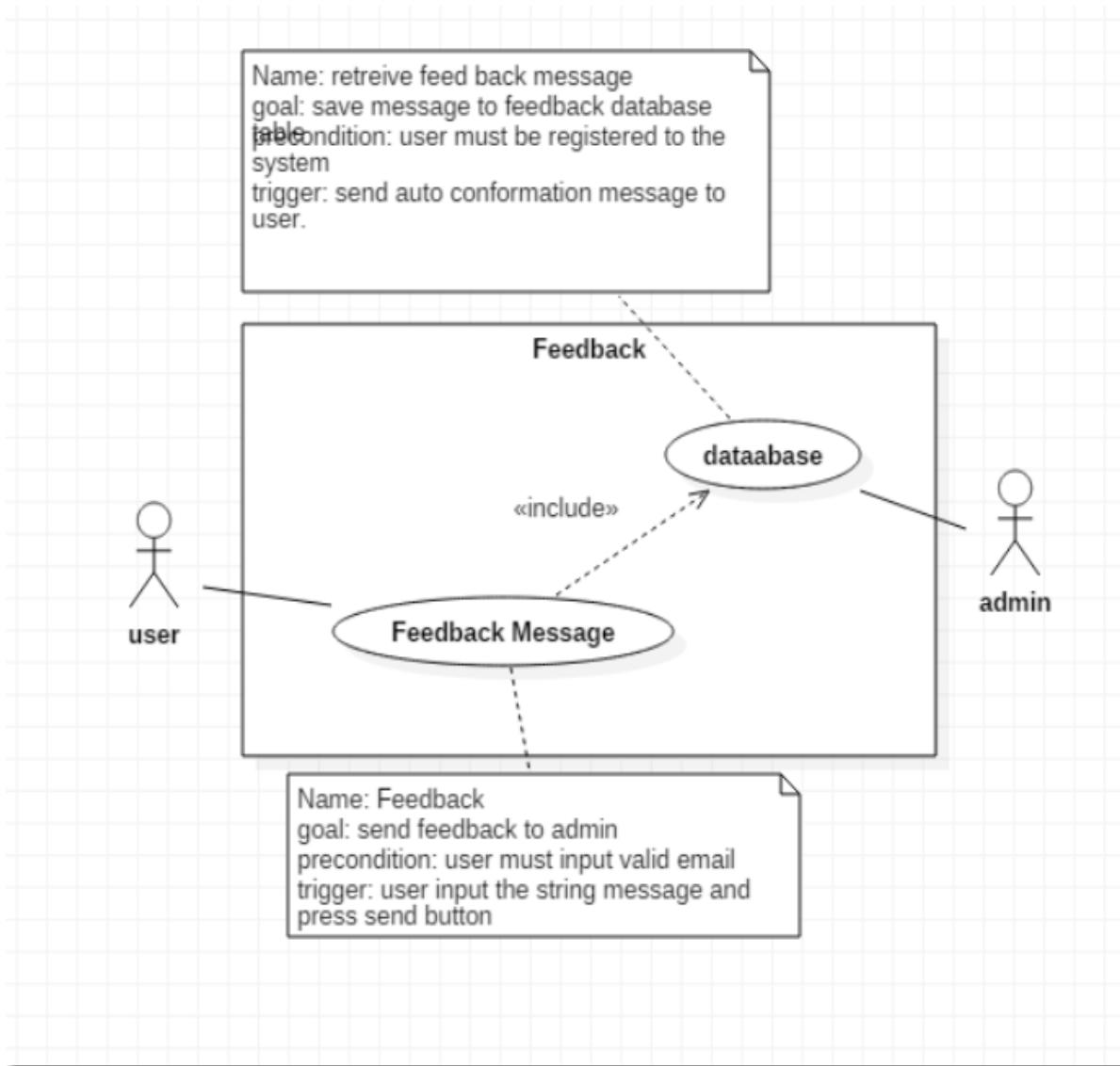


Above figures validates the duration marketing components of the project in Gantt charts

Use case diagram

Use case diagram stating the marketing





Risk Management

Number	Risk	Description	Root Cause	Potential Responses	Risk Owner	Probability	Impact	Status
1	Software	Knowledge of implementation navigation drawer	Unable to have knowledge	Practicing Code	Developer	60%	High	Good
2	Software	Colour functioning	Unable to have knowledge	Practice Code	Developer	50%	High	Good
3	Software	Knowledge of Browsing	Unable to have knowledge	Practice Code	Developer	75%	High	Good

COMPONENT TEST PLAN

BLACK BOX

Testing all paths

Black box testing is mainly focus on the principle outcomes and check if the software does what it says. In this test plan the code and logics behind the program is not the main aim and will be covered in white box testing plan.

No	Path	Input	Expected Outcome	Actual Outcome	Test Result	Comments
1	2.1	Main Activity	Navigation	Navigate	Success	N/A
2	2.2	Navigation	Search icon	Search icon	Success	N/A
3	2.3	My order	Tracking Order	Navigate	Success	N/A
4	2.4	Wish List	Adding wish list	Navigate	Success	N/A

WHITE BOX TEST PLAN

As mentioned below, white box testing, will cover the logics, codes and main functions used in the components. The marketing components uses login functions to get users sign in and keep track of them.

6	Navigation Drawer <pre>//called this method when back button is pressed by the user public void onBackPressed() { DrawerLayout drawer = (DrawerLayout) findViewById(R.id.drawer_layout); if (drawer.isDrawerOpen(GravityCompat.START))//if drawer is open it will close { drawer.closeDrawer(GravityCompat.START); } else { super.onBackPressed()// else called super class on back press method } }</pre>	Active drawer	Display the navigation drawer, if the user clicks on the navigation icon on the main page and close vice-versa	As expected	n/a
6.1	<pre>Intent intent = null; switch (id) { case R.id.nav_home: //start intent intent = new Intent(this, TopFragment.class); break; case R.id.nav_category: //start intent intent = new Intent(this, category.class); break; case R.id.nav_wishlist: //start intent intent = new Intent(this, WishlistActivity.class); break; case R.id.nav_location: //start intent intent = new Intent(this, MapsActivity.class); break; case R.id.nav_myorder: intent = new Intent(this, OrderActivity.class); break; case R.id.nav_account: intent = new Intent(this, UsersListActivity.class); break; case R.id.nav_feedback: //start intent intent = new Intent(this, FeedbackActivity.class); break; case R.id.nav_appversion: intent = new Intent(this, VersionActivity.class); break; case R.id.nav_out: intent = new Intent(this, LoginActivity.class); break; }</pre>	Intent intent, int position	Display the fragment page based on the option selected by the user within the navigation drawer	As expected	
7	Send Feed back	Get a string message	Display a string message, it a	Retrieve string message but not does not	Need ed to deve

	<pre>//This method is called when user click fab button public void onClickDone(View view) { CharSequence text = "Thank you for your Feedback "; CharSequence text2="Feedback Error"; int duration = Snackbar.LENGTH_SHORT; //creating the snack bar Snackbar snackbar = Snackbar.make(findViewById(R.id.coordinatorSell), text, duration); snackbar.show(); //displaying the snackbar in the page }</pre>		<p>user click on send button. And display string message as snack bar component</p>	<p>send to the server as its not connected.</p>	<p>lop a serv e that stor e user feed back</p>
7.1	<pre>case R.id.nav_feedback: //start intent intent = new Intent(this, FeedbackActivity.class); break;</pre>	Start activity	Take to feedback page, if user select feedback option	As expected	n/a

Project Role Researcher and Developer Introduction

Name: Rehman Share

ID: 21273542

My role is the researcher and developer for the project I evaluated the project proposed and research concurrent technologies to develop the application. As a team, we discuss the and evaluate what we have decided to develop. Then based on the idea chosen together with the team. I looked at different ideas and proposed them to the group after that we decide together as a team based on your current understanding what we would like to develop for the project.

Although initial role is a research my role also and other team members extends to contributing to the development of the proposed idea. Based on your current programming understanding we input into the project proposed and by working together make a coherent project that is developed for the current market.

In the team report we did not include the research methodology as it will be included in the research methodology assignment. My role extends from researcher to developer all the team members contributed towards each aspect of the assignment the coding was divided into sections.

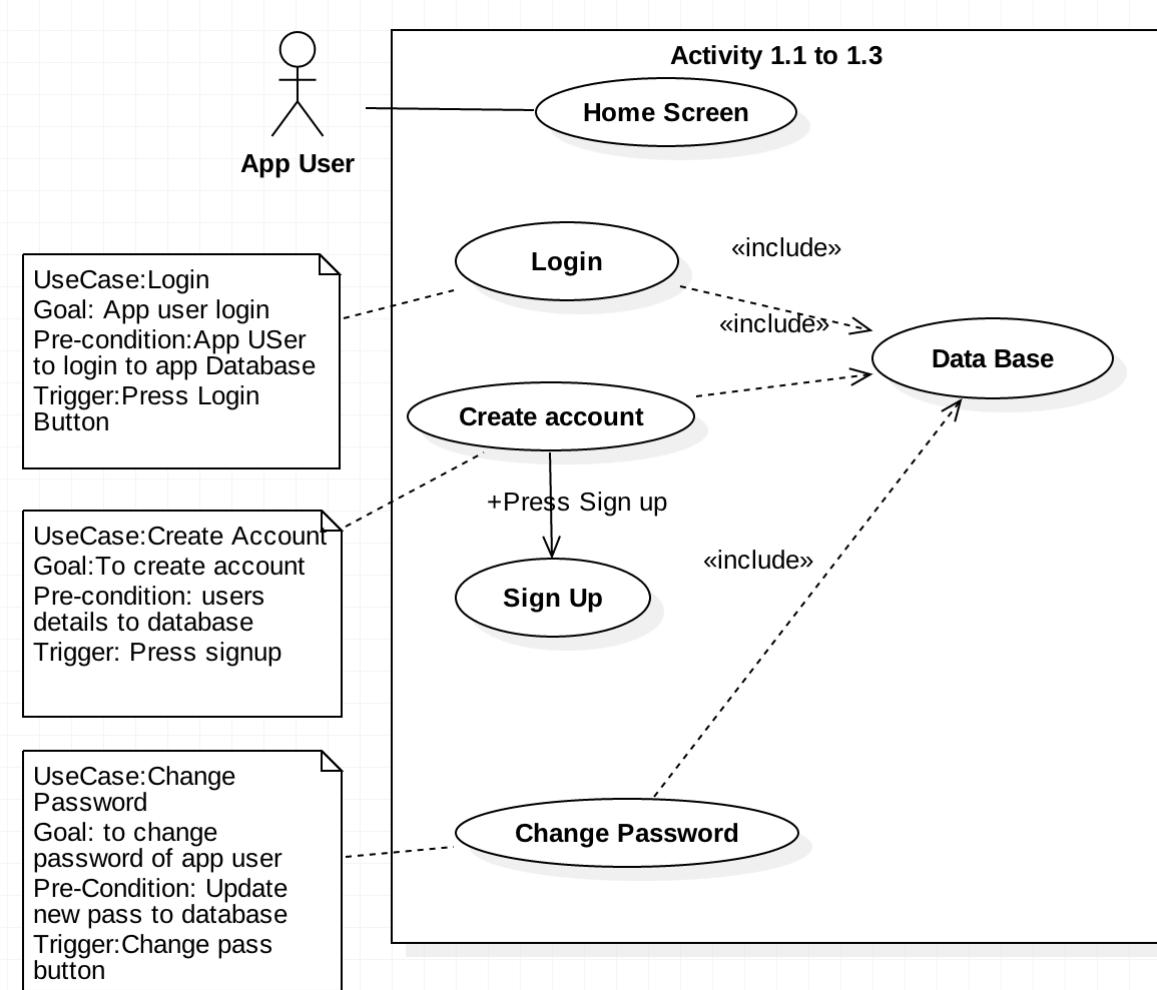
Proposed Project Idea

For this project, we decided to develop a mobile application for android phones. The reason on which we have decided to make a mobile application is due to the team's current experiences with app development. From our past experience working on mobile application development we have decided to use android platform as we have already experiences in the sector of computer science.

The app (Morning). We are creating an android application for our team project the name decided on by the team is the (Morning) application. The application is a sales app based from a customer perspective. We use android studio for developing the app that is the plat from which we have decided on the programming language used for this project idea is JavaScript.

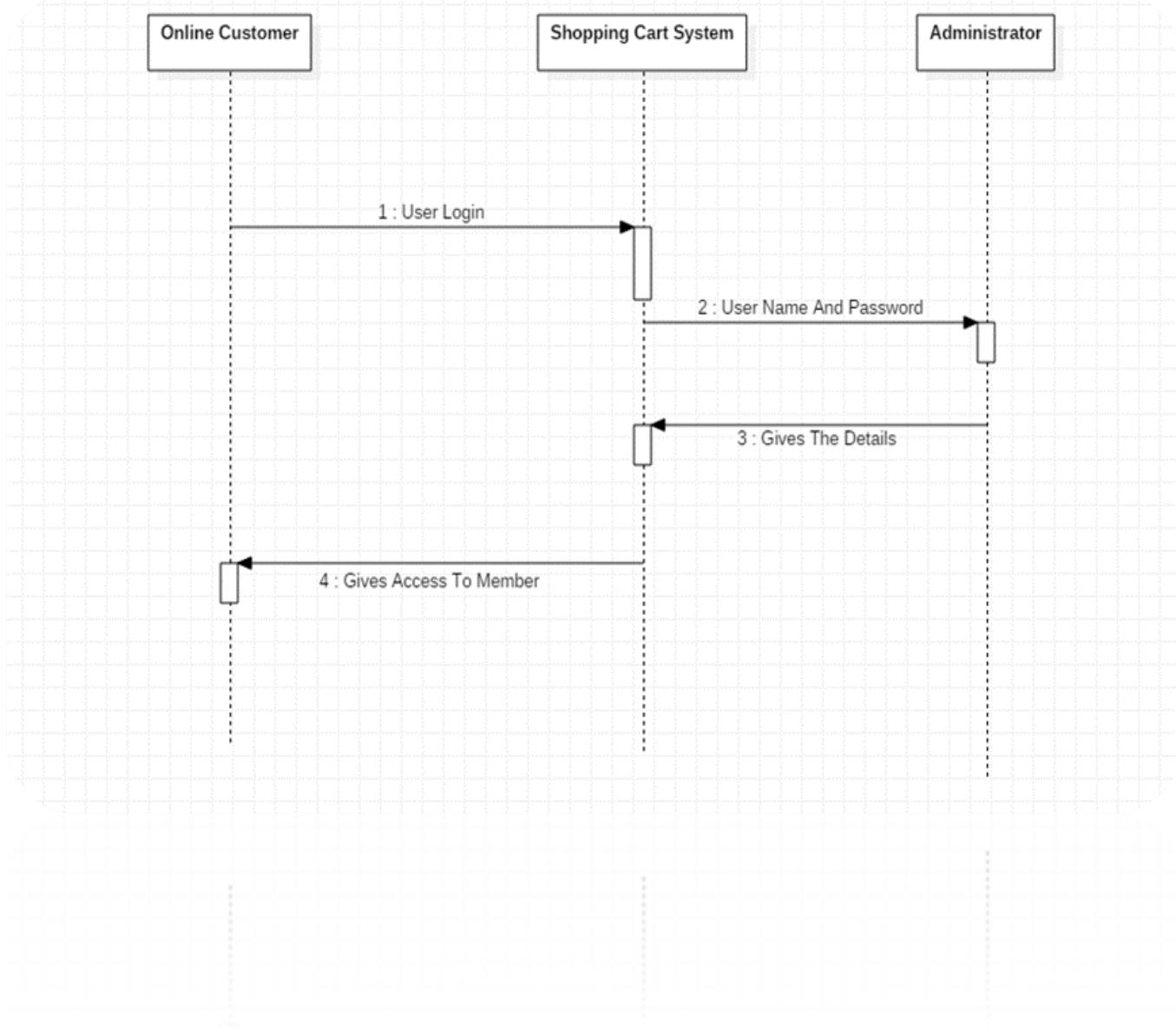
Comparisons of different programming languages developing platforms will be explained further in the research methodology assignment.

Use Case



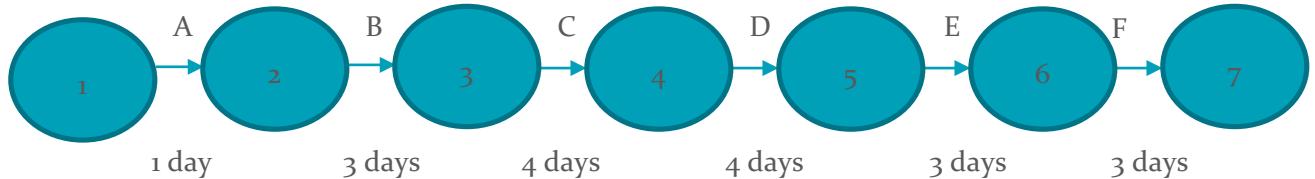
This use case diagram explains the user's interaction with the system. For the activities 1.1-1.3, this use case is made for these activities and shows how the user of app will interact with the application. The methods of interaction include a data base which is used for this application.

Sequence Diagram



This is the sequence diagram for the activity 1.2 its gives an understanding of how the activity works and the way in which it interacts with the system. The interaction between the systems works. This in concept can be used as a reference to the admin side of the application for the office people.

The AOA



This figure demonstrates the (activity on arrow diagram) for the activities interface 1.1-1.3 the letters represent activity of task and the number represent the connecting nodes. All the tasks are carried out in this example.

A. Frame work design

This provides a basic foundation that I laid out for the application for our team project.

B. Use case diagram /sequence diagram

The use case diagram and sequence diagram represents the activities carried out by myself 1.1-1.3

C. Registry development

The registry development is used for the implementation of the registry component in the application

D. Login development

This represents the login development for the application for the team project

E. Change password development

This represents the password system that is used to create user password and the change password functionality

F. Data base development

This represents the backend development for the application where the information is stored we use sql lite

G. Documentation

This is for the documentation aspect of the project where such as reports etc.



Activity 1.1 Login: This is the login Screen Created for morning app

Text Field: Textfield is used to take user input for email and password created

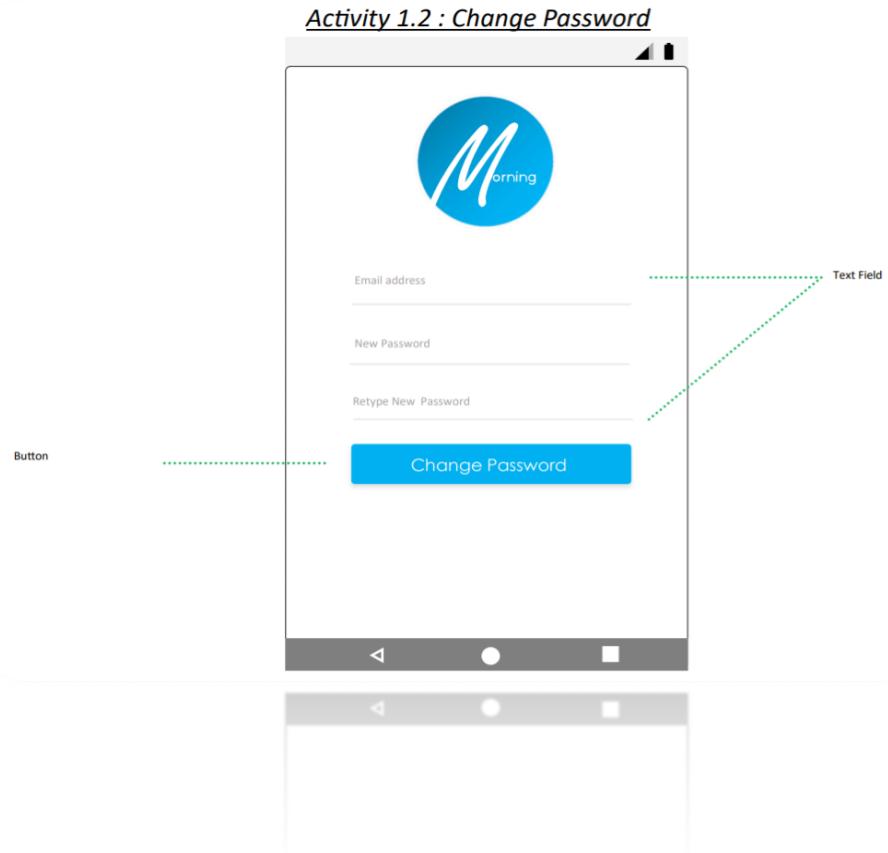
Hyperlink: redirects to web service

Button Login: on click button for login

Button Create account: on click button for create account

Here you can see that the screen was created for the application in accordance with the presentation that we did in the beginning all the UI elements and design implementation matches that of the proposed idea.

In this I created a UI designed based on proposed idea the colour scheme matches with the



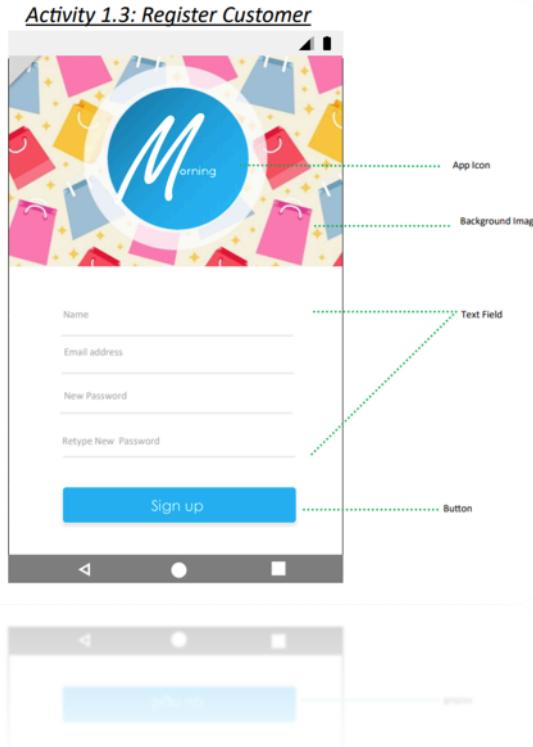
Activity 1.2.: ChangePassword created in app for changing password

TextField: used for email address input and new password input

Button: for changing password.

Here you can see the change password screen when a user clicks on forgot password user can use their login credentials to change their password once the link is sent to them. You simply enter your email i.e. username and new password re type new password to ensure the correct passwords is entered. This passwords will match each of the textfield so no wrong input is taken.

The user then simple put clicks on the change password button this will change the password of



Activity 1.3: Register customer: created for app user to register self

TextField: text fields used for registering app user

Button: on click method to finalize signup

This is the screen for the register customer/ app user this screen pops up after pressing the create account button on the first screen this will prompt user to sign up screen the user enters their details in the text fields the sign up button initializes the registration.

The design aesthetic is also in accordance with the proposed project concept used in the

Black box Testing

For this activity, we will use black box testing to test the external functionality of the software activity i.e. look at the system from an external perspective and not the internal coding elements.

No	Path	User Input	Expected outcome	Actual outcome	Test Result	Comments
1	1.1	Press Create account button	Register Customer page comes up	Activity 1.3 opens	Success	Works correctly
2	1.2	Enter Details in textfield	Take input from user	Input taken	Success	User input works
3	1.3	Press sign up button	sends user up to app	User signed up to database	Success	Registers users detail into database
4	1.4	Press forgot password button main screen	Takes user to forget password page	Forgot passwords page opens	Success	NA
5	1.5	Press Change password Button	Changes users password updates into database	Changes the password and updates in database	Success	Users details are updated correctly and stored in database

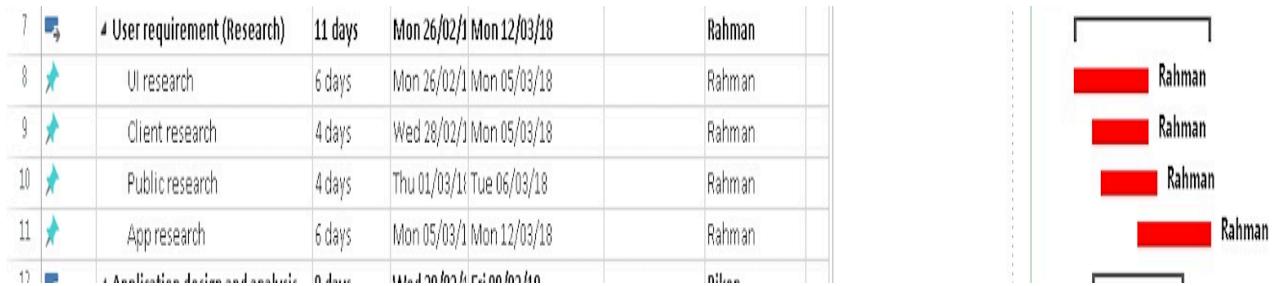
White Box Testing

Black box testing is used to look into the internal part of the project (the coding side) to test the code correctly and insure that the internals are working correctly if the internals are working then the black box testing side will work.

Code	Test Input	Expected Result	Actual Result	comment
Register New User <pre>public void addUser(User user) { SQLiteDatabase db = this.getWritableDatabase(); ContentValues values = new ContentValues(); values.put(COLUMN_USER_NAME, user.getName()); values.put(COLUMN_USER_EMAIL, user.getEmail()); values.put(COLUMN_USER_PASSWORD, user.getPassword()); // Inserting Row db.insert(TABLE_USER, null, values); db.close(); }</pre>	Insert the user name, email, password into database table.	Store the content value into the Database table (table_user)	As expected	n/a
<pre>if (!databaseHelper.checkUser(textInputEditTextEmail.getText().toString().trim())) { user.setName(textInputEditTextName.getText().toString().trim()); user.setEmail(textInputEditTextEmail.getText().toString().trim()); user.setPassword(textInputEditTextPassword.getText().toString().trim()); databaseHelper.addUser(user); // Snack Bar to show success message that record saved successfully Snackbar.make(nestedScrollView, getString(R.string.success_message), Snackbar.LENGTH_LONG).show(); emptyInputEditText(); } else { // Snack Bar to show error message that record already exists Snackbar.make(nestedScrollView, getString(R.string.error_email_exists), Snackbar.LENGTH_LONG).show(); }</pre>	Retrieve the data from the components	Call function add user; store data into database and display string message.	As expected	
User Login	if the Boolean value email, password equals to true in the SQL Database	Retrieve User email, password from the components match the value store in the SQLite database table	As expected	n/a

<pre> public boolean checkUser(String email, String password) { String[] columns = { COLUMN_USER_ID }; SQLiteDatabase db = this.getReadableDatabase(); String selection = COLUMN_USER_EMAIL + " = ?" + " AND " + COLUMN_USER_PASSWORD + " = ?"; String[] selectionArgs = {email, password}; Cursor cursor = db.query(TABLE_USER, columns, selection, selectionArgs, null, null, null); int cursorCount = cursor.getCount(); cursor.close(); db.close(); if (cursorCount > 0) { return true; } return false; } </pre>					
<pre> if (databaseHelper.checkUser (textInputEditTextEmail.getText().toString().trim() , textInputEditTextPassword.getText().toString().trim())) { //start intent main activity is result is true Intent MainIntent = new Intent(activity, MainActivity.class); startActivity(MainIntent); } else { // else display Snack Bar to show message , user input is incorrect Snackbar.make(nestedScrollView, getString(R.string.error_valid_email_password), Snackbar.LENGTH_LONG).show(); } </pre>		Start activity	Take user to the main home interface page if, user login details match. Else display string message	As expected	n/a
<h3>Change Password</h3> <pre> public void updateDatapassword(User user) { SQLiteDatabase db = this.getWritableDatabase(); ContentValues values = new ContentValues(); values.put(COLUMN_USER_PASSWORD, user.getPassword()); // updating row db.update(TABLE_USER, values, COLUMN_USER_PASSWORD+ " = ?", new String[]{String.valueOf(user.getPassword())}); db.close(); } </pre>		Read / write the data	Retrieve the new password data from the component and rewrite into the database.	As expected	n/a

Gantt Chart



The Gantt chart is used for this project to correctly follow the time pattern allocated for the project allowing for time to research.

- UI Research days requirement 4
- Client Research 4 Days
- Public Research 4 Days
- App Research 6 Days

Each of the research methods are allocated a number of days to allow for time to be taken to research for the project. As a researcher, all of the research is take into consideration by the team and discussed together to finalize the project.

Risk Register

Number	Risk	Description	Root Cause	Potential Responses	Risk Owner	Probability	Impact	Status
1	Software	Having knowledge to implement login System	Unable to implement code	Practicing code	Developer	60%	High	Good
2	Software	Having knowledge to implement the Change Password System	Unable to connect to database to update password change	Lack of knowledge of the database	Developer	50%	Mid	Good
3	Software	Being able to implement the customer register system	Lack of knowledge for implementing new customer registry system	Incorrect implementation	Developer	70%	High	Good
4	Software	Being able to implement UI elements	Lack of know of UX design	Not implementing correct UI according to Design Concept	Developer	65%	High	Good
5	Software	Being able to Colour Code in accordance with Concept proposed	Incorrectly using the wrong colour Scheme	Wrong colour scheme	Developer	40%	Low	Good

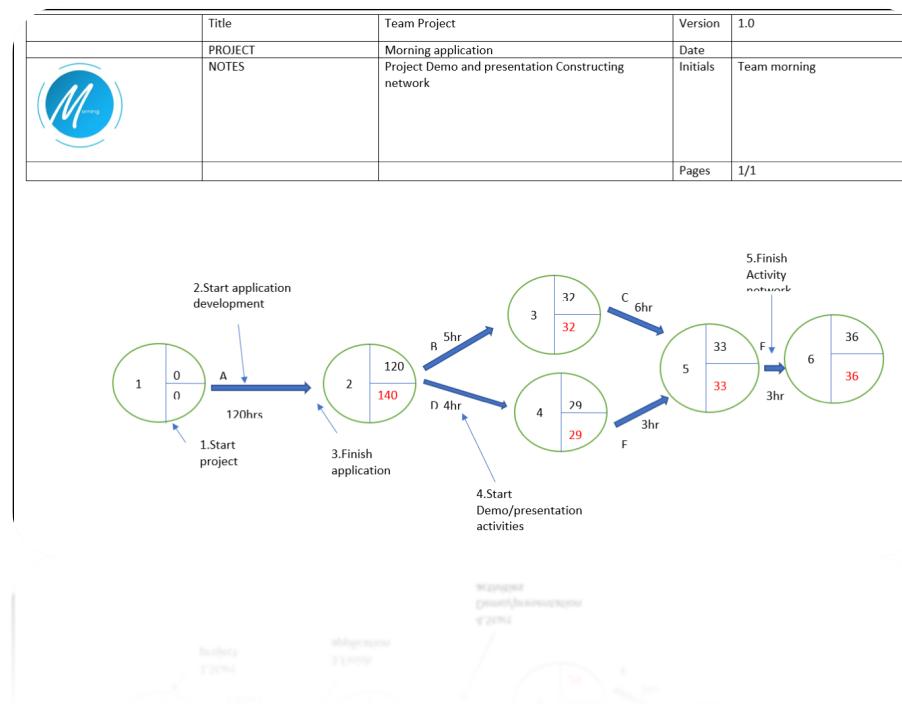
The risk register is used to analyse the activities of each team member and take in to or look into potential risks. This enables to do risk management correctly and prepare accordingly

Critical Path analysis

We use the CPA process this project taught in the module. This process first initiates with identifying and then prioritising the activities. Their dependencies (per chart) before going to earliest start time (EST). and latest finish time (LFT) connecting points between EST and LFT to create the critical path chart demonstrated below

- Start Project
- Start application Development
- Finish application
- Start Demo/presentation activates
- Finish activity

Here you can see that from the beginning of the project till end of project we allocate hours to the development of the application and other activities each element is given an EST and LFT that shows if given hours has exceeded or not



Student ID Number: 21315193

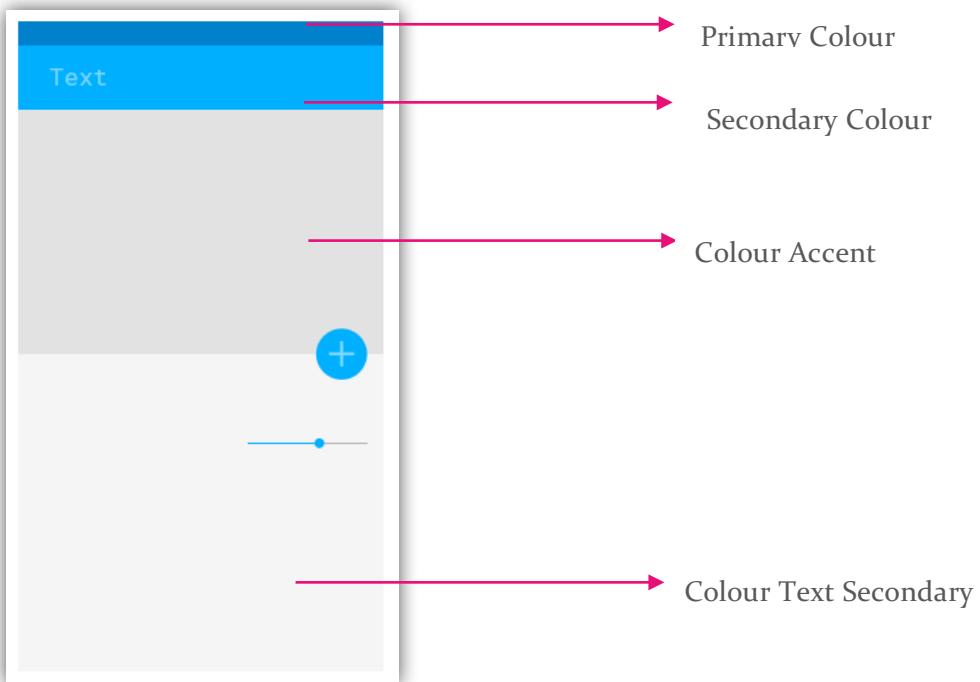
Name: Bikendra Gurung

Role: UI / UX Designer

Level 5 Computer Science.

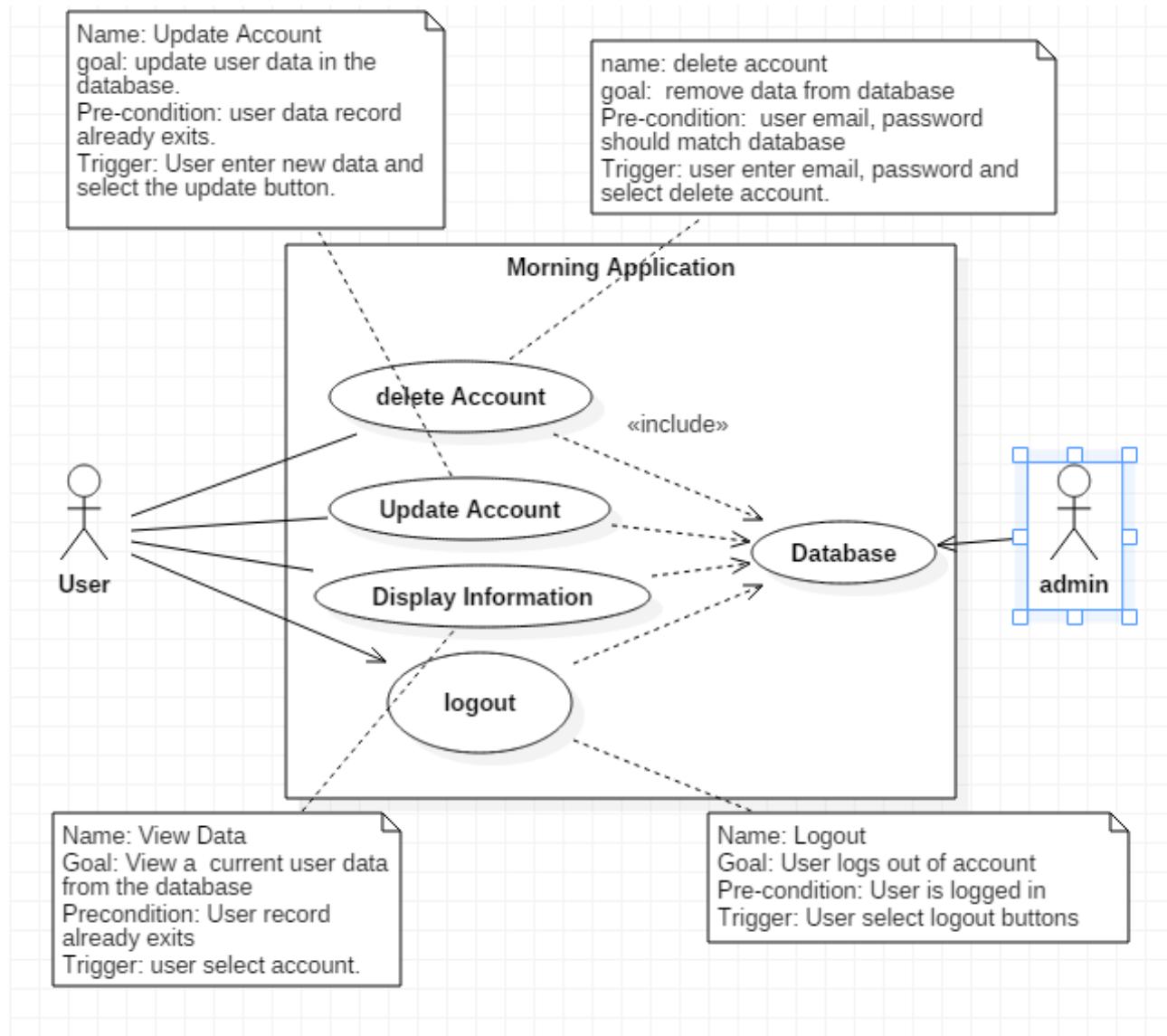
Component Description

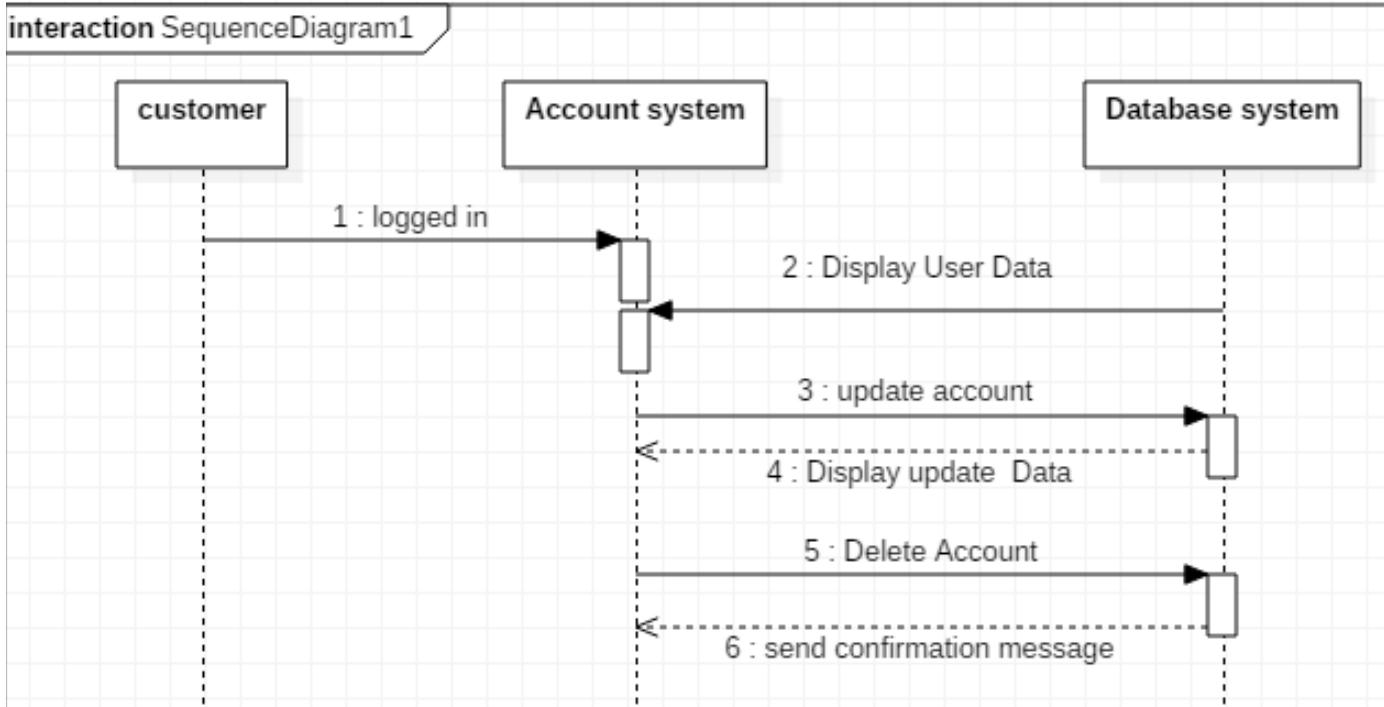
The User interface of this application is based on the google material that uses 3-dimensional structural environment and layer on layer overlapping method to produce an interactive component. It supports custom animation and motion for easy user interaction. The application uses a minimal style with colourful themes as show below.



Use case Diagram for the case study:

Based upon the given activity as part of task; I had to create use cse diagram related to the activities. The provide screenshot below defines the usecase diagram of my activities.





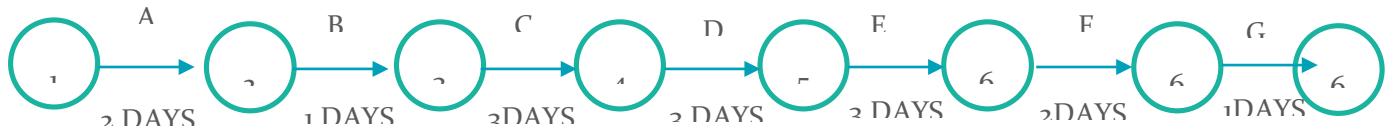
The below Sequence diagram illustrates the structure of the task between the user and the activity system. When a customer order an item it had to process from the different activity system. As shown in the diagram; when a user request for data, the customer must have logged in into the system. The account system pulls the information from the database system on request and display the relevant data. The communication between the user system and database system is synchronized, message and data are passed vice-versa.

Risk Management:

ID	Risk	Description	Root Cause	Potential Responses	Risk Owners	Probability	Impact	Status
1	Updated data	User had to reopen same to view update data	Bad coding	Implementing new method optimisation.	UI designer / junior developer	10%	Medium	Good
2	Display information	It displays all user data rather than single user data	Bad coding	Had to implement validation method that only retrieve	UI designer / junior developer	20%	High	good

				request data from database				
3	Delete account	Does not provide message that account has been delete	Require add function	Had to implement new function that send a prompt message	UI designer / junior developer	5%	Low	good

AOA Diagram



A = Framework Design

B = Use case Diagram and sequence diagram

C = client-side development [account section]

D = client-side development [update account section]

E = client-side development [Delete account]

F = Database Development

G = Individual Report

Task Breakdown

- Framework design: The development of framework provides a UI templates for the development of the final application
- Use case diagram and sequence diagram: Design and development of diagram to describe a set of actions.
- Client-side development [account section]: development of main action section that retrieve user data from the database
- Client-side development [update account section]: development of update action section for changing the user data and connecting to database
- Client-side development [delete account]: implementing and development of delete account option for application and connecting to database
- Database development: implementing SQL lite database to record the user data and information in the system.
- Individual report: The documentation of activities which contain description of account section

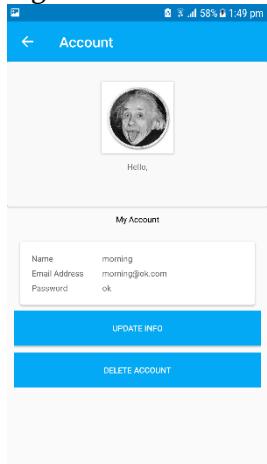
Gantt Chart



The above figure describes the work breakdown structure. It shows each task has been allocated deadline periods to finish a certain task that need to be done to process next task as each task are dependent to each other.

APPLICATION FUNCTIONALITIES

Figure 1



This initial account section page that displays the user information such as user name, email and password, image. And it implements the same design pattern of UI frame for better user experience.

Additionally, to make the information more visible; the user data and information are displayed as table format. And I had embedded a two button that allows user to update their information and delete account permanent from the database.

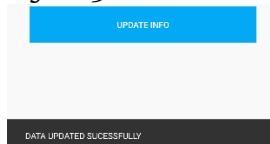
Figure 2

If a user wanted to change the name or rename, user had to click on the update button from the account section [figure 1] which prompt a new activity section as shown in figure 2.

This section of activity contains a text field for typing a user name, email, password. To successfully update the user name in the database; the user that to type the user email and password for the validation process.

If a user a wrong password or incorrect format of email address in the input section because it is embedded with the data validation system, then the system will display an error message in the screen as shown in the figure 2.

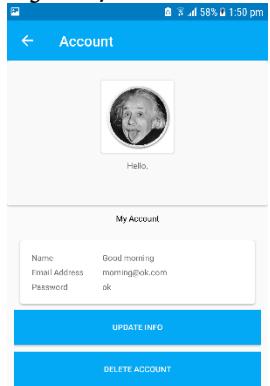
Figure 3



Once the user enters the correct information and press update button; then the system will display a successful message on the bottom of the page.

And the data will be updated in the database

Figure 4



Once the data has been successfully updated; the updated data information will be displayed in the main account activity section as shown in figure 4.

as expected the name of the user has been updated from morning to good morning which shows that data updates have been successful.

Figure 5

If a user wants to delete the account permanent from the database, then the user had to click on the delete account button as shown in figure 4 which will display a new activity section that contain input text.

To delete the account, user simply had to type the user email and password that is related to the account. And type correct password twice for double confirmation.

Once the input data has been matched with the data recorded in the database; the system will delete the user account from the database permanently.

Component Test plan

TESTING ALL PATH (BLACK BOX)

The main principles of black box testing to check the internal implemented design structure of the software produces the results as expected.

No	Path	Input	Expected outcome	Actual outcome	Test results	comments
1	1.1	Display user information	Display user information from the SQLite Database	Data Fetched and displayed	Success	N/a
2	1.2	Update User Information	Fetch input data and update data into database	Data updated	Success	n/a
3	1.3	Delete User account	Remove a user from the SQLite Database by email	User information remove from database and deleted	Success	n/a
4	1.4	User logout	Logout of the application	Sign out the active user from database	Success	n/a

WHITE BOX TEST PLAN:

The below screenshot of present code covers the main logical core functions of the application used in the application that enable application to operate task.

No	Code	Test Input	Expected Result	Actual Result	comment
1	<p>Display user information</p> <pre>//fetching data from the database databaseHelper = new DatabaseHelper(activity); String emailFromIntent = getIntent().getStringExtra("EMAIL"); textViewName.setText(emailFromIntent); //setting getDataFromSQLite();</pre>	Retrieve data from the database	Get the current user name, email, password using intent email.	As expected	n/a
1.1	<pre>public UserViewHolder(View view) { super(view); textViewName = (AppCompatTextView) view.findViewById(R.id.textViewName); textViewEmail = (AppCompatTextView) view.findViewById(R.id.textViewEmail); textViewPassword = (AppCompatTextView) view.findViewById(R.id.textViewPassword); }</pre>	Out retrieve data	Display the retrieve data into correct components.	As expected	
2	<p>Update User Name</p> <pre>case R.id.appCompatButtonUpdateInfo: //start of intent activity Intent intentUpdate = new Intent(getApplicationContext(), UpdateActivity.class); startActivity(intentUpdate); break;</pre>	Start activity	Take user to the update page, if user press update button	As expected	n/a
2.1	<pre>if (databaseHelper.checkUser(textInputEditTextEmail. getText().toString().trim()) { //fetching data from the text field and set into the da user.setName(textInputEditTextName.getText(). toString().trim()); user.setEmail(textInputEditTextEmail.getText(). toString().trim()); user.setPassword(textInputEditTextPassword.getText(). toString().trim()); databaseHelper.updateData(user); //calling method from t CharSequence text = "DATA UPDATED SUCESSFULLY "; int duration = Snackbar.LENGTH_SHORT; // Snack Bar to show success message that record saved Snackbar snackbar = Snackbar.make(findViewById(R.id.coordinatorLayout3), text, duration); snackbar.show(); //display the snackbar. emptyInputEditText(); //calling the method</pre>	Checks Retrieve data from the components	Check user register in the system, if true; retrieve the new data from the components and trigger function update Data which will rewrite new data into the database table	As expected	n/a
3	Delete Account	Start activity	Take user to delete page, if user select the delete button	As expected	n/a

	<pre> case R.id.appcompatButtonDelete: //start of intent Intent intentDelete = new Intent(getApplicationContext(), DeleteActivity.class); startActivity(intentDelete); break; } </pre>				
3.1	<pre> if (databaseHelper.checkUser(textInputEditTextEmail.getText(). toString().trim()) != null) { user.setEmail(textInputEditTextEmail .getText().toString().trim()); user.setPassword(textInputEditTextPassword .getText().toString().trim()); databaseHelper.deleteUser(user); CharSequence text = "ACCOUNT DELETED SUCESSFULLY "; int duration = Snackbar.LENGTH_LONG; // Snack Bar to show message that account is deleted successfully Snackbar snackbar = Snackbar.make(findViewById(R.id.coordinatorLayout4), text, duration); snackbar.show(); emptyEditText(); //it will start the start login activity again. Intent intent=new Intent(getApplicationContext(), LoginActivity.class); startActivity(intent); } else { // Snack Bar to show error message that record already exists Snackbar.make(coordinatorLayout, getString(R.string.wrong_data Snackbar.LENGTH_LONG).show(); } </pre>	<p>Checks Retrieve data from the components</p>	<p>Check user register in the system, if true; it deletes the user account based on the provided parameter email, password and trigger function delete User and display string message.</p>	<p>As expected</p>	<p>n/a</p>

Introduction- Coder

In this assignment, we are tasked with creating an app for a business. We have decided to create an android application and thus the name “Morning app” was chosen by all the group members. The client for this application will be a supermarket selling groceries to the public and therefore will have to have a number of features that will make it easier for the client and also their customers.

My role in this project is the coder or as some would say the software engineer. Initially the project was split into different sections for each member. E.g Coder only coding, tester only testing the application and this reflects some of the work that has been part taken earlier on, however as progression took place the work load was split evenly with the 4 other members meaning everyone got an equal part in the work. So with my section of the project I will be showing all aspects of the project from, planning, design, to coding and testing.

The Activity that was assigned to me was Activity 5, this is the maps section of the app I will be implementing a google map into the app where the customer can view the location of the business and so on.

Requirements

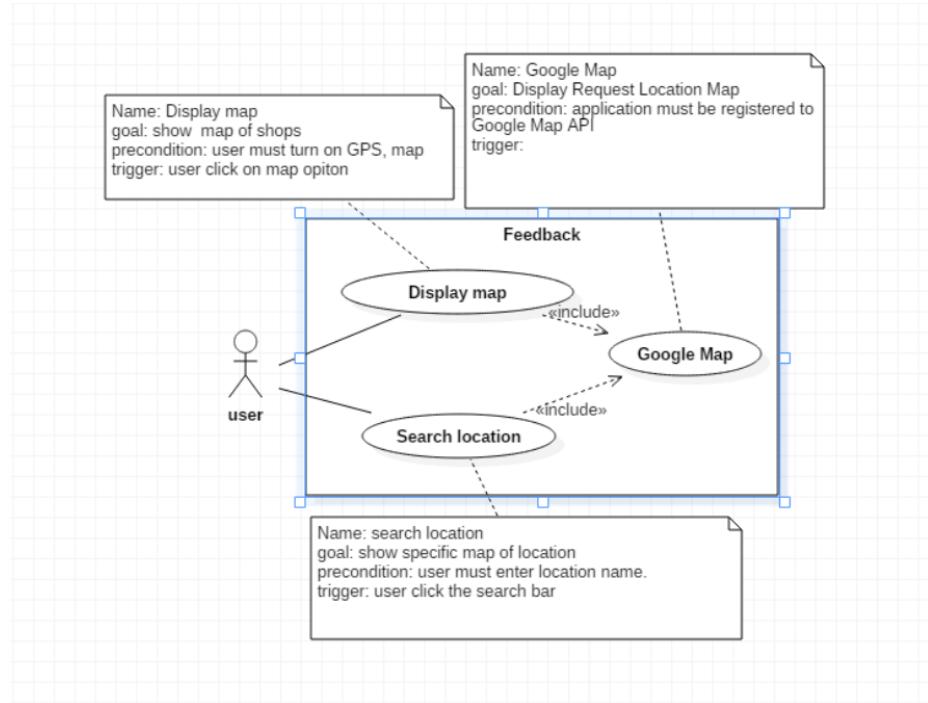
Having gained knowledge of Android programming in the first semester I was able to have the knowledge in order to do the coding for this assignment. A reasonable knowledge of Java is required.

Black box testing

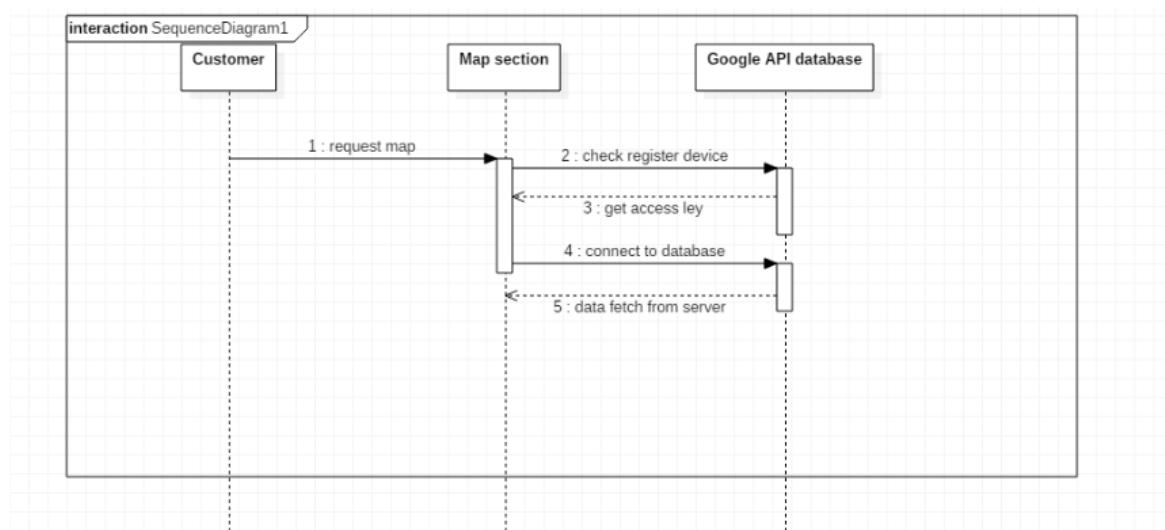
No	Path	User Input	Expected Outcome	Actual Outcome	Test Result	Comments
1	1.1	Postcode	Correct postcode and address coming up	Correct postcode and address coming up	Success	NA

2	1.2	Location	Pre-registered location	Actual business location coming up	Success	NA
11	Map	<pre> > If Google Play services is not installed on the device, the user will be > asked to install the SupportMapFragment. This method will only be triggered on > installed Google Play services and returned to the user. </pre> @Override public void onMapReady(GoogleMap googleMap) { mMapView = googleMap; LatLng uwl = new LatLng(51.504665, -0.303187); LatLng uwl_brentford = new LatLng(51.489444, -0.313410); CircleOptions circleOptions = new CircleOptions(); circleOptions.center(uwl); circleOptions.radius(500); circleOptions.fillColor(Color.TRANSPARENT); circleOptions.strokeColor(Color.RED); circleOptions.strokeWidth(4); mMapView.setMinZoomPreference(9); mMapView.setMaxZoomPreference(11); mMapView.addCircle(circleOptions); mMapView.addMarker(new MarkerOptions() .position(uwl).title("House Location in Ealing")); mMapView.addMarker(new MarkerOptions() .position(uwl_brentford).title("House Location in Brentford")); mMapView.moveCamera(CameraUpdateFactory.newLatLng(uwl)); } </pre>	<u>Latlng</u> <u>uwl</u> = new <u>latlnag</u> (x,y) store the latitude value of location	Display location of specific pre-registered location based on the latitude.	As expected	n/a
12	Map Search	<pre> public void onMapSearch(View view) { EditText locationSearch = (EditText) findViewById(R.id.editText); String location = locationSearch.getText().toString(); List<Address> addressList = null; if (location != null !location.equals("")) { Decoder geocoder = new Decoder(); try { addressList = geocoder.getFromLocationName(location, 1); } catch (IOException e) { e.printStackTrace(); } Address address = addressList.get(0); LatLng listing = new LatLng(address.getLatitude(), address.getLongitude()); mMapView.addMarker(new MarkerOptions().position(listing).title("Marker")); mMapView.animateCamera(CameraUpdateFactory.newLatLng(listing)); } } </pre>	address List = <u>geocode</u> <u>x.getFr</u> <u>mLocat</u> <u>onLocat</u> <u>ionName</u> (locati on, 1); get the paramen t value from the text input bar	Display the map of location based on the given parameter.	As expected	n/a
13		<pre> public void onSatelliteMap(View view) { mMapView.setMapType(GoogleMap.MAP_TYPE_SATELLITE); } public void onTerrainMap(View view) { mMapView.setMapType(GoogleMap.MAP_TYPE_TERRAIN); } </pre>	Two methods for two views Satelli te Map and terra in map	Display different map based on user selection	As expected	n/a

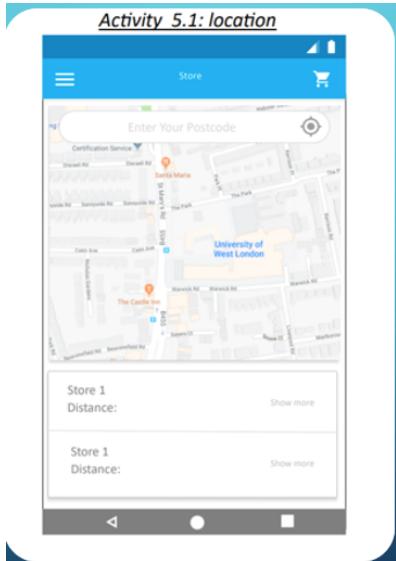
Use case diagram



Sequence diagram

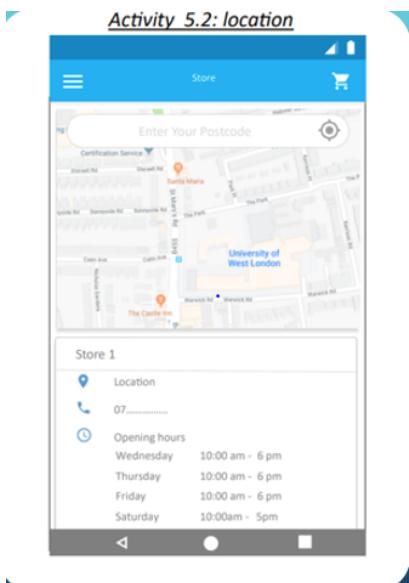


Screen shots



Activity 5.1

This screen shot describes the store location and the distance of your location. You could browse the area of the store location and also navigate.



Activity 5.2

This screen shot describes the location of the shop with the opening hours of the store. It also provides the opening days with the contact numbers.

Tester

Student ID: 21245645

Student Name: Pouya Shahverdi Moghaddam

Level 5

Computer Science

Introduction- Tester

For this module we are tasked with working in a group of five in order to design and develop a software solution for a client. Each member is tasked with their own individual project for this work which at the end aligns together to produce the software, which in our case is an Android mobile app, as well as a final report going into details of each individual's task.

In our group the application we are producing is an app called "The Morning app", this is produced for a supermarket so that they can operate an online shopping system. The application offers a large number of features that helps both the client and their consumers.

As part of the development for this app, we are required to go through a vigorous testing plan to make sure the app is ready to be released to the client, there are a number of methods available to us for this.

Initially the roles were allocated in a manner where each member would be working on only one section of the project, e.g. coder only coding, tester only testing and evaluating, however as the project progressed we were not able to stick to this template and this method did not seem efficient. The roles were changed in a way that each member would get a activity or section of the application and therefore the coding, testing of only that section would be assigned to that member. Some of the diagrams such as the Gantt chart that was produced earlier on reflects this.

Having also developed Activity 3 of the application; the categories section. I will be concentrating more on that section.

Requirements

in order to perform the testing of the application in a correct manner and efficiently manner there are a number of requirements needed.

The application itself is an Android program and previous knowledge of Java, as well as XML is required and crucial otherwise trying to figure out and fix the bugs will be an issue, also working and dealing with Android Studio will be required, in order to work with the emulator and the code.

Beyond the testing a basic knowledge of programs such as Microsoft Word, Microsoft Excel and Microsoft publisher are also required these are used to produce and illustrate diagrams such as the Work Breakdown Structure (WBS), Gantt chart, Risk Register and Activity Over Arrow (AOA) diagram. A basic knowledge of Adobe Photoshop would also be recommended with regards to the UX aspect of the application.

Gantt chart

The Gantt chart below shows the estimated time of the testing and evaluation for this project. As this was produced at the start of the project, the dates, estimations as well as the tasks have changed over time. It was assumed at the start of the project each member would have a particular role

24		Testing and Evaluation	4 days	Tue 03/04/18	Fri 06/04/18
25		Debug	1 day	Wed 04/04/18	Wed 04/04/18
26		Perform system testing	2 days	Tue 03/04/18	Wed 04/04/18
27		Document Issues	2 days	Wed 04/04/18	Thu 05/04/18
28		Correct issues	1 day	Thu 05/04/18	Fri 06/04/18
29		Final Improvements	1 day	Thu 05/04/18	Thu 05/04/18
30		Technical report	1 day	Fri 06/04/18	Fri 06/04/18



The above shows the dependency in the Gantt chart, as you can see the section for this is small as the “tester” aspect of the project is at the very last stage of the project and a small amount of time is allocated to this.

Risk Register for sub-project – Activity 3

A complete risk register for the whole project has been produced and is available at the start of the project, however for this sub project- Activity 3

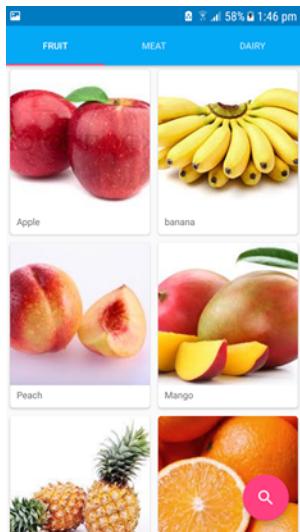
Number	Risk	Description	Root Cause	Potential Responses	Risk Owners	Probability	Impact	Status
1	Hardware	Having the correct hardware to testing the application	Not preparing early enough with hardware requirements	Purchasing last minute hardware	Tester	10%	High	Good
2	Compatibility	Software compatibility iOS v Android	Not preparing in advance	Purchasing android devices	Tester	15%	High	Good
3	Delays	Not leaving enough time for the testing	Not sticking to the Gantt chart	Setting deadline	Tester	15%	Medium	Good
4	Recognising bugs	Having to find out and locate the bugs	Not having enough knowledge in the coding	Getting external help	Tester	25%	Low	Good
5	Implementation of sub menu	Being able to implement sub menu in activity 3.1	Extensive knowledge of Java and Android studios	Gain knowledge through practice/ Hiring external coders	Tester/developer	20%	High	Good
6	Implementation of fragment	Being able to implement Fragment in the activities	Extensive knowledge of Java and android studios	Gain knowledge through practice/ Hiring external coders	Tester/Developer	30%	High-Medium	Good

A complete risk register for the whole project has been produced and is available at the start of the project, however for this sub

Functionalities and Testing

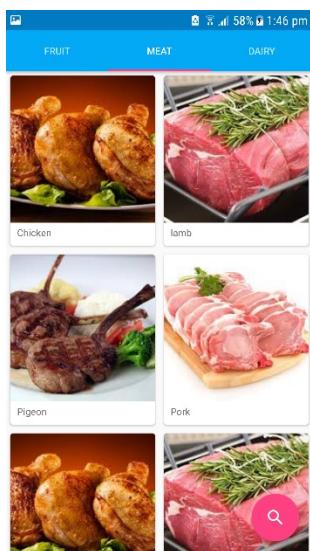
in this section I will present screenshots of the application, showing the functionalities of the app as well as testing that has been done through an actual Android phone (Samsung S6) more specifically. The images are screenshotted through the phone.

Activity 3.1 – Categories



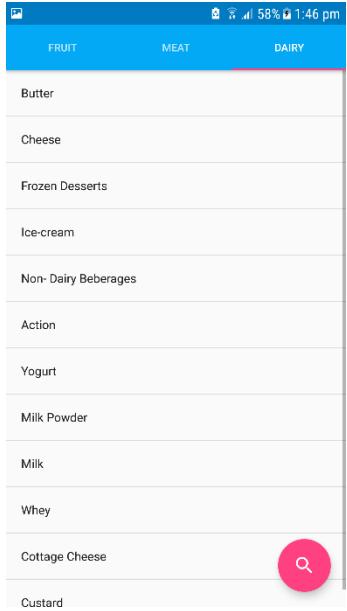
In the figure to the left, we can see the categories page of the application. In this section the user has a number of options in order to choose which activity they want to click on. At the top of the app we can see that there are three headings “FRUIT”, “MEAT” and “DAIRY”. As the user clicks on each section, they will then be directed to the selected categories.

The sub categories each contain images for the selected item and once the user clicks on each image, they again are directed to another page.

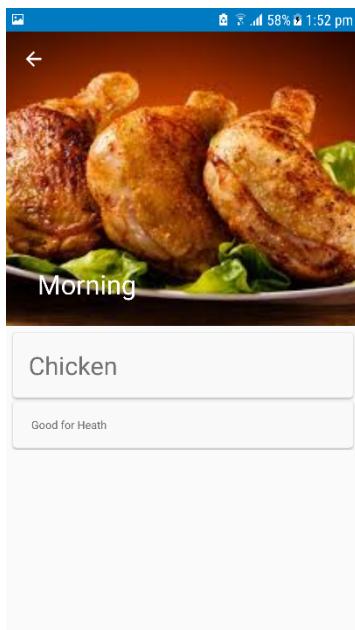


The following screenshot shows the “MEAT” sub categories, as shown, when the user clicks on the “MEAT” tab, they are then directed to the all the meats available to purchase.

Another thing to note is the search function below on the right hand side of the screen. This feature also allows the user to search for any other item they wish to purchase.



In the “DAIRY” heading, things are displayed slightly differently. There is a list showing all the dairy products available instead of clickable images. This is there as the dairy category is much larger compared to the other two and having the images would make the user experience much slower.



The Screenshot here shows what happens when the user clicks on each item. The user is transferred to another page where they are presented with the item they can choose. The administrator has the option to add and change the details of each product. In the example shown we can see that there is a small item description. Once the user clicks on the “Chicken” tab the item then gets added to the basket.

The same page is designed for all the items that is available for the app.

Component Test plan

There are two different methods that I will use to check all the stages of the app. One is called Black Box and another called White Box. Both are widely used when wanting to test out the features in software' and applications in the industry.

BLACK BOX TESTING

Black box testing is used to check all the components of the application without actually going through the internal code. One of the benefits of using this type of testing is that the tester does not have to have much experience of the technical aspects of the code.

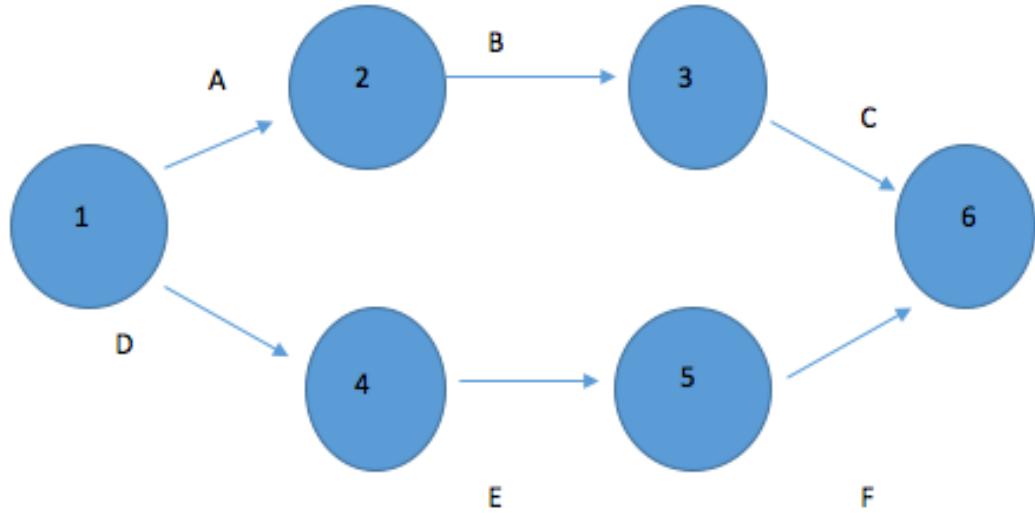
No	Path	User Input	Expected Outcome	Actual Outcome	Test Result	Comments
1	1.1	Press on tab menus (Meat)	Meat category coming up	Meat category coming up	Success	NA
2	1.2	Press on Fruit tab from meat section	Fruit category coming up	Fruit category coming up	Success	NA
3	1.3	Press Dairy tab from fruit section	Dairy category coming up	Dairy category coming up	Success	NA
4	2.1	Press Navigation drawer	Navigation drawer coming up	Navigation drawer coming up	Success	NA
5	2.2	Pressing Navigation drawer	Navigation drawer popping back in	Navigation drawer popping back in	Success	NA

WHITE BOX TESTING

White box testing is similar to Black Box testing, in a sense that there are a number of stages that need to be part taken in order to fully check

8	Fragment page	<pre> RecyclerView fruitRecycler = (RecyclerView) inflater.inflate(R.layout.fragment_fruit, container, false); //Adding the names to an array of string String[] fruitNames = new String[Fruit.FRUITIDS.length]; for (int i = 0; i < fruitNames.length; i++) { fruitNames[i] = Fruit.FRUITIDS[i].getName(); } //Adding each car description to array of string String[] fruitDescription = new String[Fruit.FRUITIDS.length]; for (int i = 0; i < fruitDescription.length; i++) { fruitDescription[i] = Fruit.FRUITIDS[i].getDescription(); } //Adding car images to array of integers int[] fruitImages = new int[Fruit.FRUITIDS.length]; for (int i = 0; i < fruitNames.length; i++) { fruitImages[i] = Fruit.FRUITIDS[i].getImageResourcesId(); } //Passing the array lists to the adapter CaptionedImagesAdapter adapter = new CaptionedImagesAdapter(fruitRecycler); fruitRecycler.setAdapter(adapter); //Defining GridLayout style //Defining the number of columns to two GridLayoutManager layoutManager = new GridLayoutManager(getActivity()); fruitRecycler.setLayoutManager(layoutManager); //Implementing tab listener on click methods. </pre>	Display fruit categories using recycle r view API	Retrieve data such as image, name, description from the fruit database and display information in grid layout	As expected	n/a
9	Fragment Details	<pre> String fruitName = Fruit.FRUITIDS[fruitId].getName(); TextView textView = (TextView) findViewById(R.id.fruit_text); textView.setText(fruitName); //Extract data from Car Array String fruitDescription = Fruit.FRUITIDS[fruitId].getDescription(); TextView textView2 = (TextView) findViewById(R.id.fruit_description); textView2.setText(fruitDescription); int fruitImage = Fruit.FRUITIDS[fruitId].getImageResourcesId(); ImageView imageView = (ImageView) findViewById(R.id.fruit_image); imageView.setImageResource(Fruit.FRUITIDS[fruitId].getImageResourcesId()); imageView.setImageDrawable(ContentCompat.getDrawable(this, fruitImage)); imageView.setContentDescription(fruitName); imageView.setContentDescription(fruitDescription); </pre>	Display specific item detail	Retrieve data of specific item and such as image, name, description from the fruit database and display information in grid layout	As expected	n/a
10	Fragment Selector	Page adapter handle the		Display the different fragment page based on the	As expected	n/a

AOA DIAGRAM



A = Fragment plan and design -2 Days

B = Implementation of Fragment – 10 days

C = Implementation menus -2 days

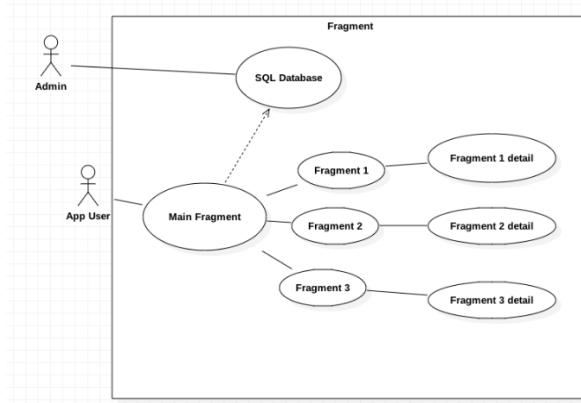
D = Test planning – 1 day

E = Actual testing -2 days

F = Report and Evaluation – 2 days

In the AOA diagram we can see that overall if we are looking at Activity 3 which is the section assignment to myself, that a large chunk of the time is spent on the actual development of the software. The testing, evaluation and the documentation only have a small part dedicated to it as essentially they only come due to the completion of that section.

Use Case Diagram



The above is the use case for my section of the app, as you can see it features the fragment and the data base

Conclusion

Overall this project has been an interesting experience as there were a number of challenges we had to deal with in order to complete this project and in an efficient and good manner, however at the end the majority of the group committed time and effort to make this application happen.

A number of new and interesting concepts were learnt that will definitely come in handy in the future, especially when working with a big project with large number of people, these concepts will also come in handy in the final year project, concept such as the AOA diagram, Gantt chart etc.

Another lesson learnt with this project is the concept of time keeping and keeping up with an actual time table of work.

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References

Weekly Slides for Team

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