1. Introduction

As per the requirement of the course SIT708 – Mobile Systems Development, students are asked to come up with Android app idea proposal covering all necessary technical and other details.

In this document I have proposed my project idea of building an Android app named **YourBuddy** using Java for the help of International students/Foreign travellers. This document includes following topics as part of the project proposal:

- Problem statement, market research and motivation, background and product summary.
- User stories, timeline and sprint plans.
- Minimum Viable Product (MVP) and future enhancements.

Background

In the modern world, People are travelling to different countries quite frequently for business and personal travel. Also, students are considering Foreign universities as further study option. Hence, there arises a need of a one stop solution that guides you for the set of process that needs to be completed to make the travel/settlement hassle free.

This project proposal document will help in explaining how my idea of "**YourBuddy**" android app will help in solving the above-mentioned problem of "what to do and when to do" for international students/travellers in the initial release of the product. It will also cover technical and non-technical details.

Market Research and Motivation

I have analysed the Market and was not able to find a product which caters to this problem statement. Although, there are various task management and helper apps but it doesn't guide you for a specific task such as foreign studies/travel. Although there are apps which provide dedicated services like searching accommodation but there is none which reminds student to get TFN, buy sim or get flu vaccine.

The motivation of the app came from the difficulties I faced during my tenure of settling in Australia for my studies. My own experience helped me a lot in designing this app.

Competitive Analysis:

There are multiple apps available in the market catering students for their visa, travel, accommodation but none guide about what should be the next and why?
 'YouBuddy' complete this missing block from services perspective - it'll act like one stop shop for students looking for guidance and reliable sources to go to. This way my app will secure very stable position in the marketplace from usability perspective and can grow and maintain user base.

2. Context

I am working to develop an Android app to guide foreign travellers specifically international students for initial release. Primarily this app will be used by students as this will guide them as mentor for the tasks, they need to complete for comfortably moving and adjusting to the foreign environment. The main idea of this product is to provide students the service which will guide them in two things, firstly what to do and secondly, when to do.

I'm an international student myself, and when I landed there wasn't anything handy to help with various things, we are supposed to do like apply for Tax File Number or getting card for public transport and I struggled in getting information from different sources. Apps are available for these things, but none of them help in deciding what to do and when to do, and that's where this idea emerged.

Product Vision:

Currently, I'm considering the implementation from students' perspective, however in the future I've plans to include sections for individuals coming under different visa systems like tourist visa or permanent residency visa for moving to Australia and other countries. They all be provided with all the necessary steps and information for completing those steps and thus this product has potential to expand a lot in terms of improving features and increasing its user base.

Overview:

I've named my app 'YourBuddy', as it will act like a buddy to new international students/foreign travellers. This app has simple and attractive UI design that makes it easy to use. Once user is logged in, app will navigate to home screen where user can select task like foreign studies or travel. This will show users the task list which they need complete. Users can mark tasks complete once they have finished all the related activities to that task using the information provided in the task for help. It will suggest you with experts, travel companies, websites or apps that can help the user to complete that process easily. It will share useful resource with the students at every step. Each task will have different status i.e. completed, ongoing and pending.

3. Asset List

From project proposal to project delivery of this app, lot of tools and technologies would be used considering various factors. Following is the concise list:

- **Figma**: It is an open source tool, makes prototyping and wireframing very easy. And even it is easy to share the design with the team by just sharing the URL.
- **Freelogodesign.org**: To design a customized logo.
- **Bitbucket**: To maintain the code, bit bucket can be used. I have created separate repository in bit bucket for my project.
- **Android Studio**: It is one of the most famous IDE for android app development.
- **Java**: The programming language sued for the app because of its features make the product reliable, fast, scalable and provide cross platform compatibility.

- **MySQL**: It would be preferred for creating database because of its features and fast processing of data. Even it is easy to make its connection with the front-end language and write complex queries in it.
- **Android Studio Emulator**: To test development in this android studio emulator would be used. Its advantage is that it easy to configure along with android studio and with-it developer can test behaviour of product on multiple devices.
- **Microsoft teams**: It would be used for communication with team, tutor and unit chair.
- **Android device**: After development of each sprint app would be tested on of the android device to observe actual behaviour of product in live environments.

Feasibility test of the assets: All the above listed assets/products are feasible with respect to development of this product as all of these are easily available and doesn't require and license. Even the tutorials for using these assets are easily available in the market.

Choosing Java over Kotlin: Although Kotlin is getting popular in market but Java is still preferred over it because apps developed in it are faster and scalable.
Going forward it would be easier to include more features in this app and it also provides cross platform compatibility. Even there are a greater number of libraries and API's available for Java.

4. Product Purpose

The primary audience of this app will be international students/travellers in the first phase, and then eventually anyone looking for help/guidance can use this app. This will be appealing to the students as this will help them with all their queries for the first few days/weeks in Australia and is easy to use. Its main aim is to guide students by telling "what to do, when to do and where to do". YourBuddy is using very interactive clean UI design so that's users can access this with ease, and nothing misleading has been added to the screens. This app will not ask for access to any personal data like contacts, images etc.

Simplicity is the key to delivering great products and that's what I've kept in my mind while developing this app. I've organised screens and information included in very aligned manner and nothing is scattered over different places and is not confusing for users. Your buddy offers interactive UI and easy navigation for users from one screen/part of the app to the other.

5. Requirements and User stories.

5.1 Requirements

Core Idea of the app can be broken into following main requirements:

- Login functionality.
- Sign up/ Register functionality.
- User profile should be maintained.
- User should eb able to view task and sub task list.
- Task management with recommendations for each step.
- User should be able to see the status of task.

5.2 User Stories

Based on the primary requirements some of the important user stories are explained below:

User Story: 1

Statement	Acceptance Criteria	Estimation	Priority
As a new user on the YourBuddy app, I want to register on the app and later would like to login in the app	1.User friendly design of login, register and update profile screens. 2.On starting the app user new user should land on login screen. 3. On clicking "create an account" user should move to register screen 4. On register screen user should be able to create new account. 5. On login screen, existing user should be able to login into app.	By using planning poker technique to estimate the story points. **Story Points: 8**	**Priority: 1** High Priority

User Story: 2

Statement	Acceptance Criteria	Estimation	Priority
As a registered user if I want to update any information in my profile. I should be able to do that.	1.User friendly design of Profile screen. 2. On clicking the profile button user should be moved to profile screen. 3. By clicking on Update button profile information should be updated in the system.	By using planning poker technique to estimate the story points. **Story Points: 5**	**Priority: 1** High Priority

User Story: 3

Statement	Acceptance Criteria	Estimation	Priority
As a user, I want to see all the task and sub task for foreign students.	1. After login user should move to home screen where he should be able to select foreign study option. 2. On selecting foreign study option user should move to task-checklist screen for foreign study. 3. On the task check list screen, list of all the to do steps should be visible to user. 4.On clicking the home button or back button user should move back to home screen. 5. On clicking the profile button user should move to Update profile screen.	By using planning poker technique to estimate the story points. **Story Points: 8**	**Priority: 1** High Priority

User Story: 4

Statement	Acceptance Criteria	Estimation	Priority
As a user, after selecting foreign study option, I wish to complete all the task in it.	1. Once user is on the home screen of foreign studies. First task "got visa" should be enabled. 2. On clicking first task "got visa" user should move to task detail screen. 3. On task detail screen, information card should appear, and user should be able to mark the task as done. 4 . User should be able to complete all the tasks in similar way.	According to the planning poker estimate approach this can be considered as **Story Points: 8**	**Priority: 1** High Priority

Minimum viable product (MVP) functionality

The minimum viable product (MVP) will require the following feature which need to include in the app for initial go live:

• New user should be able to register on the app.
• Existing user should be able to login into the app.
• User should be able to update his profile on the app.
• On the home screen of the app user should be able to select foreign study option.
• Once user select foreign study option user should be able to see the list of tasks.
• On the foreign study home screen, there should be clear visibility of tasks which are complete, ongoing and pending.
• User should be able to able to complete the checklist of each tax and mark it as done.
• By clicking on the home screen user should be able to navigate to home screen.
• Status of every task should get updated once it is completed.

End to End process overview:

End to End User flow -Student:
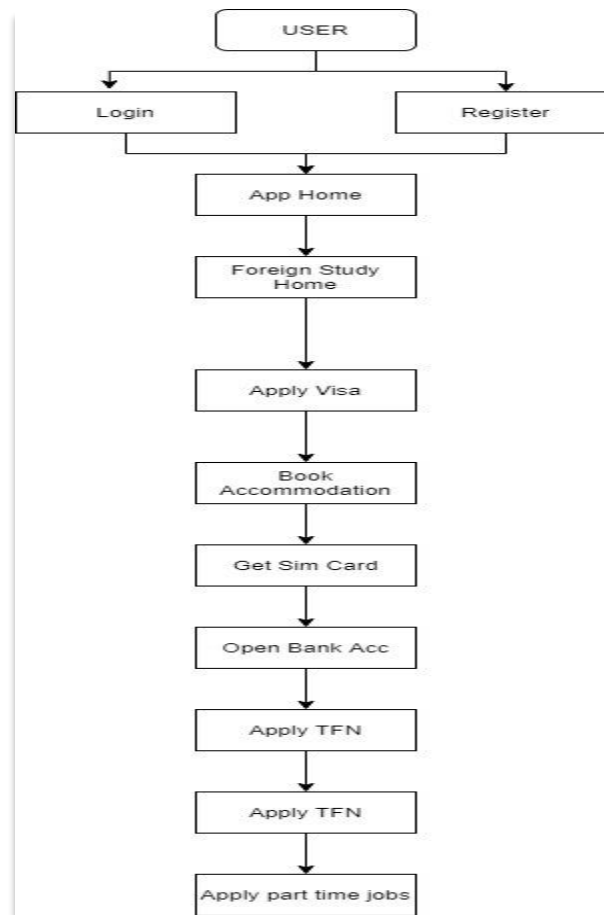
6. Value Proposition

Considering the idea and easy usability this app has potential to become popular among international students. Below mentioned are the few key valuable factors:

- **Simple and appealing UI**: User interface of app would be very attractive. Adopted design theme of card layout would make the app self-explanatory.
- **No privacy issue**: It would not ask access to any confidential information of users.
- **Cost Efficient**: There is not any paid service in the app and also it would be free to download.
- **Growth prospect**: Every year thousands of student travel overseas for study, so this have growth prospect in term of user base.

7. UI/UX design

Link to Figma prototype:
https://www.figma.com/file/DjWiCQpXXwPt8SjYL9b03v/YourBuddy?node-id=0%3A1

This link can be used for viewing the prototyping and wireframing of the system using Figma.

While preparing the design and UI of the app main was to present the idea in simple yet attractive way. To make the design self-explanatory proper colour combination and card layout is used.

For the initial release key attribute of design are:
- There would be around 12-13 screen in the initial release.
- Screens for login, sing up, update profile, task list, sub task list and about the app.
- Card layout and proper colour combination for task management.
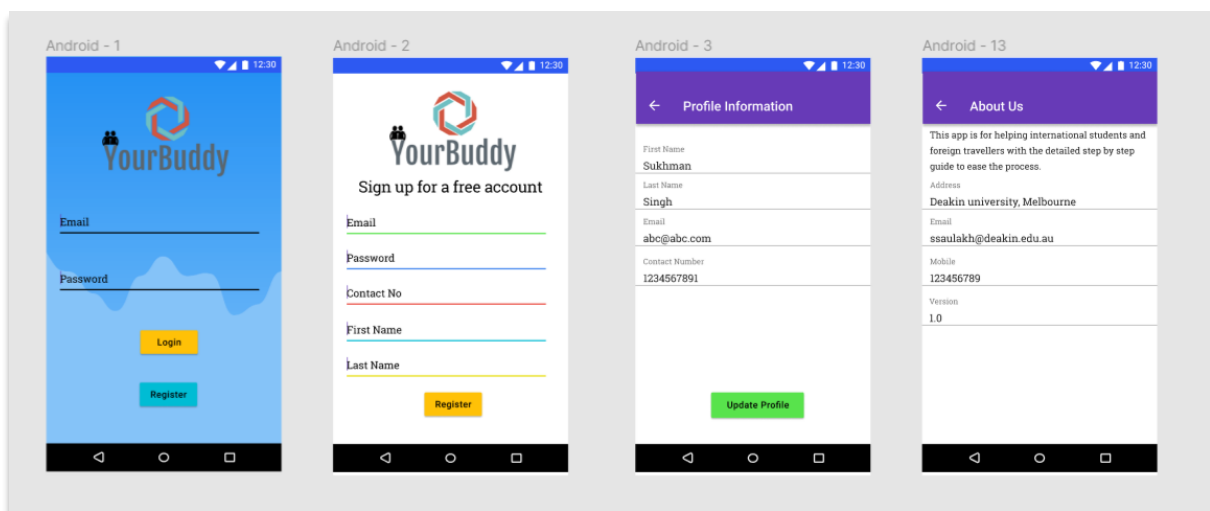
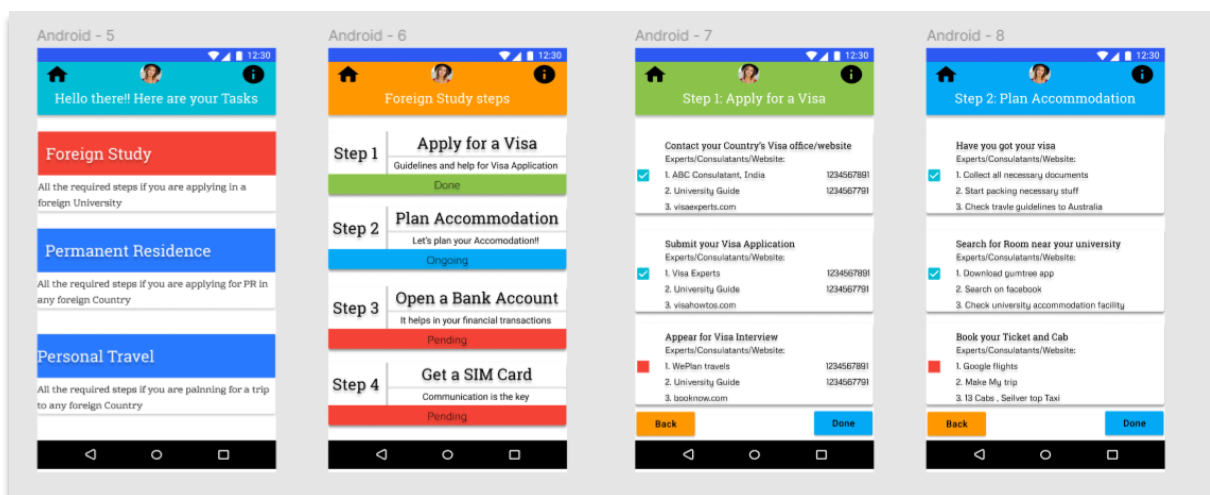Fig 1: Login, Register, Update profile and about us screen

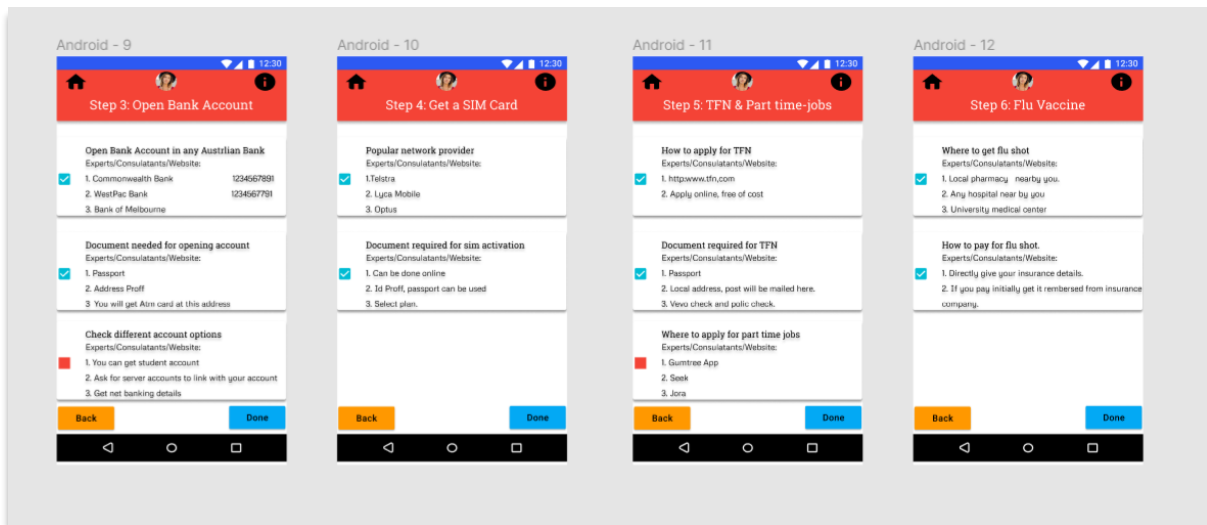

Fig 2: Home screen, task list, subtask list

Fig 3: Pending sub task screens

The main components of the above-mentioned design are:

- **Login, Sign Up and Update Profile (Component 1):** User would be to make account in the app using Sign Up screen and registered user can login in the app using login screen. And if at any point user wishes to update his details he can do so using update profile screen.
  Shown in screen shot above.
- **Task List and Subtask List (Component 2):** User would be able to see the task list on the home screen in card layout design. Once user selects task, like in this case of foreign studies all the sub tasks related to foreign studies should be visible to user. And upon clicking particular sub-task, details of that task will appear in front of the user in the form of card.
- **Task manager and task progress (Component 3):** Once user open any sub-task, he would be able to see the detailed information. And to complete that sub-task he must select all the check boxes in that task and then mark it as done. Once user marks the task as done, he will navigate to next task. On the sub task list screen colour of that particular task will change to green and status would be updated as completed whereas ongoing task would be blue and pending task would be in red colour making this screen as task manager.
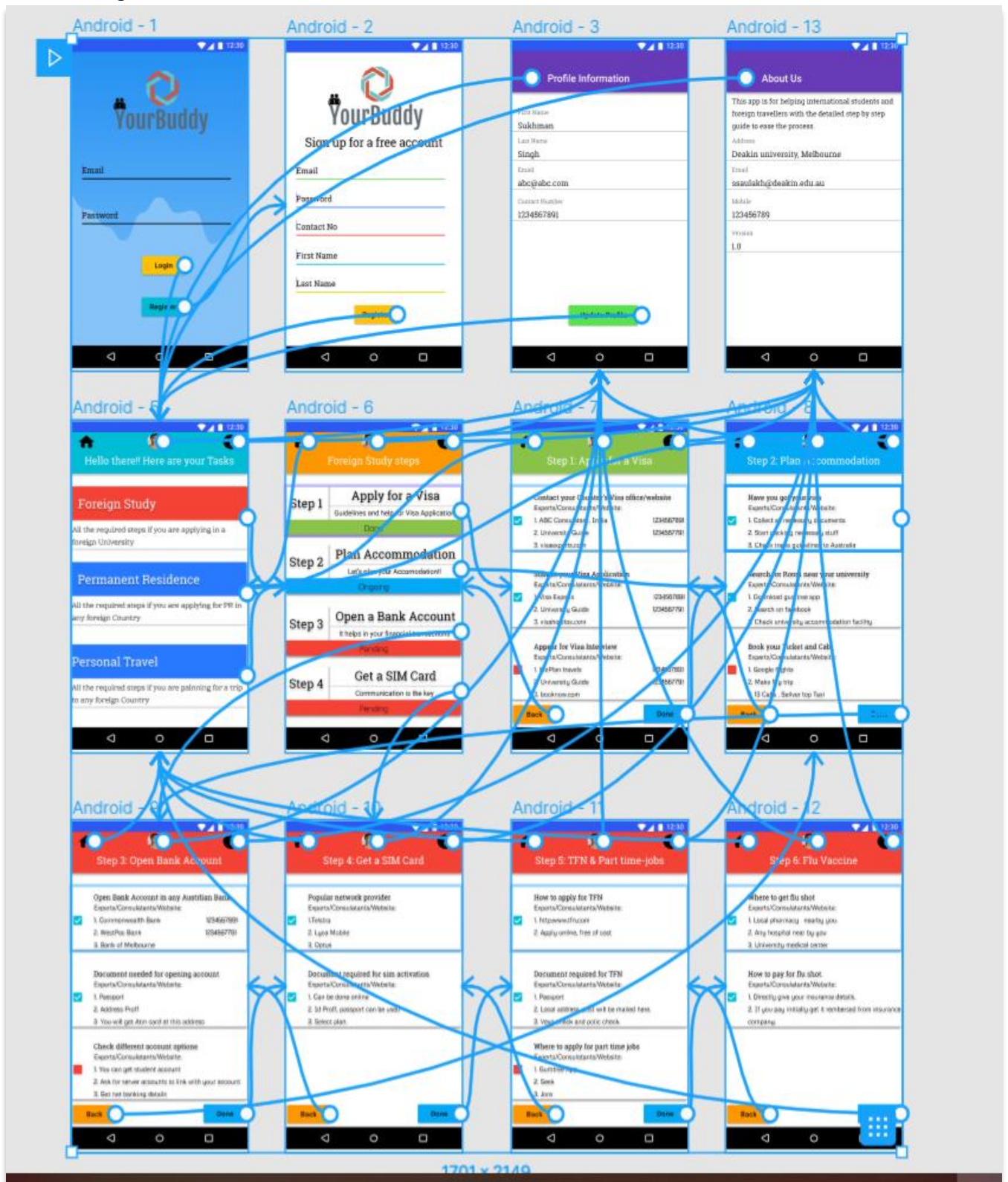
Wireframing:

Fig: Wireframing of initially designed screens.

Explanation/summary of wireframing:

One complete cycle or flow of the app can be explained by following steps:

Step 1: App will start on login screen. Existing user can login using his credentials and new user can click on register to create account.

Step 2: New user can create account on register screen.

Step 3: Upon successful login or registration user will reach on home screen. Where he can select which task, he wishes to complete. In the initial phase it would be foreign study.

Step 4: Upon clicking foreign studies user will move to task list for foreign studies. This screen will also act as task manager, showing completed task in green colour, pending in red and ongoing in blue.
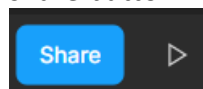
Step 5: Upon clicking the task user will see the details of the task and can mark it as done.

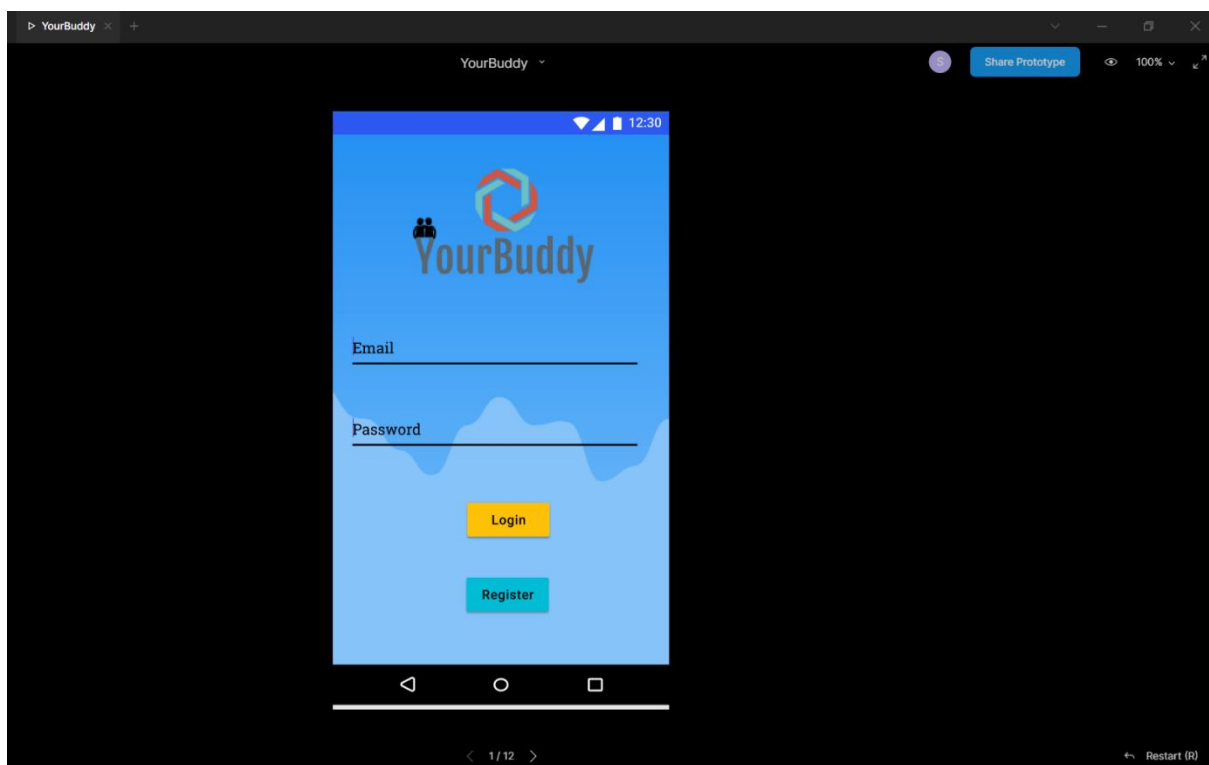Step 6: User can also update his profile information using update profile screen.

Playing demo in Figma:

Step1: Go the link provided above.

Step click on play button next to share button

Step3: Following screen should appear:

8. Product Backlog

Sr no.	Category	Key Activities of the category
1	Project proposal, documentation	• Working on project proposal. • Market analysis. • Preparing prototypes and wireframes.
2	App Design	• Sprint planning. • Completing design of user screen in android studio. • Incorporating review comments in design.
3	App Development	• Working on sprint plan to complete development. • Developing user stories in android studio. • Testing user stories. • Client demo after every sprint.
4	Testing, Bug fixes, Release planning	• Fixing all the bugs reported. • Deploying changes of sprint. • Completing documentation of the release.
5	App publication and handover.	• Handover presentation to unit chair/ client. • Completing all the handover artefacts. • Public on goggle store.

9. Project target outcomes and timeline

Sr no	Deliverables	Outcomes	Timeframe
1	Project proposal	• Provides idea of the project	Week 5
2	App design	• Working on finalizing designs using prototypes and wireframing.	Week 6-7
3	App development	• Working on development of user stories.	Week 7-10
4	Demo and Review comments	• Demo of the initial development. • Working on review comments.	Week 9-10

5	Handover documents	• Preparing handover documents.	Week 11
6	Handover and final presentation	• Final demo of app and submitting handover documents.	Week 12
7	Release	• After approval, deploying app on play store.	Week 12

10. Sprints Plans

Sprint 1 (weeks 3-6):

Aim – The Aim of the first sprint is preparing complete solution proposal analysing various factor like market, competitors, feasibility etc.

Sprint backlog

1. Project proposal, prototyping and wireframing

The main deliverable in this sprint would be:

- preparing project proposal.
- designing prototypes.
- wireframes for the app.

Sprint 2 (weeks 6-9):

Aim – The main of this sprint is to develop login, sign up and profile update functionality. In this development work on android app in java would start and for backend mysql would be used.

Sprint backlog

1. Development:

The main deliverable in this sprint would be:

- Developing user story1: As a new user on the YourBuddy app, I want to register on the app and later would like to login.
- Developing user story2: As a registered user if I want to update any information in my profile. I should be able to do that.
- Fixing defect found in development.

Sprint 3 (weeks 9-12):

Aim – To continue the development work aim would be to develop task, sub task and task detail screens. Functionality of tracking task status would be implemented in this sprint.

Sprint backlog

1. Development:

The main deliverable in this sprint would be:

- Developing user story3: As a user, I want to select foreign study option on home screen and would like to see my task checklist.
- Developing user story4: As a user, after selecting foreign study option, I wish to complete the to do checklist in sequential order.

- Fixing development defects.
- Client demo.

11. Coding Concepts

For the development this android app following coding concepts would be used:
- OOPS Concepts: Object oriented concepts, as this app is being developed in Java OOPs concepts would be implemented throughout the code. Like using inheritance, polymorphism and abstraction.
- Collections (Arrays and Linked List): As this project will need managing large amount of data of user and tasks. So to handle that data in coding different classes of Collection like Array, Array List and Linked List would be used.
- Design Pattern: For neat and clean code in which future enhancements are possible SOLID principles and appropriate Design Pattern would be used like Singleton Design Pattern or Façade Pattern.
- MySQL queries: For storing database MySql would be used. To perform operation on database joins, inner queries and indexes would be used.
- Session Handling: For maintaining all the activities of user in single session, session handling would be done in code. So that at one time only single object of session is created.
- Event Listeners: To navigate between different screens, event handling using different listener available in Android would be done. Like using onClick on the click of button.

12. Project management

The following activities will be performed to help manage the project:
- Weekly lecture with unit chair and tutor (Wednesday 12pm to 2pm).
- Weekly practical session with unit chair and tutor (Thursday 2pm to 3pm).
- Discussion: on problems, issues and features.
- Demo of sprint outcomes.
- Project handover and documentation handover (Week 11).

13. Artifact management

The following tools and technologies would be used capturing knowledge and useful artefact of the project.
- Microsoft team: for communication.
- Bit bucket: https://bitbucket-students.deakin.edu.au/users/ssaulakh/repos/yourbuddy/browse