Can a Mobile Application Enhance the Experience of New Students Joining Third Level Education?

Ken Kilmartin Andrew Sherlock Catharine Phoenix
B00091252, B00090936, B00091705

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Supervised by Luke Raeside

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Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Degree of **B.Sc. in Computer Science** in the Institute of Technology Blanchardstown, is entirely my own work except where otherwise stated, and has not been submitted for assessment for an academic purpose at this or any other academic institution other than in partial fulfilment of the requirements of that stated above.

Signed: _____

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Signed: _____ Dated: ____/_____/_____

Ken Kilmartin
Andrew Sherlock
Catharine Phoenix

Abstract

The hypothesis of our thesis is to identify if a mobile application (app) for Institute of Technology Blanchardstown (ITB) could enhance the student life, particularly for new students in third level education. The thesis will highlight the research methodologies, design of the application, a range of features to be made available, system specifications, implementation of prototype and evaluation of the application. The literature review will discuss substantive findings, as well as theoretical and methodological findings of how the User Experience (UX) and Mobile Learning (M-Learning) would impact on students.

Key features of the mobile application include local transport, chat and forum options, map of the college, a quiz, events guide, important links, user timetable, notes and a phone directory. The thesis discusses if these features can help new students access important information that can help them adapt to student life.

The thesis discusses the technical aspects of developing the application based on findings of the research. The thesis also discusses the feedback and research carried out after the application was developed. It focuses on the user experience, the relevance of each feature and how frequent the student would use the application.

Ken Kilmartin
Andrew Sherlock
Catharine Phoenix

Contents

Chapter 1: Introduction

1.1 Research Question and Rationale for choice of project

Our research question is "Will an Application Enhance the Experience of New Students Joining Third Level Education? ".

The rationale behind us researching this topic was that we all remembered how daunting it was joining third level trying to find where buildings are located, making new friends, to gauge the personal progress on subjects, if we were doing enough or should we be doing more. The group also felt that although the information was out there to help answer these questions it would be a lot easier and less daunting if all these questions were answered under one app instead of going through the ITB website looking for where the Linc building is located or when the next college bus is.

Our first step was to survey students to find if there is a demand for an app and also what features the students feel are most appropriate. From this information we planned to develop an app that is of value to students. From this preliminary research, we wanted to develop an app with the students' user experience at its core. We wanted to find out what encourages a person to use an app repeatedly and that is genuinely beneficial to their transition to college. We envisioned the app to be a tool for a new student gaining access to a range of services and enable them to become immersed in college life.

Following the development stage of our app we surveyed first year students to find out if having access to our app would enhance their experience of coming to third level. This stage of our research was to answer our main research question in real terms as the app was now be a tool that can be utilised by the student.

By undertaking this type of research our aim was to gain a further understanding into the advantages of consulting the target market when developing an app. By doing this we would find out what features were essential in enhancing a first-year student's college experience.

1.2 Benefits of this project

1.2.1 Benefit for Students:

As a group we felt that new first years would benefit from this app greatly by having all the information from the site in one easy to access and user-friendly environment. Some of the novel features of our project would be information on transport to the college as currently there is no app for timetables for the college shuttle bus. Prior to our app students would have to click over four links on the ITB website to see a static web page. This feature alone would be beneficial to all students that take the shuttle bus. Another beneficial feature of the app is the map as there is currently no feature like this on the ITB website, this feature could also benefit family members coming for graduation. Another unique feature of our app is the forum this could be a useful utility for students and lecturers to discuss class topics or events in the college. This then is coupled on the chat feature this also enhances communication between students and staff. Unfortunately, these two social aspects of the app also have drawbacks with moderation of chat and the forums. Our decision to include a quiz in the app was to bring an educational aspect into the app. We also thought that while we were in first year it was very hard to gauge on a week by week basis how well we were doing, we thought that implementing a quiz would answer this question. The group all agreed that currently finding our timetable using the ITB website is quite difficult to navigate, not only that but when you get to it there are four to six different groups, so it can also be difficult to know which class you are in. Our app simplifies this in that you can make your own timetable within it and just check that.

1.2.2 On a Personal Level:

The group thought that this project would be a good way of learning how to develop an app, we realised that this would require knowledge of Android Studios and we thought this would be a good opportunity to learn how to use this tool. Another benefit of us taking on this project is that we will get to learn about Firebase which is an online platform with features such as a database, cloud functions, etc.

Chapter 2: Literature Review

2.1 Overview of fields reviewed, and sources consulted

The topics we decided to research were:

- User Experience(UX)
- M-Learning (Mobile Learning)

We chose these topics to research as before undertaking the Literature Review we had a few specific questions during our initial discussions such as; at what stages should we make the user of the app a priority? Other questions that came up are the aesthetics of the app important or are the features more important? Also, how can we make the app more than just a way for new students to connect?

We decided to research UX as we realised before going into the project that if the app was to be successful (meaning students would have a positive experience using the app) it would have to have the user at the heart of the design. In relation to the design of the app this research also involved looking at the different roles involved and who the key people are in the design of an app and making the app as user friendly as possible. As a group, we explored Utility v Usability and how problem solving is a core skill that is essential to these core elements of designing an app.

Another topic we decided to research was M- learning. We look at the characteristics, benefits and we also critique M-learning. The group chose this topic to research, specifically the benefits, as we wanted the app to also be beneficial towards the user's education rather than just a social app. We considered how we could design a feature that would add to the educational aspect of the app.

The sources we consulted were all peer reviewed and academic publications such as journals and conferences papers. The group used the IEEE database for searching for well cited work. From here the bibliographies of each of these papers gave us further papers to research to try gain a further understanding into these topics.

2.2 Review of User Experience

The group felt that if the app was focused around the User Experience (UX) that it would be more successful; meaning to enhance the users experience of joining a third level institution. In learning the design practices of UX we aim to make our app have more value to the user.

Primarily, we should establish what would be considered good UX design. The group believe that to create a well-designed app, we should keep our audience at the core of our design. Moreover, our app should be designed so that all interactions should be done with ease while using a minimal amount of finger presses (Kuusinen & Mikkonen, 2014). Another key to good UX is to maintain consistency across the app. Within the app, all forms should be kept simple and easy to fill out. And when using the app, the user should be provided with instant and intuitive feedback at all times. From researching the methodology of UX, this can be broken into different roles including a Requirement Analyst and UI designer (Song, et al., 2011).

Requirement Analyst:

The role of a Requirement Analyst is to define the target user, collect information on users' demands and define specific functions. The Requirement Analyst's role is to analyse the problem and clearly define it.

UI Designer:

The role of the UI Designer would be to try to solve these problems. They would do this with the three states of a user experience see figure 3 (Song, et al., 2011).

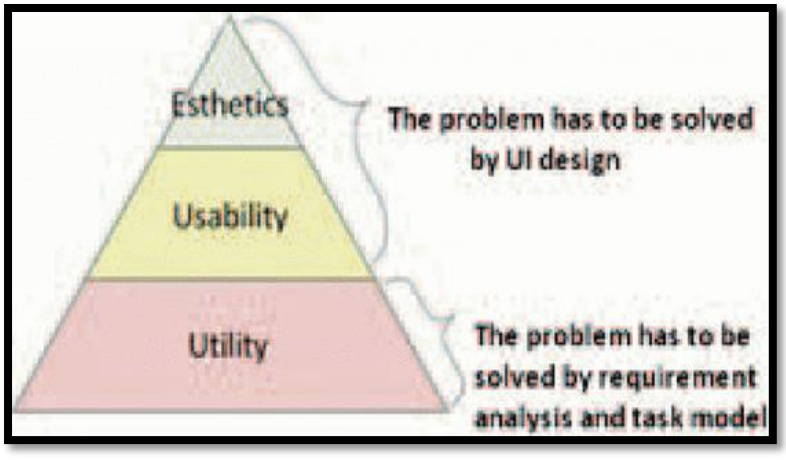


Figure 1 three states of a user experience

Utility and Usability

From Figure 3 we can see that utility is at the core of the app, this is what the app does, making sure that it satisfies the users need. This really is essential but at the same time usability of the app also needs to be high. This would be how the user easily navigates through the interface. If you are unable to use an app, it may as well not exist, so usability needs to be a high priority. With this in mind if the app is to be a success we have got to achieve high utility and usability. This can be achieved through thorough research and taking an iterative approach when approaching usability. Judging from the journals we reviewed, the best way to strike a balance between utility and usability would be to use an iterative process (Hussain, et al., 2008).

Methodologies of UX

The group believe that the methodologies used by (Kuusinen & Mikkonen, 2014) were very thorough with using a mixed method approach, we feel that by consulting a range of different specialists involved in UX such as scrum master, product owner and developer over the course of three different mobile apps we gain a further insight into what stage would be best suited for considering our UX design.

Kuusinen & Mikkonen (2014) carried out research spanning over a year of weekly interviews with nine participants, they started to notice that user experience tasks were not solely the responsibility of the UX specialist, they were instead shared between the UX specialist, the developers and the product owner.

With the results of the research, the product owner and the UX specialist were both responsible in understanding the user value. User value is defined as how happy users are with the app (Kim, et al., 2016).

From the research undertaken by (Kuusinen & Mikkonen, 2014) we also see a pattern emerge that half of the apps that were developed had the user value and user needs discussed with both the developers and project team. They worked together to be able to improve user value of the app. During one of the interviews, a UX specialist made the point that

> *"There is no role differentiation [in concept creation]. Graphic designers are good in making graphics, developers in making software, but the general issues of the concept, what there will be in the app and how the UI should work, it is teamwork."* (Kuusinen & Mikkonen, 2014, p. 224)

This point is further proven by Ungar's (2008) observation on UX designers, developers and product owners during his workshop where he had the different roles try to co-ordinate to produce design concepts. During this workshop it is reported that an exchange of knowledge between the roles helped promote teamwork and *"got design ahead of development "* (Ungar, 2008) . With

this approach, a prototype can be formed from an early start which means it can be shown to users/product owners to review the concepts set in place. This also means that each concept can be revistied when each sprint starts. This would help to increase the overall user value through an iterative process.

As a group, we thought that the UX would be done by a specialist at the end of the scrum backlog, so we were surprised to find that UX is approached at the start of every sprint. However, on reading the findings of the results, the more complex the project is the UX design needs to be worked on ahead of actual development as opposed to smaller projects such as above where the UX can be looked at the start of each sprint. (Kuusinen & Mikkonen, 2014).

From the studies it suggests the best way to get good teamwork with the UX specialist is by adding a specialist onto the Scrum team, thereby increasing collaboration and them having an earlier insight into the deveopment process (Kuusinen & Mikkonen, 2014). This would happen naturally within our project due to it involving only three people.

2.3 Review of M-Learning

As a group, we discussed that the app we develop would also be for students to use as a learning tool for everyday college life. We researched the definition and purpose of M-Learning and more importantly the impact it can have on student life. We researched a case study to help our decision-making process in determining relevant features to include in the project.

Introduction to M-Learning

Mobile-Learning (M-Learning) is a teaching tool which can combine both mobile computing and E-learning. Using wireless networks or broadband services M-Learning is available without any restrictions of location or time (Chee, et al., 2016).

The evolution of technology has potentially enabled mobile learning to enhance both the teaching and learning process. In addition, it will also provide efficiencies for all relevant stakeholders and that information will be more readily available through M-Learning systems (Hanafi & Samsudin, 2012).

Important Characteristics of M-Learning

Research has concluded that M-Learning needs to be reusable, portable and socially interactive.

1. Reusable: M-Learning must deliver a more intimate and relevant learning experience to each individual. Its technology should enable content to be used in a variety of learning approaches specific to each individuals' requirements (Ayala & Castillo, 2008).

2. Portable: An important feature of M-learning is that it enables just-in-time knowledge. The system should be designed to enable the user to access learning material from any place at any time (Ayala & Castillo, 2008).
3. Socially Interactive: This will give the ability to share opinions, thoughts and ideas at the click of a button. This can be an efficient way for users to share knowledge (Ayala & Castillo, 2008).

The Benefits of M-Learning

Research has found that students are more likely to source academic information through a mobile app rather than spending time researching through other learning resources.

Research also suggests that M-Learning is a more efficient way to teach and learn as it enables students to access material instantaneously. They can read lecture notes or listen to academic material on a device while travelling to college.

M-learning can offer tools such as short tests and academic quizzes. The research indicated that younger people enjoy this form of interactive learning. M-learning ensures that students can have more time on their hands as they can access lecture notes or other materials at any time (Hanafi & Samsudin, 2012).

Critique of M-Learning

It is difficult to measure how meaningful the level of learning is when using M-Learning systems. It can be difficult to judge the type of impact of M-Learning can have on individuals, as each person has a range of different skills, knowledge and expertise. There can also be a varying range of competence using mobile devices (Hanafi & Samsudin, 2012). Another point to consider is that the economic background of each student can vary which can result in variance in the quality of mobile devices.

2.4 Conclusions of the literature review

The group feel that we have increased the knowledge that we need to develop an app on the android mobile platform. Some of the journals we reviewed may not have covered all the information that we need. We feel we have gained a good technical knowledge on the subjects we chose to research.

As a group, we have come to realise that we need to focus more on utility and usability rather than aesthetics of the app, contrary to what we had originally thought. The user value should be thought about at all stages of development. We also need to keep focus the characteristics of a M-learning app and the features that can be included to improve students learning experience while also keeping in mind that it is also difficult to measure the real impact M-Learning has.

In particular, with the research we undertook we feel there are limitations. The participants we surveyed were primarily first year computing students, so the results only represent a particular group. By using Android, we are omitting students who only have access to Apple (IOS) devices.

We feel the research done was comprehensive, however, we also realise that in a fast-paced area such as Android development it is important for research to be kept relevant and up-to-date. Although, looking at longitudinal studies the group was left with the opinion that these would need to be repeated and there could be gaps within the literature if they are not carried out over a variety of projects with different companies and with different levels of success as the research only explores successful apps..

Chapter 3: Methodologies

3.1 Overview of method

The group discussed our approach and how best to undertake research for our thesis. We considered the many different methods of research that we could use; such as qualitative or quantitative research methods to help us to collect the relative data we needed in order develop this app. Qualitative research provides more in-depth answers and insight to a research question while quantitative research measures and provides more statistical and numerical answers. The group had decided that a mixed method approach would best suit our methodology, meaning a combination of both qualitative and quantitative methods could be used. We decided to first have informal meetings with Peer Mentoring support and also Student Services to see if we would be allowed to survey students partaking in the Peer Mentoring program. This would allow us to see if the students had any suggestions towards the features that would be needed for this app. We had decided on a survey to gain further information on what features students would like implemented within our app. The group felt a survey was a convenient way of collecting data from the students for research purposes. Surveys can also be an economical way of carrying out research and can be a way of collecting data from large groups. By surveying students, we felt we could gain a further insight into what the most pressing issues were for them and how a college app could help them. Before handing the survey to the student we had informed them that in filling it out they were giving consent for us to use it for our research purposes. We also informed them they could withdraw from the research at any time and that any information they gave would be anonymous and confidential.

During this session with the students we had also asked them if they would be willing to test our app when it was developed with the purpose of seeing if an app with these features would have improved their experience in first year. We then asked them to complete an additional survey to evaluate our app with the intention of resolving our Research question which is “Can an App Enhance the Experience of New Students Joining Third Level Education?”. We had decided to use Survey Monkey this time as felt it would be an easier way of getting the results faster.

The app was given to fifty students across the campus, the sample ranged from first, second and third years and they were asked based on their experience with the app if they could fill out the survey. Out of the fifty people that were asked thirty-seven completed the survey.

3.2 Review of existing work

The group decided to look for apps that are currently available for colleges and what features they had. We started with looking at apps that were related to ITB and found there were only two. The first app which is called "ITB Student Services" just acted as a link for the ITB website and brought you to the Current Student webpage. The second ITB app we found is for the Student Union and this did not seem to work on any level. Therefore, with this information we established that the college needs a more efficient app that has a variety of features.

We then decided to turn to other colleges and see what apps are available. In the app store the first college app we found was the Dublin Institute of Technology app. This app also acted as a placeholder for linking to information on their website but had done it with a more user friendly and streamlined Graphical User Interface (GUI). It also provided more links to services such as the library and course calendar.

The next college app we looked at was for National University Ireland Maynooth. This app has a feature that the group felt was helpful, which is that you can find where your lecture hall is and because it is linked to Google maps, you can see the direction the lecture hall is in.

The last app that we explored was the Dublin City University app. This app has the most striking GUI; it is both easy to use and has a range of features we like. We felt that this app has a very professional appearance in comparison to the other apps. The app also has a link to all emergency numbers and the group thought this is a useful feature as we ourselves do not know an ITB security phone number without having to look it up online.

With the information gathered from the aforementioned apps we felt we could then decide on what aspects we needed to focus on to do our research. We decided on a thematic literature review as we felt this was the best approach to help us answer the questions we had about designing a successful and user-friendly app.

Chapter 4: System Requirements and Specification

4.1 Requirements

Our app is a mobile based app that is designed to help new students attending 3rd level education for the first time. Our initial focus is to help students that are attended ITB, specifically computing students on initial release. We hope that the system could possibly in the future to be expanded on to help students within our courses. The aim of the design is that this app could also be used within other colleges and institutes with little modification.

The features we want to implement are:

- Timetable
- Forum
- Transport
- Chat
- Contacts
- Quick links
- Quiz
- Map

We believe that the timetable, contacts and chat are essential core features to make the app useable and practical. The aim is to combine all the resources that students need on starting college into one place to ensure they have all the support and resources that they need.

For implementation, we are planning to implement this using android studio to write and design the app itself and for database we will use Firebase as it is directly supported with Firebase and it simplifies query and updating the database with new information. We will also need to use the real-time transport API to get the transport information that is up to date and live.

Chapter 5: System Design

5.1 Use Cases

The users of the ITB app will be both students and lecturers. The app will have a variety of different functions which they will be able to use. After registering and logging in, they will be brought to a home screen with many different options, listed below.

- Do a Quiz
- View Timetable
- View Public Transport in the Area
- Find a Classroom
- Chat to Other Users
- Connect with their Mentor/Mentee
- Post in a Forum
- View Important Links
- Call College Phone Numbers

Register

Preconditions: User is not a registered user

1. User opens the app
2. They are given the option to either Log in or Register
3. User clicks on "Register"
4. User is brought to a screen to fill out:
    - Name
    - User Type - Student/Lecturer
    - Student Number/Lecturer Email Address
    - Course Name - from drop down menu
    - Radio Button for Mentor or Mentee (optional)
    - Enter a password and repeat password
5. User clicks Submit
    5.1. If passwords don't match, or do not meet password restrictions, user is prompted to re-enter the passwords
    5.2. If user is already in the system, a prompt to tell them this and a link to login and a link for "forgotten password" is given.
        5.2.1. User clicks log in and is brought to the login page
        5.2.2. User clicks forgotten password and an email is sent to the user to reset their password
6. User is brought to a screen prompting them to "Click the link in the email we just sent, to confirm your address".
7. User goes to their email and clicks the link.
8. This brings the user back to the app screen that prompts the user to either Log in or Register

Post conditions: User is a registered user

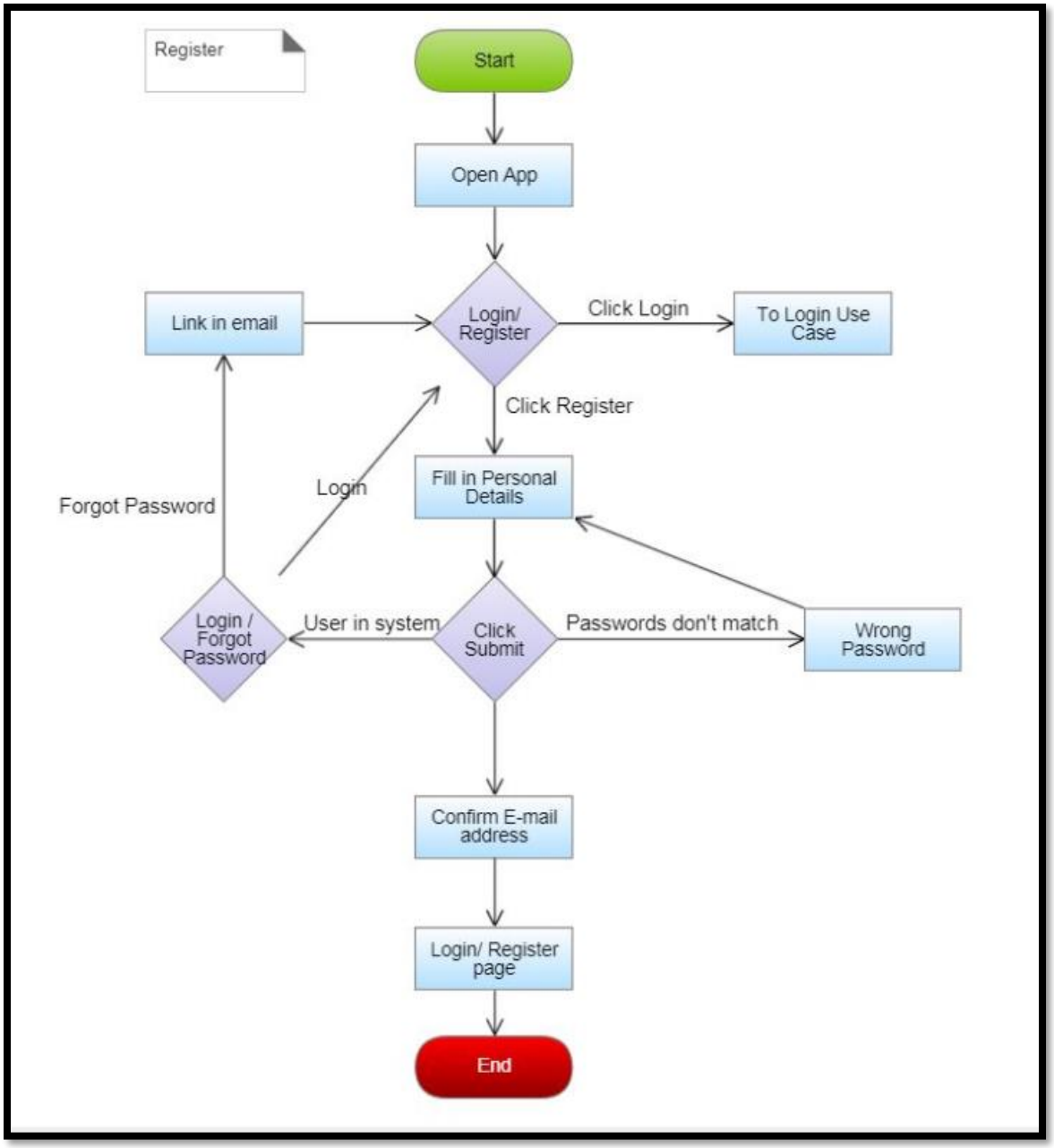


Figure 2 Register Use Case

Login

Preconditions: User has an account

1. User clicks on the Login button.
2. User is brought to a screen to fill out:
    2.1.1. Student Number/Lecturer Email Address
    2.1.2.Password
    2.1.3.Forgot password
3. User clicks Login
    3.1. If the user has entered the correct details the User is brought to the Menu Page.
    3.2. If passwords do not match, or the Student Number/Lecturer Email Address is not in the database, user is brought back to a fresh Login screen, with an output stating login details do not match the system and a prompt have you forgotten your password.

Post conditions: User is a logged in and on the Menu Page.

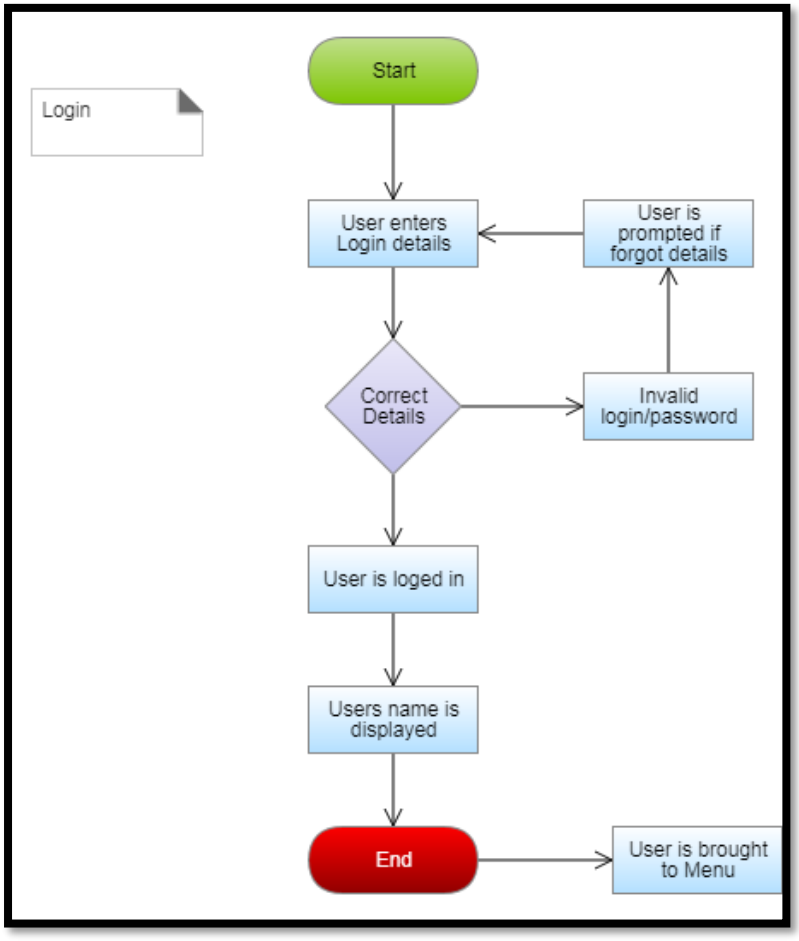


Figure 3 Login Use Case

Find a Classroom (Map)

Preconditions: User is logged in

1. User clicks the map button
2. User is brought to a screen with a Google map a drop-down menu to select what building and a list of available rooms.
3. On clicking a room number, the user wants to know location of the map will then change and zoom into the location placing a tag on the location

Post conditions: User knows the direction the class is and will go back to menu.

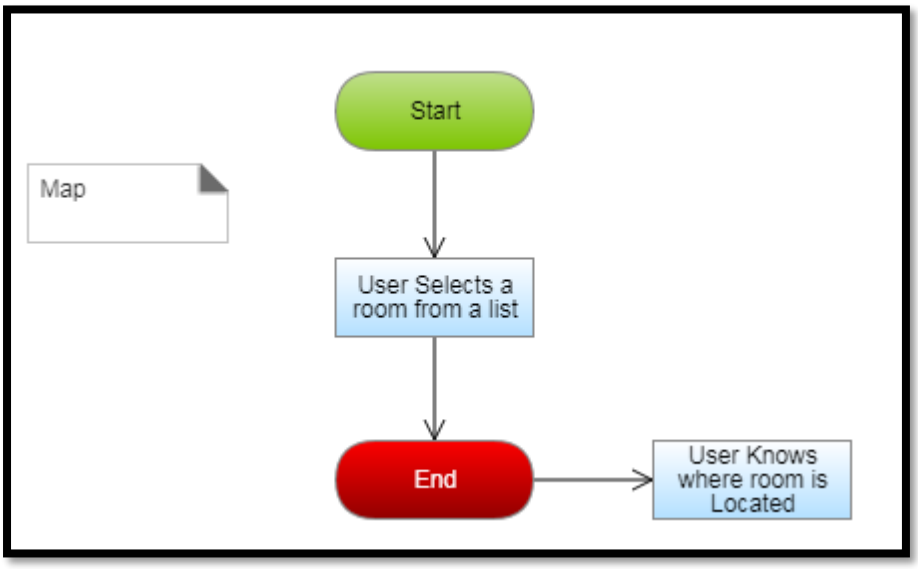


Figure 4 Find a Room Use Case

Chat to Other Users &Connect with their Mentor/Mentee

Preconditions: User is logged in

1. User clicks on Chat button
2. User is brought to a page with a list of chats already in the system
3. They have the choice to start a new chat or choose an existing thread
    3.1. User chooses to start a new chat
        3.1.1. User is brought to a screen with a list of app users
            3.1.1.1. The user's mentors/mentees are listed at the top of the contact list
        3.1.2. User can search for another user's name
        3.1.3. User picks a contact
    3.2. User chooses an existing thread
4. The previous messages sent to this contact are shown.
5. The user can type and send a new message
6. The user can also receive messages

Post conditions: User has sent message to the intended contact

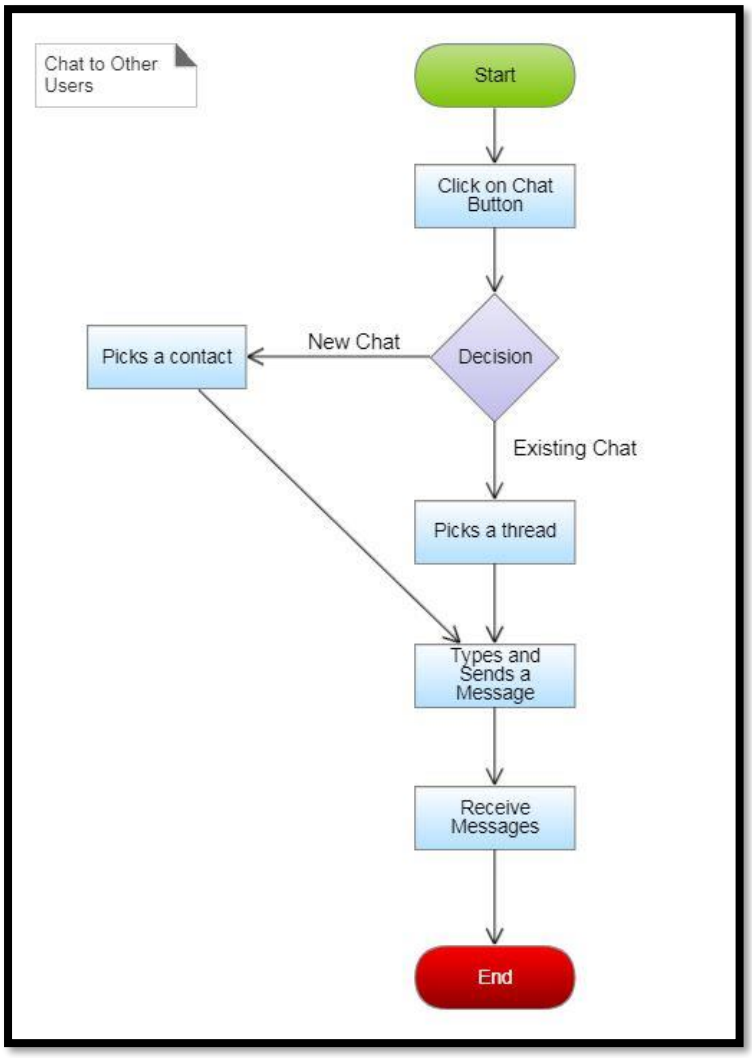


Figure 5 Chat Use Case

View Important Links

Preconditions: User is logged in

1. User clicks button to view important links
2. User brought to a screen with list of college links
3. User can scroll and find link they are looking for
4. Clicks on link
5. App is closed and user is brought to a browser, opening the link they clicked

Post conditions: App is closed

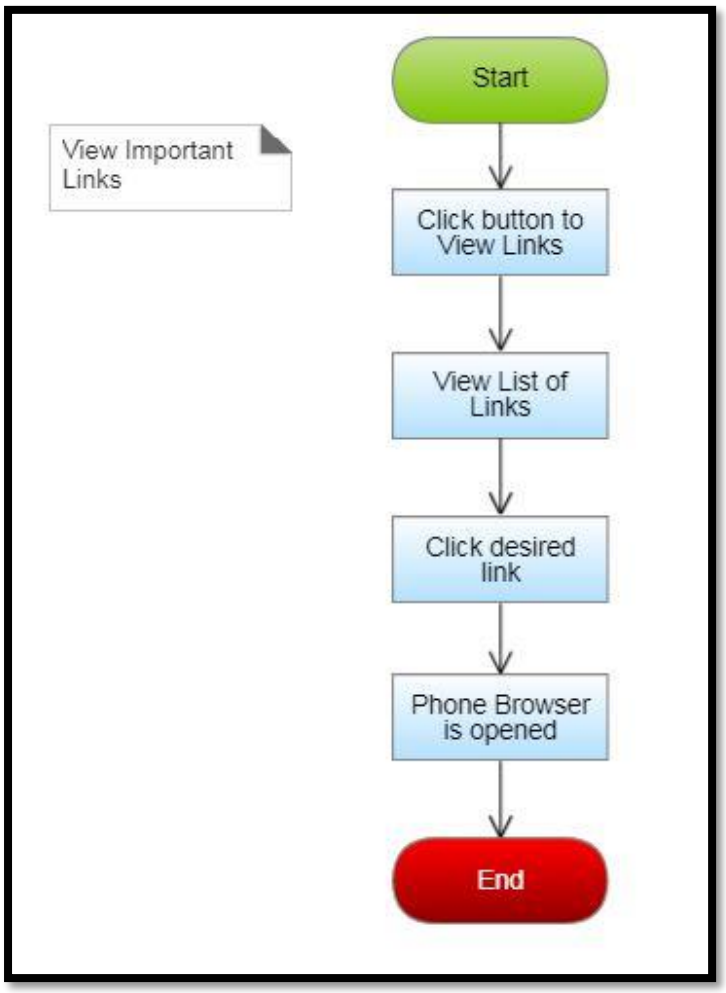


Figure 6 View Links Use Case

Call College Phone Numbers

Preconditions: User is logged in

1. On the head of each page is a phone symbol
2. User can click on this symbol from anywhere in the app
3. User is brought to a list of college related phone numbers
4. User can scroll to find the number they are looking for
5. User clicks on the number
6. A prompt pop's up asking if they would like to call that number
    - 6.1. User clicks call
        - 6.1.1. The app closes and the call will be made
    - 6.2. User clicks cancel
        - 6.2.1. User is brought back to the list of contacts
        - 6.2.2. From here, the user can find another phone number or go back to the home screen

Post conditions: User has made a call or is back to using the App

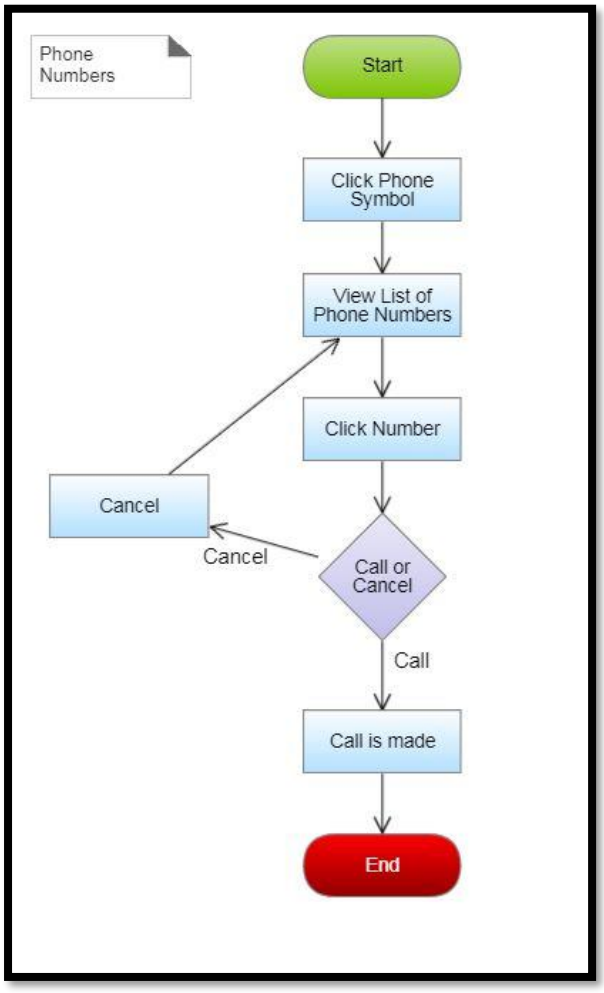


Figure 7 Call Phone Numbers Use Case

ITB Quiz

Preconditions: User must be registered and currently logged in. There must be a quiz available for the user to do.

1. The user clicks on the “Quiz” button on the app menu.
2. The user is brought to a screen in which they are given the options
    2.1. Semester that the module the quiz they want to do is from.
    2.2. The module names.
    2.3. The week that the user wants to take a test on.
3. When the options are chosen by the user, they click the “Take test” button.
4. The user is giving a series of questions in which they are given multiple possible answers.
    4.1. Each question will require the user to click on a radio button for the answer they have chosen.
    4.2. After the user has clicked the button they click the “Next” button.
    4.3. The user will be given another question until they have answered the number of questions in the test.
5. After the user has finished the test, they will be brought to a screen that will give them the results of the test.
6. The screen will have buttons that the user will use to choose what they would like to do next.
    6.1. Retry button which will allow them to do another quiz in the same subject that they just completed.
    6.2. Back to quiz home, which will bring the user back to the quiz home to choose another module to take a test on?

Post conditions: User has returned to the quiz home screen or is retrying the quiz.

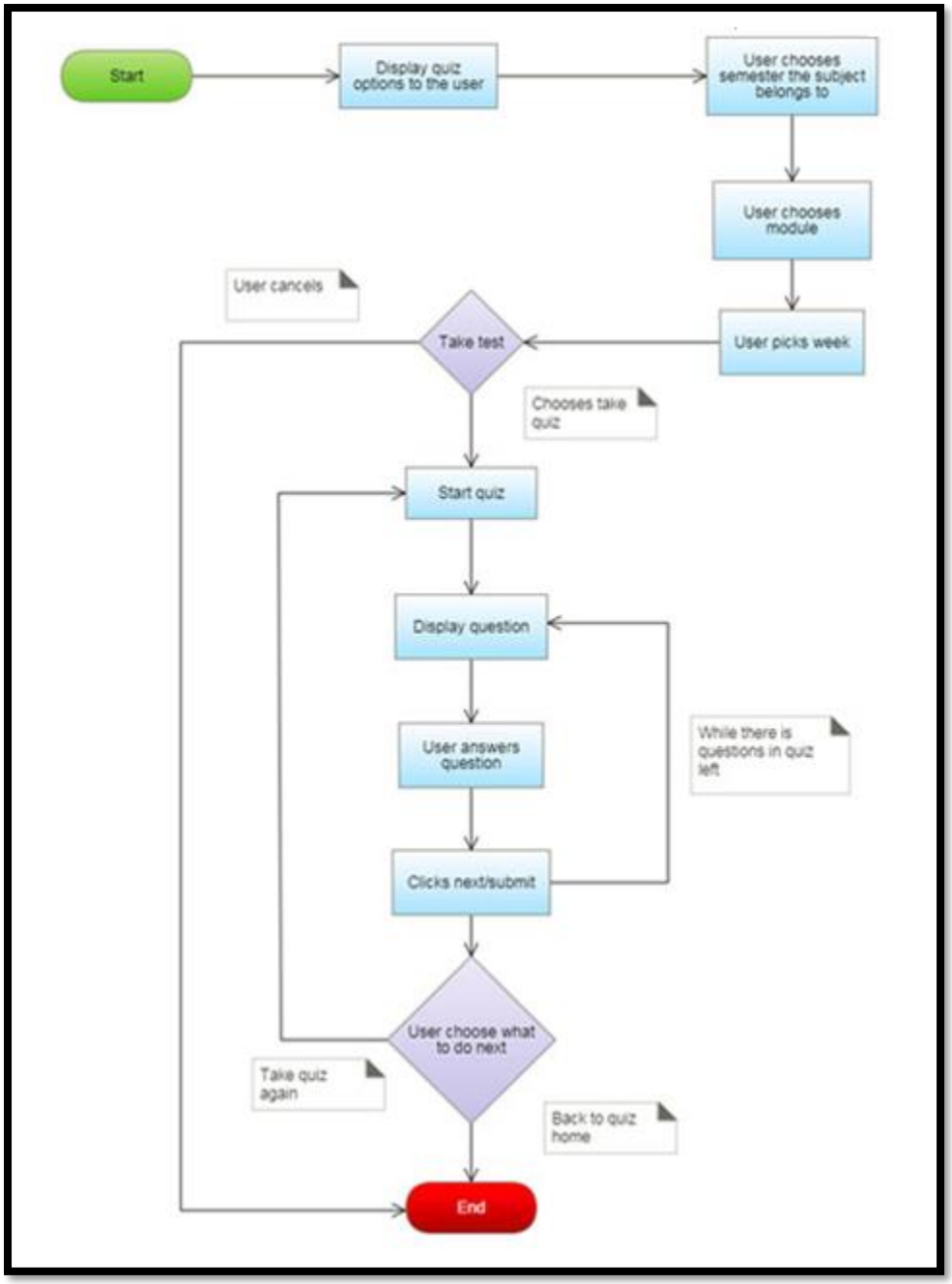


Figure 8 Quiz Use Case

Live Public Transport Updates

Preconditions: User must be logged in and have available network connection.

1. The user clicks on the “Transport” button on the menu screen.
2. The user is given the options of the method of public transport they wish to take (i.e. Dublin bus, ITB shuttle bus)
3. The user then is presented with a list of routes that are available in the area.
4. The user then chooses the location that they wish to depart from.
5. A screen will load with live times that the method of transport is due to leave from that location.
6. The user can press the “Return” to go back to the main activity.

Post conditions: The user has returned the main screen or is checking another time.

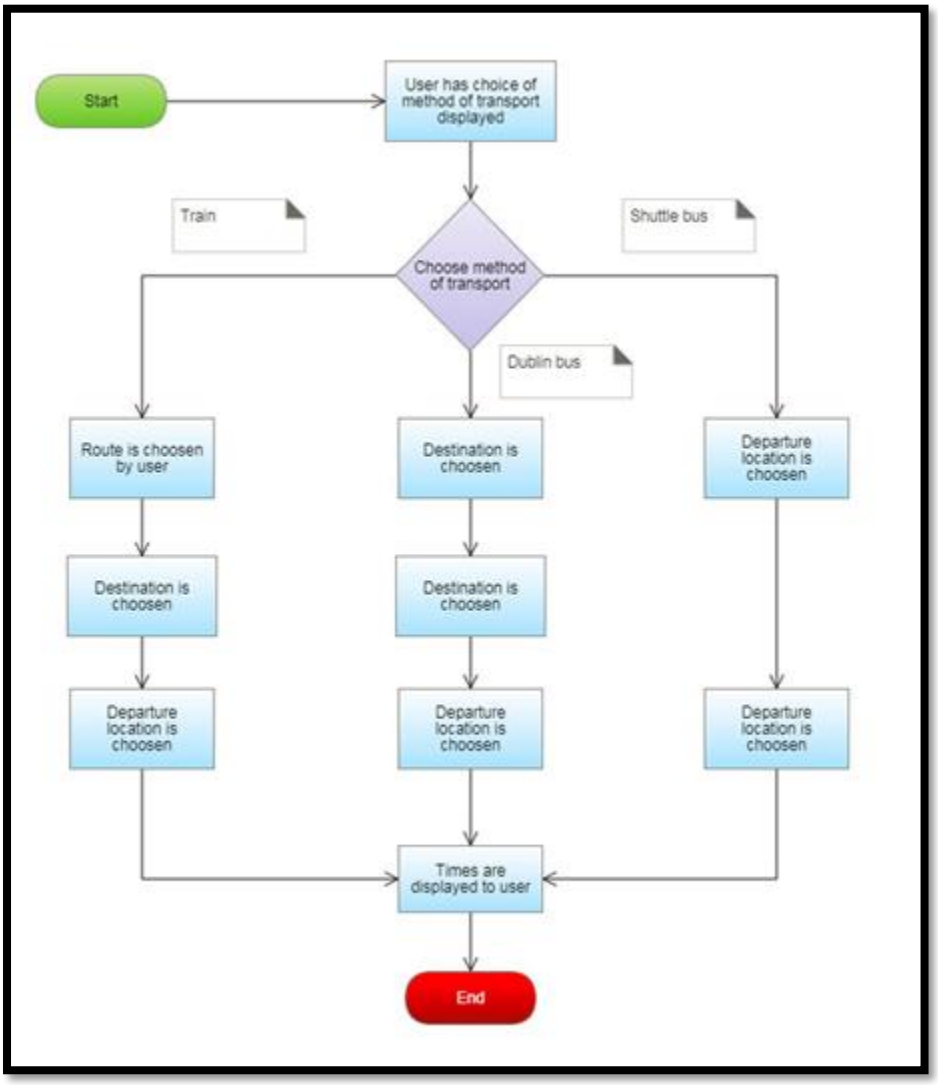


Figure 9 Live Transport Updates Use Case

Posting a New Topic.

Preconditions: The user must be registered and logged in. The user must have a connection to the internet.

1. The user clicks on the “Forum” button on the menu.
2. The user chooses the topic in which they wish to post (i.e. module).
3. The user clicks the post “new thread” button.
4. The user is brought to a screen in which they enter the message they wish to post.
5. The user then can click a button to finish their action.
    5.1. The User clicks the “Post” option to post the message.
        5.1.1. The user then is brought to the discussion board screen to where the message posted.
    5.2. The user clicks the “Cancel” button to not post the message.
        5.2.1. The user is returned to the discussion board in which they were viewing before posting.

Post conditions: The user will have either posted a message and be looking at the post within the discussion board or will have returned to the board without posting the message.

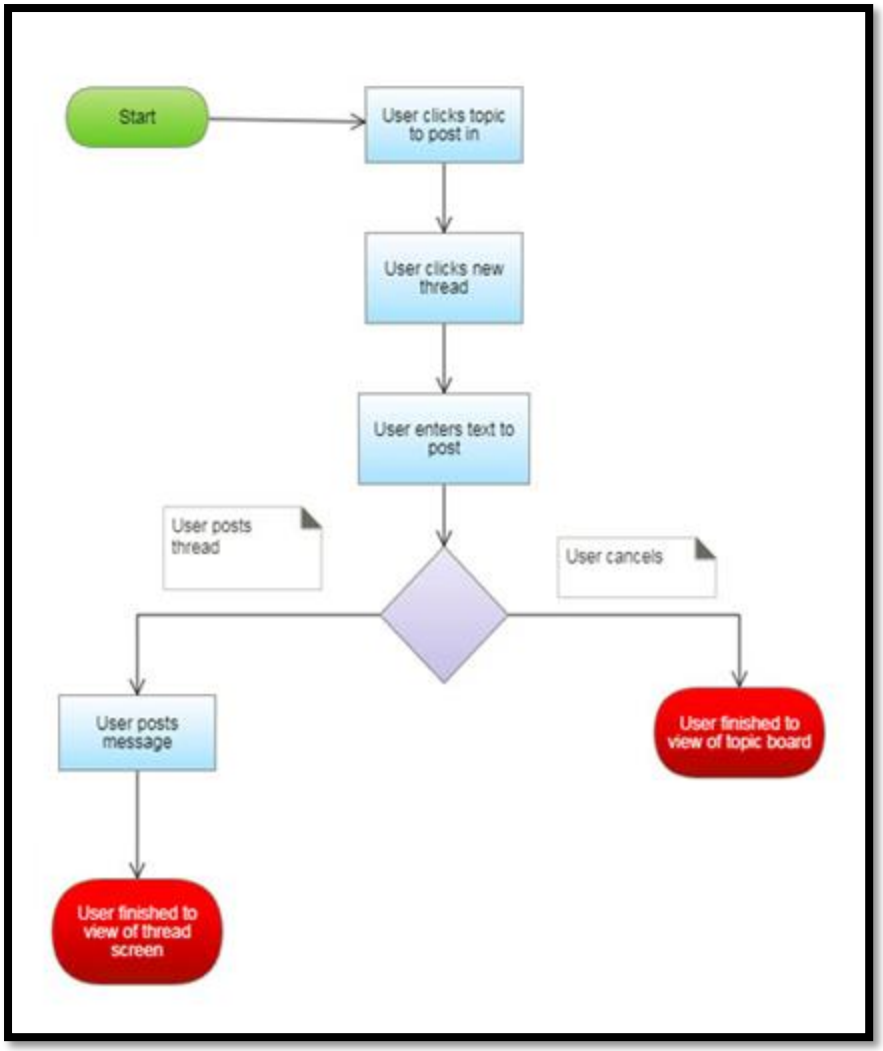


Figure 10 Post a New Topic Use Case

Posting in the forum.

Preconditions: The user is registered and logged in. The user is currently looking at a topic. The user must also have a connection to an internet connection.

1. The user is viewing a topic.
2. The user clicks the "New post" button that is on that topics page.
3. The user is brought to a screen in which they can reply to a topic.
4. The user must fill in a message to post to continue.
5. The user can click a button to finish their current action.
    5.1. The user clicks "Post reply" in which they post a reply to the topic.
        5.1.1. The user is brought to the topic screen to view their reply within the topic.
    5.2. The user clicks the "Cancel" button.
        5.2.1. The user is returned to the topic in which they were viewing.

Post conditions: The user will have either posted a reply to a topic in which they are now viewing. Or the user did not post and returned to the topic that they were viewing.

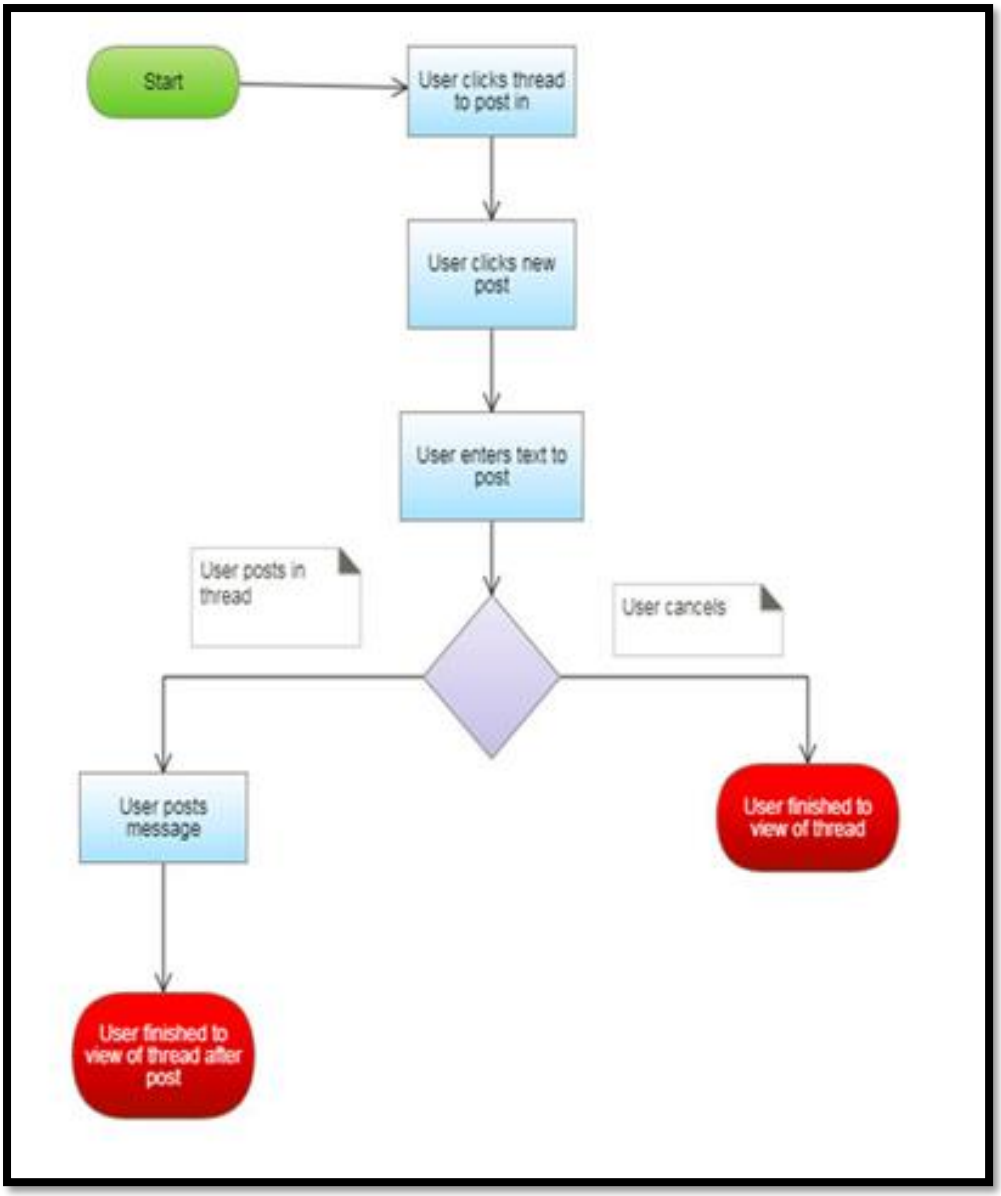


Figure 11 Post in a Current Topic Use Case

5.2 Wireframes

Before we began developing the app, we drew out some wire frames, and then used online software to make digital wireframes. This helped us all to make sure we were all on the same page about what exactly the app will do, and what the behaviours will be.

Here are the wireframes for logging in.

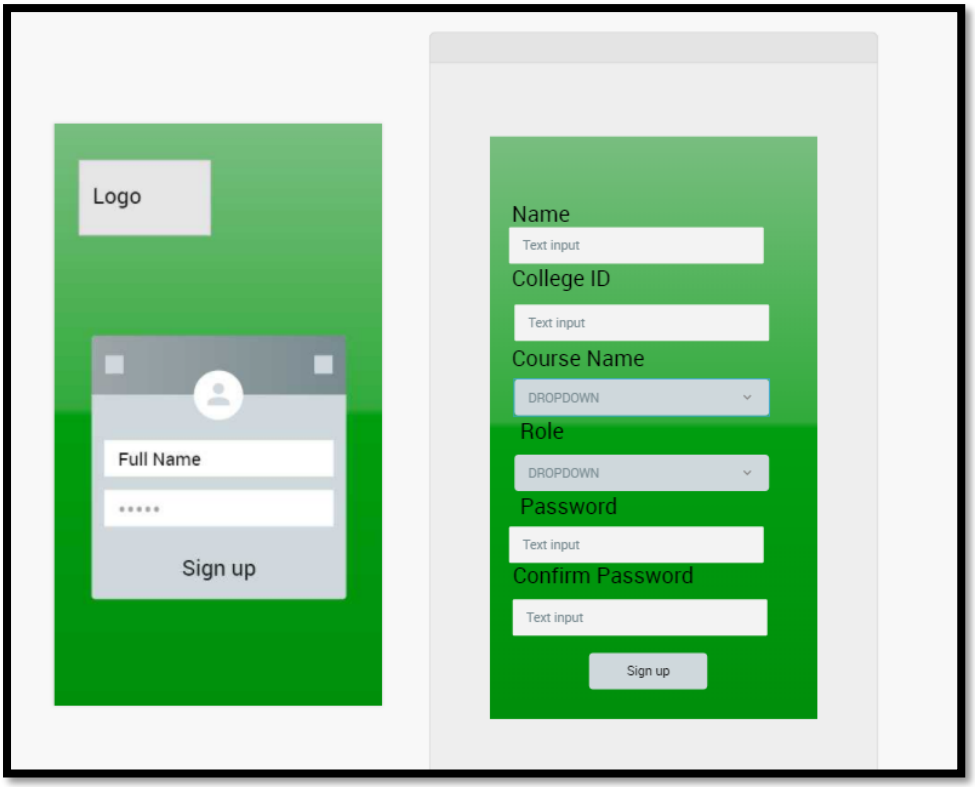


Figure 12 Login Wireframe

This is the wireframes for registering a user. As you can see in Figure 12, the user will click “Sign Up”, and be brought to a screen which captures the user’s details. Once the user has confirmed their details via a link in their email, they will then be brought back to the title menu and can log in as shown in the wire frame previously. Figure 13 will the show you where the user goes from here.

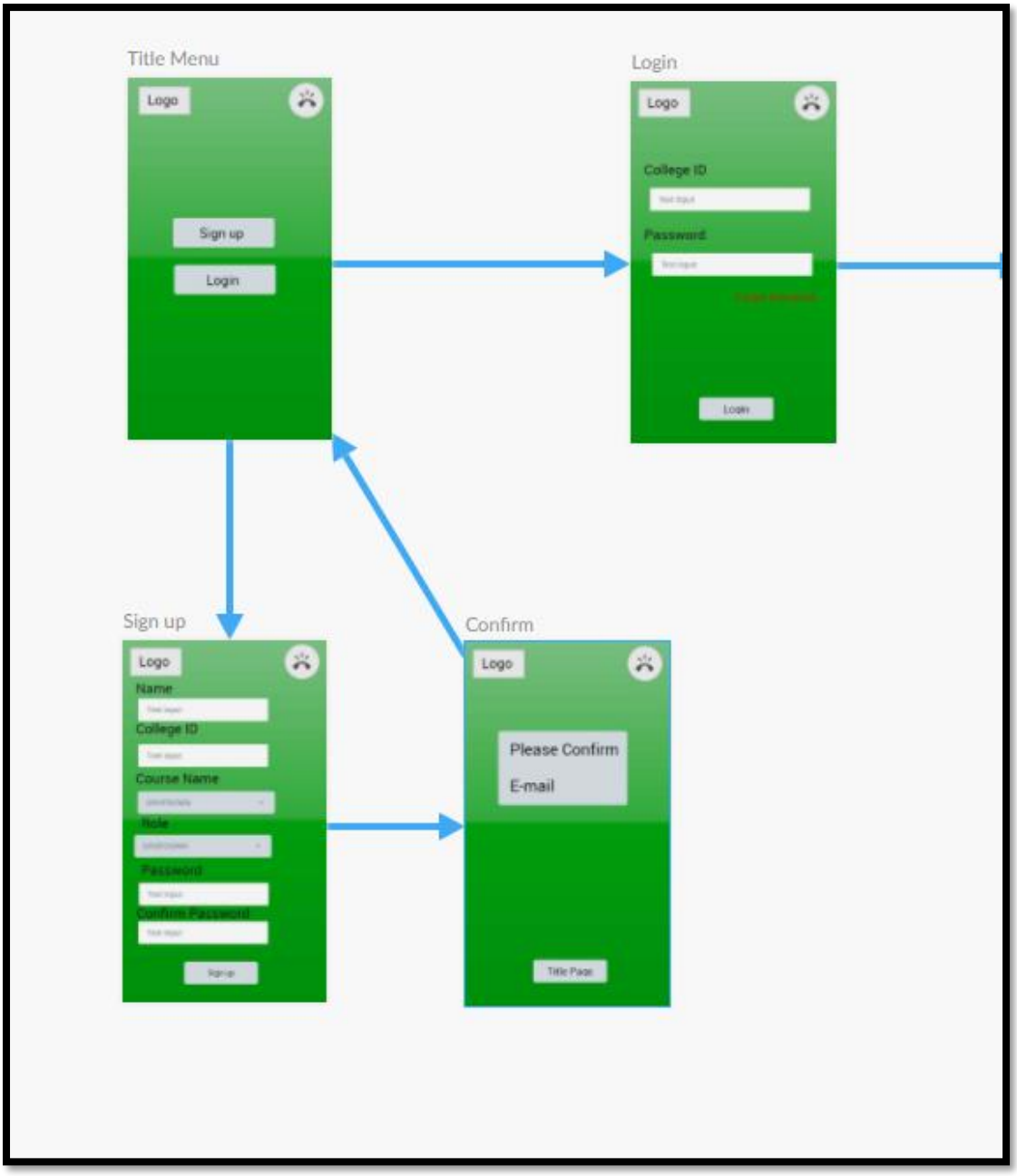


Figure 13 Sign up Wireframe

In Figure 13 we can see the Main Menu; this is where the user will be able to select one of the features previously mentioned. In this figure, it shows how the user can be brought to a map to find the classroom they need to go to, and it also shows the flow of if they choose to take a quiz.

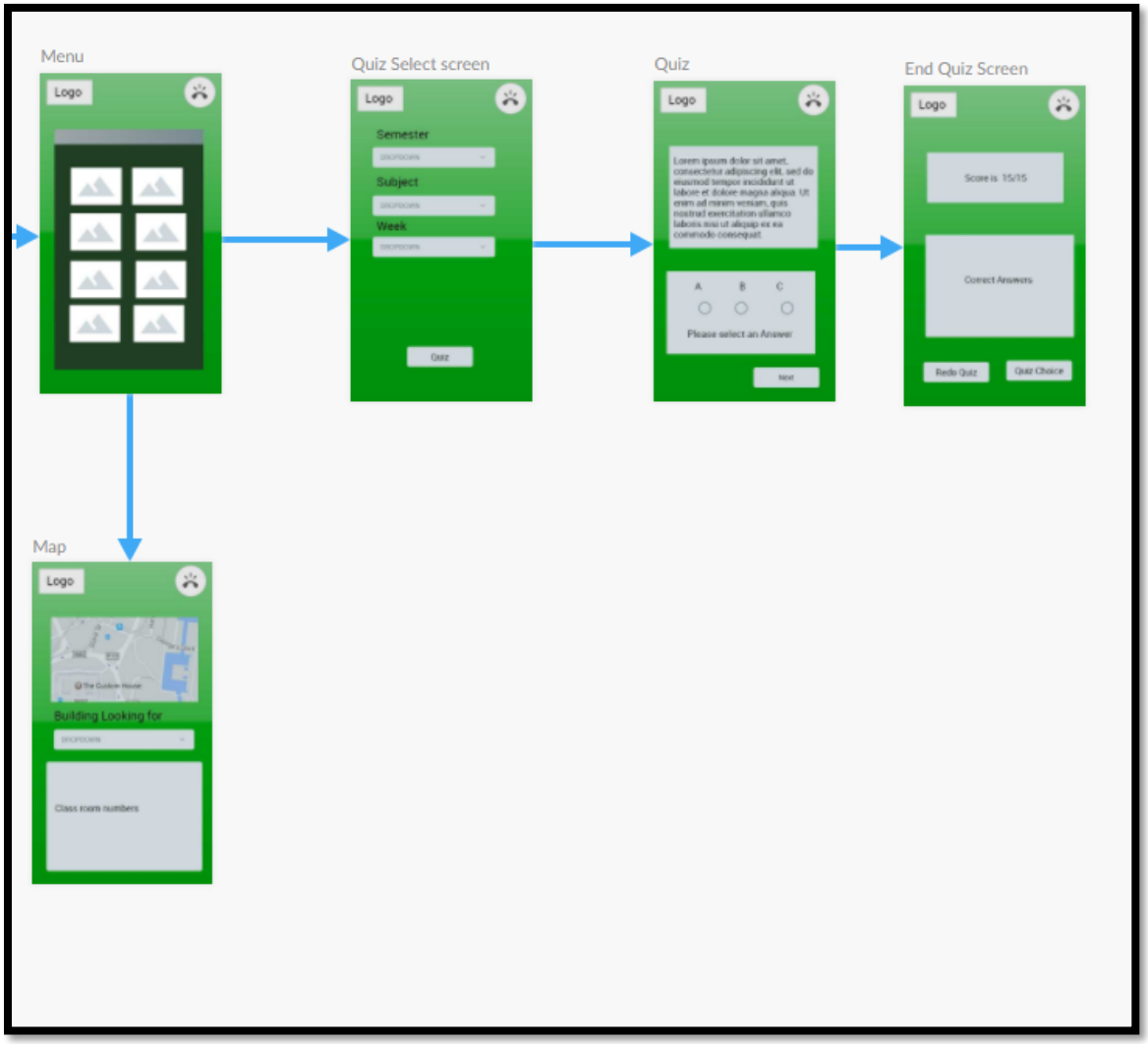


Figure 14 Main Menu Wireframe

Chapter 6: Implementation of Prototype

6.1 Choosing a data storage method

The first step that the team had to take was to decide which database to use for the project. Android does not directly support SQL unfortunately and this is the database that the team is most comfortable using. We would need to host it using web hosting and use an android service. A better and more efficient method is to use Firebase which is developed by Google. Firebase is a very common method of data storage, which can be used for many different projects such as mobile apps and web apps etc. Firebase gives many benefits to implementation using services that will be discussed in the following sections.

6.2 Users Accounts

The first feature that we will discuss is the user sign up and accounts system, which for the app is a vital one due to the later desired features, which are a chat and forum feature. The use of Firebase gives the team the benefit of Firebase authentication. This is a feature of using Firebase that takes away the need to store the user details such as passwords from the developers and allows Firebase to handle that. To create an account with the app the user needs to provide an email address and password then we can call a method provided by the Firebase library to create the user.

However, the team wanted to ensure only ITB emails are used to register for an account, to avoid just anyone downloading the app and gaining access. The method that we used for this was to ask for the users ITB identification, which for students is their student numbers and for staff users is their email address without the domain name. The app then determines what type of account the user has from the provided ID.

Since Firebase handles the authentication part of the app, there was no need for implementation of hashing algorithms and storing of plain text password. Firebase also allows the user to recover their passwords using the Firebase messaging to email a new link which will create a new password. The app requires information stored about users such as course etc., we store this in the Firebase database in the users table.

6.3 Chat feature

The chat feature implementation allows users to message any user that has registered with the app. The chat features contact list are filtered into students, lecturers and staff sections to ensure that the user can quickly find any user they wish to message. This can be further filtered by name. If the user has sent messages they will have a list of the previous messages they have sent. The list will highlight messages that have not been read yet. Students that join ITB are allocated to a group.

Once they register for the app they are asked for their group. This is to allow the user to have access to the group chat within the chat feature.

The implementation of this feature heavily depends on Firebase. Each user is given a section within their general profile information within the database. Here is stored the list of messages that the user has access to which is updated in the senders and receivers' database. The feature has listeners that are available from the Firebase library that listen for changes in the database and that allows the view be updated as new messages come in.

Firebase supports cloud functions which are functions that can be triggered depending on when the programmer wants them to trigger. The app makes use of these when a new message is sent to a user and the database is updated, the apps cloud function triggers on creation of a new child. This then sends an http request to the device that the user that received the message is using. A service is responsible for interrupting what to do with the http, the service sees that it's a new message and will notify the user using the Android notification manager.

6.4 Forum feature

The forum feature is designed to be user friendly and simple to use. The forum is split into sections such as module, campus etc. some sections have subsections, such as module and will list the subjects that are in the users' course. The user can make new posts and upload images, which can be used for example, if the user wants to ask a question about something on their notebook.

The users can reply to any of the posts and they are displayed in a modal. The forum much like the chat feature takes advantage of Firebases benefits. The information is retrieved from the forum database and is added to the forum by using the Firebase listeners. When the user has the reply modal opened, the app has a listener to ensure any new posts are displayed to the user as soon as they come in.

6.5 Transport feature

The transport section has three sections, one that is used to display Dublin Bus times that stop in the area of the college, the timetable for the shuttle bus and trains that leave the Coolmine station. Each of these features had to be implemented in different ways. As students may join ITB that may not be familiar with the area, the team decided to include a map which shows each of the stop locations where fit.

6.5.1 Dublin Bus timetable

For real time transport information, there is an API that is available from the data.gov.ie website. The API functions by the user providing a link with the information they want within it such as route and stop. The app has a list of the Dublin bus stops that are within the area. When the user selects Dublin bus, it loops through this list retrieving the routes within the area. The user can select the route and then the stop they want the time for which retrieves the next buses and times. The app checks the next hour of buses.

The link is sent using an http request with the information placed into the link such as route and stop id. The server then sends a JSON string of all the information that is available at that time. This information needs to be parsed down to JSON objects and filtered down to the information that is required. The information then is given to the activity which then can proceed and show the information to the user.

6.5.2 Shuttle bus timetable

The shuttle bus timetable does not have a method of real time information that is publicly available. The timetable is stored within the app in a JSON string that is parsed down depending on the stops that the user selects. Due to a small number of bus stops, we did not need to dynamically load in the stops.

6.5.3 Irish Rail timetable

The train timetable uses a similar method of loading the information as the Dublin Bus timetable. The same can be used. However, Irish Rail does not support JSON strings, which means only xml can be used with Irish Rail. The only local train station to ITB is the station at Coolmine. The only information we needed to include to this was the station location, any train that stopped at the station was one that was going to be displayed within the app.

There was more information provided with Irish Rail than that of Dublin Bus. Information such as the train status and the number of minutes they are late. This was information the team felt was a good addition to the transport timetable, so it was displayed in the train’s information panel.

6.6 Map feature

One of the required features of the app was to have a map of the campus which shows the location of each of the rooms on campus. This was implemented using Google maps which can be added to an app by using a map fragment and importing the Google maps library. The user's location can be shown on the map if they give the app permission to access that information.

Android allows access to the geolocation of their device, this allows users that have the account permissions such as a staff user to add locations that they visit from within the app. The locations co-ordinates are stored within the Firebase database. The user can choose from a list of locations to find the room they are looking for.

6.7 Event System

One system the team decided to add during development was an event system. The purpose of this system was to alert students to certain events that maybe happening at that time. For example, if the college was closed due to some unforeseen reason.

The system appears on the menu screen underneath the title bar. If the student taps the bar it loads a new activity with the details associated with that event. To implement this, a new event is added to the firebase database. Once that is added, a notification is sent to all the students that are signed into the app using a cloud function. Each of the events titles loop on the home screen for a few seconds if there is more than one event.

6.8 Quiz

The team wanted a quiz feature included in the app that would function similarly to the quiz system on the colleges Moodle system. The student would be able to choose from a list of modules that they are studying as part of their course. The module leader would also be able to add new quizzes and questions to quizzes that are already created.

The student once they have selected a quiz to take, the app chooses ten from the pool of current questions that are available for that quiz. Once the user has finished the quiz, the app adds up the correct answers and shows the user the result.

The course leader can edit and make new quizzes from within a system that is available once they are selected as a course leader. The user then can select to make a new quiz and add questions, once saving the quiz, it is available for students to take immediately. If the course leader does not want a certain question to be in the quiz any longer, they can delete that question. All the data is saved using the Firebase database which loads the questions for that quiz once a user selects it.

6.9 Links

The app has a directory of important links that are associated with the college. All these links were available in many places, there was no one place that the students could go to find the important webpages. The team felt that this would be one of the essential features that the app could have.

The implementation of this is achieved by using a string array within an Android resource file which is loaded into the activity when the user presses the links button. This method was chosen due to the resource file being something that can be expanded on with later updates to add new links.

6.10 Phone

Similarly, to the links feature, one of the apps desired features was a phone directory so a user can find numbers for important college services such as security, the nurse's office etc. The phone numbers are also stored in a string array resource file to allow further numbers to be added in later app updates. The app opens the devices phone as a new intent and the phone number is passed to it as data parameter.

6.11 Timetable

The timetable feature of the app is used for users to organize their time during the week from within the app. The team decided that we would let this be a system that the users can enter themselves to allow them to fully plan their week. A user can enter the title of the time allocated, the start and finish time and the location of the activity. They can select the day they wish to view and see the appointments they have for that day.

The system is implemented using SQLite due to the feature not being required to be hosted online and this made the system less complex to implement with greater robustness and uptime due to the fact the user does not need network to access the data.

6.12 Notes

The notes feature was suggested to the team by our Project Supervisor as a good addition to the app. The purpose of this feature is to allow students to take notes from within the app, for example if the user wished to take notes from a lecture. The user can add a new note and give it a new title which is stored. The user can also edit their previous notes and read over their previous notes.

Similarly, to the timetable feature, the storage method for the feature is to use SQLite. Allowing easier access to the feature as networking did not need to be considered in order to use. Testing and evaluation

Chapter 7: Testing and Evaluation

7.1 Results of the first quiz

The group conducted a survey with first year students in ITB and we have learnt the following.

Issues that students faced:

- Students did face difficulties in finding the location of rooms and places to go when first coming to the college.
- Some students reported that they found it hard to adjust to life in college.
- Transport was an issue that come up a few times on the survey.
- Time management for students came up as a difficulty.
- Students found it difficult to make friends at the start of college.
- Finding empty rooms.
- Language issues for international students are an issue.
- Notifications for assignments, and instructions how to submit.

Statistics

When we asked if an app would be useful when joining ITB, 76% of the students responded with yes. This shows us that an app is needed, and students would download the app.

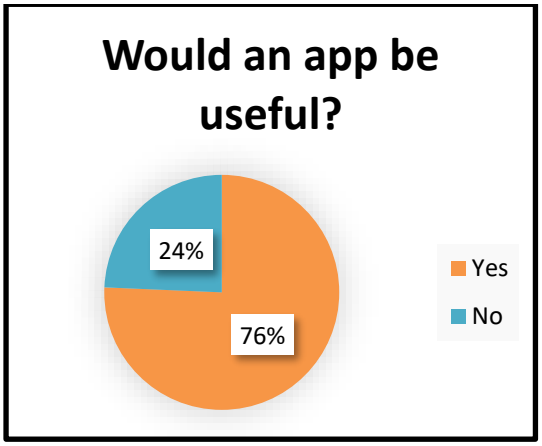


Figure 15 Usefulness of app

We asked which of the features students would see as the most important features needed in the app. You can see the results in the following chart.

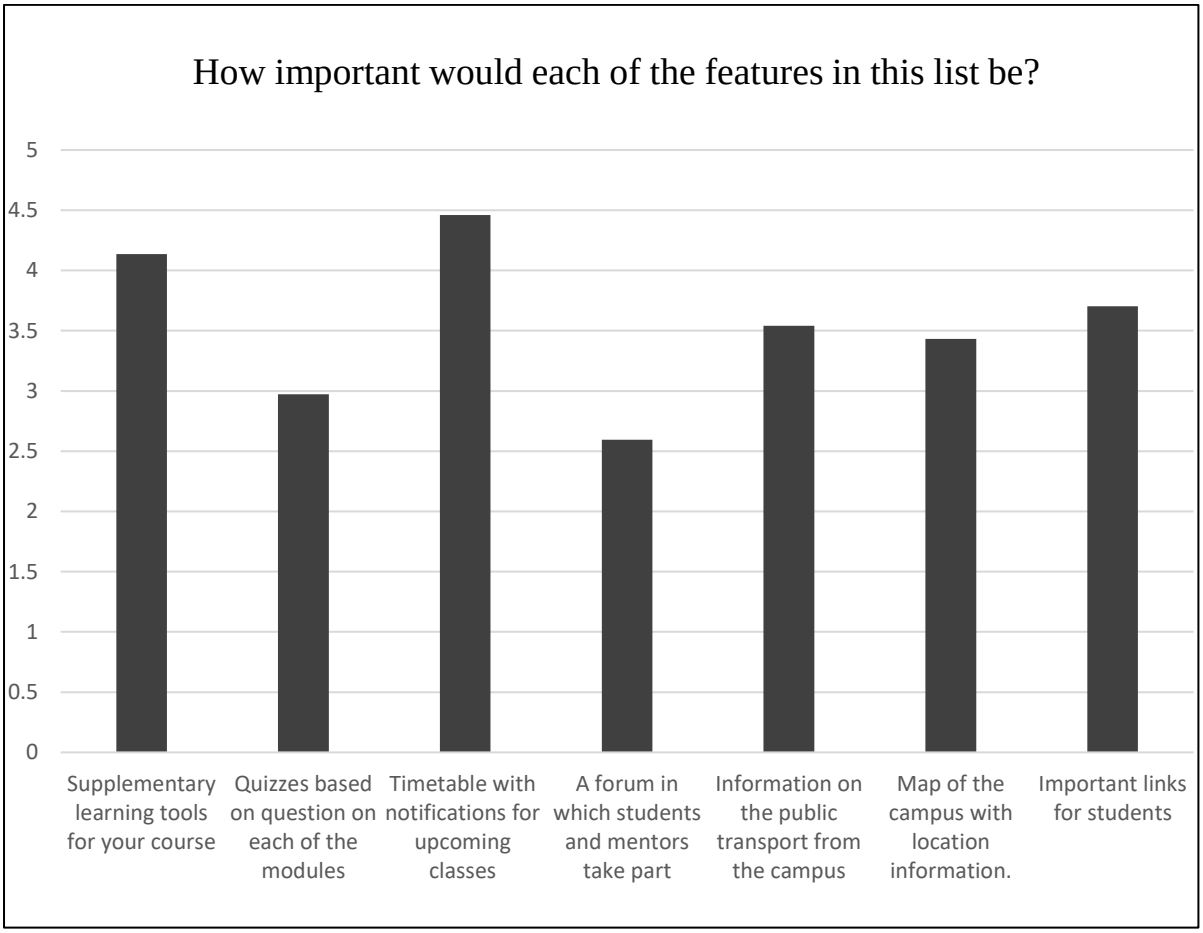


Figure 16 Important Features

We also wanted to know what difficulties students faced when entering ITB and the following are some of the results we received

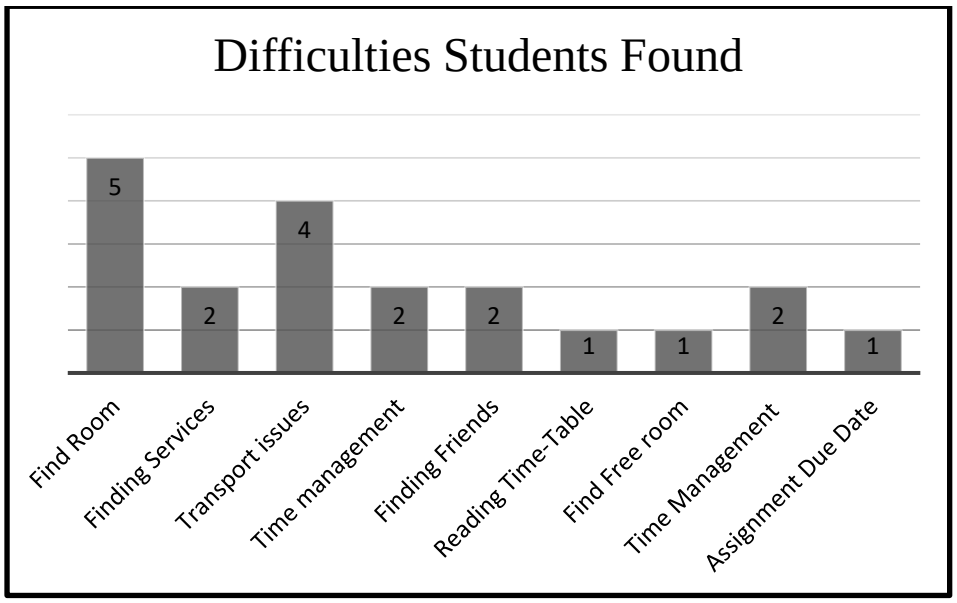


Figure 17 Difficulties Faced by Students

7.2 Evaluation of the results from first quiz

The surveys and research we carried out identified the challenges first year students' face adjusting to third level student life. We are proposing our app will help relieve pressure and ultimately help to create a less stressful environment for the student. From Figure 15 and 16 above we can identify some of the most important features of our app to students and the main challenges students face. In Figure 15 we can see that a feature with timetable information is of great importance to students and in Figure 16 finding rooms and transport are some of the biggest difficulties facing students.

We identified a range of support services that ITB already provide. However, we feel an app where these services can be accessed conveniently is required. We also identified other services which could be created to help improve student life.

The college has several support services already in place. We will bring these services to students' attention by including them in the app we develop such as the counselling, security, and the nurse etc. We will also include links to useful college learning platforms such as Moodle, E-mail and the college website. We hope to enhance the timetable that students can know when they are in class.

We will also add other support services we found to be useful for students to integrate into student life as outlined in the project proposal. With the results of the above survey we are satisfied that we have identified the areas in which we can best support students.

7.3 Results of the second quiz

Question 1.

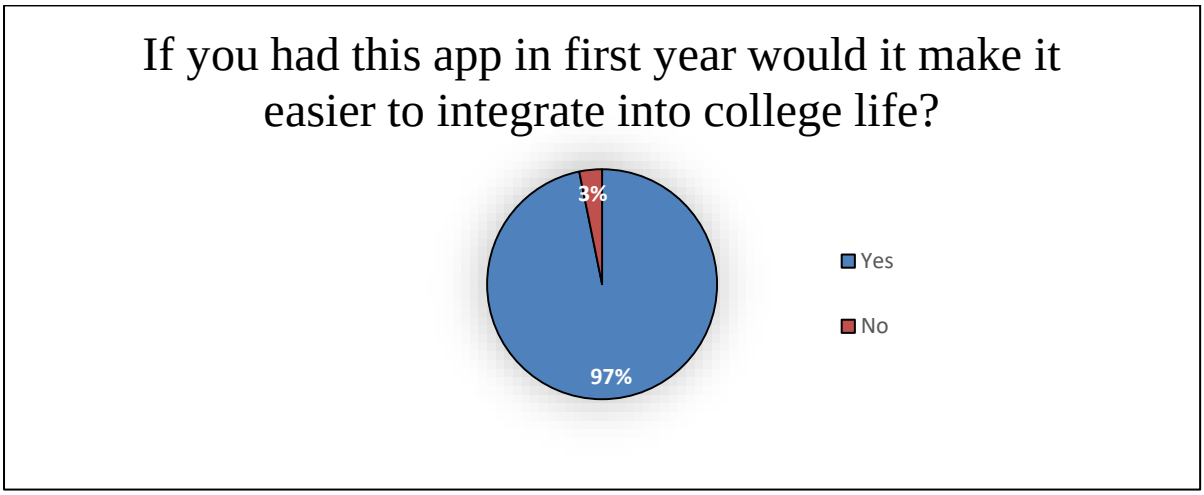


Figure 18 Question one

Yes 35/36 No 1/36

Question 2.

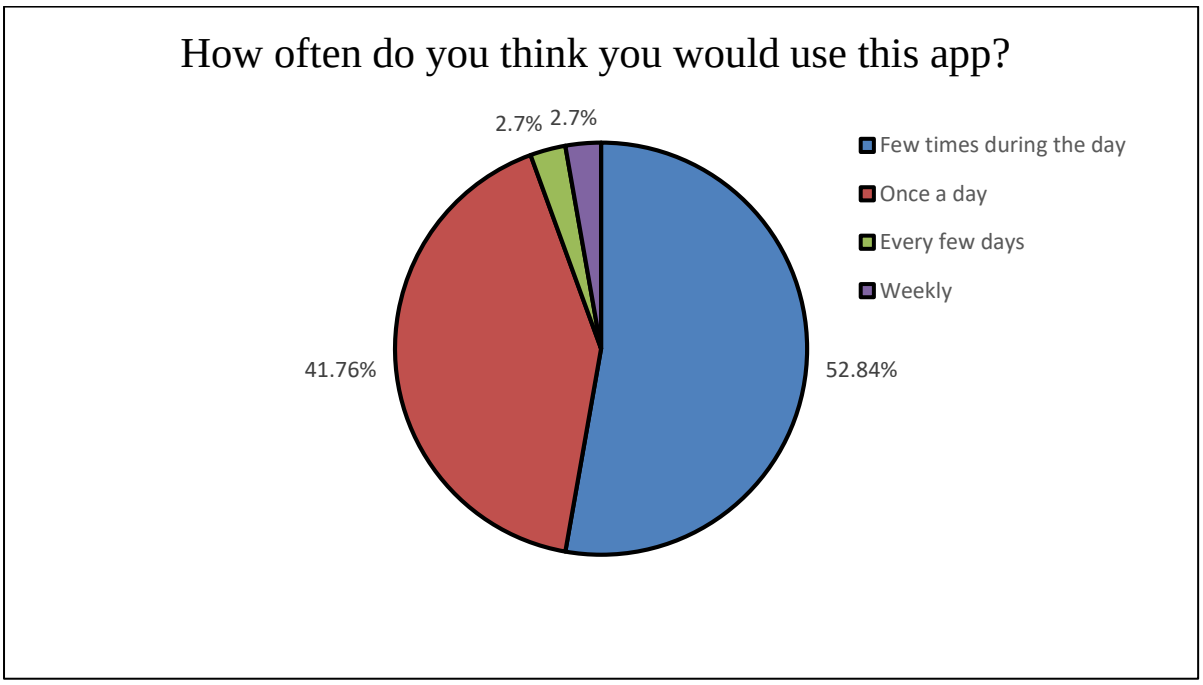


Figure 19 Question two

Few times during the day 19/36 Once a day 15/36 Every few days 1/36 Weekly 1/36

Question 3.

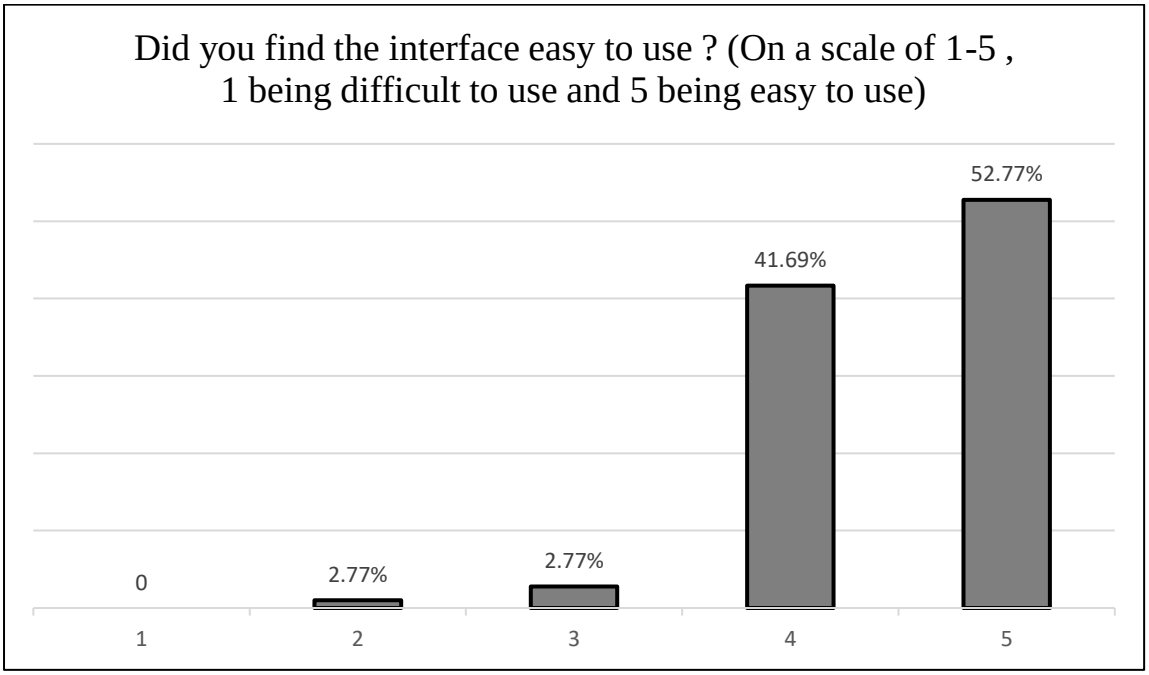


Figure 20 Question three

Very easy to use 19/36, Easy to use 15/36 Ok to use 1/36 Hard to use 1/36 Difficult to use 0/36

Question 4.

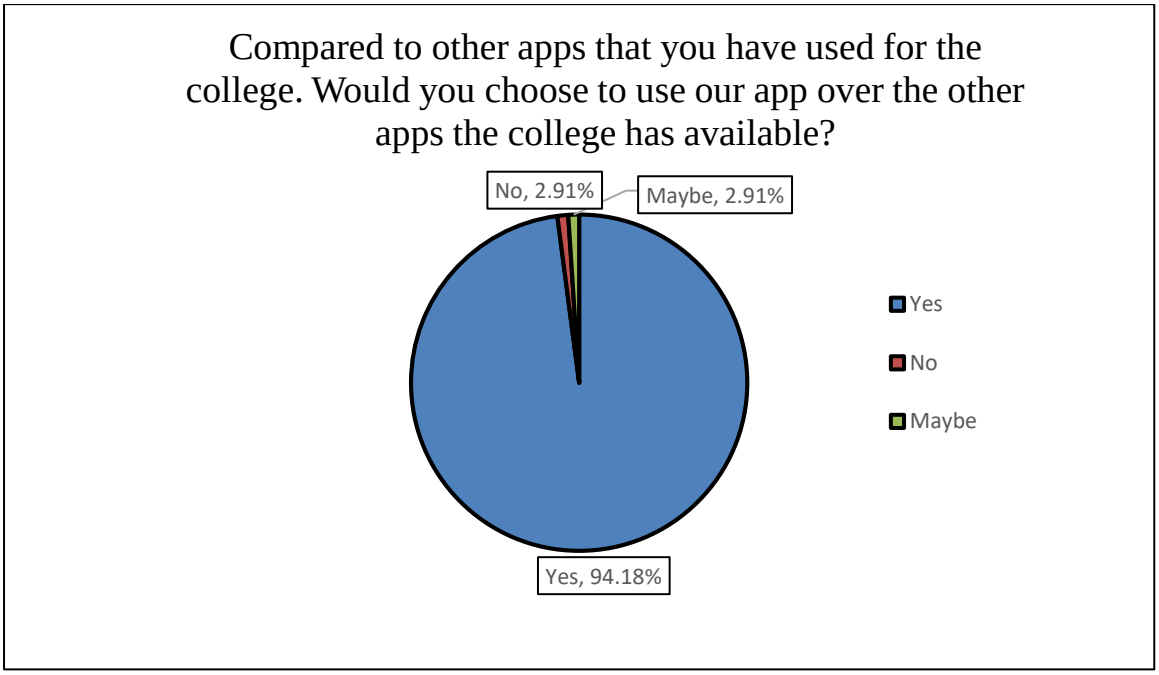


Figure 21 Question four

Yes 34/36 No 1/36 Maybe 1/36

Question 5.

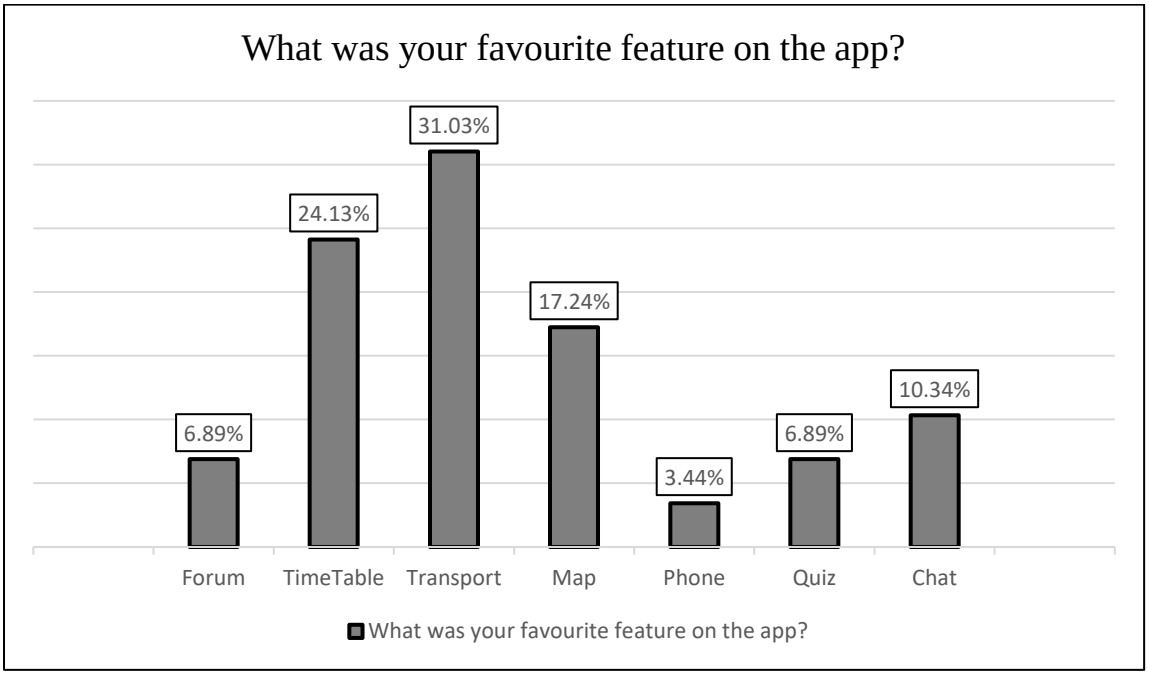


Figure 22 Question five

Forum: 2 /29 Timetable: 7 /29 Transport: 9 /29 Map: 5 /29 Phone: 1 /29 Quiz: 2 /29 Chat: 3 /29

Question 6.

Is there any other feature you would like to see included in an app like this?

Out of these results 11 people out of 31 that responded no.

There were some suggestions that would have been good to implement such as:

- Link to societies.
- The ability to export the notes.
- Maybe a link to student handbook.
- Links to feature on Moodle that tells when assignments are due.
- Link library books/paper.
- Student discounts for food, drinks, shops.
- Information on library opening hours.
- Social events.
- More quiz.
- Maybe a link to upcoming events in college.
- Finding free rooms or computer labs.
- Integration with email.
- Notification's with the timetable.

Question 7.

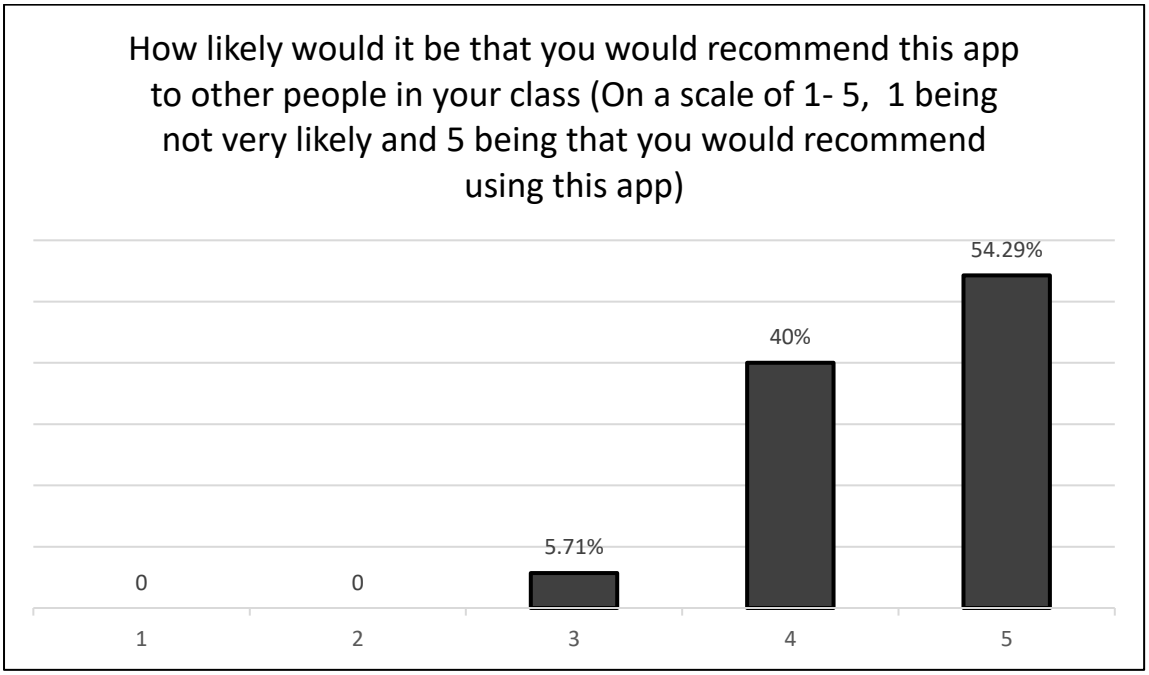


Figure 23 Question seven

Question 8.

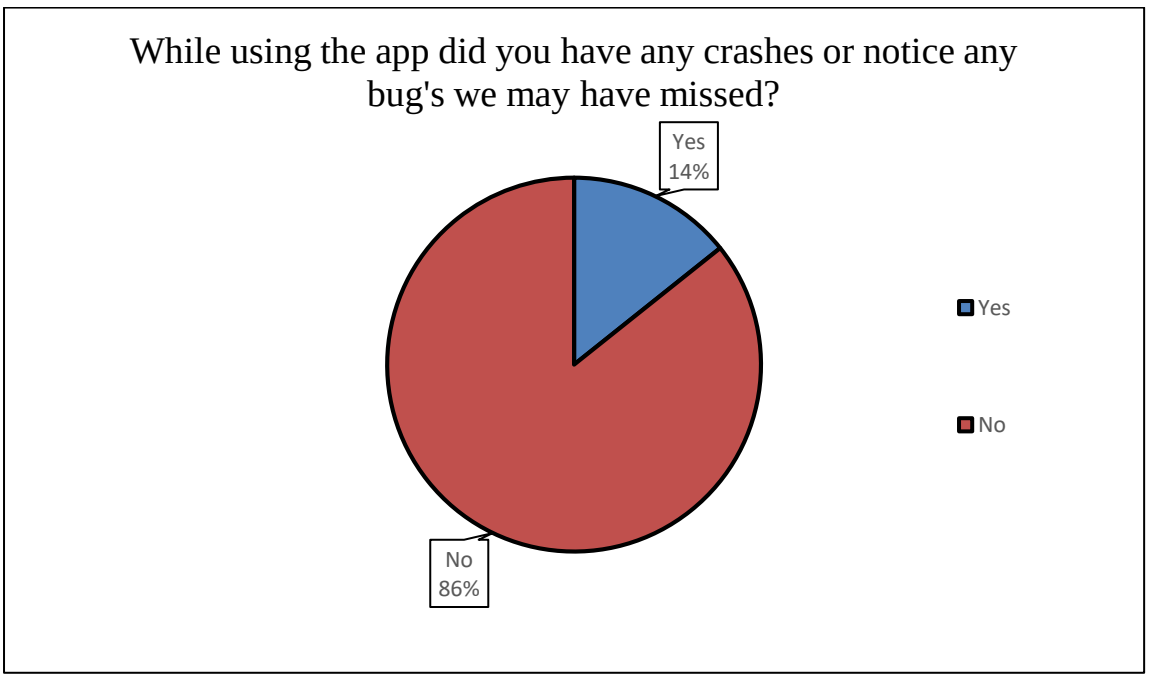


Figure 24 Question eight

Yes 5/35 No 30/35

Question 9.

Please let us know what version of Android you are using?

The majority of users that used the app where on Oreo or Nougat there was two users that used Marshmallow.

7.4 Evaluation of the results from second quiz

The first question on the survey, "If you had this app in first year would it make it easier to integrate into college life?" was asked in order to establish if in fact our app satisfies our hypothesis. Thirty-six people answered that having an app like this would have made it easier to integrate into third level. The group felt with ninety-seven percent of those surveyed answering yes that this app would help them to integrate easier into third level that this justifies our hypothesis and demonstrates that there is a market for an app with these features.

The second and third questions were, "How often do you think you would use this app?" and "Did you find the interface easy to use?". The motivation behind these questions was to investigate the usability of the app, also if we designed an app that the user felt was intuitive to use. The group feels from the feedback received that due to the frequency of use by the users that we were successful in striking a balance between usability and utility. This was also concreted by the fact that fifty-two percent had said they could see using this app more than few times a day.

The fourth question was, "Compared to other apps that you have used for the college would you choose to use our app over the other apps the college has available?". This for us was to establish was our app better than the ones that are currently available from the college. This was something we were quietly confident we would receive positive feedback about due to most people we had asked in first survey not even knowing there were apps for the college.

The fifth question on the survey was," What was your favorite feature on the app?". In the results of the survey the transport and timetable features were the most popular. As a group, we were surprised by how popular the timetable feature was because we felt other features would be prioritized by students. In hindsight, we feel the popularity of the timetable feature may be due to the fact accessing the timetable via the ITB website is complicated and time consuming.

The sixth question on the survey was, “Is there any other feature you would like to see included in an app like this?”. As, a group we were appreciative of the feedback we received as some of the suggestions we had not thought of and feel we would consider implementing these additions down the line. These suggestions may also highlight areas that affect students’ integration into third level education which we feel our app could meet these needs.

Our seventh question, “How likely would it be that you would recommend this app to other people in your class”. This was to further explore the usability of the app and the audience it might reach. We realised for the app to be successful (to have concurrent users) we need to receive positive feedback and that users would recommend the app to others. Due to the nature of a chat and forum system we feel that the app would be more effective with a greater number of concurrent users. This makes promotion of our app essential for it to be successful.

The eighth question was,” While using the app did you have any crashes or notice any bugs we may have missed? and the ninth “Please let us know what version of Android you are using?”. The aim of these questions was to find out if we had overlooked any bugs or compatibility issues. This process uncovered a compatibility error that we had not previously found with trying the app out on phones with API less than twenty-four. So, by asking these questions in our survey we were able to address an issue we may not have found otherwise.

Chapter 8: Conclusions and Further Work

8.1 Conclusion

In conclusion, we took a comprehensive look at how best to design an app that would benefit students and support them in their integration into third level.

The team feel that the first survey highlighted the most essential features and that we developed. Features such as Transport and a Timetable were mentioned in the first survey.

From our literature review, the team discovered how essential a good User Experience plays into the success of the app. One of the key methods to achieve was to have a good interface, we feel we have achieved this and the results are apparent in our design and the feedback we received on our second survey. The application uses simple interfaces that aimed to be consistent and has no unnecessary steps for the user to get the information they are looking for.

From the team's literature review of M-learning, we feel that we were able to focus the app on the most effective ways of aiding the students. The information on the app was tailored to help the user, giving the most vital information. We feel that researching this topic helped with the implementation of the quiz section of the app. This will benefit students and staff in focusing students on the material covered and also to be able to have feedback on how well a student feels they are doing.

The team has one concern about deploying the app to a larger market, this is due to the forum and chat features. If these features are not moderated sufficiently this could have a negative effect on users and our app; certain students could use them for bullying for example. The team has implemented features to tackle this and if the application was to be brought to a larger audience, we would urge that moderation would be ensured to be in place.

The team are satisfied with the finished app and judging from the findings of the second survey we feel that the application will help students with integrating into college life easier.

Considering that the majority of surveys came back that the student would recommend the app to other students in their group, we feel that this would utilize the app's features further which will create an environment to allow students to integrate into ITB better which was the aim of this project.

8.2 Further work

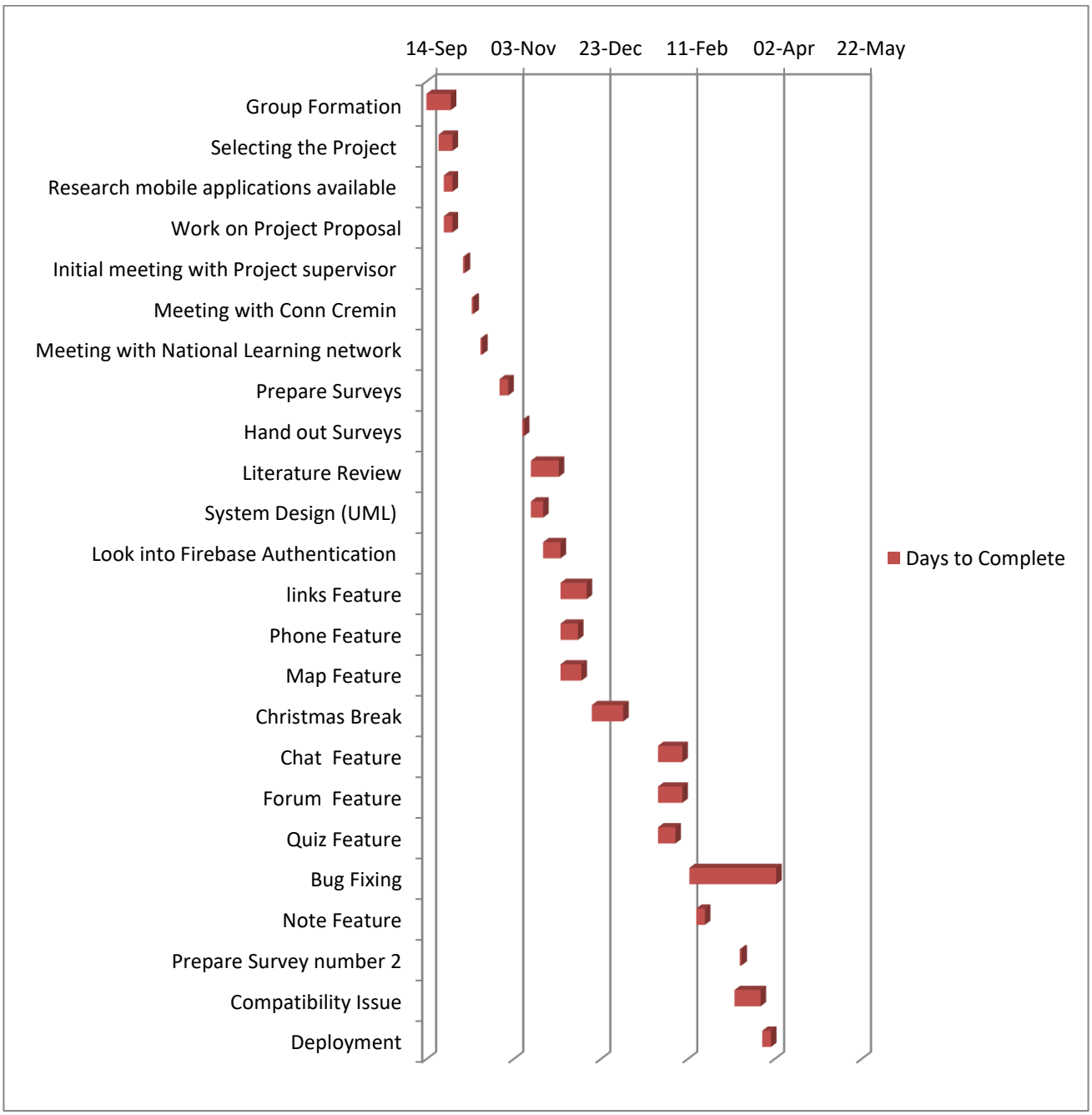
For this project to be developed further towards release for use by the college, the team would fix the bugs that were discovered by the test users. Most of these were small UI fixes such as the text being cut off on some screens.

The survey told us that the feature that was quite popular was the timetable, we would look to add notifications to this. The team originally decided against this as we were worried about the app leaving a lot of notifications on the user's device. However, this was a suggested feature in the surveys. It would also have been a good feature to allow users to export their notes, which the team would like to implement in the future.

Appendix A: Project Planning

8.3 Gantt chart of our Planning

Having a clear plan and making a Gantt chart at the early stages of development we felt was imperative, not only for the progress of our project but also that we could gauge at what stage of development we were at. The Gantt chart also helped with managing our time and properly allocating tasks for the team's schedule. Although, some features may have taken longer or shorter to complete it, this had not phased us as we had allowed extra time for development at the end.



Appendix B: Program listings

To view the Programme please view the enclosed cd with the full project.

Appendix C: Pre-Development survey

8.4 First years Student survey for pre-app development.

1. What course are you doing in ITB?

   _____

2. If you had difficulties when you first started coming to ITB, what were they?

   _____

   _____

3. Would you find an app to help with adjusting to life in ITB useful?

   Yes ☐ No ☐

4. On a scale of 0 – 5(5 being essential, 0 being not important), how important would each of the features in this list be for use with the app.

Supplementary learning tools for your course	☐
Quizzes based on question on each of the modules	☐
Timetable with notifications for upcoming classes	☐
A forum in which students and mentors take part	☐
Information on the public transport from the campus	☐
Map of the campus with location information.	☐
Important links for students	☐

5. Are there any other features you would like to see implemented?

   _____

   _____

6. On a scale of 0 – 5, (5 being excellent, 0 being bad), how do you find the services in ITB? ☐

7. Do you use the forums on Moodle?

   Yes ☐ No ☐

8. Does your course have a group page set up on Facebook?

   Yes ☐ No ☐

9. Do you know where the past papers are located?

   Yes ☐ No ☐

10. Do you know where the S building and the B block are on the ITB campus?

    Yes ☐ No ☐

Appendix D: Post-Development survey

8.5 First years Student survey for post-app development

1. **If you had this app in first year would it make it easier to integrate into college life?**

- Yes
- No

2**. How often do you think you would use this app?**

- Few times during the day
- Once a day
- Every few days
- Weekly

3. Did you find the interface easy to use? (On a scale of 1-5, 1 being difficult to use and 5 being easy to use)

4. Compared to other apps that you have used for the college.
Would you choose to use our app over the other apps the college has available?

- Yes
- No
- Maybe

5. What was your favourite feature on the app?

6. Is there any feature you would like to see included in an app like this?

7. How likely would it be that you would recommend this app to other people in your class (On a scale of 1 – 5, 1 being not very likely and 5 being that you would recommend using this app)

8. While using the app did you have any crashes or notice any bug's we may have missed?

- Yes
- No

If Yes, Can you please explain what happened?

9. Please let us know what version of Android you are using. To find out the version of Android that is currently running on your device, please try the following steps: From the home screen, press the Settings Button. Then select the Settings option. Scroll down and select About Phone.

10. Any other Comments?

Appendix E: Project Diaries

Initial meeting 14/9

14 SEPTEMBER 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

First Meeting

- Form the team.
- Discuss What we would like to do as a project.

NOTES

- Had a discussion into what kind of project we want to do.

ACTION ITEMS

1. Each of us find a topic we had our eye on.
2. And try find out what project supervisors are available.
3. Each of us Setup GitHub.

NEXT WEEK'S AGENDA

- Bring back ideas for project to the table and have an overview how project may come together.

Second Meeting 21/9

21 SEPTEMBER 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. We had come up with the idea of an internet of things device that could detect if a child was left in a car that would make a notification. We had decided this project due to a child dying during summer in Tipperary.

New Business

- Discuss the technologies available that would help with this project.

NOTES

- Need research to see what's available at the moment in the market.

ACTION ITEMS

1. Wait for Michael to put up what project supervisors are available.
2. Discuss with Simon McLoughlin our ideas and if it could be made into a project.
3. Andrew Ken and Catharine will explore what's available in the market currently.

NEXT WEEK'S AGENDA

If Simon feels our idea is something we can develop into a project, come back to next meeting with what technologies we feel are best suited for this project.

Third meeting 28/9

28 SEPTEMBER 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. Simon had thought that the idea would make a good project.
2. Some of the physical devices we had decided that would work would be a raspberry pi and sensors and a camera.
3. After thinking about the idea for the project though the group had agreed that maybe it would encourage people to leave their children in the car if they could use it for just checking in with the child using their phone.
4. Decided to change ideas for the project and came up with the idea to develop a first-year app for android phone.

New Business

- With the new topic picked we will need to narrow the scope in.
- The Project supervisor list was put up so need to discuss who we would like to supervise us.

NOTES

- Reading the supervisor list, we had a look at what projects the supervisors had out and what was similar to our own. The group as a whole had thought Luke Raeside would be good for a supervisor due to us having him previously.

ACTION ITEMS

- Think what we would like to include in the app.
- Look into how apps are developed.
- Organise a meeting with Luke.

NEXT WEEK'S AGENDA

- Can see what Luke thinks of our project and each of us come back to group.

Forth Meeting 05/10

05 October 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix, Luke Raeside.

AGENDA

Last Meeting Follow-up

1. Meeting with Luke went well had suggested that we Organise meeting with Con Cremin to do with the first-year experience.
2. Luke had also suggested in the meeting that we look into a chat feature that we had not even thought of covering.

New Business

- During this meeting we need to try get an understanding of what features we would like within our app.
- Andrew Catharine and Ken decided to prepare for a meeting with Con Cremin during meeting to try lay out what exactly we would like to get help from him with.

NOTES

- During the meeting the group had established what we would like for core features that we would like implemented.
- We had also decided that we should run through some tutorials for Android development.
- Ken brought up in the meeting that Google had a scholarship at the moment for an android course.

ACTION ITEMS

- Have the meeting with Con and see if he had any ideas on what he thought would be good to include to try integrate into the peer mentoring.

NEXT WEEK'S AGENDA

- See what Con Cremin comes back with ideas and then maybe try narrow in the scope of the project.

Fifth meeting 12/10

12 October 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix, Luke Raeside.

AGENDA

Last Meeting Follow-up

1. Meeting with Conn Cremin went well and had suggested that we meet with Áine that works in National Learning Network.
2. With The core features named we just had to establish what that meant and the finer details e.g. we wanted the app to act as a supplementary learning tool but how would we achieve this.

New Business

- For this meeting we established that we should work on our project proposal.
- We also felt we needed to have a good clear understanding of what we wanted our app to do so as when going to talk to Áine in national learning network we would be able to ask the right questions to see where students find it difficult.

NOTES

- Check in to see how people are going with the android tutorials.

ACTION ITEMS

- Judging how the meeting goes with Áine we can then see if we need to adjust feature we would like to implement or even see if there are already systems in place that we could link to.

- Each of us is to be given a section of the Project proposal and meet next week to try access where we are with submission for project skills.

NEXT WEEK'S AGENDA

- Look what apps are out there for other college see if there are features in their app that would do similar to what we had planned or what we could bring to the table.

Sixth meeting 26/10

26 October 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix, Luke Raeside.

AGENDA

Last Meeting Follow-up

1. Meeting with Áine went well she was able to give good insight into what kind of features may be helpful.
2. She had also said that we could bring a survey to the Next peer mentoring lunch for the first-year students to fill out.

New Business

- Need to plan on what kind of questions be on the survey to try make as impartial questions to get clear feedback of what features would improve student's transition into third level.
- Start looking at research that is out there currently for our literary review.

NOTES

- The apps that we had looked at from ITB were quite uninspiring but managed to find some features from other colleges that we had thought we would like to recreate.

ACTION ITEMS

- Bring surveys to the next peer mentoring meeting.
- Collate the data to establish what features are more important than others.

NEXT WEEK'S AGENDA

- Processes the data gathered from the surveys and try to see if students had other suggestions of what they felt would be good features.

Seventh meeting 09/11

9 November 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix, Luke Raeside.

AGENDA

Last Meeting Follow-up

1. The data gathered actually backed up what we thought would be key features that we should include.

New Business

- Literature Reviews we need to agree on the research question.
- Pick topics that we need to research that can answer our hypothesis.

NOTES

- Check in with how far people have got with the tutorials.
- Ken secured the scholarship with Google for the android development course.
- Have the meeting next Monday instead of regular Thursday day to try complete the literature review.

ACTION ITEMS

- Work on the literature reviews try get each individuals section done.

NEXT WEEK'S AGENDA

- Next week agenda is bringing all the literature reviews together to form one cohesive document.

Eight meeting 13/11

13 November 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. All three of us completed each of task set out for doing literature review on time.

New Business

- For this meeting we will bring each of our individual work and make one clear literature review.
- Edit the literature review.

NOTES

- At the end of the meeting we sketched out the wireframe of how we would like the app the look.

ACTION ITEMS

- For the next meeting each of us is to come back to the next meeting with use case and UML.
- Important links, Register, College phone numbers – Catharine
- Log In, Timetable, Map - Ken
- Quiz, Public Transport, Forum – Andrew

NEXT WEEK'S AGENDA

- From the use case and UML let's move forward to bring this to android studios and see how far we can get with it.

Ninth meeting 30/11

30 November 2017

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix, Luke Raeside.

AGENDA

Last Meeting Follow-up

1. With the feedback given we realised for our thesis we will have to make a few changes but were overall happy with the progress we had made with our app so far.

New Business

- For this meeting we had decided to try come to come to terms with Firebase database for looking after the login system we had planned.

NOTES

- After trying to figure out firebase database we came to learn towards the end of the meeting that firebase actually has a separate part for logging built into it while it did take a lot of meeting time the mistake will work in our favour as gained little more understanding on the database side that we would need for other functionality of our app.

ACTION ITEMS

- For the next meeting we will try get a section of the app to work. Andrew will work on the main menu page Catharine will work on quick links and Ken will work on important Phone numbers.
- We all should research how firebase authentication works and see what we come back with.

NEXT WEEK'S AGENDA

- Next week we should bring our findings on firebase authentication and see if we can figure it out between us.
- We will need to prepare for the presentation we have to give for project skills.

Tenth meeting 29/1

29 January 2018

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

New Business

- Discuss where about in the project we are progress wise and how much we would like to complete and by when also discuss what deliverables are required.

NOTES

- The group agreed on taking a rough approach to implementing the remaining the remaining features we had agreed that its best to try get features in then work on the UX aspect of each of the features.

ACTION ITEMS

- Andrew is going to work on the chat system for next week.
- Catharine will look at how to make a dynamic timetable.
- Ken will work on the quiz part of the app.

NEXT WEEK'S AGENDA

- Next week we should bring our progress to the group along with list of difficulties and we can see where we can help each other.
- Ken had said he will go back over our Literature review and make the advised changes to the document.

Eleventh meeting 5/2

5 February 2018

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. Andrew worked on chat system but is going through a clean-up phase.
2. Ken has functionality of the quiz and worked on the thesis.
3. Catharine is currently working on timetable.

New Business

- Work on segregating quiz into sections and displaying a final score at end.
- Forum needs to be started, create link to chat feature.
- Timetable needs to be able to accept user input.

NOTES

- Get a key for Google map API.
- Find out when is possible to meet up with Luke Raeside.

ACTION ITEMS

- Work on forum with hosting images.
- Continue work on timetable and quiz.

NEXT WEEK'S AGENDA

- Follow up on tasks completed and brainstorm on any issues that has come up
- Start considering how to clean up and make app look more cohesive.
- Look into toast notifications.

Twelfth meeting 21/2

21 February 2018

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix. Luke Raeside

AGENDA

Last Meeting Follow-up

1. Andrew worked on chat system but is going through a clean-up phase.
2. Ken wrote more of the Quiz.
3. Catharine is currently working on timetable features.

New Business

- Luke brought up the point that with a chat forum that some sort of moderating may need to take place.
- Luke also thought of an idea for a feature like a notepad.
- Timetable needs to be able to accept user input.
- With regards to the quiz new feature to allow lecturer to upload custom quiz.

NOTES

- So far the group feels it is in a good spot as far as features and will soon be able to move to the testing phase.
- The group also realise that before we can survey some students to establish if our app satisfies our hypothesis.

ACTION ITEMS

- Tackle some of the compatibility issues.
- Continue work on timetable and quiz.

NEXT WEEK'S AGENDA

- Start considering how to clean up and make app look more cohesive.

Thirteenth meeting 16/3

16 March 2018

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. Andrew finished up the chat and done some fix's on compatibility.
2. Ken wrote second questionnaire and has worked on thesis.
3. Catharine finished the timetable and has also finished the note function that was suggested.

New Business

- Bug Fixing.
- Deployment options.
- De-bug why timetable wasn't saving for physical device.

NOTES

- The group spent the meeting looking at how to deploy the app.
- We discussed what kind of questions we would want asked during our second questionnaire

ACTION ITEMS

- Tackle some of the bugs.

NEXT WEEK'S AGENDA

- Discuss the thesis and progress with it.

Fourteenth meeting 6/4

6 April 2018

ATTENDEES

Ken Kilmartin, Andrew Sherlock, Catharine Phoenix.

AGENDA

Last Meeting Follow-up

1. Andrew finished up the bug fixing.
2. Ken has hosted questionnaire and has continued thesis.
3. Catharine has fixed the timetable bug.

New Business

- Have a stable version for release to users to test.
- How to pass the version out to users.

NOTES

- The group has decided to join first year groups and ask students from our group to test.

ACTION ITEMS

- Assigned the implementation of the prototype section to Andrew.
- Ken begins to edit the document
- Catharine to do an abstract

NEXT WEEK'S AGENDA

- Discuss the thesis and progress with it.

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