SCHOOL OF COMPUTING

TEESSIDE UNIVERSITY

Module: Inclusive Design (MUL4052-N)

Improving the User Experience of the TU App for iPhone

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Submission Date: 09/06/2015

Part 1: Design Document

Part 2: Evaluation Strategy and Report

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Part 1: Design Document

1   RESEARCH AND DESIGN METHODOLOGY

Huy and van Thanh (2012) conducted a theoretical evaluation which compared different mobile app paradigms and found that it is becoming increasingly popular to develop native smartphone apps for mobile devices over other mobile app paradigms when analysing the results from a user experience perspective. A better user experience is created when an app is tailored for the hardware in question, and this can open doors to enabling functionality such as supporting offline use of apps by downloading and making use of local storage if necessary. A native mobile app is not automatically deemed a successful mobile product however;

"Successful mobile products are ones that are useful and usable, and provide a coherent, comprehensive user experience. If a mobile does not provide highly valued functionality, it will not be used, no matter how well designed the interface is."
(Mobile Interaction Design, 2006, p. 39)

According to Norman (1988, p. 52-53) in designing products which make sense to users there are four principles to bear in mind to promote usability:

- **Visibility** – the state of the device is clear from observations
- **A good conceptual model** – a consistent presentation of operations
- **Good mappings** – ability to determine relationships between actions and results
- **Feedback** – consequences indicate that something has resulted from the actions taken

When a user is introduced to a new system for the first time they face the Gulf of Execution and the Gulf of Evaluation (Norman 2013, p. 38-39). The Gulf of Execution is the process where the user attempts to figure out how something operates, and the Gulf of Evaluation is the process where the user then attempts to figure out what happened (Figure 1.0). Good design bridges these two processes so that the feedback provided by an application is directly influenced by the user's actions and this creates an intuitive user experience.
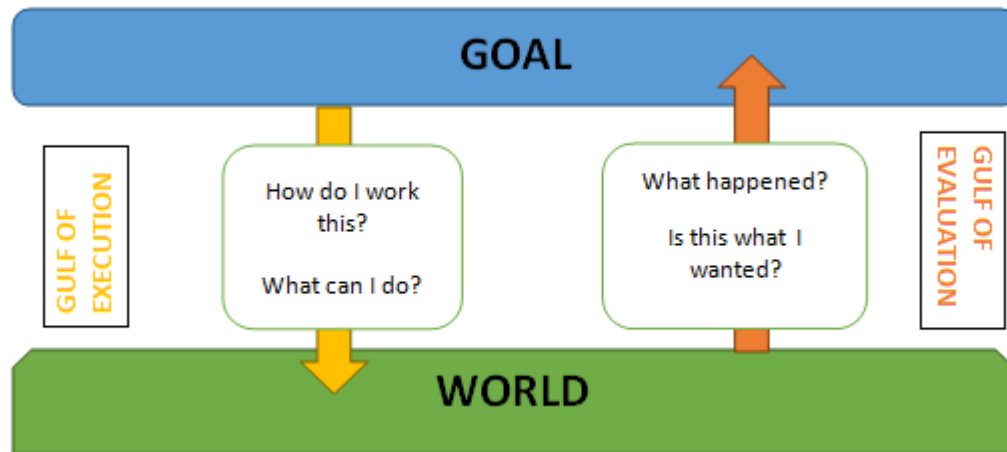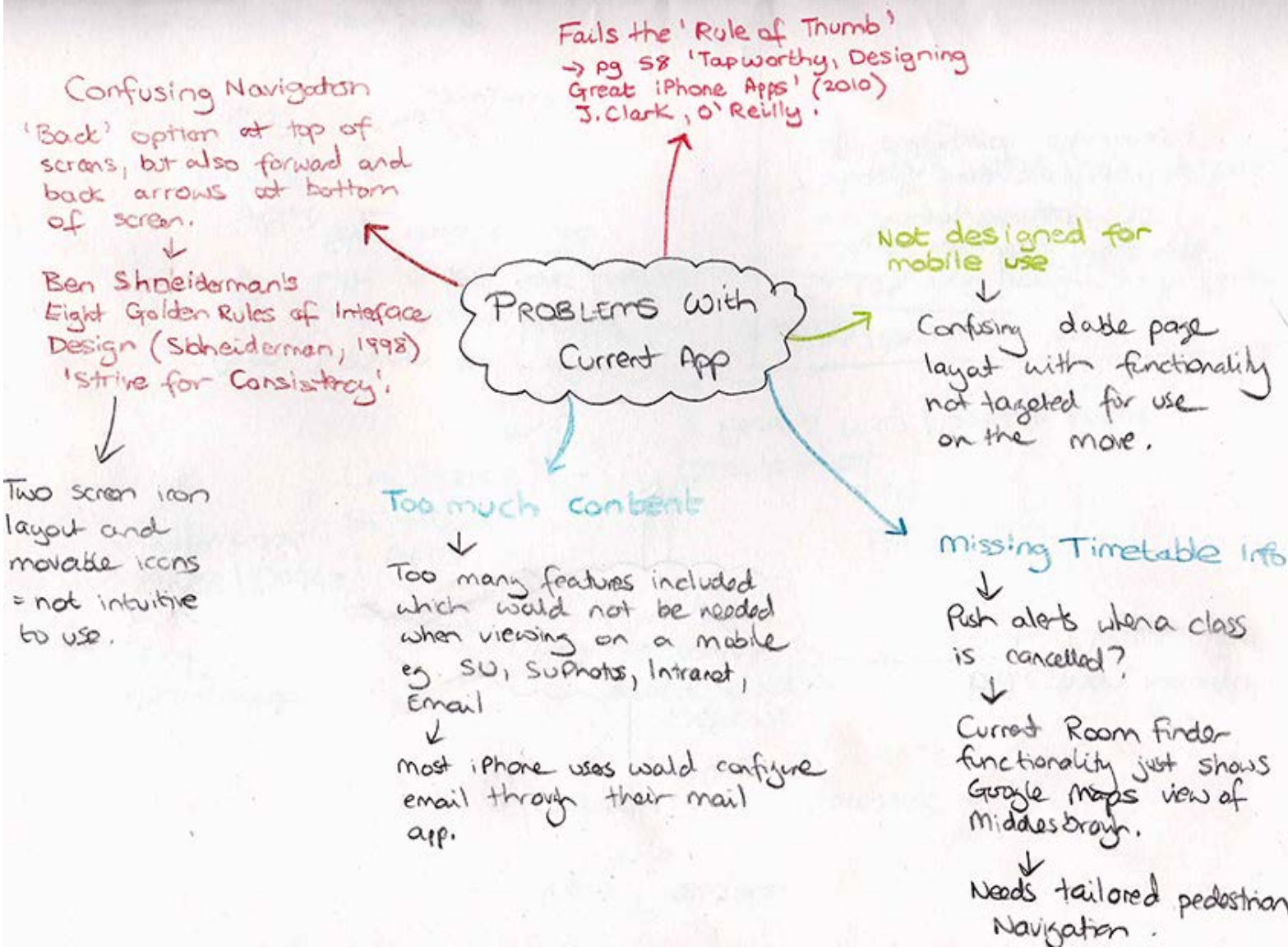
Above – Norman's Gulf of Execution and Evaluation

1.1 <u>**ANALYSING THE PROBLEM**</u>

I sat down with the current version of the TU App and explored the different options on the various menus. I brainstormed the below diagram based on my thoughts of the current design, relating back to Schriederman's Eight Golden Rules of Interface Design (1998) and the 'Rule of Thumb' from Clark's Tapworthy, Designing Great iPhone Apps (2010).

The 'Rule of Thumb' indicates that on handheld devices the key area for interaction is the easiest point of access for the user's thumb. On an iPhone this area is the bottom right section, or in the case of left handed users the bottom left. The current TU app has been designed where this prime area for interaction is void of icons or menus – in fact it has been left blank solely to illustrate the university logo at the sacrifice of the user experience.

Another failing in the current design is not conforming to the rule of having a good conceptual model – the navigation options are inconsistent across the screens to the point of there being two sets of back buttons which navigate to the same location.
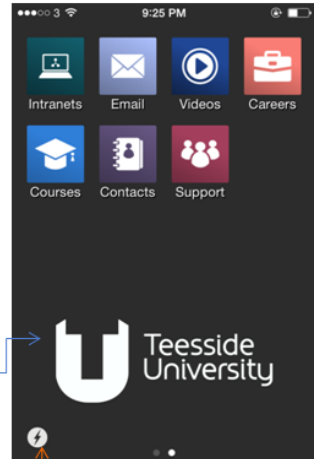
Confusing Navigation

'Back' option at top of screens, but also forward and back arrows at bottom of screen.

↓

Ben Shneiderman's Eight Golden Rules of Interface Design (Schneiderman, 1998) 'Strive for Consistency'.

↓

Two screen icon layout and movable icons = not intuitive to use.

Fails the 'Rule of Thumb'
→ pg 58 'Tapworthy, Designing Great iPhone Apps' (2010) J. Clark, O'Reilly.

PROBLEMS WITH Current App

Not designed for mobile use

↓

Confusing table page layout with functionality not targeted for use on the move.

Too much content

↓

Too many features included which would not be needed when viewing on a mobile eg. SU, SuPhotos, Intranet, Email.

↓

most iPhone uses would configure email through their mail app.

Missing Timetable Info

↓

Push alerts when a class is cancelled?

↓

Current Room Finder functionality just shows Google maps view of Middlesbrough.

↓

Needs tailored pedestrian Navigation.

Above – Brainstorming ideas – problems with the current app

The biggest problem with the current TU App is that it is obvious from the design that it has not been thought with mobile use in mind. It is a case where a desktop version of a website has been ported down to mobile, rather than a thought out design being created in order to utilise the actions the user would be more likely to use while on the move. A student will not want to access the full content of the intranet while walking down the street, therefore the app should be designed with this consideration in mind.
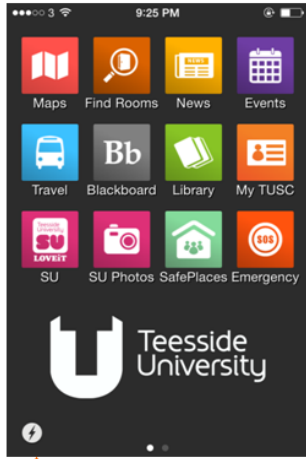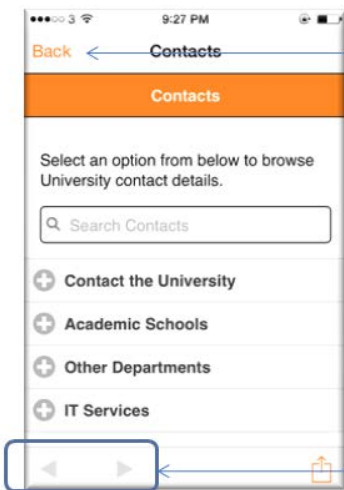
Too many options and similar coloured icons

Space left for logo which causes a two screen layout with icons – not intuitive

This is a button – not intuitive

Confusing Navigation

Email login as on desktop
-phones have email clients

Directions as on desktop version

1.2 REQUIREMENTS FOR A MOBILE BASED APP

I sat down with some students and asked for thoughts on which features should be included as the most important to access while viewing on a phone. The following brainstorm was the result of these discussions.
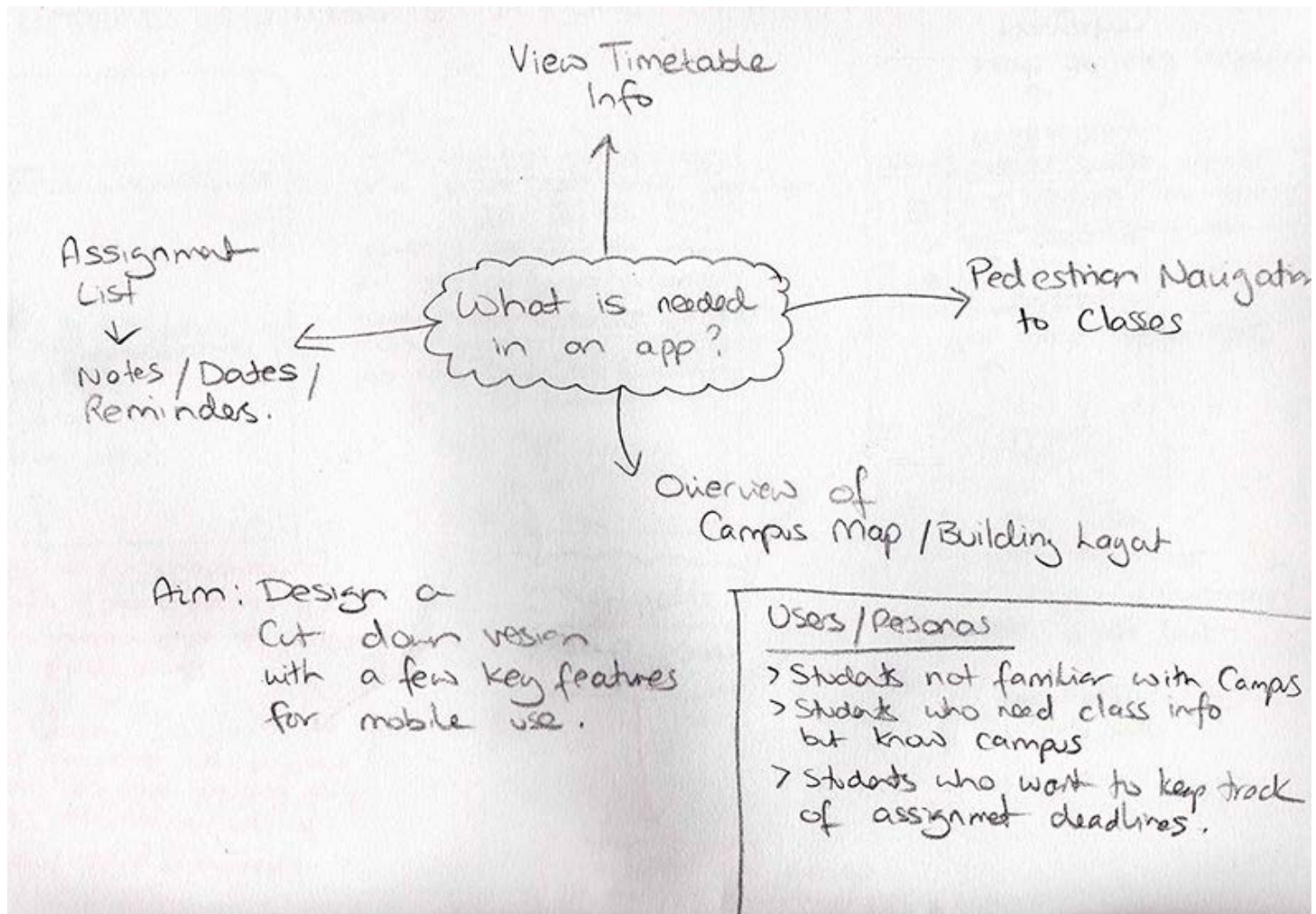

Above – Brainstorming ideas – what is needed in the app?

The solution for this problem is to redesign the TU App with 3 basic features and to implement them with a mobile user in mind. This will provide an enhanced user experience. The three key features will be as follows;

- View Timetable
- View/Navigate to buildings on campus
- Keep track of assignments due

1.3   RESEARCH ON CURRENT APPS ON APPLE APPSTORE

I researched current apps that were popular on the Apple AppStore to find out what makes a good interface design. For the map and navigation aspects of the design I drew inspiration from apps such as PointInside indoor navigation and TomTom's GPS apps. For the calendar and scheduling aspect of my design I researched apps such as Sunrise Calendar, Week Calendar and Class Timetable to see the best ways of displaying date information to the user. For the login designs I researched popular social media apps which are used frequently on a daily basis such as Facebook and LinkedIn.
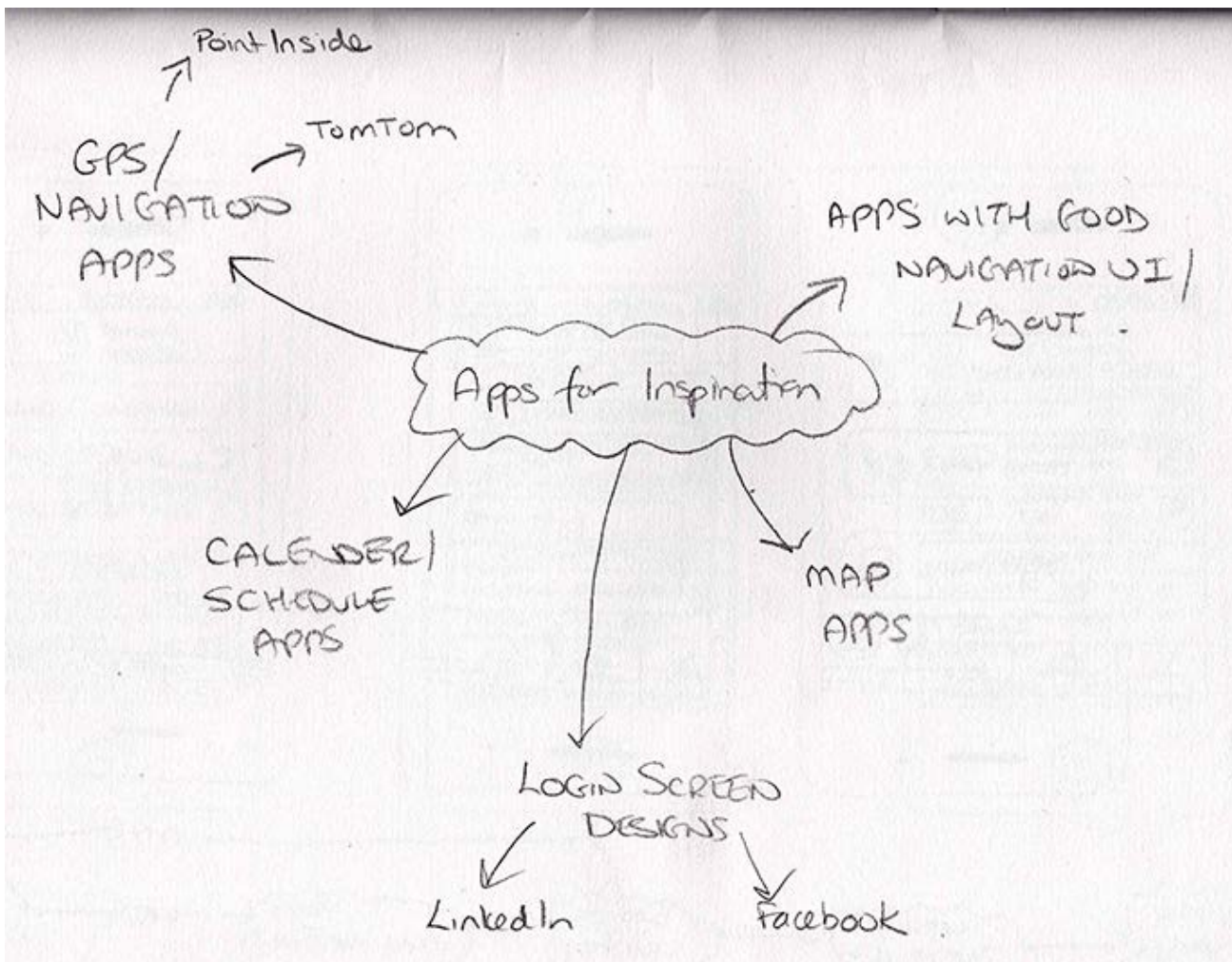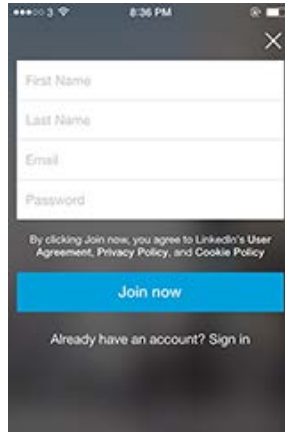

Above – Brainstorming ideas – apps for inspiration
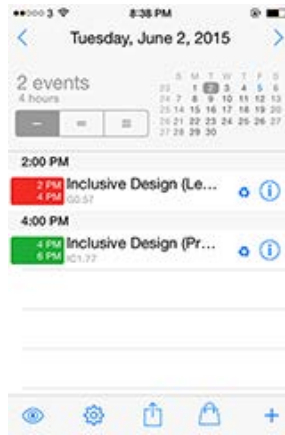
1.4 APPS USED FOR DESIGN INSPIRATION

Facebook   *LinkedIn*   *TomTom*

*Point Inside*   *Week Calendar*   *Class Timetable*

Above – Screenshots of apps used for design inspiration

2 USER REQUIREMENTS ANALYSIS

The following pages illustrate the user personas and user scenarios that were used for the basis of designing the user experience. These documents consist of gathering requirements which the app will be based upon and these documents will be referred to during the design and implementation processes.
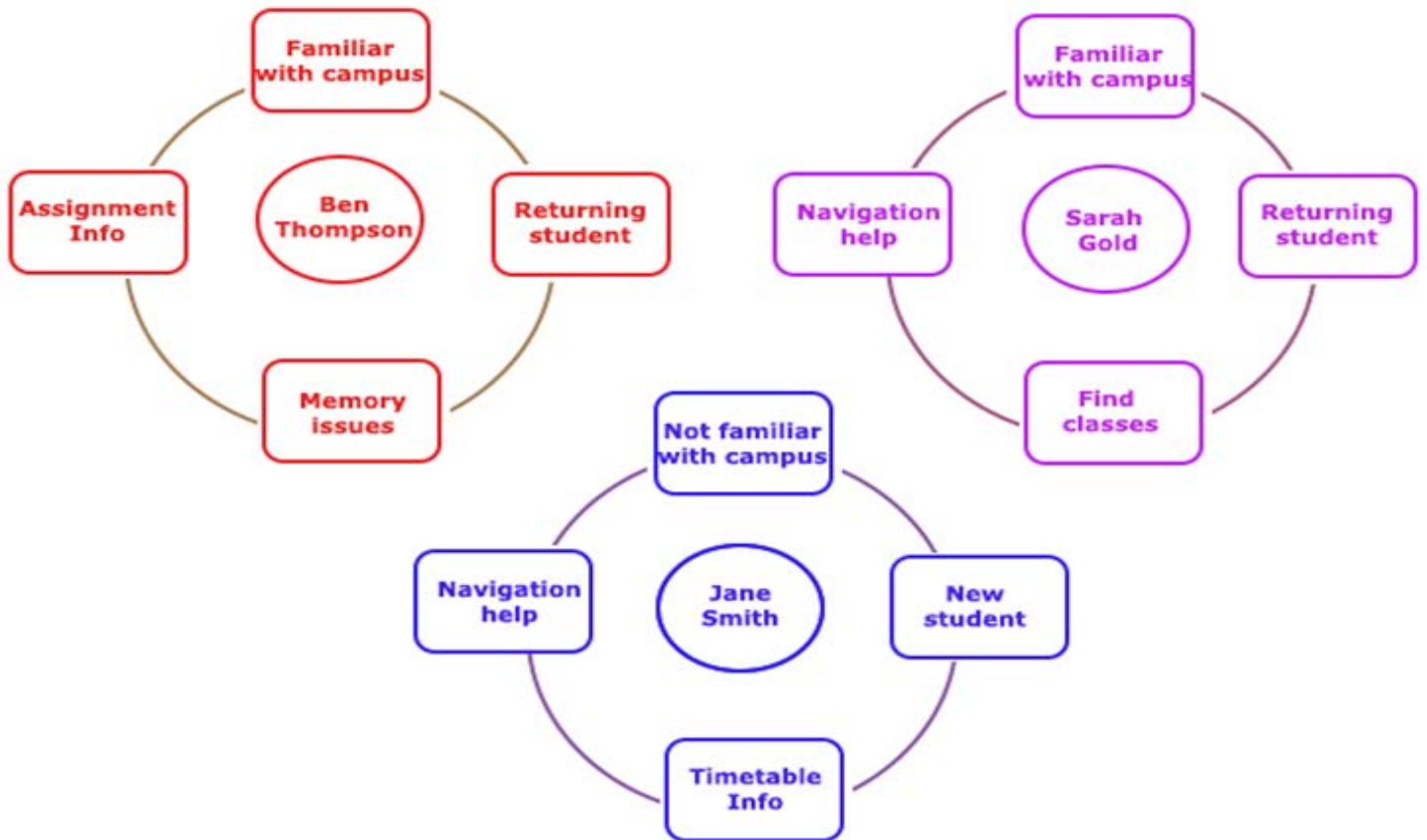
Above – Three Personas used throughout this project

"This campus is really big and difficult to navigate. I hope I can find my way around."

Name	Jane Smith
Role	Undergraduate Student
Background	Jane is a new university student and is not familiar with the campus of Teesside University. She is starting her first year of studies and does not live on campus. She has access to a Windows laptop and an iPhone.
Goals for App	To guide Jane from her current location to her class on campus.

02 | PERSONAS – BEN THOMPSON

"Being back at uni is great, but it is difficult keeping track of which class I should be attending each day"

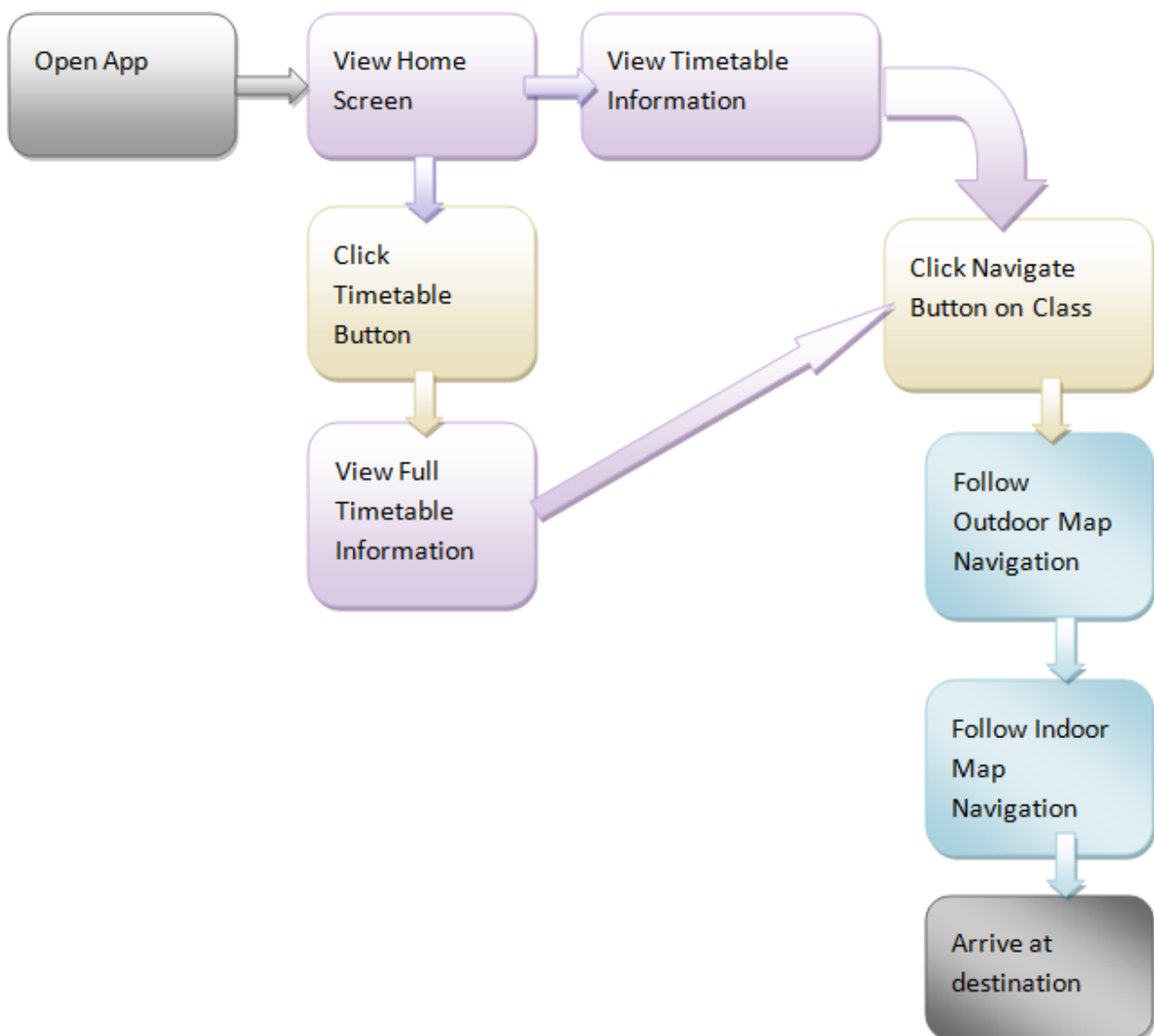| Name	Ben Thompson
Role	Postgraduate Student
Background	Ben has been to Teesside University for his undergraduate degree. He does not have access to a laptop, however he checks for updates on his iPhone regularly. He struggles with remembering which class is on which day of the week since he has memory issues.
Goals for App	To allow Ben access to his timetable so he knows what his schedule looks like.

03 | PERSONAS – SARAH GOLD

"I need to know which of my assignments is due first and when my other classes have deadlines"

Name	Sarah Gold
Role	Postgraduate Student
Background	Sarah is familiar with the campus as she was an undergraduate student at Teesside University. She has lots of classes and finds it difficult keeping track of them all.
Goals for App	To show Sarah when her assignments are due.

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"Jane is on campus at Southfield Road. She has an Inclusive Design class at 4pm but she is not sure how to get to the lecture hall in the Greig Building. She needs to find where building is located from her current position on campus, but she also needs to know which room inside the building she is meant to be at."
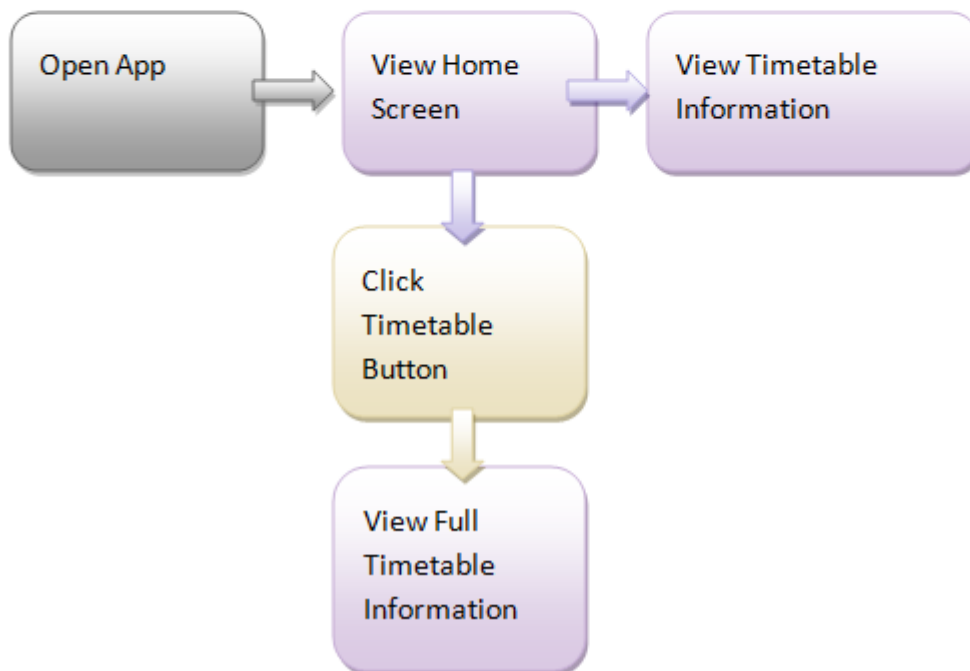
Scenario without app	Jane would need to find a copy of the university campus map and then pinpoint her current location in relation to it in order to find which direction to travel. She would then need to ask someone inside the Greig Building where the room was, or she would need to search for the room and hope she did not get lost.
Scenario with redesigned app	Jane would open the new TU App and view her classes on the home screen. Her next class at 4pm is listed. Jane can click the navigate button on her class listing to be given visual instructions on a map guided by GPS to the Greig building from her current location. When she arrives at the building the app will switch to the indoor mapping view to guide her directly to her class room.

Open App → View Home Screen → View Timetable Information

View Home Screen → Click Timetable Button → View Full Timetable Information → Click Navigate Button on Class

View Timetable Information → Click Navigate Button on Class

Click Navigate Button on Class → Follow Outdoor Map Navigation → Follow Indoor Map Navigation → Arrive at destination

"Ben is at work currently as he is a part time postgraduate student. He takes classes on certain days of the week to fit with his work schedule. His employer needs to know when Ben will be on campus next."
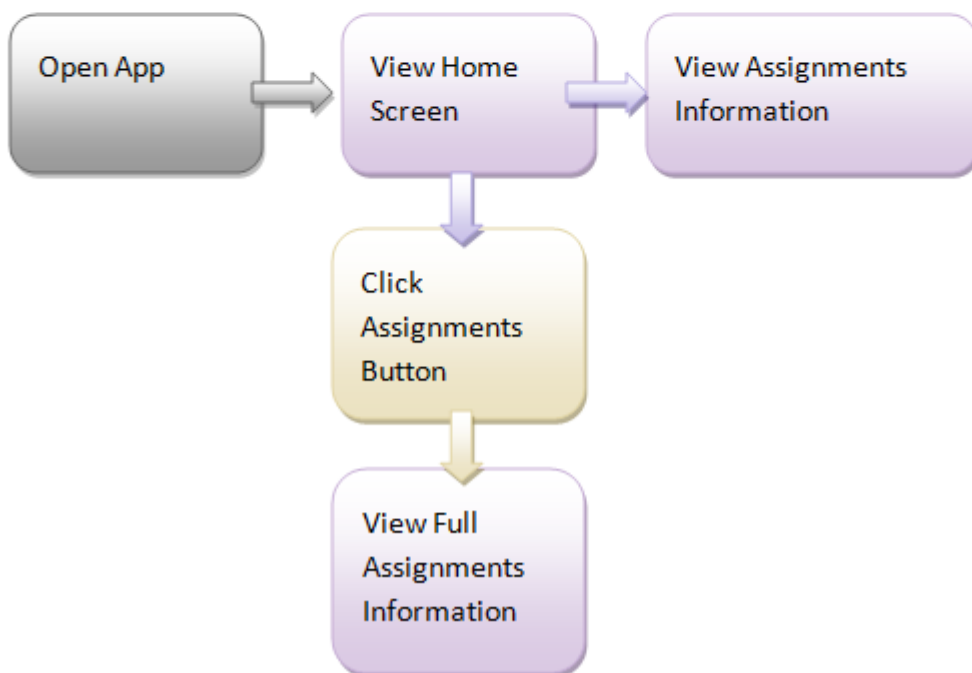
Scenario without app	Ben would need to log onto the university intranet on a computer and enter his credentials to access his timetable. He would then need to check visually on his week view to pinpoint which day he was needing to reference.
Scenario with redesigned app	Ben would open the new TU App and view his upcoming next three classes on the home screen. If he needed to see a whole week he could do so by clicking the Timetable option.

Open App → View Home Screen → View Timetable Information

View Home Screen → Click Timetable Button → View Full Timetable Information

"Sarah is out with friends on campus. She would like to stay out late with her friends tonight but she is unsure when her deadlines for her assignments are. She is sure there is one soon but she does not want to miss out joining her friends. "

Scenario without app	Sarah would need to find a computer to log onto Blackboard and find out the dates of her assignments by either looking on the module listing, or by opening the ICA and checking the date on the document and making a note of it somewhere.
Scenario with redesigned app	Sarah would open the new TU app to view her assignments list on the home screen. Alternatively she could view every assignment she has made a note of in the Assignments option.

Open App → View Home Screen → View Assignments Information

View Home Screen → Click Assignments Button → View Full Assignments Information

3 DESIGN SPECIFICATION AND PROTOTYPE

The following pages document the design from sketching to prototyping phases. The finished prototypes which were presented in the peer session are located in the following locations;

- **Version A** of prototype (with map driven navigation) – http://invis.io/KT32Y3FVN
- **Version B** of prototype (with compass style navigation) - http://invis.io/HT32Y1JCF
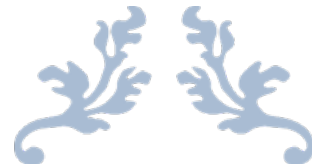
SCREEN DESIGN OVERVIEW

From Sketching to Prototyping

3.1 THUMBNAILS FROM INVISION

The following thumbnails are evidence of the design progressions from sketches to the prototypes which were uploaded to InVision at http://invis.io/KT32Y3FVN (Version A) and http://invis.io/HT32Y1JCF (Version B).

3.2 THUMBNAILS FROM INVISION – HOME SCREEN DESIGNS

This sketch was not developed any further

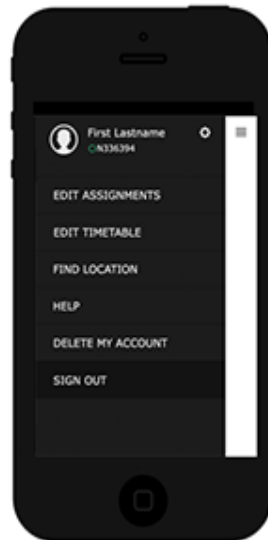## 3.3 THUMBNAILS FROM INVISION – NAVIGATION SCREEN DESIGNS
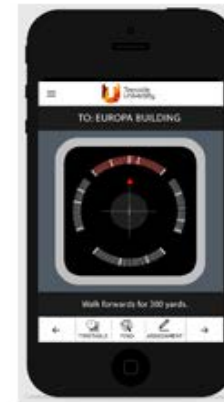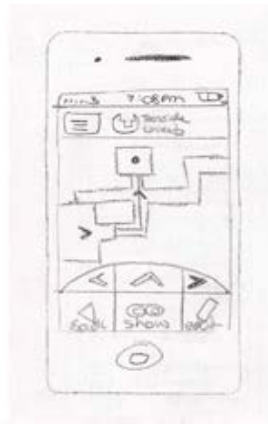
Main Screen Designs

Version A
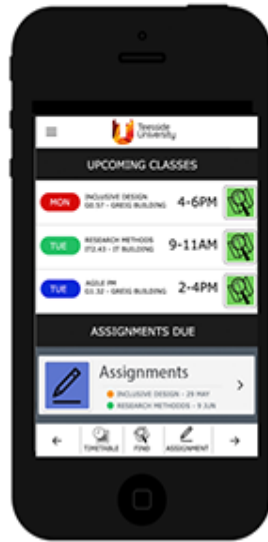
Version B

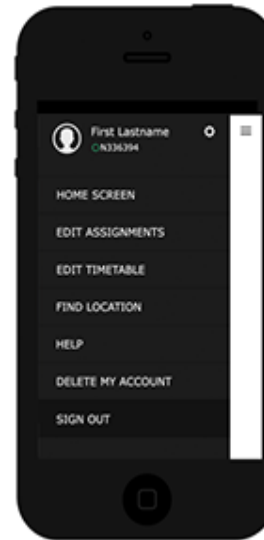**Main screen with the most recent classes on display and the assignments list visible**

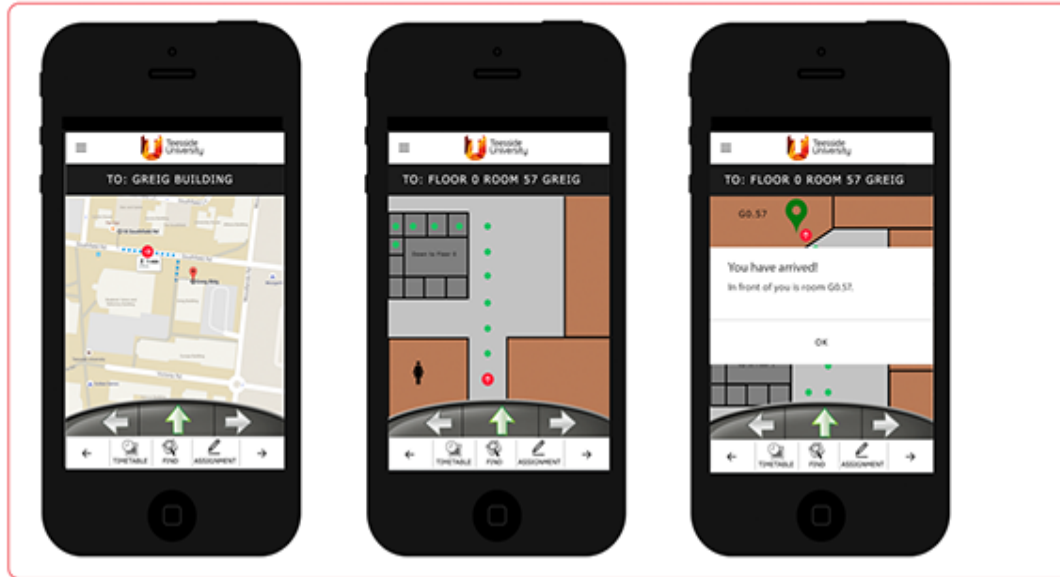**Main screen with no visible data but easy button options to each section.**

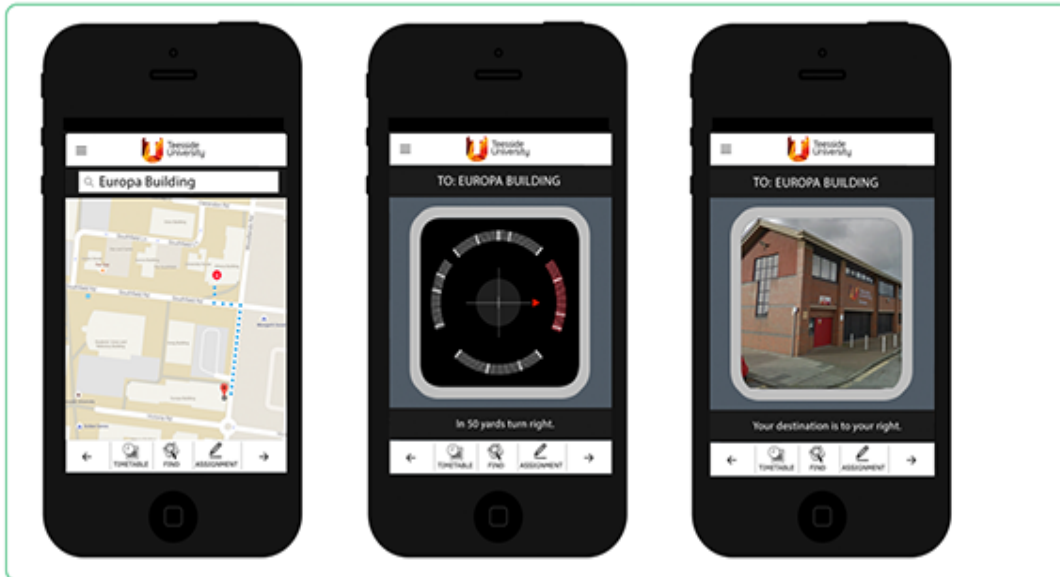**Menu screen first design before the addition of a Home button option**

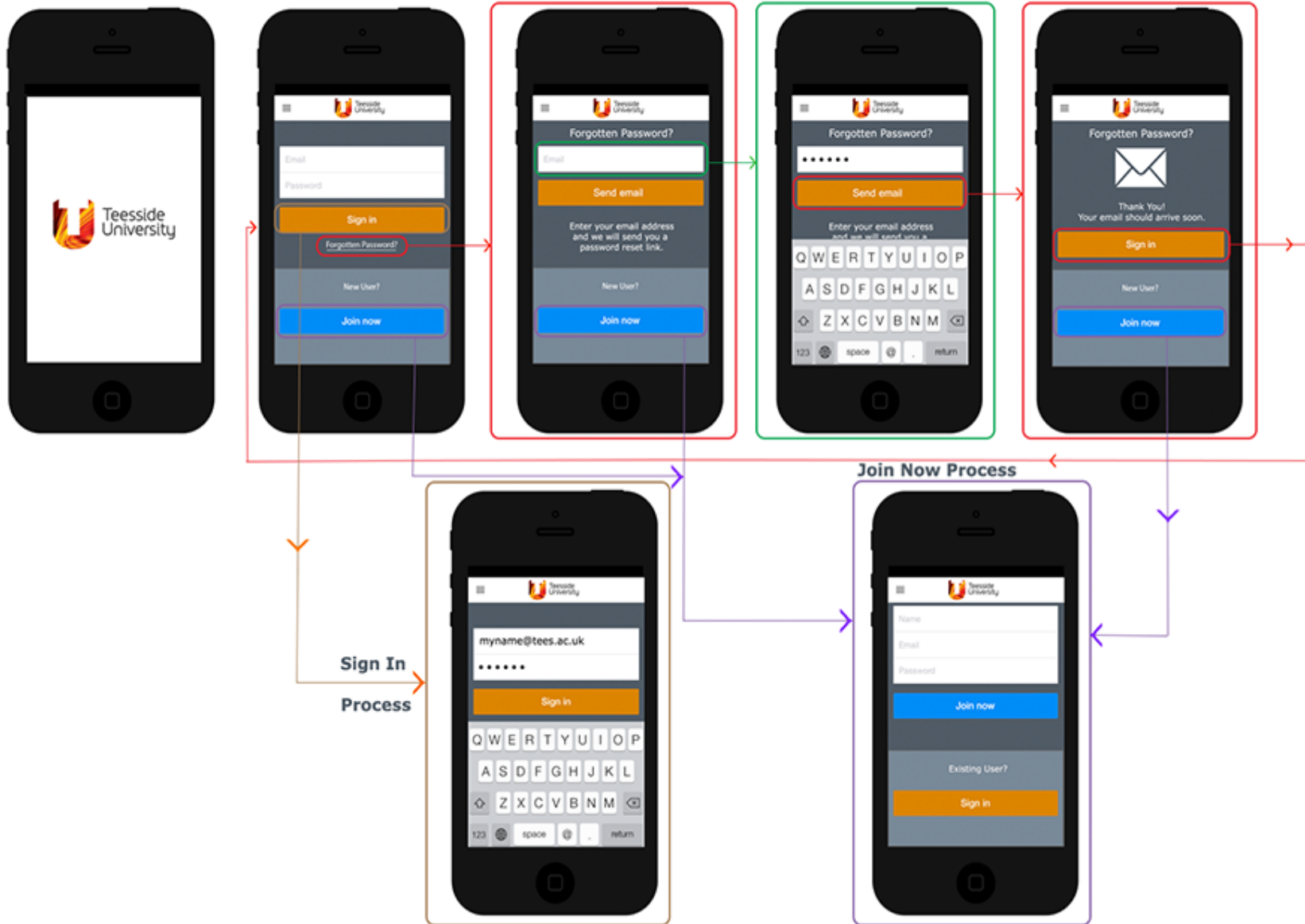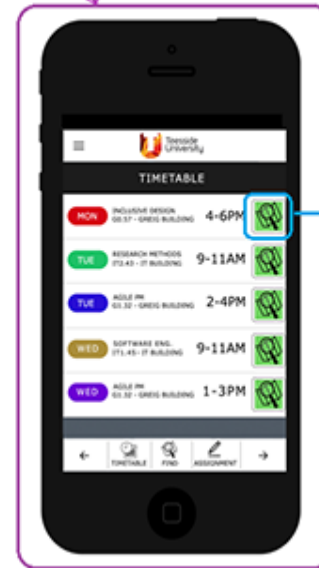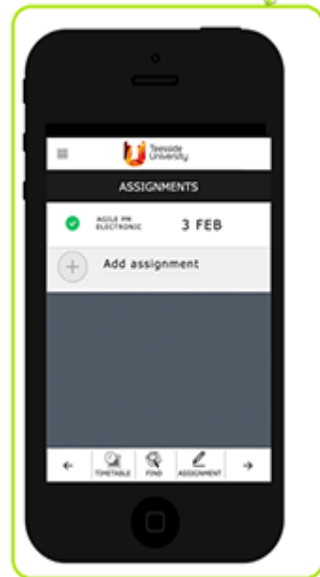**Menu screen with the addition of a Home button**
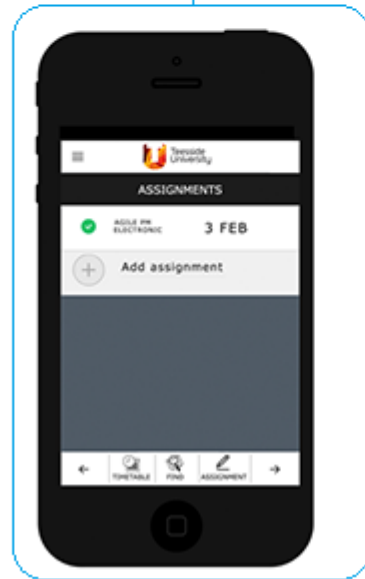
Navigation Designs

Version A

Version B

Forgotten Password Process

Join Now Process

Sign In Process

Version A Menu

Version B Menu

Timetable
View Timetable Information

Find a place
Navigate to a place on campus

Assignments
View dates for all your assignments

Sign out

Europa Building

ASSIGNMENTS

AGILE PM
ELECTRONIC   3 FEB

Add assignment

TIMETABLE

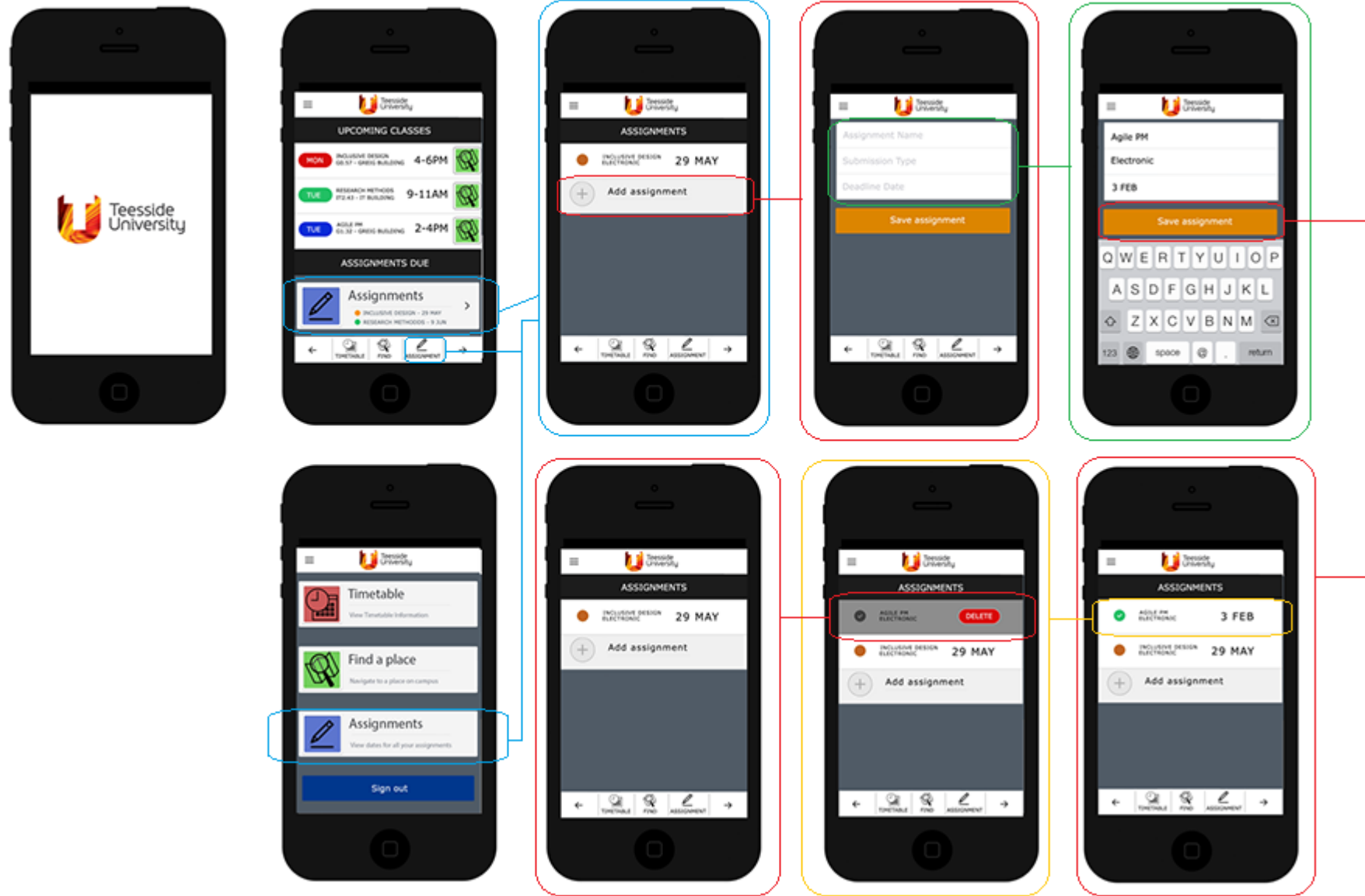| MON | INCLUSIVE DESIGN G0.57 - GREIG BUILDING | 4-6PM |
TUE	RESEARCH METHODS IT2.43 - IT BUILDING	9-11AM
TUE	AGILE PM G1.32 - GREIG BUILDING	2-4PM
WED	SOFTWARE ENG. IT1.45 - IT BUILDING	9-11AM
WED	AGILE PM G1.32 - GREIG BUILDING	1-3PM

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Assignments Process

Part 2: Evaluation Strategy and Report

1 RESEARCH AND EVALUATION STRATEGY

To research the efficiency of the prototype I devised a questionnaire to email around the team of students that would participate and to family and friends. This questionnaire can be found in Appendix 1. During the design phase of the prototype I created two different versions of the app – version A and version B. The reasoning behind this was to be able to evaluate the two design ideas through A/B testing.

- **Version A** had a different menu design and a different style of pedestrian navigation using indoor and outdoor map navigation.

- **Version B** had a different menu design and compass style navigation with GPS location instructions.

The questionnaire gave participants a task to achieve and no instructions in order to navigate around the prototype in their own method. There were answers on how to complete the tasks at the end of the questionnaire, however it was designed so that the user interactions would be recorded more realistically this way, rather than giving step by step instructions on how to achieve the goal. Testing two design concept ideas would enable usability testing to be performed on both ideas to find out which of these concepts translates better to a mobile app in practical use compared to the initial comparison of ideas in isolation.

2 UX EVALUATION

Six questionnaires were emailed around the student group and six were distributed to family and friends who were not familiar with the campus. Out of the twelve questionnaires which were distributed I received 8 responses. I have collated the answers to the Yes/No questions in the below table and I have used the comments made to create a list of improvements which could be made when making further designs to the app. The questionnaires were designed to incorporate the user personas and scenarios from the design phase.

SECTION 1 – USER BACKGROUND		
Question Number	**Number of Yes**	**Number of No**
Q1 – Do you use a smartphone on a daily basis?	8	0
Q3 – Do you own an iPhone?	3	5
Q4 – Are you familiar with an iPhone?	7	1
SECTION 4 – USING THE APP – CREATE A NEW ACCOUNT		
Q1 – Did you find it easy to find your way around the app?	8	0
SECTION 4 – USING THE APP – LOGGING OUT		
Q1 – Did you find it easy to find your way around the app?	8	0
SECTION 4 – USING THE APP – SIGNING IN AS EXISTING USER		
Q1 – Did you find it easy to find your way around the app?	8	0
SECTION 4 – USING THE APP – FORGOTTEN PASSWORD		
Q1 – Did you find it easy to identify what to do?	8	0
SECTION 4 – USING THE APP – NAVIGATE TO THE GREIG BUILDING		
Q1 – Did you find it easy to follow the route via the map?	8	0
SECTION 4 – USING THE APP – NAVIGATE TO THE CENTURIA BUILDING		
Q1 – Did you find it easy to follow the route via the map?	7	1
SECTION 4 – USING THE APP – FIND CLASS INFORMATION		
Q1 – Did you find it easy to find class information?	8	0
SECTION 4 – USING THE APP – ADD ASSIGNMENT TO ASSIGNMENTS		
Q1 – Did you find it easy to add an assignment?	8	0
SECTION 4 – USING THE APP – DELETE ASSIGNMENT FROM ASSIGNMENTS		
Q1 – Did you find it easy to delete an assignment?	7	1
SECTION 4 – USING THE APP - HELP SCREEN		
Q1 – Did you find the Help menu?	7	1
Question Number	**Number of A**	**Number of B**
SECTION 5 – VERSION B – COMPARING HOME SCREENS		
Q1 – First time user which screen would you prefer?	3	5
Q2 – Installed for a while, which screen would you prefer?	5	3
Q3 – Which screen do you prefer?	4	4
SECTION 5 – VERSION B – COMPARING NAVIGATION		
Q1 – Which navigation style do you prefer?	7	1
SECTION 6 - COMPARISONS		
Q1 – Which version do you prefer A or B?	5	3

2.1   COMMENTS MADE ON QUESTIONNAIRE

The following are some of the comments made on the questionnaire in regard to the user experience via the prototype;

- Map view should illustrate the direction which the user is looking
- Toggle button implemented to be able to choose between different menu screen styles
- Toggle button implemented to be able to choose between map views
- Arrows on bottom of version A map did not initially indicate purpose
- Map colours on indoor view needs improving – colour contrast of corridors and buildings could be improved
- Add ability to check if a lesson is cancelled or still running
- Add option to change timetable view from a schedule view to a calendar date view
- Ease of use – generally easy to find tasks
- Side menu is a good idea, but perhaps move the Home button from this icon to the main menu bar
- Good comparison of navigation options
- Generally prefer the map option to the compass view
- Good overall design
- Good icon layout

Generally the feedback was in favour of the map style navigation over the compass style navigation and the reaction to two menu screens was mixed. Overall people would prefer the option to toggle between the two views. The difficulty in having a desktop iPhone emulator prototype meant that some features, such as the arrow indication on the map view did not come across as intuitively since the user experience did not reflect the GPS simulations of actually moving around on campus. This limitation meant that to simulate navigation the users had to click on the prototype a number of times, which forces them to treat the app like a desktop device, rather than being able to immerse themselves in the mobile experience by physically walking and interacting with the prototype. The next important phase of testing would be to create a mobile version on a physical mobile device in order to create the correct testing environment.

3   OUTCOMES AND DEVELOPMENT PLAN

The feedback from the questionnaire was very valuable to the development and improvement of the app. Even though there was a lot of feedback I have narrowed down these comments to the following key tasks to focus on in the next stage of design;

- Add accessibility contrast mode
- Allow add/remove items to timetable
- Allow switching views for menus and navigation
- Add edit functionality to assignments list
- Reposition home button from side menu to bottom menu

Further rounds of redesign and then testing would be required to fine tune the app's basic features before moving on to adding more complex options and added functionality. An important testing phase of actually producing a mobile device prototype rather than emulating on a desktop device would also need to be planned to gather more relevant user experience feedback.

I believe the way forward with the design would be to drop the compass style navigation design, and to keep the map navigation with enhancements, and to also merge the two versions of the home screen design together to create a toggled view in one design.
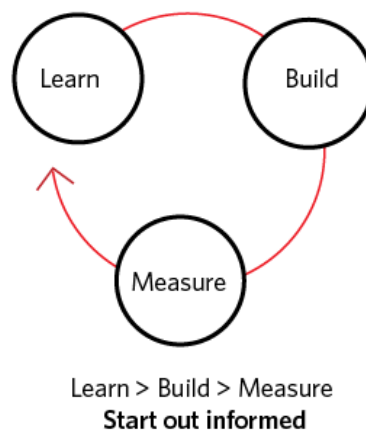
Above – Eric Ries' cyclical model for development

After further prototypes were created then the next stage would be to create a code driven app. Up until now the prototypes have been UX driven and created through the sketching and design phases. A coded version of the app with user interactions and the correct feedback would need to be developed and tested. This stage would need input from the UX team, the Development team, the Usability team, the test team and any business owners who would be representing and advocating the project to the university. I believe that moving forward with this initial design is the correct path towards creating a student focused user experience which is designed for, and aimed at mobile use, and implemented correctly can become a tool to enhance the daily lives of students at the university.

REFERENCES

3.1 RESEARCH

- Huy N. P. And Thanh D. (2012) 'Evaluation of mobile app paradigms', Proceedings of the 10th International Conference on Advances in Mobile Computing & Multimedia, MoMM '12, New York, NY, USA, 2012 ACM. pp. 25–30.
- Jones, M. & Marsden, G. 2006, Mobile interaction design, Chichester, John Wiley.
- Norman, D.A. 1988, The psychology of everyday things, New York, Basic Books.
- Norman, D.A. 2013, The design of everyday things, 2nd edn, MIT Press.

3.2 GRAPHICS AND ICONS

- http://www.axure.com/community/widget-libraries
- https://itunes.apple.com/gb/app/tu-mobile/id916133071?mt=8
- https://itunes.apple.com/gb/app/linkedin/id288429040?mt=8
- https://itunes.apple.com/gb/app/facebook/id284882215?mt=8
- https://itunes.apple.com/gb/app/class-timetable/id425121147?mt=8
- https://itunes.apple.com/gb/app/tomtom-europe/id355680531?mt=8
- https://itunes.apple.com/us/app/point-inside-shopping-travel/id338171893?mt=8
- https://itunes.apple.com/gb/app/week-calendar/id381059732?mt=8
- http://www.invisionapp.com/
- http://www.cooper.com/journal/2011/03/more_better_faster_ux_design

APPENDIX 1: TU APP QUESTIONNAIRE

TU App User Questionnaire

The following questionnaire will set out some tasks and will ask you to describe your experience using the iPhone app. Since the method of delivery is via an online emulator it is important to only use the features within the emulated iPhone and to remember that when performing each task you would be doing so as if you were away from a desktop and out in the university campus using a real phone.

Section 1 – User background

Please complete the following. All of your answers will remain confidential and be used solely for the purpose of this study.

Q1. Do you use a smartphone on a daily basis? *(Please highlight using the highlighter tool/change font colour as appropriate)*				
YES		NO		
Q2. On a scale of 1-5 (*with 5 being very confident and 1 being not confident*) how confident are you at using your smartphone beyond the basic functionality of calls and texts?				
1	2	3	4	5
Q3. Do you own an iPhone?				
YES		NO		
Q4. If you do not own an iPhone, are you familiar with the layout and interactions of the iPhone?				
YES		NO		
Q3. On a scale of 1-5 (*with 5 being very confident and 1 being not confident*) how confident are you at using an iPhone beyond the basic functionality of calls and texts?				
1	2	3	4	5

Section 2- How to access the app

There are two versions of the TU app. You will be required to perform the tasks in the Section 4 with version A of the app, and then in Section 5 with version B of the app.

- **Version A** of the app can be accessed at this location: http://invis.io/KT32Y3FVN

- **Version B** of the app can be accessed at this location: http://invis.io/HT32Y1JCF

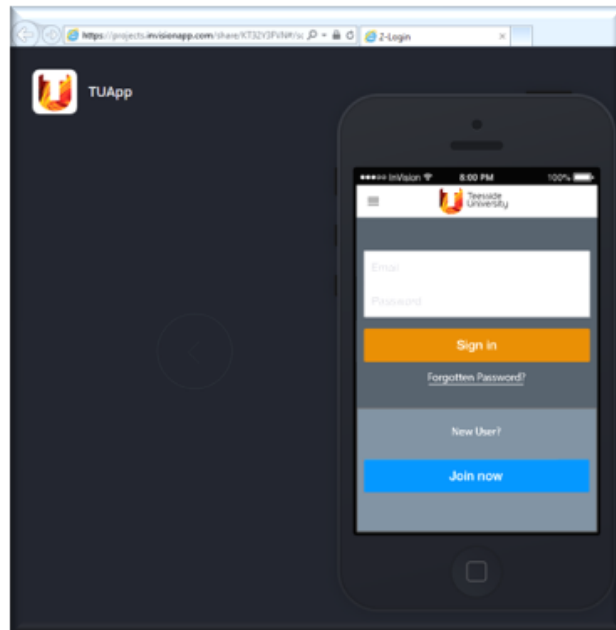## Section 3 – How to use the emulator online

When you click on either of the two links above you will be taken to the InVision website where you will see a loading screen as follows;
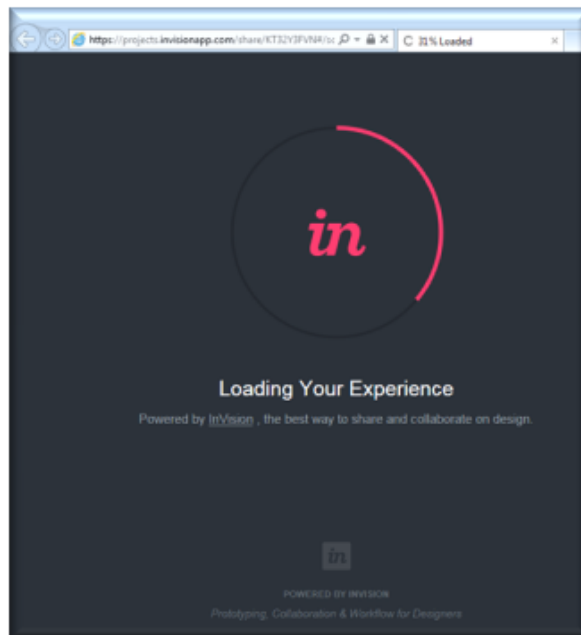
After a few moments you will see the following screen for a few seconds;
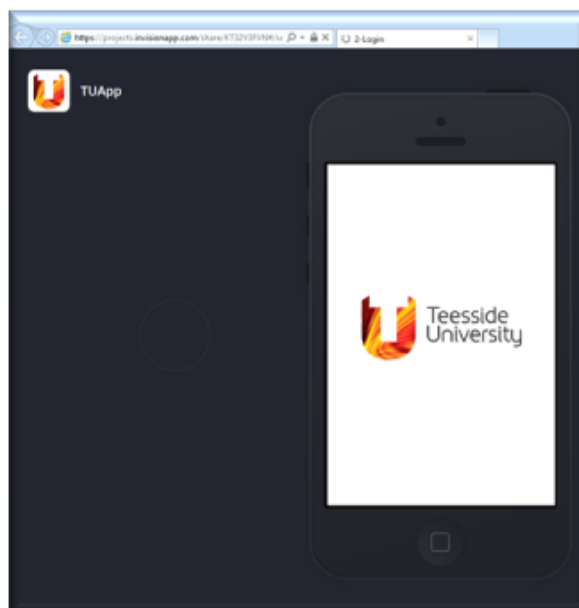
And then finally after the page has loaded you will be greeted with the following first page in the app emulator;

This log in screen is the first interactive page in the app. From here you will be required to only select the icons and clickable items within the iPhone screen as if you were using a real iPhone device. Do not use any of the browser buttons or other arrow keys outside of the iPhone frame.

Section 4 – Using the app – Create a new account

TASK 1: From the first screen create a new account as a new user

After performing this task you should be logged in automatically and see the following screen:

Q1. Did you find it easy to find your way around the app to create a new account?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

TIP: If you had difficulty performing this task or any of the other tasks then go to the Answers Section to find out how to navigate to the pages to continue.

Section 4 – Using the app – Logging Out
TASK 2: Logout from the app

After performing this task you should be returned to the following screen:
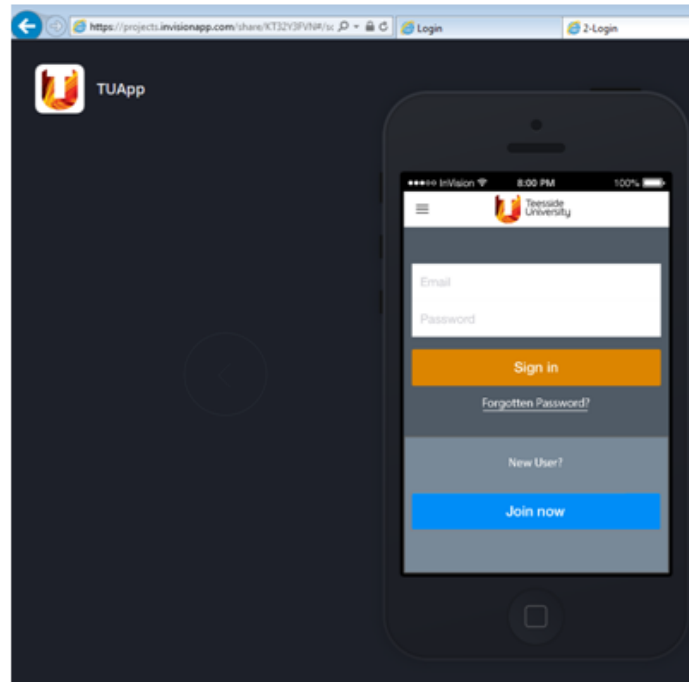
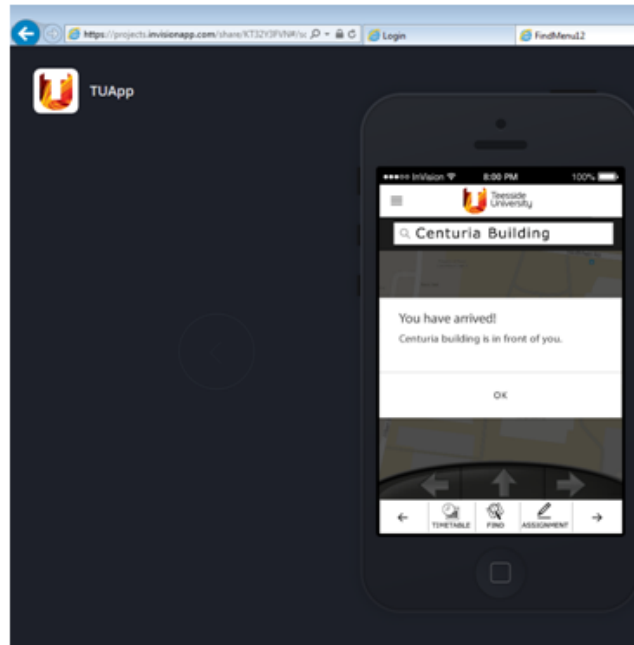| Q1. Did you find it easy to find your way around the app to log out/sign out?	
YES	**NO**

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

Section 4 – Using the app – Sign In as existing user

TASK 3: From the login screen log in to the app as an existing user

After performing this task you should be returned to the following screen:
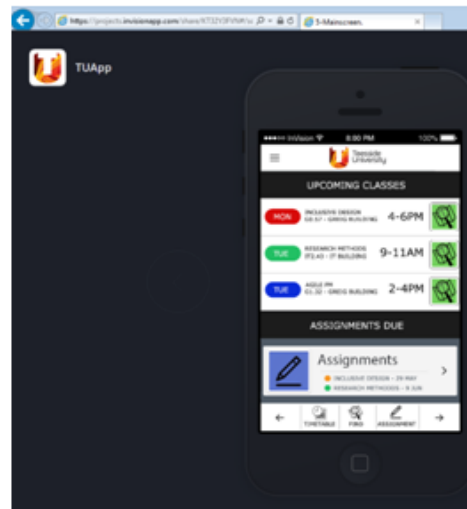
Q1. Did you find it easy to find your way around the app to log in?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? (*If so, please elaborate*)

Section 4 – Using the app – Forgotten Password

TASK 4: From the login screen prompt for an email to be sent with password info

After performing this task you should be returned to the following screen:
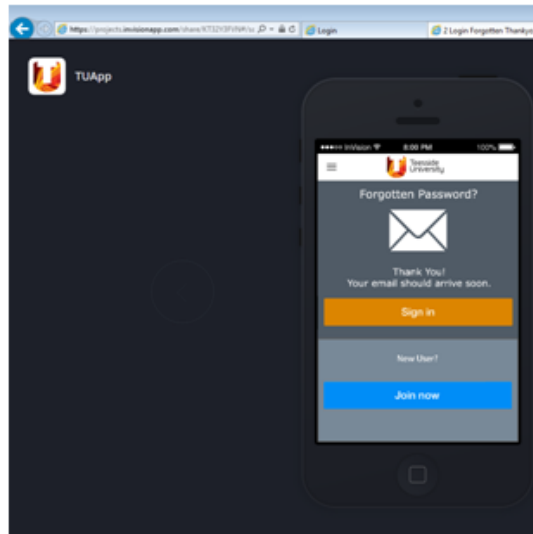
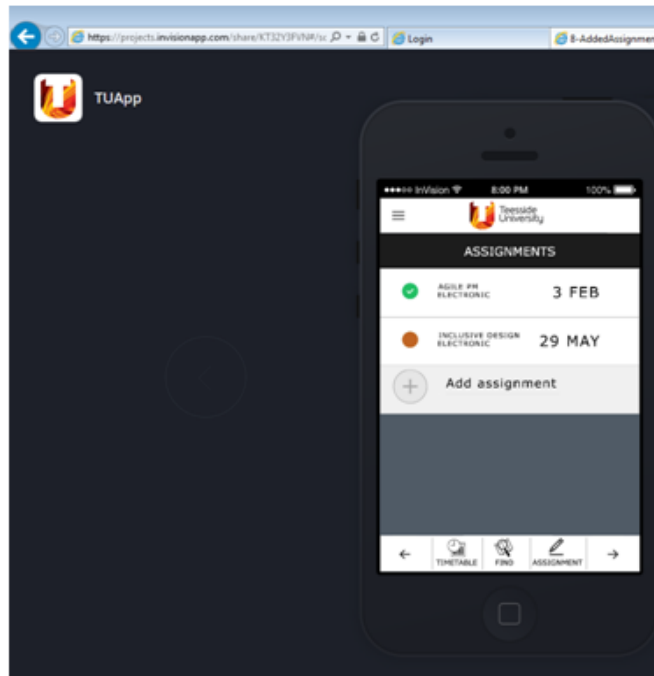| Q1. Did you find it easy to identify what to do when you have forgotten your password?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

Section 4 – Using the app – Navigate to the Greig Building

TASK 5: From the home screen click the green Find icon (magnifying glass) next to the class timetable for Inclusive Design and follow the navigation process to the Greig Building.

After performing this task you should be returned to the following screen:
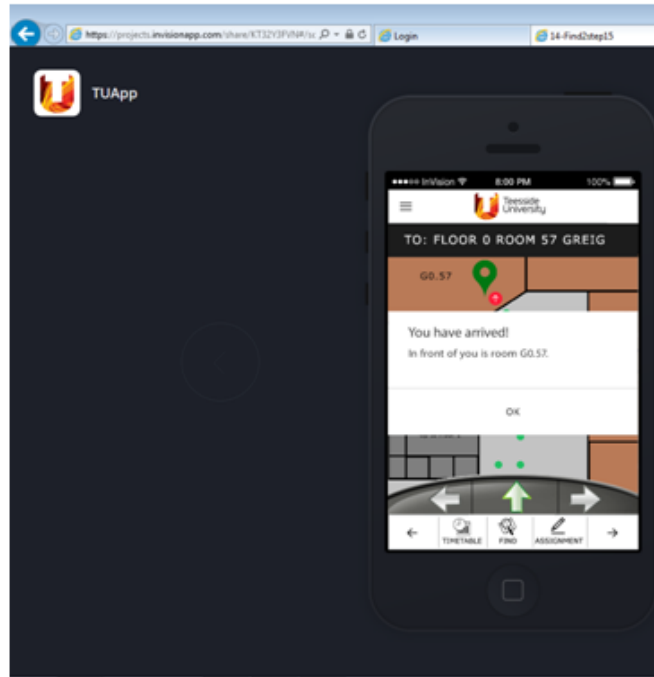
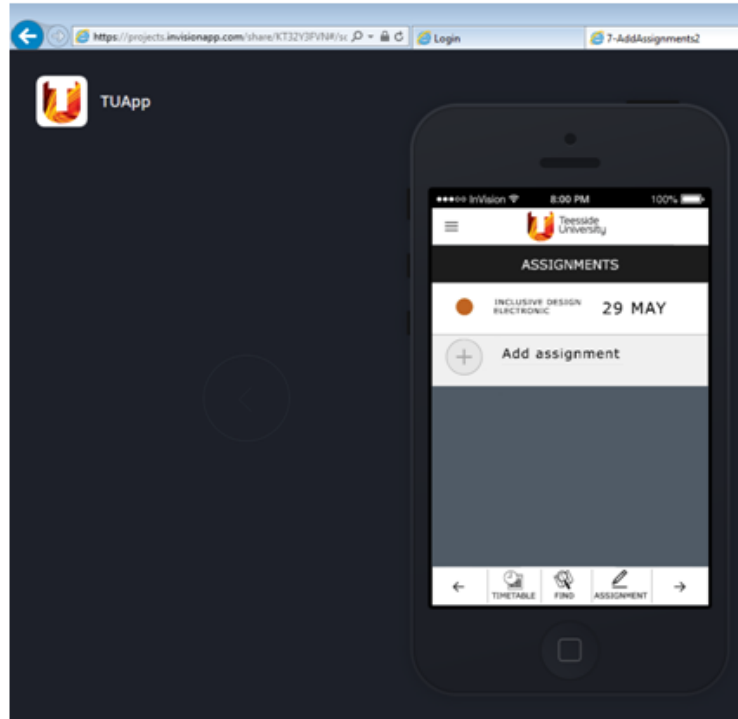| Q1. Did you find it easy to follow the route via the map?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? (*If so, please elaborate*)

Section 4 – Using the app – Navigate to the Centuria Building

TASK 6: From the home screen click the Find menu icon on the bottom toolbar and follow the navigation process to the Centuria Building.

After performing this task you should be returned to the following screen:

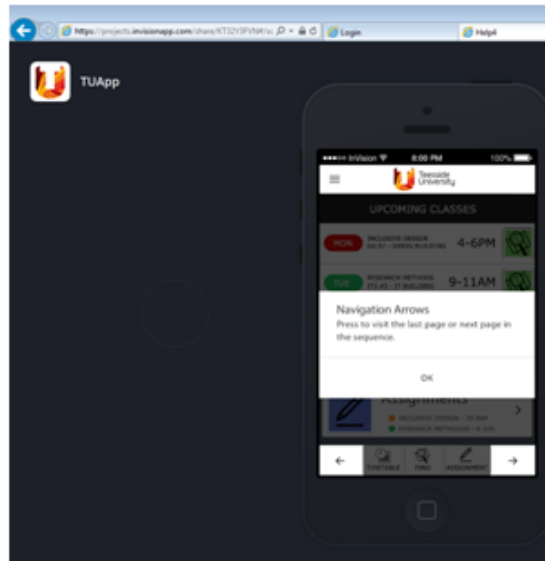| Q1. Did you find it easy to follow the route via the map?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? (*If so, please elaborate*)

Section 4 – Using the app – Find Class Information

TASK 7: From the home screen click the Timetable menu icon on the bottom toolbar find out what time your Agile PM class is on Wednesday

After performing this task you should be returned to the following screen:
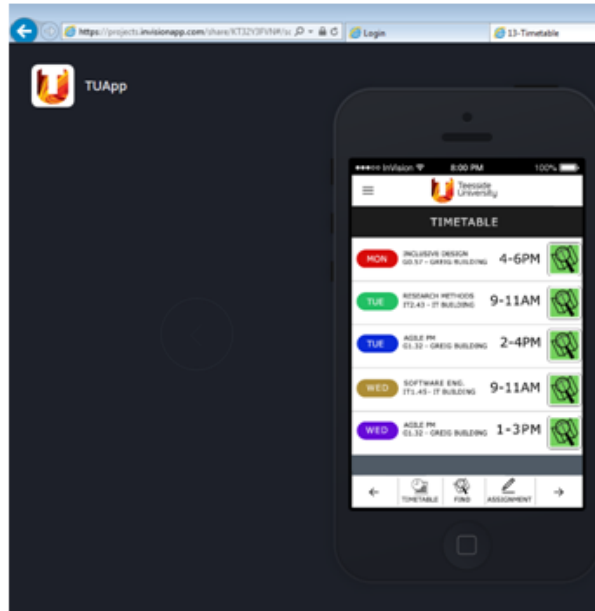
Q1. Did you find it easy find the class information?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

Section 4 – Using the app – Add an Assignment to Assignments

TASK 8: From the home screen click the Assignment menu icon on the bottom toolbar and add a new assignment to your list of assignments

After performing this task you should be returned to the following screen:

Q1. Did you find it easy to add an assignment?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

Section 4 – Using the app – Delete an Assignment from Assignments

TASK 9: From the Assignments screen delete the Agile PM assignment from your list of assignments

After performing this task you should be returned to the following screen:

Q1. Did you find it easy to delete an assignment?	
YES	NO

Q2. Did you have any difficulties in performing this task? *(If so please describe below)*

Q3. Do you have any suggestions for improvement? *(If so, please elaborate)*

Section 4 – Using the app – Help Screen

TASK 10: Locate the Help menu and watch the guide

After performing this task you should be returned to the following screen:

Q1. Did you find the Help menu?	
YES	**NO**
Q2. Did you have any difficulties in performing this task? *(If so please describe below)*	
Q3. Do you have any suggestions for improvement? (*If so, please elaborate*)	

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Section 4 – Using the app – Other Comments

TASK 11: Navigate through the app and comment on what you think of the design

Q1. Do you find it overall easy to use?

Q2. Do you have any suggestions for improvement? *(If so please describe below)*

Q3. Do you like any feature in particular? (*If so, please elaborate*)

Section 4 - Answers – Using the app – Create a new account

TASK 1: From the first screen create a new account as a new user

Click on the Join Now button on the sign in screen. Click on the email fields or Join now button. This will show a keyboard. Click again on the boxes or on the keyboard and you will be taken to the main home screen as if you are logged in with a new account.

Section 4 - Answers – Using the app – Logging Out

TASK 2: Logout from the app

Click on the hamburger icon on the top left on the menu to show settings menu. Click the sign out button.

Section 4 - Answers – Using the app – Sign In as existing user
TASK 3: From the login screen log in to the app as an existing user

Click on the Email or Password fields or the Sign In button. This will show a keyboard. Click again on the boxes or the keyboard to be taken to the main home screen as if you are logged in with an existing account.

Section 4 - Answers – Using the app – Forgotten Password
TASK 4: From the login screen prompt for an email to be sent with password info

Click on the Forgotten Password link on the sign in page. Click on the email field. This will display a keyboard. Click again to be sent an email confirmation.

Section 4 - Answers – Using the app – Navigate to the Greig Building
TASK 5: From the home screen click the green Find icon next to the class timetable for Inclusive Design and follow the navigation process to the Greig Building.

Click on the green find icon to the right of the class information for Inclusive Design. This will show you on a map where you are in relation to the Grieg Building. Keep clicking on the subsequent screens on the map section to be simulated through the navigation journey.

Section 4 – Answers - Using the app – Navigate to the Centuria Building
TASK 6: From the home screen click the Find menu icon on the bottom toolbar and follow the navigation process to the Centuria Building.

Click on the grey Find toolbar icon on the bottom menu. This will take you to the main Find screen where you can enter a location to search for. Clicking the search box will enter Centuria as your location. Clicking on the subsequent screens will simulate your journey through the campus to the Centuria Building.

Section 4 – Answers - Using the app – Find Class Information
TASK 7: From the home screen click the Timetable menu icon on the bottom toolbar find out what time your Agile PM class is on Wednesday

Click on the grey Timetable icon on the bottom menu. This will take you to the Timetable screen where all your classes are listed for the entire week.

Section 4 – Answers - Using the app – Add an Assignment to Assignments

TASK 8: From the home screen click the Assignment menu icon on the bottom toolbar and add a new assignment to your list of assignments

Click on the grey Assignment icon on the bottom menu. This will take you to the Assignments screen. Click Add assignment to load the new form to add an assignment. Click on the fields to show keyboard and input. Click again to add the assignment.

Section 4 - Answers – Using the app – Delete an Assignment from Assignments

TASK 9: From the Assignments screen delete the Agile PM assignment from your list of assignments

Click on the Agile PM class icon in the Assignments screen. This will highlight the DELETE functionality as if swiped by the iPhone user. Click again to confirm the delete.

Section 4 – Answers - Using the app – Help Screen

TASK 10: Locate the Help menu and watch the guide

The Help menu can be found by clicking the Hamburger icon on the top left of the app and then looking at the side menu. Clicking the Help option will show the walkthrough screens which are progressed by clicking through them.

Section 5 – Using the app – Version B

TASK 1: Navigate through the app and comment on what you think of the design

You have performed a number of tasks using Version A of the app, now try and navigate through Version B of the app, making notes of what your first impressions are.

Q1. Do you find it overall easy to use?

Q2. Do you have any suggestions for improvement? *(If so please describe below)*

Q3. Do you like any feature in particular? (*If so, please elaborate*)

Section 5 – Using the app – Version B – Comparing Home Screens

TASK 2: One of the design differences between Version A of the app and Version B are the Home screen designs.

Version A	Version B

Q1. If you were a first time user of the app, which screen would you prefer?

Q2. If you had the app installed for a while and knew your way around, which screen would provide the more beneficial information at a glance?

Q3. Which screen do you prefer? (Please elaborate)

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Section 5 – Using the app – Version B – Comparing Navigation

TASK 3: One of the design differences between Version A of the app and Version B are the Navigation designs. Version A uses a traditional maps view to guide the student through the campus with a combination of outside street navigation and then inside building navigation when in the required location. Version B uses a compass based navigation where the compass would indicate to the student while walking whether to turn left, right or continue straight forward similar to a GPS navigation system inside a car. Compare both these navigation systems and describe your thoughts.

Version A	Version B
(Above – outside navigation via maps)	(Above – compass style navigation with text directions)
(Above – inside navigation via maps)	(Above – visual guide at destination)

Q1. Which navigational style do you prefer? *(Please state why)*

Q2. Comments?

Section 6 – Comparisons

TASK 1: You have used both versions of the app. Please state your thoughts here and pick which version of the app you prefer.

Q1. Which version do you prefer? Version A or Version B?

Q2. Comments?

Section 7 – Thank You

Thank you for taking part in this study. Please email this questionnaire to Katherine Joyce at N3363194@tees.ac.uk

APPENDIX 2: POWERPOINT SLIDES FROM PRESENTATION

The following pages contain copies of the slides used for the peer presentation session.
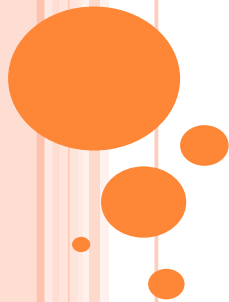
INCLUSIVE DESIGN (MUL4052-N)

Improving the User Experience of TU Mobile App

Katherine Joyce (N3363194)

THE PROBLEM

- Current TU App available on iTunes for iPhone
- Not designed as an app for mobile use
- No scenarios envisioned for use – scaled down version of the desktop intranet functionality
- Missing features that would be ideal for mobile use

Confusing Navigation

'Back' option at top of screens, but also forward and back arrows at bottom of screen.
↓
Ben Shneiderman's Eight Golden Rules of Interface Design (Shneiderman, 1998) 'Strive for Consistency'.
↓
Two screen icon layout and movable icons = not intuitive to use.

Fails the 'Rule of Thumb'
→ pg 58 'Tapworthy, Designing Great iPhone Apps' (2010) J.Clark, O'Reilly.

PROBLEMS with Current App

Not designed for mobile use
↓
Confusing double page layout with functionality not targeted for use on the move.

Too much content
↓
Too many features included which would not be needed when viewing on a mobile eg. SU, SuPhotos, Intranet, Email
↓
Most iPhone users would configure email through their mail app.

Missing Timetable Info
↓
Push alerts when a class is cancelled?
↓
Current Room finder functionality just shows Google maps view of Middlesbrough.
↓
Needs tailored pedestrian Navigation.

EXAMPLES – HOME SCREEN LAYOUT

Too many options and similar coloured icons

Space left for logo which causes a two screen layout with icons – not intuitive

This is a button – not intuitive

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EXAMPLES – NAVIGATION ISSUES

Confusing Navigation
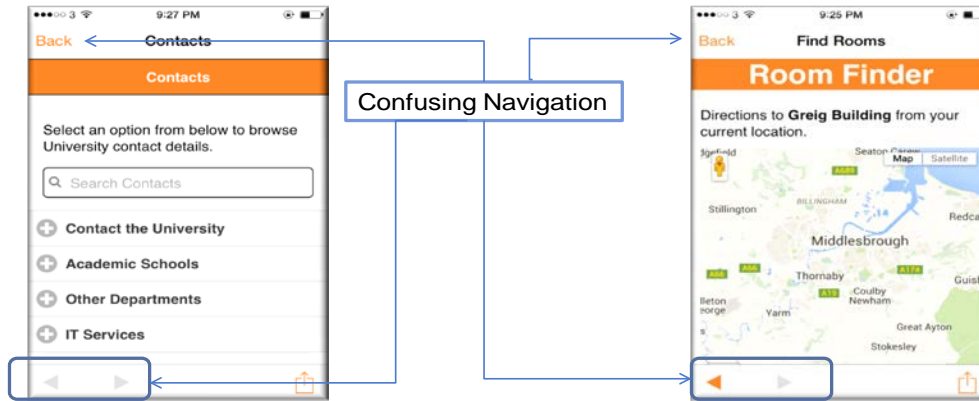
EXAMPLES – DESKTOP PORTED TO MOBILE

Email login as on desktop
-phones have email clients

Directions as on desktop version
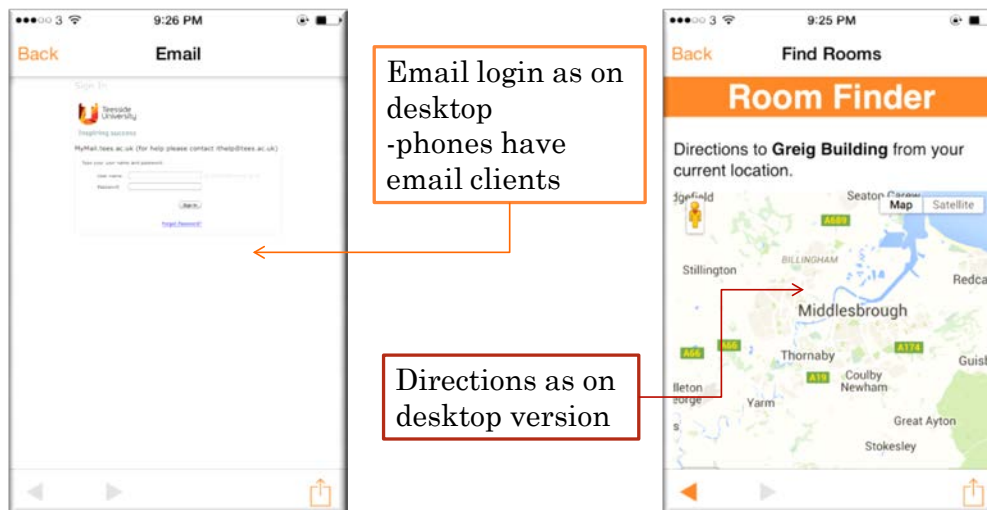
The Solution

- Redesign an app concept for mobile use
- Redesign User Experience
- Concentrate on 3 simple features
- Include key features required for students of a mobile app

View Timetable Info

Assignment List
↓
Notes / Dates / Reminders.

What is needed in an app?

Pedestrian Navigation to Classes

Overview of Campus Map / Building Layout

Aim: Design a Cut down version with a few key features for mobile use.

Users / Personas
> Students not familiar with Campus
> Students who need class info but know campus
> Students who want to keep track of assignment deadlines.

FEATURES REQUIRED FOR APP

- View timetable
- View/Navigate to buildings on campus
- Keep track of assessments due

?

Proposed Evaluation Methods

- Perform A/B Testing on two versions of app design
- Gather feedback from user questionnaires aimed at performing tasks with the app
- Evaluate against user personas

PROTOTYPES

- **Version A** - http://invis.io/KT32Y3FVN
- **Version B -** http://invis.io/HT32Y1JCF

DESIGN DIFFERENCES

- Version A had a traditional map navigation
- Version B had a compass style GPS navigation

Version A

Version B

DESIGN DIFFERENCES

- Version A had a home screen with data
- Version B had a simpler button menu home screen

FEEDBACK FROM QUESTIONNAIRES

- Map view should illustrate direction that user is looking
- Toggle button to be able to choose between two implemented views
- Arrows at bottom of the map did not indicate purpose initially
- Improve map building colours
- Ability to check if lesson is running
- Change schedule view option to calendar view

FUTURE IMPROVEMENTS TO APP

- Add accessibility contrast mode
- Allow ability to add or remove items from timetable
- Allow view switching for timetable and map features
- Add edit functionality to the assessments section

ANY QUESTIONS?