Test Plan

The testing phase of our project is vitally important in the production of a high-quality product as it enables us to detect and resolve various faults in a product and it also means we can deliver a product to our client knowing there is a minimal number of faults in the system. However, the testing phase will not guarantee that our product will be fully bug-free, it will only indicate most faults that exist in our product. We intend to maximise the test code coverage of our app program code during testing to ensure that the majority of faults within our app can be detected and fixed.

The team members responsible for testing (Titas Alvikas, Will Comber and Edward Phillips) will be required to keep the testing stage on schedule and make sure that testing is carried out to a high standard.

The testing stage in our project will be carried out from the time that we create our first prototype system until we submit our final system. This is to help diagnose any faults in our product during the implementation phase and any large errors will be detected at an early stage of the project lifecycle.

To complete our testing of the system we will require the use of a PC with Windows 10 OS, Android Studio version 3.3.1 and appropriate Android devices running Android 5.0 and above. We plan to test on different screen sizes of phones to make sure the app looks and behaves similarly on a large variety of mobile phones.

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| Test Number | Description | Expected Result | Actual Result | Improvements made |
| 1 | Download the app | App should be downloadable to an android device as an APK from the project website | Currently the app can be downloaded from Google Play taking up 11.3 Mega Bytes of storage | None |
| 2 | Run the app | App should start, display a loading screen and then the home screen | App runs successfully and opens the home screen as intended | In the end, we decided not to implement a loading screen on the app |
| 3.1 | Open the navigation drawer when pressing on the hamburger icon on any page | Navigation drawer should fully open | Navigation drawer opens successfully from every page | None |
| 3.2 | Open the navigation drawer when swiping from the left side of the screen on any page | Navigation drawer should open depending on how much it is pulled out, coming fully out if swiped. | Navigation drawer opens successfully from every page when swiped in by finger from the left | None |
| 3.3 | Notification bar is transparent when navigation drawer is active | Notification bar should be transparent when navigation drawer is opened | Notification bar is notably transparent | None |
| 4.1 | Increase and decrease app text size from accessibility settings | Text size in the app should be scaled appropriately | Text size is changed appropriately from a slider menu | None |
| 4.2 | View application information and about the developers when selected in the settings page | Application information and about the developer’s information should display | Information about the application and the developers displays successfully in popup messages | None |
| 5.1 | Get directions for all tutor rooms using search (using stairs and elevator) | Text of directions to rooms should display on the same screen | The relevant directions to most tutor rooms all display correctly | None |
| 5.2 | Get directions for all study spaces using search (using stairs and elevator) | Text of directions to study spaces should display on the screen | The relevant directions to all study spaces display correctly | None |
| 5.3 | Get directions for lecture theatre and flat floor teaching rooms using search (using stairs and elevator) | Text of directions to rooms should display on the screen | The relevant directions to the lecture theatre and fat floor teaching rooms all display correctly | None |
| 6.1 | Search for a tutor room using search button on the top right of a screen | Search results should display on screen in a list | Search results display correctly when typing in the name of an existing tutor | None |
| 6.2 | Search for a study space using search button on the top right of a screen | Search results should display on screen in a list | All six study spaces were correctly displayed when searching for ‘study area’ | None |
| 6.3 | Search for lecture theatre and flat floor teaching rooms using search button on the top right of a screen | Search results should display on screen in a list | Lecture theatre and flat floor teaching rooms display correctly when searched for | None |
| 6.4 | All search queries for finding a Tutor display the relevant Tutors | Search results should display relevant tutors | All search results display the correct tutors in a list | None |
| 6.5 | Search for a room from the find a room screen | Search results should display on screen in a list | Fail, the Find A Room screen has been removed | We removed the Find A Room screen as it was essentially the same as the normal search screen |
| 6.6 | All search queries for finding a specific room using the room number display the relevant rooms | Search results should display on screen in a neat list of relevant information | All tested search queries return the correct list of rooms e.g. search ‘6.0’ returns all rooms on sixth floor | None |
| 7.1 | View enlarged floor maps on different floors | Floor plan with a darkened background of the screen should display | Floor plan is displayed as an image as intended | We improved the RAM usage on this feature and other screens in order to make it run more efficiently |
| 7.2 | Display correct map on active floor level | Correct map is displayed for the current floor | The relevant floor map is displayed for each floor | None |
| 8.1 | Load tour guide screen | Screen with information regarding a tour for the USB should display | Tour guide screen loads successfully in the same activity on the building information screen | None |
| 8.2 | Load building information screen | Screen with building information should display | Building information screen loads successfully and displays relevant information about the USB | None |
| 9 | Run the app in the background | App should run in the background and be accessible after running in the background | App can successfully run in the background and be accessed again | None |
| 10 | Get a user to try and use some features of the app | The app should be usable for existing university students and prospective students based on our user requirements | The app has been tested by a different user from our team and they have confirmed that our app is usable for them | None |
| 11 | Every button in each activity can be operated without application crashing | No crashes should occur after testing any given button | After pressing on all buttons in each activity the application does not crash as expected | None |
| 12 | Every activity can be accessed from somewhere within the application | Any activity can be accessed while doing anything in the app, e.g. searching or viewing the options | Any activity can successfully be accessed from all screens of the app | None |
| 13 | Toolbar displays the correct name of the active activity | Toolbar displays the correct text | The tool bar displays the correct text relating to each activity | None |
| 14 | All directions given to a room are accurate | Given room directions correctly lead you to the room | The room directions correctly lead the user to the correct rooms | None |
| 15 | Where enabled, each activity displays content correctly in portrait mode | Content does not look distorted or broken when viewing in portrait mode | All activities display correctly and sensibly in portrait mode | None |
| 16 | Where enabled, each activity displays content correctly in landscape mode | Content does not look distorted or broken when viewing in landscape mode | Fail, content looks distorted in some screens, especially the home page when in landscape mode | We removed the landscape mode from the app as it was a redundant feature in the app |
| 17 | A circle is drawn over the relevant room searched for on the floor plan | Circle is correctly drawn on the corresponding room | A floor plan with a circle drawn over the room on the map is correctly displayed | None |
| 18 | The map can be zoomed in and out, within acceptable parameters | Map can be zoomed out and zoomed in within reason | Map can successfully be zoomed in and out by pinching the screen with two fingers | None |
| 19 | Any changes made in the settings page will change in every relevant activity | The entire app reflects the current changed settings, e.g. text size | The changes in settings take effect correctly in all other screens of the app | None |
| 20 | Any changes made in the settings page will maintain state after the app is closed and re-opened | App will not forget an adjusted text size after being restarted, and will remember whether it was changed to be bigger or smaller | After closing and reopening the app, the text size remains the same as it was before closing the app | None |