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For ChalmersOnTheGo 1.0, Jelly Bean 4.0 and API 16

Chalmers On The Go – the Complete Chalmers Experience

This document describes the different user stories, their associated acceptance tests and the unit tests made when developing the ChalmersOnTheGo Androis application.

Test Report

Software Engineering Project – DAT255 - lp4, 2013Chalmers University of Technology, 24.05.2013

Test Report

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# User stories

Below you will find a complete list of user stories, used while developing the ChalmersOnTheGo application. Their presented order is not an internal prioritising between the stories. Please note that some user stories are generally formulated, for an example “I want to see all rooms”. These are tested only with a limited amount of data, not the data for *all* the rooms there are in the Chalmers, due to time limitations regarding collection of data. As long as more data is added in the correct way described in the [Developer Manual](Developer%20manual.docx), those user stories are probable to be correct. Please also note that user stories marked with an asterisk (\*) have not been implemented. For more information on these, see section 3.3. Design decisions in document [Software Development Document.docx](Software%20Development%20Document.docx).

**General**

* As a user, I should be able to exit the application at any time from inside the application1
* As a user, I want to be able to reverse my actions with a back-button2

**Map**

* As a user, I should only be able to see and navigate inside the Chalmers area3
* As a user opening the application, I want to see a fixed view of the Chalmers area, which always has the same starting coordinates4
* As a user opening the application, I want to see my current position on the map23
* As a user, I want to be able to click on a marked location, generating a popup window informing me about the name and floor of the location5
* As a user, I want to be able to add and save my favourite locations on the map
* As a user, I want to be able to erase all marked locations on the map24

**Navigation**

* As a user having gotten a location marked on the map, I want to be able to get the shortest path from my current location to the wanted location, by clicking the locations information window6
* As a user, I want to be able to get the map centred at my current location7
* As a user navigating to a certain location, I want to know how long time it will take me to get there29
* As a user navigating to a certain location, I want to know the distance between my current location and the wanted location30

**Searching**

* As a user typing in a search for some item, I want a dropdown menu to appear with word-completed suggestions8
* As a user searching and getting suggestions, I want to be able to click any suggestion and get the location I clicked marked on the map9
* As a user, I want to be able to search for a room, mark it and get the closest entry to the room marked on the map10
* As a user, I want to be able to search for a building and get all the rooms in the building marked on the map11
* As a user, I should be able to search for different room types, and get all the rooms of the specific type as suggestions12

**Layer function**

* As a user, I want to be able to have a checkbox-regulated layer function where I can choose between location types13
* As a user checking any layer, I want to be able to see all the rooms concerned by the specific layer14
* As a user, I want to have layers with computer rooms, lecture halls, group rooms and pubs15

**Different application modes**

* As a user, I should be able to switch between night and day mode at any point or time in the application \*
* As a user currently in night mode, I want to see the buildings coloured according to their associated section’s colour \*
* As a user currently in day mode, I want to see the buildings coloured neutrally \*

**Non-navigational features**

* As a user, I want features not only concerned with the map and navigation
* As a user, I want to se how many steps I have taken25
* As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26
* As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27
* As a user, I want to be able to synchronise my Time Edit schedule with the map to see where my lectures are \*

**Design, appearance and user support**

* As a user, I want a nice looking application icon16
* As a user, I want to be able to reach all the application’s functions from a menu system similar to Google maps17
* As a user searching for items, I want to see an icon symbolising the type of room, building or pub for each suggestion I get18
* As a user checking the “pub layer”, I want to be able to see the buildings where the pubs are painted with the colour of the respective pub’s sections19
* As a user opening the application, I want to be prompted to activate the GPS if it is not already enabled20
* As a user, I want the GUI to have an appealing appearance21
* As a user, I want the application to perform wanted actions reasonably fast22
* As a user, I should be able to switch orientation mode between vertical and horizontal without loosing my choices28

**Current user stories (20 may-current):**

1. As a user, i want to be able to search for two separate locations, and get the path between them. – future implementation. Anders: jobbar på den nu (24 maj)
2. As a user, I want to be able to mark which floor I’m interested in when checking a specific layer Anders: Rene jobbar på det nu Niklas: Finns meny, men vet ej om Rene fixade så att menyn gjorde något

# Testing

In the texts below you will find a complete list acceptance tests and unit tests, as well as their associated user stories, made while developing the application ChalmersOnTheGo. The acceptance tests and unit tests together are calculated to cover the essential parts of the code.

## Acceptance tests

All user stories have been acceptance tested. The user stories are tested mainly to pass, but also to fail, and the tests have reasonable branch coverage. The validity in the tests is assured by their tight connection to user stories. The tests are made to verify the implementation.

|  |  |
| --- | --- |
| What is tested | Exit-functionality |
| How it is tested | From each view, the exit-function in the menu is tried out |
| Expected result | Exit should happen whenever the exit-button is pressed |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should be able to exit the application at any time from inside the application1 |

|  |  |
| --- | --- |
| What is tested | Back/reverse-functionality |
| How it is tested | From each view, the back-function is tried. |
| Expected result | Previously taken step should reverse whenever the back-button is pressed. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to reverse my actions with a back-button2 |

|  |  |
| --- | --- |
| What is tested | Zoom-out limit |
| How it is tested | Repeatedly zoom out in map. |
| Expected result | The map should only show the Chalmers area, not more. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should only be able to see and navigate inside the Chalmers area3 |

|  |  |
| --- | --- |
| What is tested | Map boundaries |
| How it is tested | Repeatedly scrolling outside of the map. |
| Expected result | The map should get stuck on the boundaries. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should only be able to see and navigate inside the Chalmers area3 |

|  |  |
| --- | --- |
| What is tested | Navigation fail outside Chalmers |
| How it is tested | The user stands outside the map boundaries and tries to navigate with the application. |
| Expected result | The map should show the boundaries of map, not the user’s current position. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should only be able to see and navigate inside the Chalmers area3 |

|  |  |
| --- | --- |
| What is tested | Limited data on Chalmers area |
| How it is tested | Data, not in the database, is searched for |
| Expected result | No suggestions should present themselves |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should only be able to see and navigate inside the Chalmers area3 |

|  |  |
| --- | --- |
| What is tested | Fixed starting coordinates |
| How it is tested | Repeatedly opening the application and visual control. |
| Expected result | The map view should show the intended coordinates. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user opening the application, I want to see a fixed view of the Chalmers area, which always has the same starting coordinates4 |

|  |  |
| --- | --- |
| What is tested | Information (and navigation) window |
| How it is tested | Arbitrary locations are searched and marked on the map. The marker is clicked. |
| Expected result | When clicking the marker, it should trigger the popup window containing room name, floor and a “Navigate to here”-text. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to click on a marked location, generating a popup window informing me about the name and floor of the location5 |

|  |  |
| --- | --- |
| What is tested | (Information and) navigation window |
| How it is tested | Arbitrary locations are searched and marked on the map. The marker is clicked. The information popup window is clicked. |
| Expected result | When clicking the popup window, the shortest path from the user’s current location to the marked location should be drawn on the map. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user having gotten a location marked on the map, I want to be able to get the shortest path from my current location to the wanted location, by clicking the locations information window6 |

|  |  |
| --- | --- |
| What is tested | Target function |
| How it is tested | The user moves to different places inside the map boundaries and presses the target button |
| Expected result | The map should centre on the user’s position |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to get the map centered at my current location7 |

|  |  |
| --- | --- |
| What is tested | Target function when opening application |
| How it is tested | The user stands inside the map boundaries and opens the application |
| Expected result | The map should centre on the user’s position |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user opening the application, I want to see my current position on the map23 |

|  |  |
| --- | --- |
| What is tested | Search field |
| How it is tested | The search icon is clicked |
| Expected result | A writeable search field will show up with a marker in it |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user typing in a search for some item, I want a dropdown menu to appear with word-completed suggestions8 |

|  |  |
| --- | --- |
| What is tested | Suggestions in search field |
| How it is tested | Arbitrary letters are written in the field |
| Expected result | Word-completed suggestions should show in a dropdown menu |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user typing in a search for some item, I want a dropdown menu to appear with word-completed suggestions8 |

|  |  |
| --- | --- |
| What is tested | Coverage in search field suggestions |
| How it is tested | Suggestions are generated with arbitrary letters and the suggestions are checked manually against the database content |
| Expected result | The suggestions should represent all the correlating data in the database |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user typing in a search for some item, I want a dropdown menu to appear with word-completed suggestions8 |

|  |  |
| --- | --- |
| What is tested | Search field |
| How it is tested | The search icon is clicked |
| Expected result | A writeable search field will show up with a marker in it |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user typing in a search for some item, I want a dropdown menu to appear with word-completed suggestions8 |

|  |  |
| --- | --- |
| What is tested | Mark searched location |
| How it is tested | Arbitrary locations are sought and clicked on in suggestions menu |
| Expected result | Locations should be marked on the map |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user searching and getting suggestions, I want to be able to click any suggestion and get the location I clicked marked on the map9  As a user, I want to be able to search for a building and get all the rooms in the building marked on the map11 |

|  |  |
| --- | --- |
| What is tested | Closest entry function |
| How it is tested | A sought and marked room’s popup information window is clicked |
| Expected result | The closest entry should be marked on the map |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to search for a room, mark it and get the closest entry to the room marked on the map10 |

|  |  |
| --- | --- |
| What is tested | Generic rooms search |
| How it is tested | Each room type (group room, leacture hall and computer room) is searched for |
| Expected result | They should show up as suggestions |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should be able to search for different room types, and get all the rooms of the specific type as suggestions12 |

|  |  |
| --- | --- |
| What is tested | Generic rooms search and navigation |
| How it is tested | Each room type (group room, leacture hall and computer room) is searched for, suggested and clicked |
| Expected result | All rooms of the specific type are marked on the map |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should be able to search for different room types, and get all the rooms of the specific type as suggestions12 |

|  |  |
| --- | --- |
| What is tested | Layer menu |
| How it is tested | The layer-button is clicked |
| Expected result | The layer menu should appear |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to have a checkbox-regulated layer function where I can choose between location types13 |

|  |  |
| --- | --- |
| What is tested | Layer menu checkbox alternatives |
| How it is tested | The layer menu is opened and visually controlled. |
| Expected result | Alternatives should be computer rooms, lecture halls, group rooms and pubs. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to have layers with computer rooms, lecture halls, group rooms and pubs15 |

|  |  |
| --- | --- |
| What is tested | Layer menu checkboxes |
| How it is tested | Arbitrary check-boxes are marked and the menu is closed |
| Expected result | The chosen location layers should show on the map |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user checking any layer, I want to be able to see all the rooms concerned by the specific layer14 |

|  |  |
| --- | --- |
| What is tested | Layer menu checkboxes |
| How it is tested | Arbitrary check-boxes are marked and the menu is closed. The menu is opened and the check-boxes are unmarked. Close. |
| Expected result | The unchosen location layers should disappear from the map. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user checking any layer, I want to be able to see all the rooms concerned by the specific layer14 |

|  |  |
| --- | --- |
| What is tested | Attractiveness in application icon |
| How it is tested | Visual control and discussion among team members. |
| Expected result | Consensus in that it is appealing. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want a nice looking application icon16 |

|  |  |
| --- | --- |
| What is tested | Menu similarity to Google maps |
| How it is tested | The application’s menu system is compared to that of Google |
| Expected result | The system should be quite similar |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to reach all the application’s functions from a menu system similar to Google maps17 |

|  |  |
| --- | --- |
| What is tested | Icons in search suggestions |
| How it is tested | All different search item types are tried (pubs, buildings, computer room, lecture hall, group room) |
| Expected result | The suggestions should show correlating icons to the items |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user searching for items, I want to see an icon symbolising the type of room, building or pub for each suggestion I get18 |

|  |  |
| --- | --- |
| What is tested | Building colours for pubs |
| How it is tested | The pub layer is marked |
| Expected result | The buildings with pubs should be painted in their section colour respectively |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user checking the “pub layer”, I want to be able to see the buildings where the pubs are painted with the colour of the respective pub’s sections19 |

|  |  |
| --- | --- |
| What is tested | GPS prompt |
| How it is tested | The GPS function is deactivated. Then the application is opened. |
| Expected result | A window should prompt the user to enable the GPS function. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user opening the application, I want to be prompted to activate the GPS if it is not already enabled20 |

|  |  |
| --- | --- |
| What is tested | Attractiveness in GUI |
| How it is tested | Visual control and discussion among team members. |
| Expected result | Consensus in that it is appealing. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want the GUI to have an appealing appearance21 |

|  |  |
| --- | --- |
| What is tested | Performance |
| How it is tested | Arbitrary functions are clicked and the time they take to react is measured with timer |
| Expected result | Each carried-out action should take at the most 1 second |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want the application to perform wanted actions reasonably fast22 |

|  |  |
| --- | --- |
| What is tested | Empty map function |
| How it is tested | Arbitrary locations and layers are added to the map, and then the empty map-button clicked |
| Expected result | The map should be become clean |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to erase all marked locations on the map24 |

|  |  |
| --- | --- |
| What is tested | Activation and deactivation of step counter |
| How it is tested | The StepCounter will be activated, arbitrary functions carried out, then the StepCounter will be deactivated |
| Expected result | The StepCounter should activate and deactivate when ordered to |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Counting steps |
| How it is tested | The StepCounter will be activated and the user will walk and manually count her steps, comparing them to those in the StepCounter. |
| Expected result | The number of steps manually counted and those counted by the StepCounter should correlate. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Counting steps in sleep mode |
| How it is tested | The StepCounter will be activated and sleep mode will be engaged. The user will walk and manually count her steps, then waking up the application, comparing the counted steps to those in the StepCounter. |
| Expected result | The number of steps manually counted and those counted by the StepCounter should correlate. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Counting steps when application is minimised |
| How it is tested | The StepCounter will be activated and the application will be minimised. The user will walk and manually count her steps, then opening the application, comparing the counted steps to those in the StepCounter. |
| Expected result | The number of steps manually counted and those counted by the StepCounter should correlate. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Counted steps saved if StepCounter deactivated |
| How it is tested | The StepCounter will be activated and the user will walk. The number of steps will be controlled, then the StepCounter will be deactivated, then activated again. |
| Expected result | The number of steps in the StepCounter should still show on the calorie counter progress window. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Stop counting steps |
| How it is tested | The StepCounter will be activated and the user will walk, then deactivate the StepCounter. |
| Expected result | The StepCounter should stop counting when being turned off. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Not saving counted steps when exiting application |
| How it is tested | The StepCounter will be activated and the user will walk, then the application will be exited, and then opened again. |
| Expected result | The StepCounter should be restarted from 0. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to se how many steps I have taken25 |

|  |  |
| --- | --- |
| What is tested | Calorie counting window |
| How it is tested | The calorie counting window is clicked in the menu. |
| Expected result | The wanted window should show up. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26 |

|  |  |
| --- | --- |
| What is tested | Calorie counting progress bars existing |
| How it is tested | Visual control of calorie counting window. |
| Expected result | Progress bars for wine, beer, shots, water and cider should show in the windows. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26 |

|  |  |
| --- | --- |
| What is tested | Calorie counting progress bars working 1 |
| How it is tested | Visual control of progress bars while walking a few steps. |
| Expected result | Progress in all bars with taken number of steps . |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26 |

|  |  |
| --- | --- |
| What is tested | Calorie counting progress bars working 2 |
| How it is tested | Visual control of progress bars while walking the desired amount of steps per each drink type. |
| Expected result | Progress in all bars and reaching desired amount of steps per drink, resulting in that, if the user takes a drink, no “fat warning”-message will appear. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26 |

|  |  |
| --- | --- |
| What is tested | Drink it functionality |
| How it is tested | Clicking on each Drink it-button. |
| Expected result | Number of had drinks should show an increase accordingly, and the progress bars should start counting for a new drink. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to see when I have burnt enough calories walking, to drink either a glass of wine, beer, shot, or cider26  As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27 |

|  |  |
| --- | --- |
| What is tested | Warning fat message |
| How it is tested | Clicking on Drink it without having reached desired amount of burnt calories. |
| Expected result | Number of had drinks should increase accordingly, and the progress bars should start counting for a new drink. Additionally, a message warning the user of becoming fat appears. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27 |

|  |  |
| --- | --- |
| What is tested | Saving progress when in sleep mode |
| How it is tested | The StepCounter will be activated and sleep mode will be engaged. The user will walk and manually count her steps, then waking up the application, comparing the counted steps to those in the calorie counting progress bars. |
| Expected result | The number of steps manually counted and those shown in the calorie counting progress bars should correlate. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27 |

|  |  |
| --- | --- |
| What is tested | Saving progress when minimising the application |
| How it is tested | The StepCounter will be activated and the application will be minimised. The user will walk and manually count her steps, then waking up the application, comparing the counted steps to those in the calorie counting progress bars. |
| Expected result | The number of steps manually counted and those shown in the calorie counting progress bars should correlate. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27 |

|  |  |
| --- | --- |
| What is tested | Not saving counted steps when exiting application |
| How it is tested | The StepCounter will be activated and the user will walk, then the application will be exited, and then opened again. |
| Expected result | The calorie counter progress bars should be restarted from 0. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I want to be able to notify the application that I have taken a drink so that the calorie burning start for a new drink27 |

|  |  |
| --- | --- |
| What is tested | Switching orientation |
| How it is tested | Arbitrary functions will be activated, then the phone will be turned to switch modes. |
| Expected result | Any saved data should remain in every orientation mode. |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user, I should be able to switch orientation mode between vertical and horizontal without loosing my choices28 |

|  |  |
| --- | --- |
| What is tested | Duration and distance between locations |
| How it is tested | Arbitrary locations are searched for and marked on the map. The marked location is clicked showing the information and navigation window. The window is clicked. |
| Expected result | The time and distance from the user’s current position will be shown |
| Actual result |  |
| Potential fix |  |
| New result |  |
| Associated user story | As a user navigating to a certain location, I want to know how long time it will take me to get there29  As a user navigating to a certain location, I want to know the distance between my current location and the wanted location30 |

## Unit tests

All database methods in the DAO (Data Access Object) class have been unit tested, using the public Assert class. The methods are tested both to pass and to fail and the tests have extensive statement coverage. These tests are made to verify the implementation.

* **Insertion and getting in table 4 (buildings table), test case**
  + insertIntoTable4 and getAllFromTable4 were tested together:
    - A building name (String) was inserted into table 4 via insertIntoTable4 and fetched with getAllFromTable4
* **Insertion and getting in table 2 (room types table), test case**
  + insertIntoTable2 and getAllFromTable2 were tested together:
    - Three room types (String) were inserted into table 2 via insertIntoTable2 and fetched with getAllFromTable2
* **Insertion and getting in table 1 (coordinates and buildings table), test suite**
  + insertIntoTable1 and getClosestEntry were tested together:
    - A pair of coordinates (Double) and a building name (String) were inserted into table 1 via insertIntoTable1.
    - The coordinates (Double) were used to create an object (LatLng) containing latitude and longitude.
    - The object (LatLng) and the building name (String) served as input in getClosestEntry.
    - The result of getClosestEntry (LatLng) and the object (LatLng) containing the coordinates were compared and found to be equal.
    - Calculating the closest entry
  + insertIntoTable1 and getClosestEntry were tested together:
    - An object (LatLng) containing zero coordinates, the current coordinates, were created.
    - Five different coordinate pairs (Double) and a building name (String) were inserted into table 1 via insertIntoTable1.
    - The pair of coordinates (Double) closest to the zero coordinates, were in addition used to create an object (LatLng) containing latitude and longitude.
    - The zero coordinates object (LatLng) and the building name (String) served as input in getClosestEntry.
    - The result of getClosestEntry (LatLng) and the closest coordinate pair object (LatLng) were compared and found to be equal.
    - Insertion and getting in table 3 (room name, coordinates, room type, building and floor table)
  + insertIntoTable3 and getRoomCoordinates were tested together:
    - A pair of coordinates (Double) were used to create an object (LatLng) containing latitude and longitude.
    - A room type (String) was inserted into table 2 via insertIntoTable2.
    - A building name (String) was inserted into table 4 via insertIntoTable4.
    - The room name (String), the coordinates (Double, the room type (String), the building name (String) and a floor (String) were inserted into table 3 via insertIntoTable3.
    - The room name (String) served as input in getRoomCoordinates.
    - The result of getRoomCoordinates (LatLng) and the object (LatLng) containing the coordinates were compared and found to be equal.
    - Getting all rooms in a specific building
  + insertIntoTable2, insertIntoTable3, insertIntoTable4 and getAllRoomsInBuilding were tested together:
    - A room type (String) was inserted into table 2 via insertIntoTable2.
    - A real building name (String) was inserted into table 4 via insertIntoTable4
    - A false building name (String) was inserted the same way.
    - Room name1 (String), coordinate pair1 (Double), the room type (String), the true building name (String) and floor1 (String) were inserted into table 3 via insertIntoTable3.
    - Room name2 (String), coordinate pair1 (Double), the room type (String), the true building name (String) and floor2 (String) were inserted into table 3 via insertIntoTable3.
    - A false room name (String), coordinate pair1 (Double), the room type (String), the false building name (String) and floor1 (String) were inserted into table 3 via insertIntoTable3.
    - The true building name (String) served as input in getAllRoomsInBuilding.
    - The result of getAllRoomsInBuilding (ArrayList<String>) was tested using methods size and contains, and found to be satisfactory.
    - Getting all rooms with a specific type
  + insertIntoTable2, insertIntoTable3, insertIntoTable4 and getAllRoomsInBuilding were tested together:
    - A room type (String) was inserted into table 2 via insertIntoTable2.
    - A false room type (String) was inserted the same way.
    - A building name (String) was inserted into table 4 via insertIntoTable4
    - Room name1 (String), a coordinate pair1 (Double), the true room type (String), the building name (String) and floor1 (String) were inserted into table 3 via insertIntoTable3.
    - Room name2 (String), coordinate pair1 (Double), the true room type (String), the building name (String) and floor2 (String) were inserted into table 3 via insertIntoTable3.
    - A false room name (String), coordinate pair1 (Double), the false room type (String), the building name (String) and floor1 (String) were inserted into table 3 via insertIntoTable3.
    - The building name (String) served as input in getAllRoomsInBuilding.
    - The result of getAllRoomsInBuilding (ArrayList<String>) was tested using methods size and contains, and found to be satisfactory.
    - Getting suggestions
  + insertIntoTable2, insertIntoTable3, insertIntoTable4 and suggestions were tested together:
    - A room type (String) was inserted into table 2 via insertIntoTable2.
    - A building name (String) was inserted into table 4 via insertIntoTable4
    - A room name (String), a coordinate pair (Double), the room type (String), the building name (String) and a floor (String) were inserted into table 3 via insertIntoTable3.
    - Different strings of letters matching the strings in table 3 served as input in suggestions.
    - The result of suggestions (ArrayList<String>) was tested using methods for size and null, and found to be satisfactory.
    - Getting room names
  + insertIntoTable3 and getName were tested together:
    - A room name (String), a coordinate pair (Double), a room type (String), a building name (String) and a floor (String) were inserted into table 3 via insertIntoTable3.
    - The room name (String) served as input in getType.
    - The result of getName (String) and the room name were compared and found to be equal.
    - Getting room types
  + insertIntoTable3 and getType were tested together:
    - A room name (String), a coordinate pair (Double), a room type (String), a building name (String) and a floor (String) were inserted into table 3 via insertIntoTable3.
    - The room name (String) served as input in getType.
    - The result of getType (String) and the room type were compared and found to be equal.
    - Getting floor
  + insertIntoTable3 and getFloor were tested together:
    - A room name (String), a coordinate pair (Double), a room type (String), a building name (String) and a floor (String) were inserted into table 3 via insertIntoTable3.
    - The room name (String) served as input in getFloor.
    - The result of getFloor (String) and the floor were compared and found to be equal.