

# ROOM USAGE APP

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# INTRODUCTION

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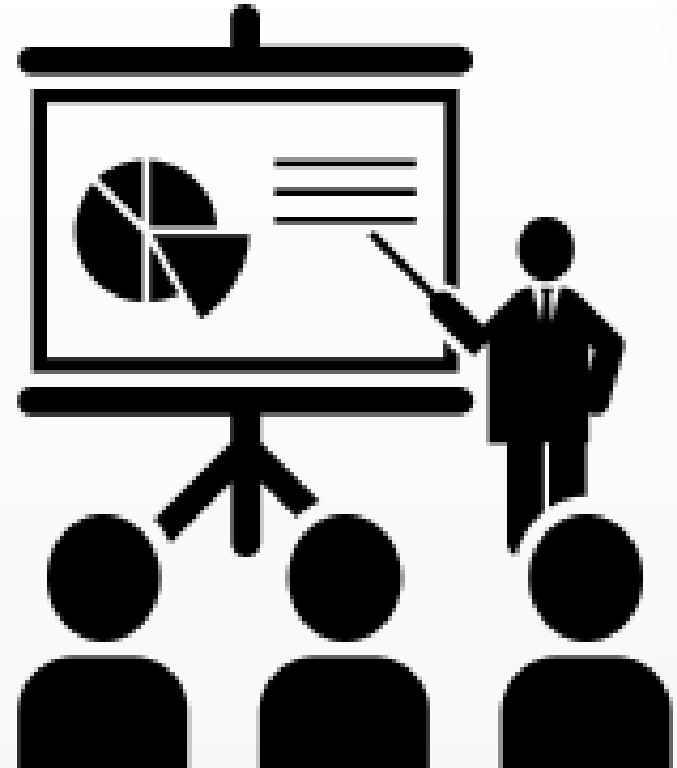
- About us
  - Software development team of sustainAppility,
  - Encourages the careful use of resources
  - Promotes awareness of environmental impacts
- Our task
  - Producing an app for tracking usage statistics in rooms around Monash University.
- The goal
  - Allows the management team to reduce energy wastage



# FLOW OF PRESENTATION

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- How does the app benefit us?
- Overview of application
- Features, app interface and instructions to use for
  - ☐ New Observation page
  - ☐ Observations page
  - ☐ Occupancy page
  - ☐ Building stats page
- Known bugs and limitations
- Conclusion



# HOW DOES THIS APP BENEFIT MONASH?

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- **13.8%** of the total amount of the entire institutions
  - Energy consumption by universities (Yeungnam University) --
- Our app tracks
  - ☐ Seat utilization per room
  - ☐ Information on the heating and lighting
- **6** campuses -- **200,000** students and staff worldwide
  - The management team can make the necessary changes and **conserve energy**



# OVERVIEW OF OUR APPLICATION

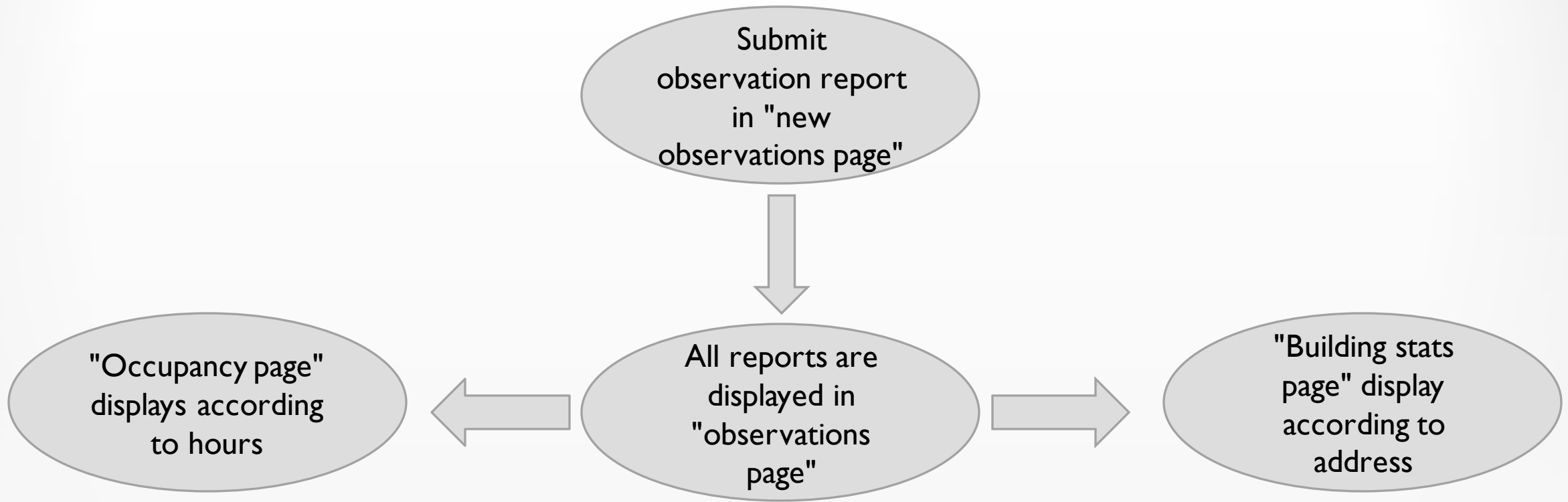
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- **4** main accessible pages
  - New room observation
  - Observations
  - Occupancy
  - Building stats
- New room observation page :- make a report
- Remaining pages :- Display information on the different factors

# OVERVIEW OF OUR APPLICATION

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- Flowchart illustration of the process





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# NEW ROOM OBSERVATION PAGE



# FEATURES AND INTERFACE

- New room observation page interface
  - Input boxes
  - Save and clear button
- New room observation page features
  - Automatic location detection option

23:43 <https://eng1003.monash/a/gc> 11

New Room Observation

Building address...

☐ Automatically determine my address

Room number

☒ Lights

☒ Heating / cooling

Number of seats in use

Number of available seats

23:43 <https://eng1003.monash/a/gc> 11

New Room Observation

Room number

☒ Lights

☒ Heating / cooling

Number of seats in use

Number of available seats

SAVE CLEAR



# INSTRUCTION TO USE

- Detects **user's location** when the checkbox is ticked
- What will happen?
  - Request to a web service
  - Get the longitude and latitude of user
  - The longitude and latitude of user is used to **determine user's current location.**

The screenshot shows a mobile application interface for 'New Room Observation'. The status bar at the top indicates 'U Mobile', '2:38 PM', and '65%' battery. The address bar shows 'eng1003.monash'. The app title 'New Room Observation' is in a blue header. The form contains several input fields and controls: a 'Building address...' text field (highlighted with a red rounded rectangle), an unchecked checkbox labeled 'Automatically determine my address' (highlighted with a red rounded rectangle), a 'Room number' text field, two toggle switches for 'Lights' and 'Heating / cooling' (both turned on), and two more text fields for 'Number of seats in use' and 'Number of available seats'. The bottom of the screen shows a standard mobile navigation bar with back, forward, share, book, and tabs icons.

# INSTRUCTION TO USE

How users can make observation reports?

- **Save** and **Clear** function can be controlled manually by the users when they are making observations report

The screenshot shows a mobile application interface for 'New Room Observation'. The status bar at the top indicates 'U Mobile', signal strength, time '2:42 PM', and battery level '64%'. The address bar shows 'eng1003.monash'. The app title 'New Room Observation' is in a blue header. The form contains the following fields and controls:

- 'Building address...' text input field.
- A checkbox labeled 'Automatically determine my address'.
- 'Room number' text input field.
- 'Lights' toggle switch (turned on).
- 'Heating / cooling' toggle switch (turned on).
- 'Number of seats in use' text input field.
- 'Number of available seats' text input field.

At the bottom, there is a red-outlined navigation bar containing three buttons: a back arrow, a forward arrow, and a document icon. The 'Number of available seats' field and the navigation bar are highlighted with red circles.

# INSTRUCTION TO USE

- **Errors** that may occur when users are making observation report
- Useful error message will be displayed to notify users

The image displays two side-by-side screenshots of a mobile application interface for 'New Room Observation'. The app is running on a device connected to 'U Mobile' with a signal strength indicator. The status bar shows the time as 3:38 PM (left) and 3:17 PM (right), and battery levels at 43% and 46% respectively. The browser address bar shows 'eng1003.monash'.

The interface features a blue header bar with a hamburger menu icon and the title 'New Room Observation'. Below the header, there are several input fields and toggle switches:

- 'Building address...' text input field.
- A checkbox labeled 'Automatically determine my address'.
- 'Room number' text input field.
- Two toggle switches: 'Lights' and 'Heating / cooling', both currently turned on.
- 'Number of seats in use' text input field.
- 'Number of available seats' text input field.

Red annotations highlight specific areas:

- A red box around the 'New Room Observation' header bar.
- A red box around the 'Lights' and 'Heating / cooling' toggle switches.
- A red box around the 'Number of available seats' input field.
- A red box around the bottom navigation bar, which includes icons for back, forward, share, bookmarks, and tabs.



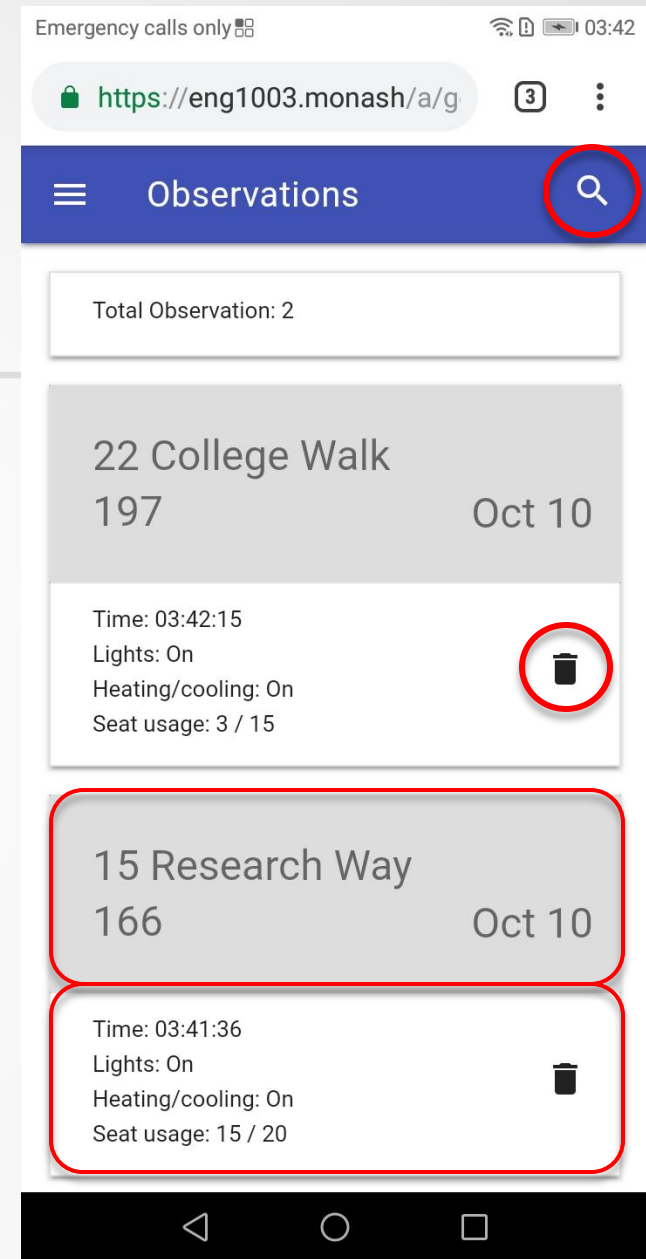
# OBSERVATIONS PAGE

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# FEATURES AND INTERFACE

- Observations page features
  - Search button for filtering entries
  - Delete button for removing entries
- Observations page interface
  - Total number of observations collected
  - All observations will be shown





# INSTRUCTION TO USE

Most recent observation report will be displayed at the top

**Search** function filters observations

What will happen?

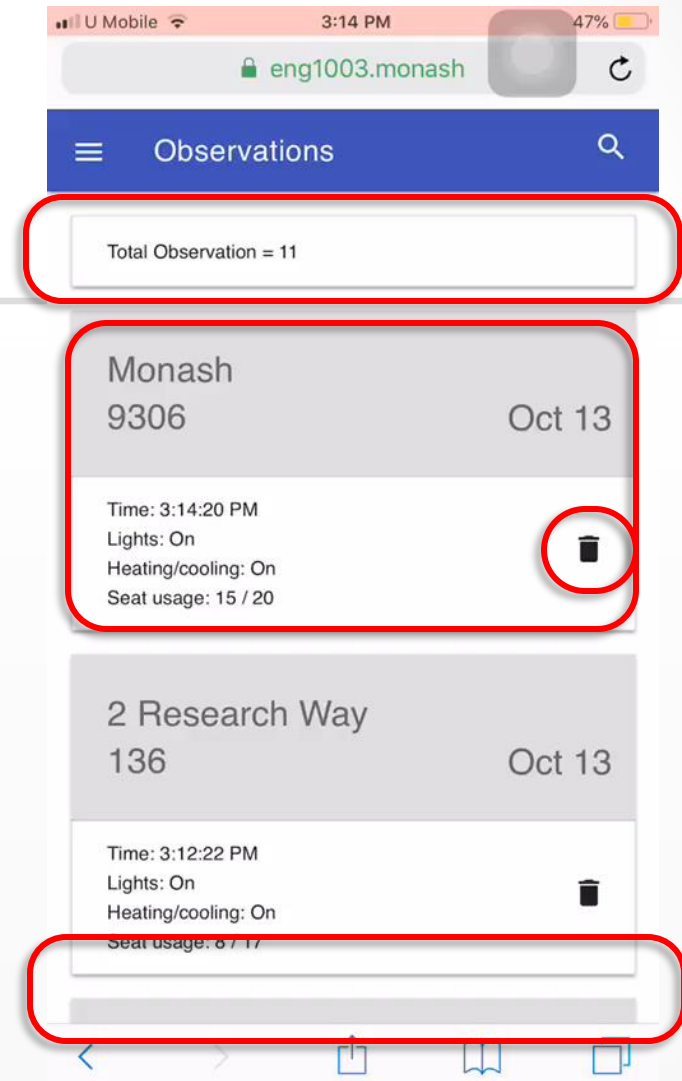
- Check whether input matches
- Hide if not fulfill the input message, display if yes.

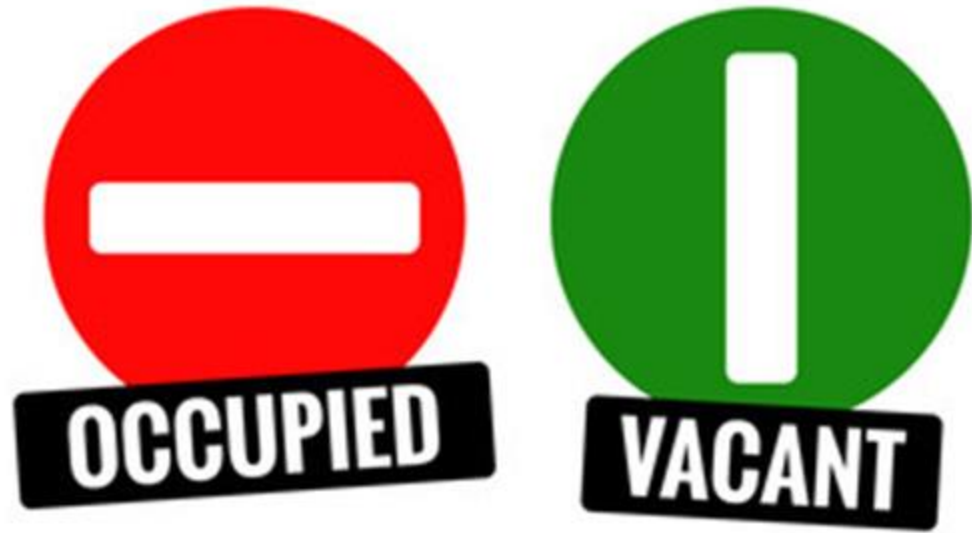
The image shows a mobile application interface for 'New Room Observation'. The app is running on a device with 'U Mobile' service, at 2:49 PM, with 52% battery. The URL bar shows 'eng1003.monash'. The title bar is blue with a white hamburger menu icon and the text 'New Room Observation'. Below the title bar, there is a red box around a text input field with the placeholder 'Building address...'. Below this is a checkbox labeled 'Automatically determine my address'. Further down, there is a red box around a text input field with the placeholder 'Room number'. Below that are two toggle switches, both turned on: 'Lights' and 'Heating / cooling'. Below the toggles is a text input field with the placeholder 'Number of seats in use'. Below that is another red box around a text input field with the placeholder 'Number of available seats'. At the bottom of the screen is a navigation bar with five icons: a back arrow, a forward arrow, a share icon, a book icon, and a list icon.



# INSTRUCTION TO USE

**Delete** function allow users to delete some faulty  
and unwanted observations



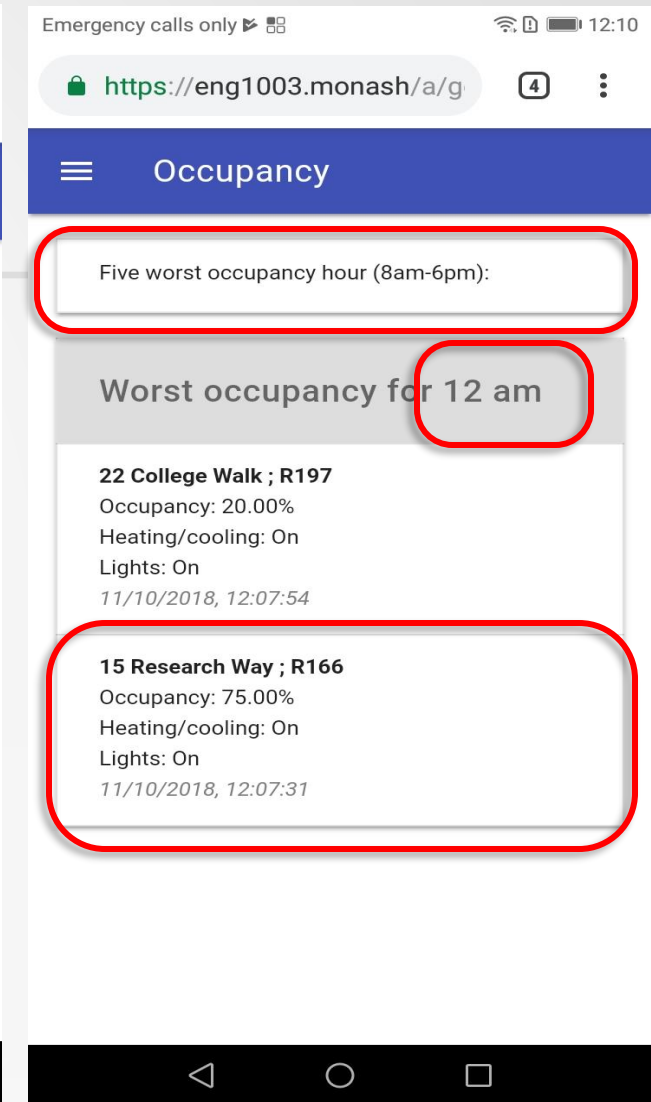
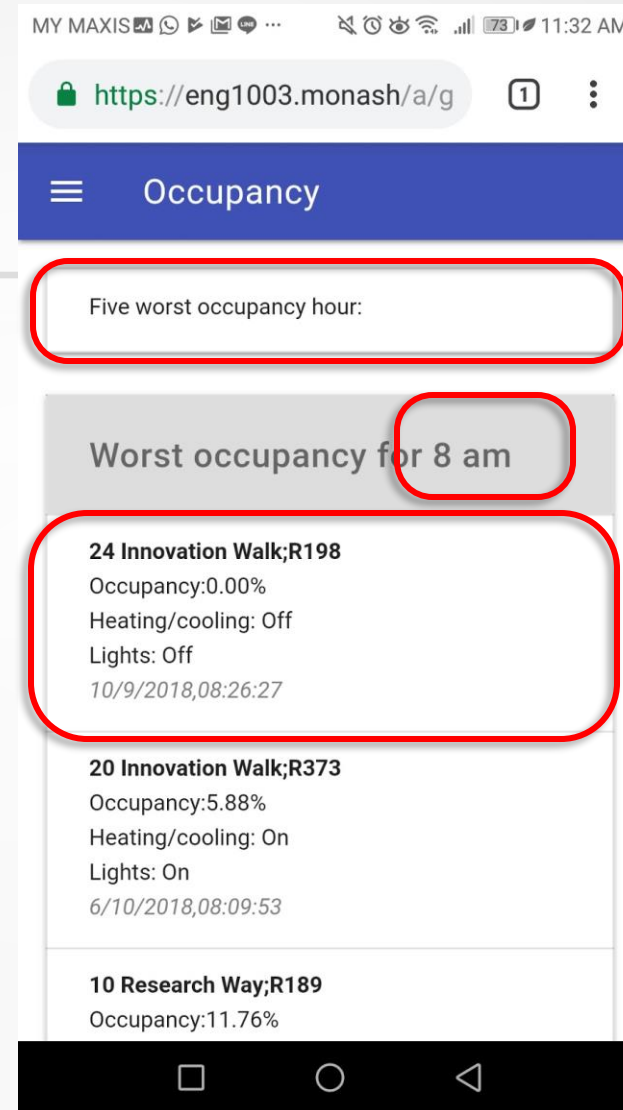


# OCCUPANCY PAGE

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# FEATURES AND INTERFACE

- Occupancy page features
  - 5 worst occupancies for a given hour
  - All if there are less than 5 in an hour
- Occupancy page interface
  - A message cell
  - ❖ The hour in the header
  - ❖ The five worst occupancies with all the details for each entry is in the body



# BUILDING STATS

## PAGE

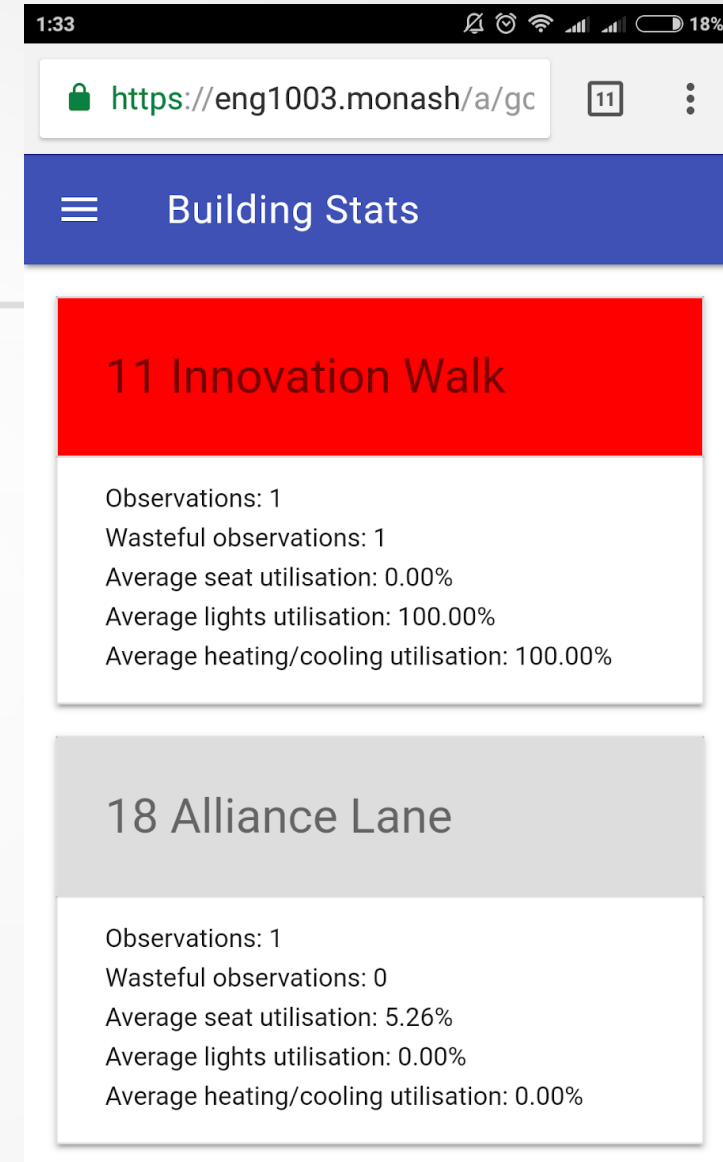
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# FEATURES AND INTERFACE

- Building stats features
  - Wasteful observations are highlighted in red
- Building stats interface
  - Contains individual entries
    - ❖ building's name in the header
    - ❖ details of that building in the body





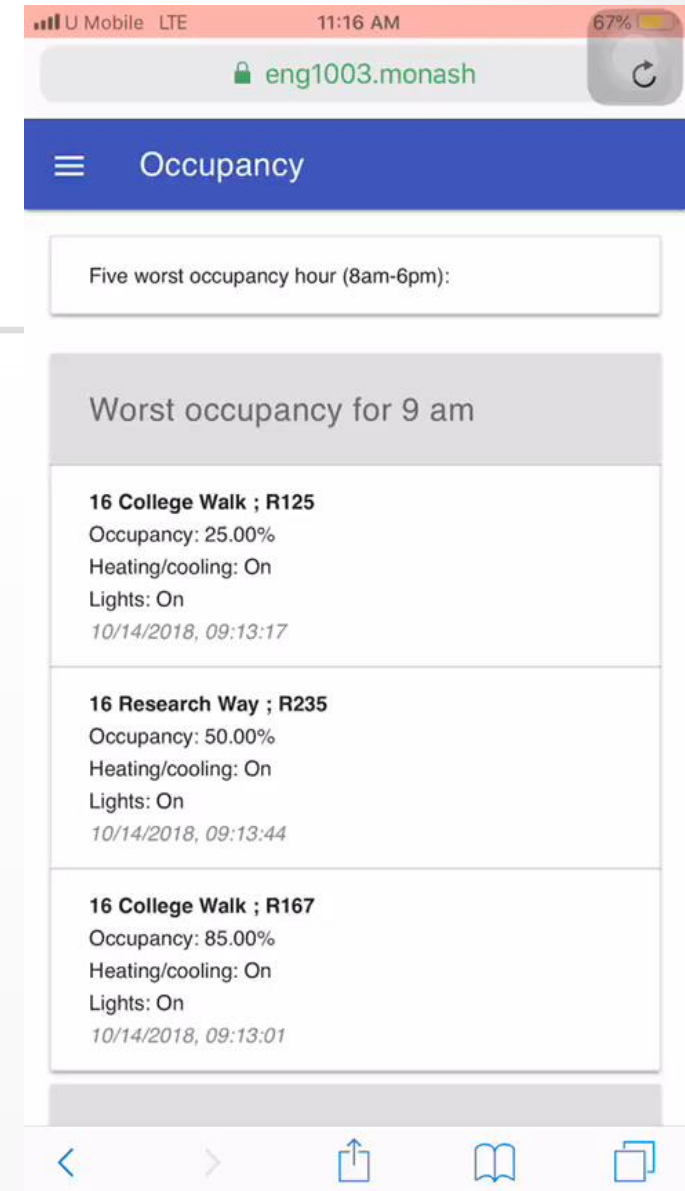
# INSTRUCTION TO USE

Display the sorted observation reports by hour  
(8am – 6pm)

- 5 of the **worst occupancy** in each hour

Display sorted observation reports by the  
**name of building**

- Building with at least one wasteful observation will be highlighted in “**RED**”





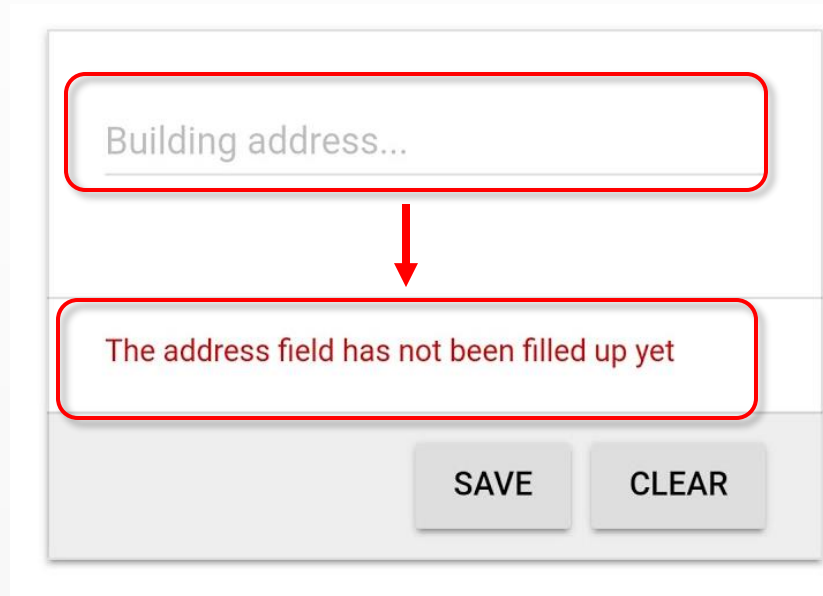
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# KNOWN BUGS & LIMITATION

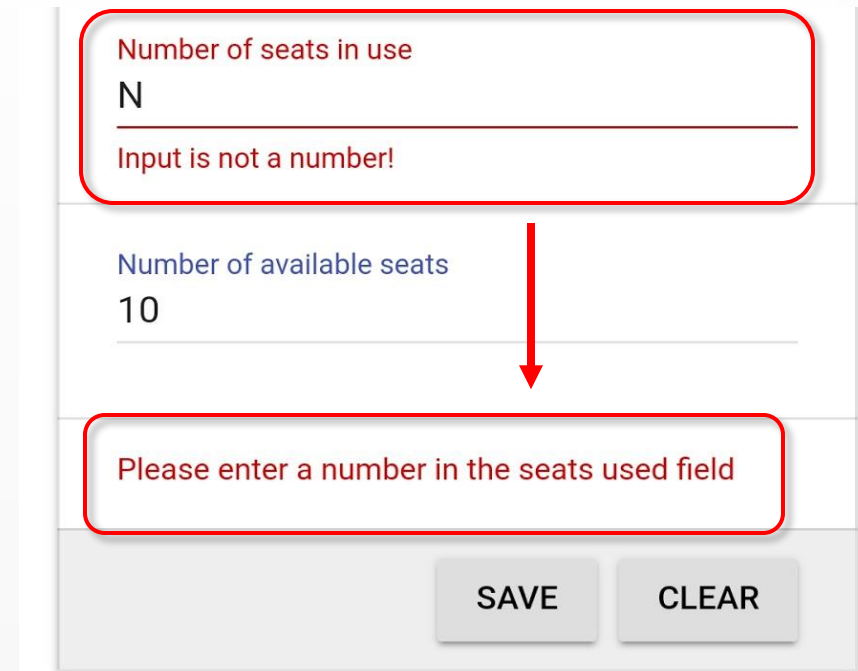


# KNOWN BUGS AND LIMITATIONS

- New observations will **not** be saved when given **wrong** inputs
  - Specific error message will be displayed
  - Users are expected to correct the inputs



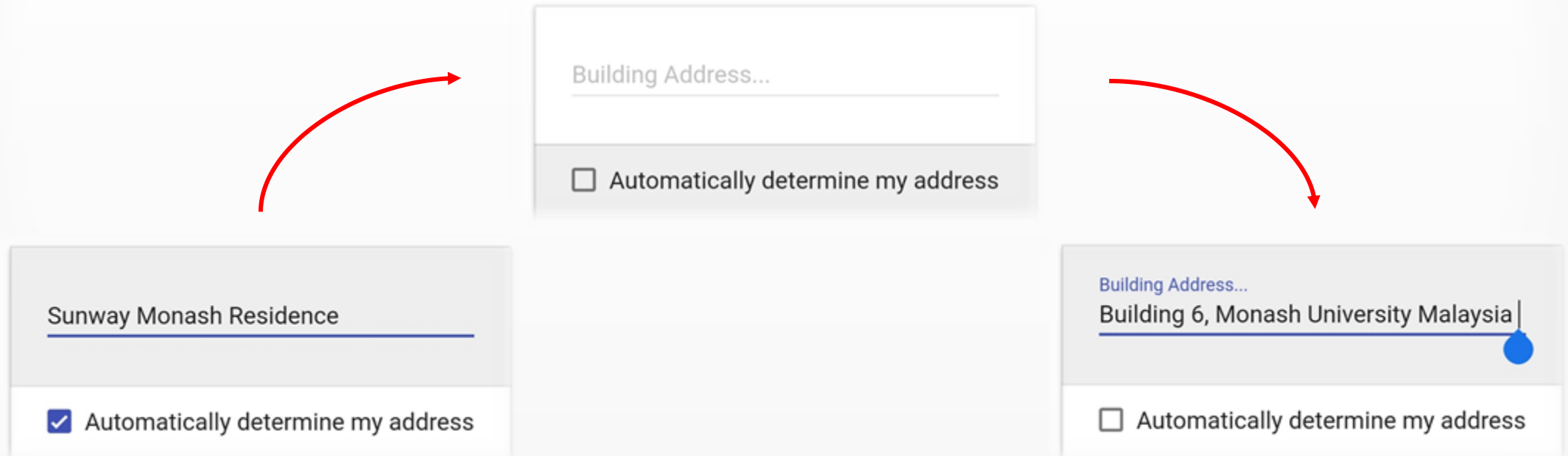
A screenshot of a web form with a text input field labeled "Building address...". A red arrow points from the input field to a red-bordered error message box below it that says "The address field has not been filled up yet". At the bottom of the form are two buttons: "SAVE" and "CLEAR".



A screenshot of a web form with two input fields. The top field is labeled "Number of seats in use" and contains the text "N". A red arrow points from this field to a red-bordered error message box below it that says "Input is not a number!". The bottom field is labeled "Number of available seats" and contains the text "10". At the bottom of the form are two buttons: "SAVE" and "CLEAR".

# KNOWN BUGS AND LIMITATIONS

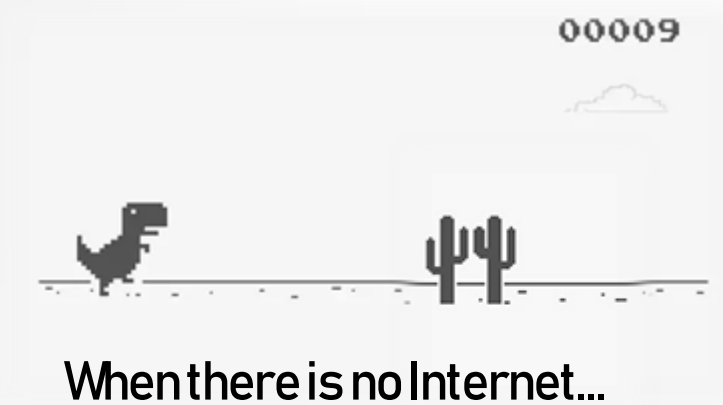
- Accuracy of the location-tracking function is set to be **at most 500m**.
  - Users are expected to untick the checkbox and manually key in the correct building address.



# KNOWN BUGS AND LIMITATIONS

Problem with the type of **Storage** used

- The need to **manually delete** when storage is full.
- Can't view observations on **other** devices
- Future Improvement: Cloud

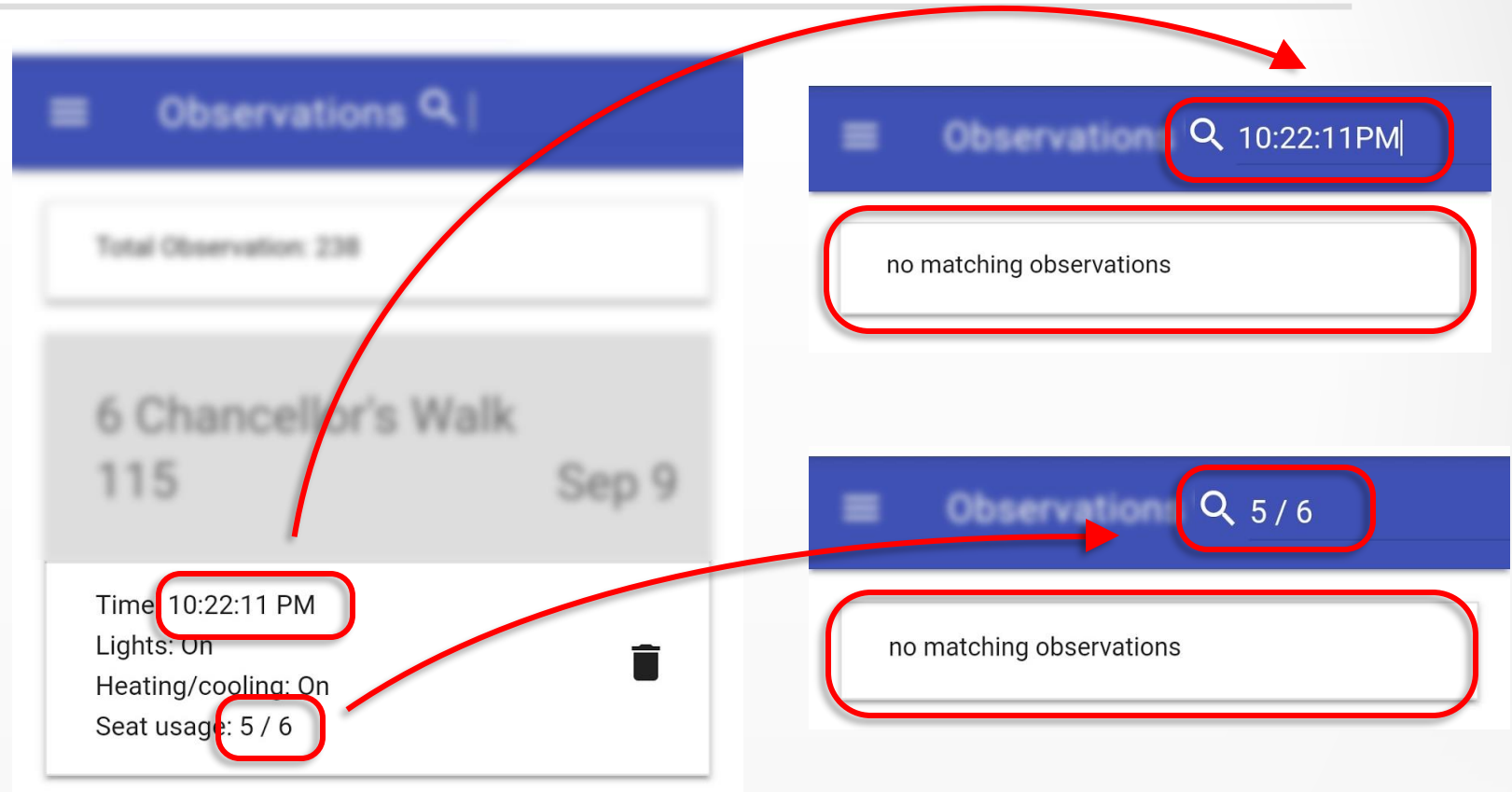


- **Internet** connection is needed to launch the app and to determine user's location

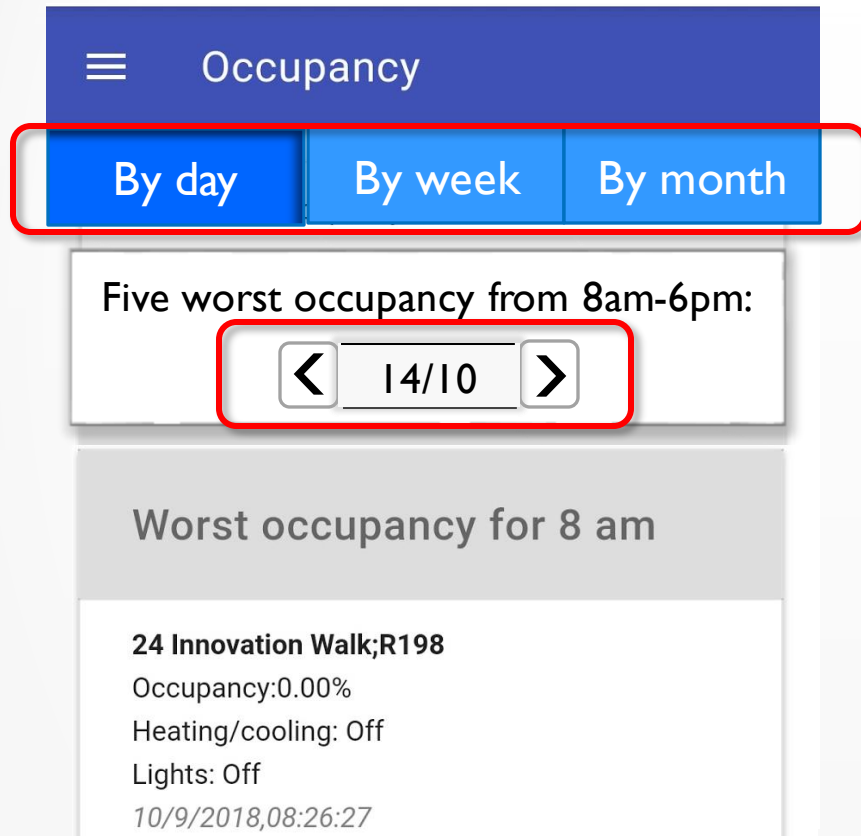


# KNOWN BUGS AND LIMITATIONS

- The search function will only filter **building address, room number and date**
  - To increase speed of search function
  - More practical



# KNOWN BUGS AND LIMITATIONS



Occupancy is sorted by hours **regardless of which day** the observation is recorded

- Future improvement: **more viewing choices**

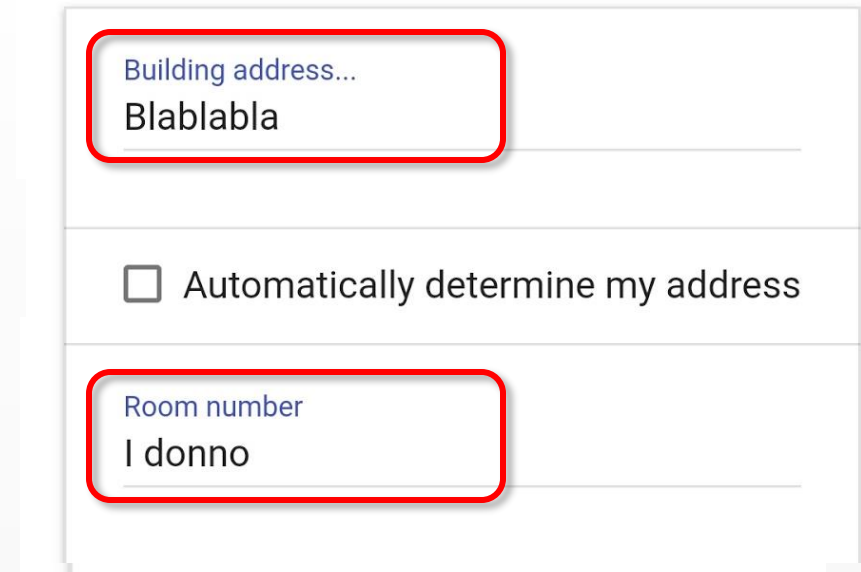


# KNOWN BUGS AND LIMITATIONS

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The inputs for building address and room number

- Validation
- Case-sensitive.
- Future Improvement: **Auto-fill** and **Saved Dictionary**



The screenshot shows a form with three sections. The first section is a text input field with the placeholder text 'Building address...' and the value 'Blablabla'. The second section is a checkbox labeled 'Automatically determine my address'. The third section is another text input field with the placeholder text 'Room number' and the value 'I donno'. Both text input fields are highlighted with red rounded rectangular boxes.

Building address...  
Blablabla

☐ Automatically determine my address

Room number  
I donno

# CONCLUSION

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- We have created an app that is used to track the statistics of room usage through Monash campus
- Through this information, actions can be taken, and energy efficiency can be improved
- Met all the requirements;
  - Appropriate submission form for reports
  - Auto detection of current address
  - Search & delete function for observations
  - Systematic display of compiled observations
- Suggested future improvements

