ROOM USAGE APP

PRESENTED BY:

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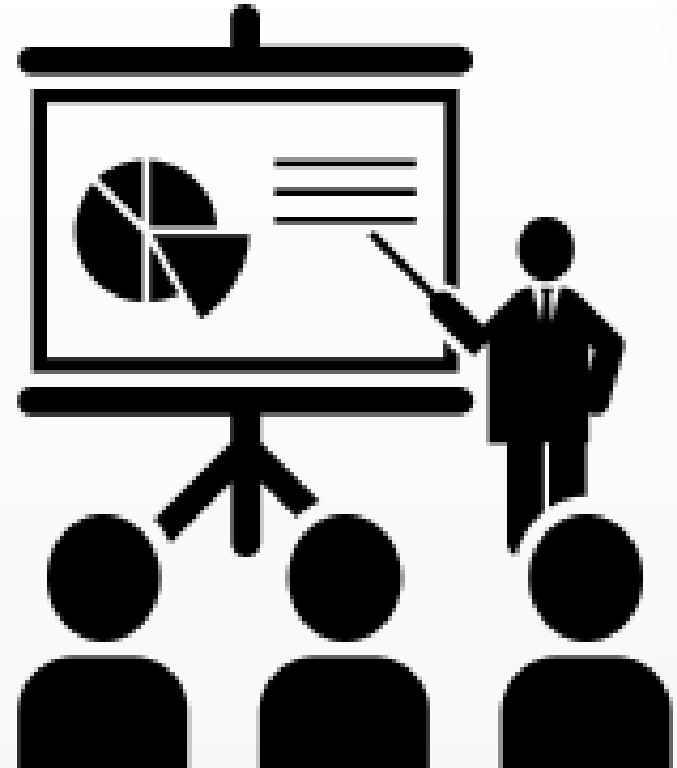- LIM WEI JUN
- POONG ZUI XIANG

INTRODUCTION

- 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

- 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?

- **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
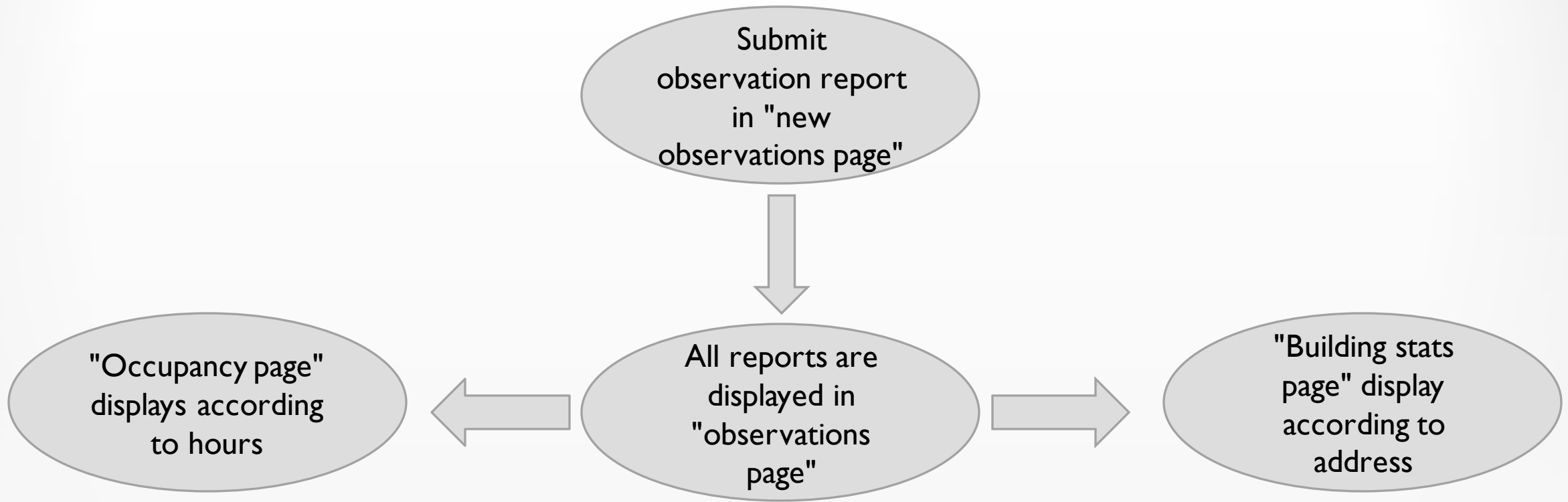
OVERVIEW OF OUR APPLICATION

- **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

- Flowchart illustration of the process

Submit observation report in "new observations page"

↓

"Occupancy page" displays according to hours ← All reports are displayed in "observations page" → "Building stats page" display according to address

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

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.

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

INSTRUCTION TO USE

- Errors that may occur when users are making observation report

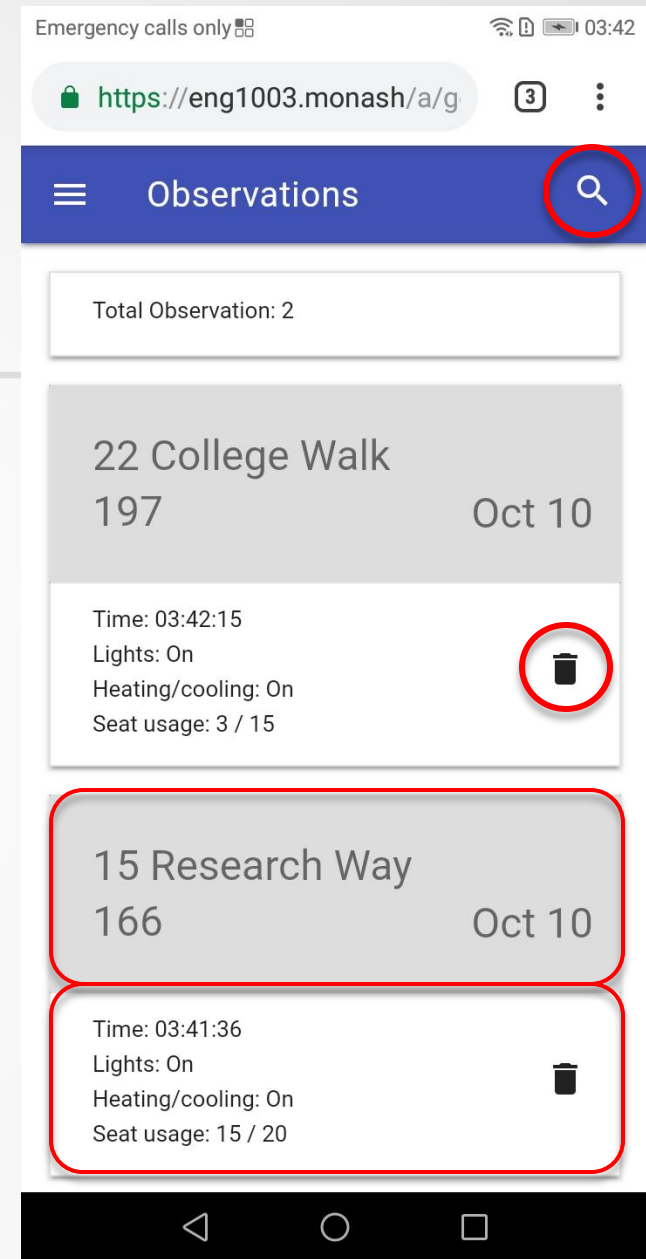- Useful error message will be displayed to notify users

OBSERVATIONS PAGE

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
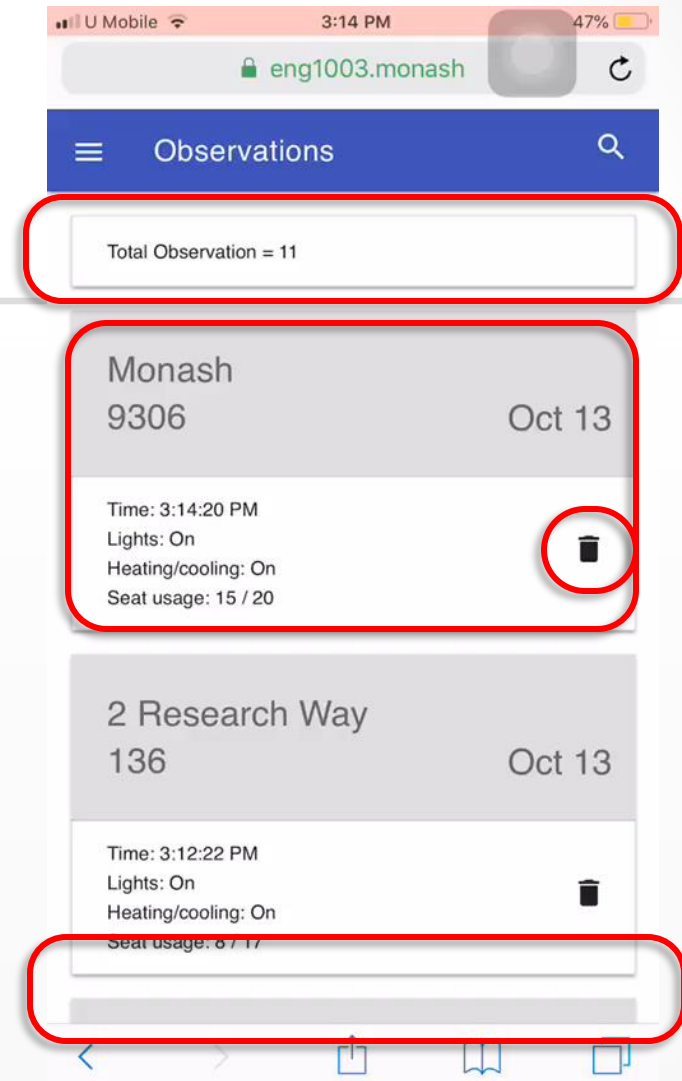
Search function filters observations

What will happen?

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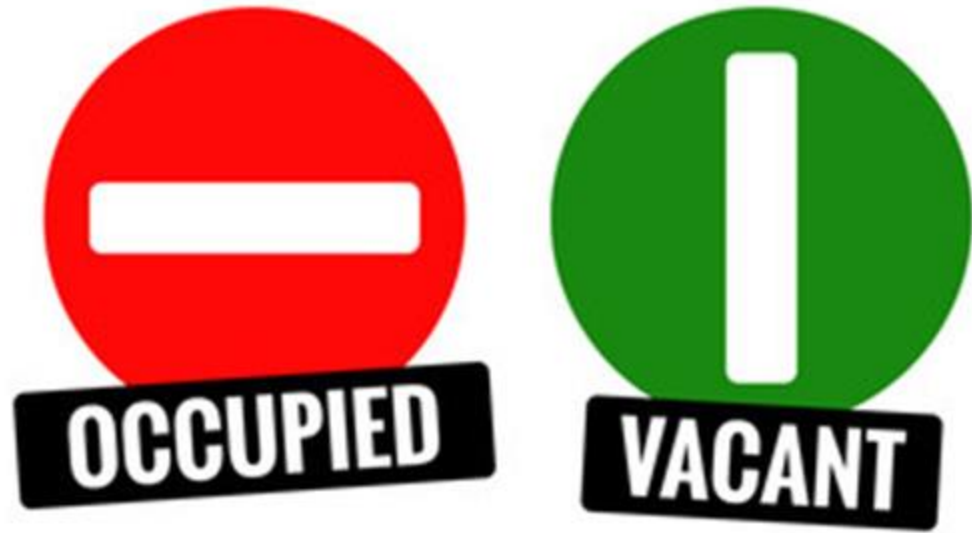- Hide if not fulfill the input message, display if yes.

INSTRUCTION TO USE

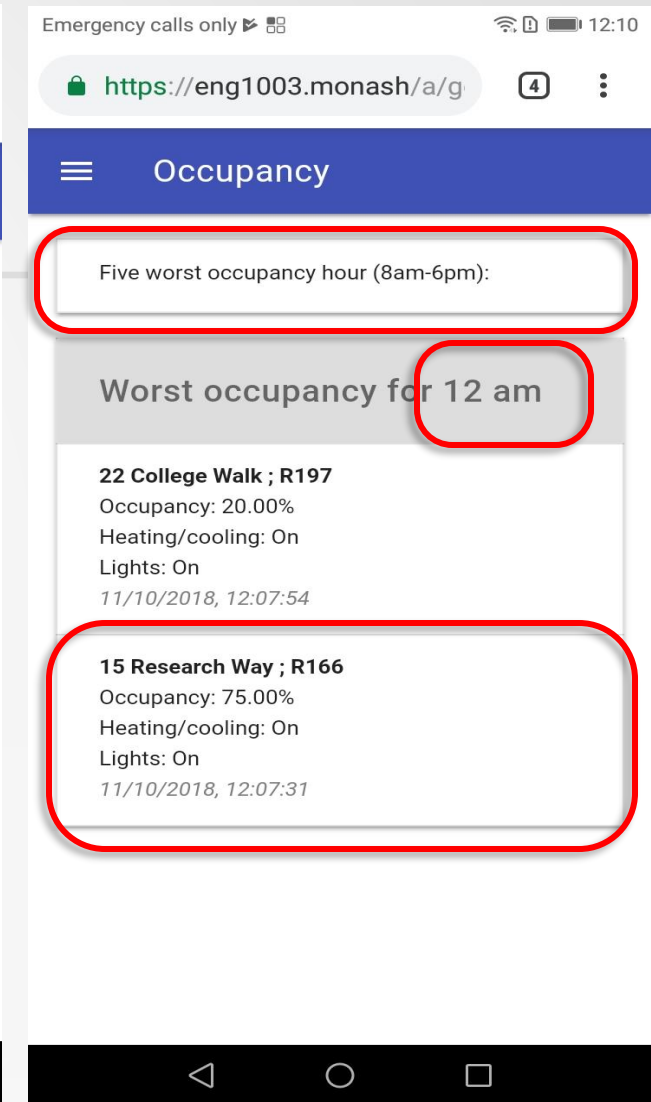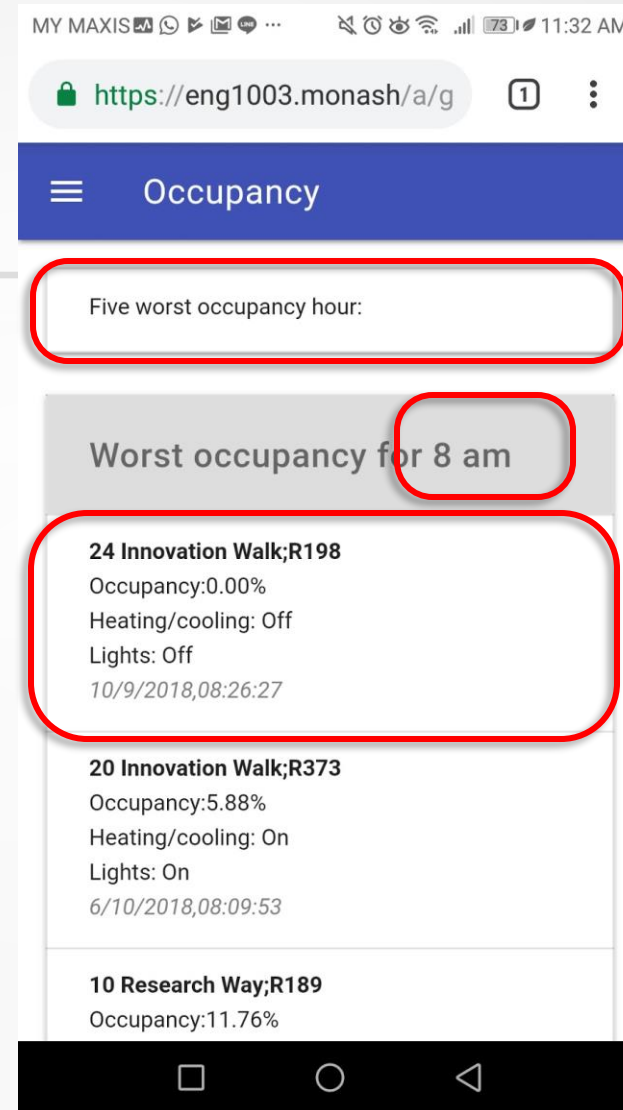Delete function allow users to delete some faulty

and unwanted observations

OCCUPANCY PAGE

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
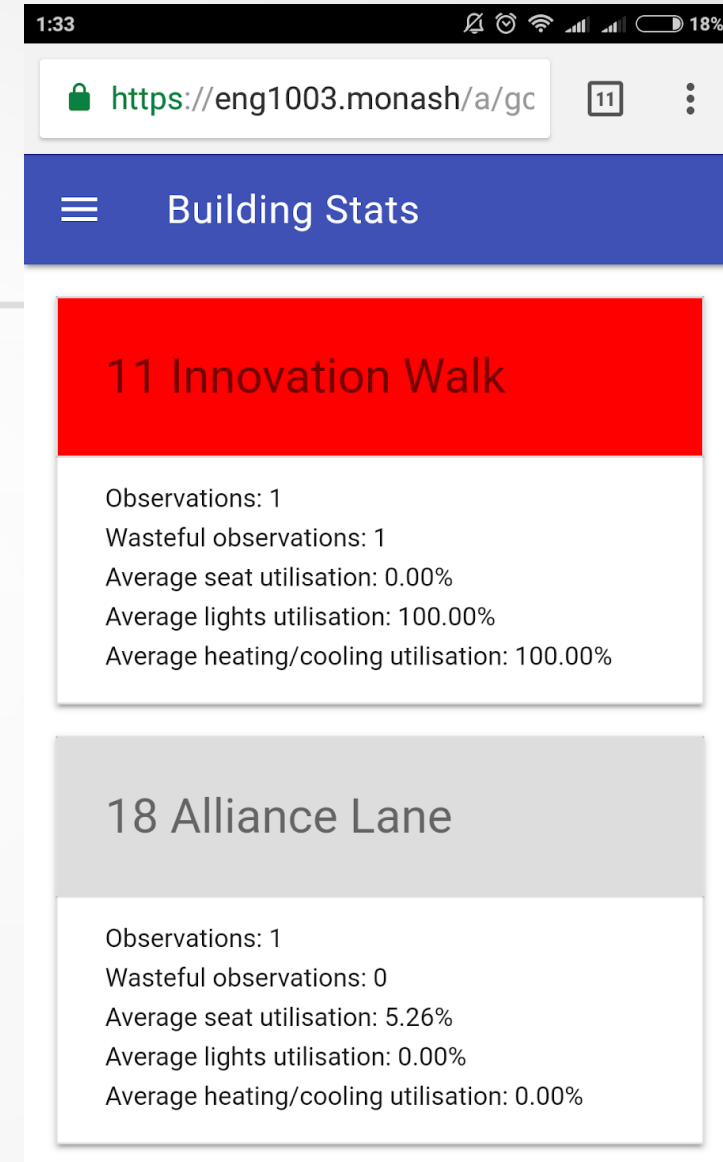
BUILDING STATS PAGE

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

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🔒 https://eng1003.monash/a/gc

☰ Building Stats

11 Innovation Walk

Observations: 1
Wasteful observations: 1
Average seat utilisation: 0.00%
Average lights utilisation: 100.00%
Average heating/cooling utilisation: 100.00%

18 Alliance Lane

Observations: 1
Wasteful observations: 0
Average seat utilisation: 5.26%
Average lights utilisation: 0.00%
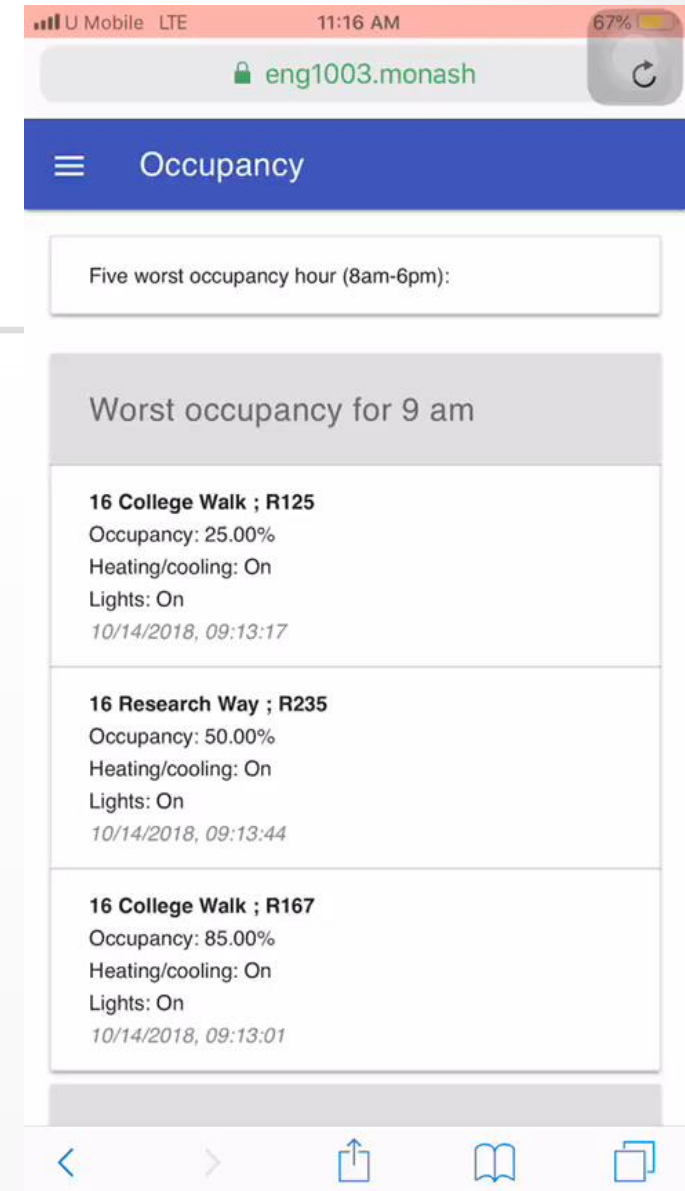Average heating/cooling utilisation: 0.00%

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

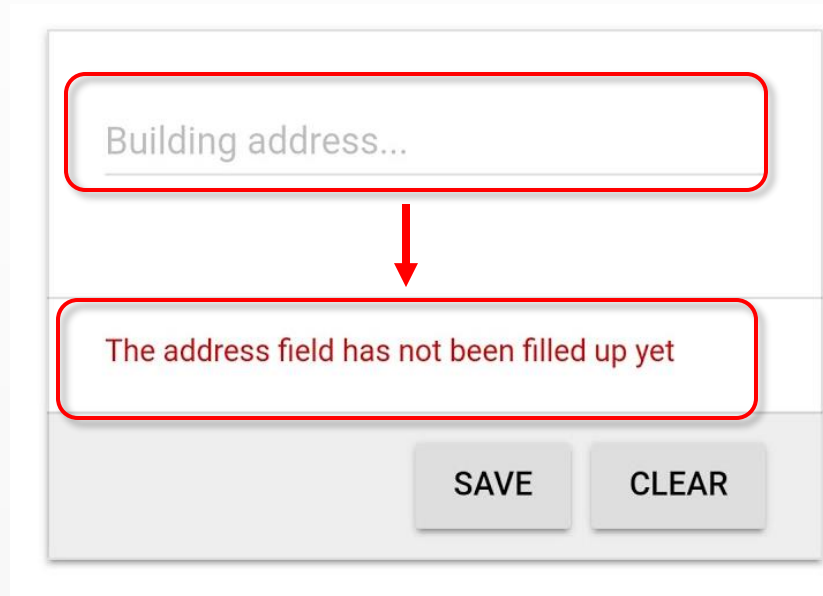- Building with at least one wasteful observation will be highlighted in "RED"
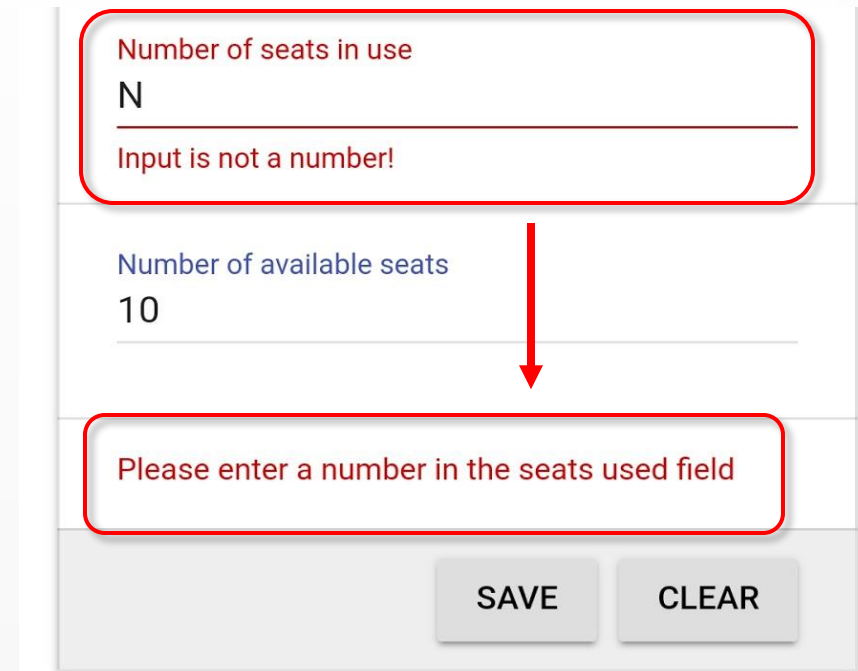
KNOWN BUGS & LIMITATION

KNOWN BUGS AND LIMITATIONS

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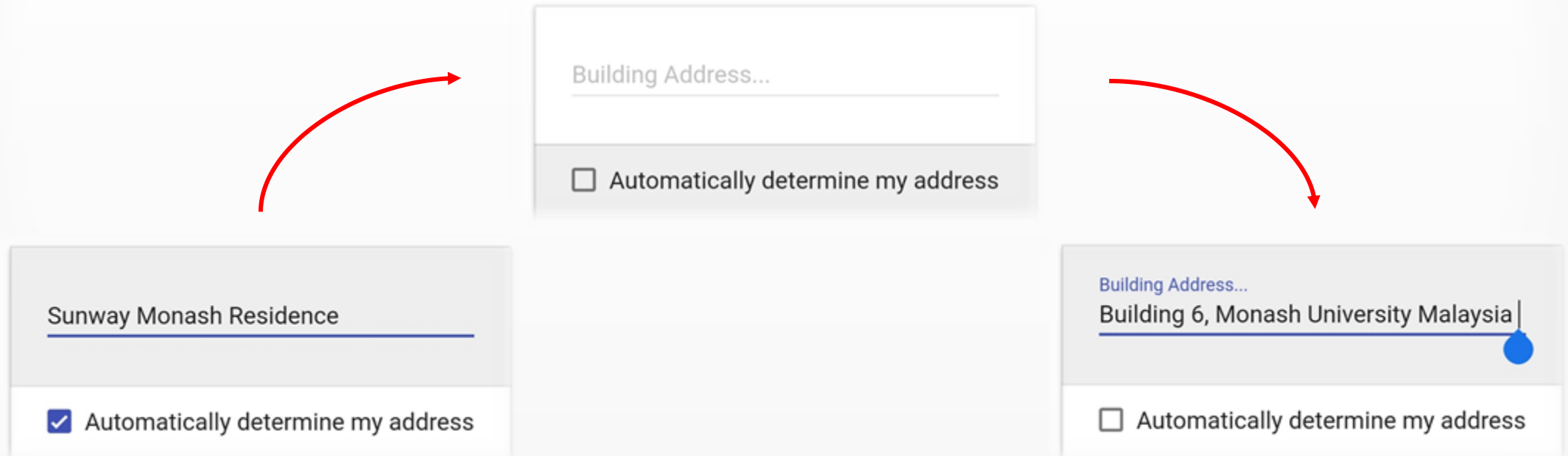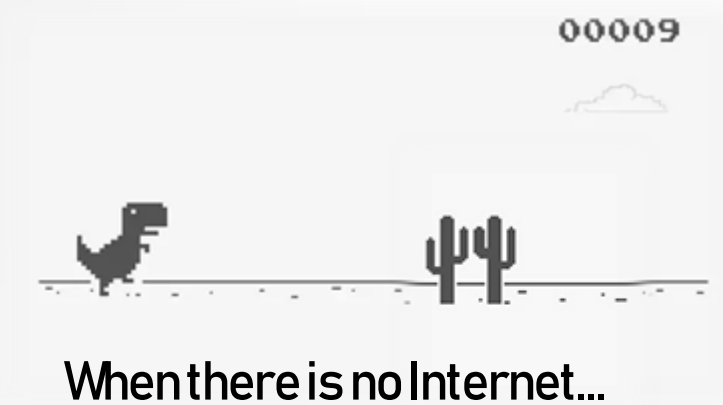   - Users are expected to correct the inputs

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

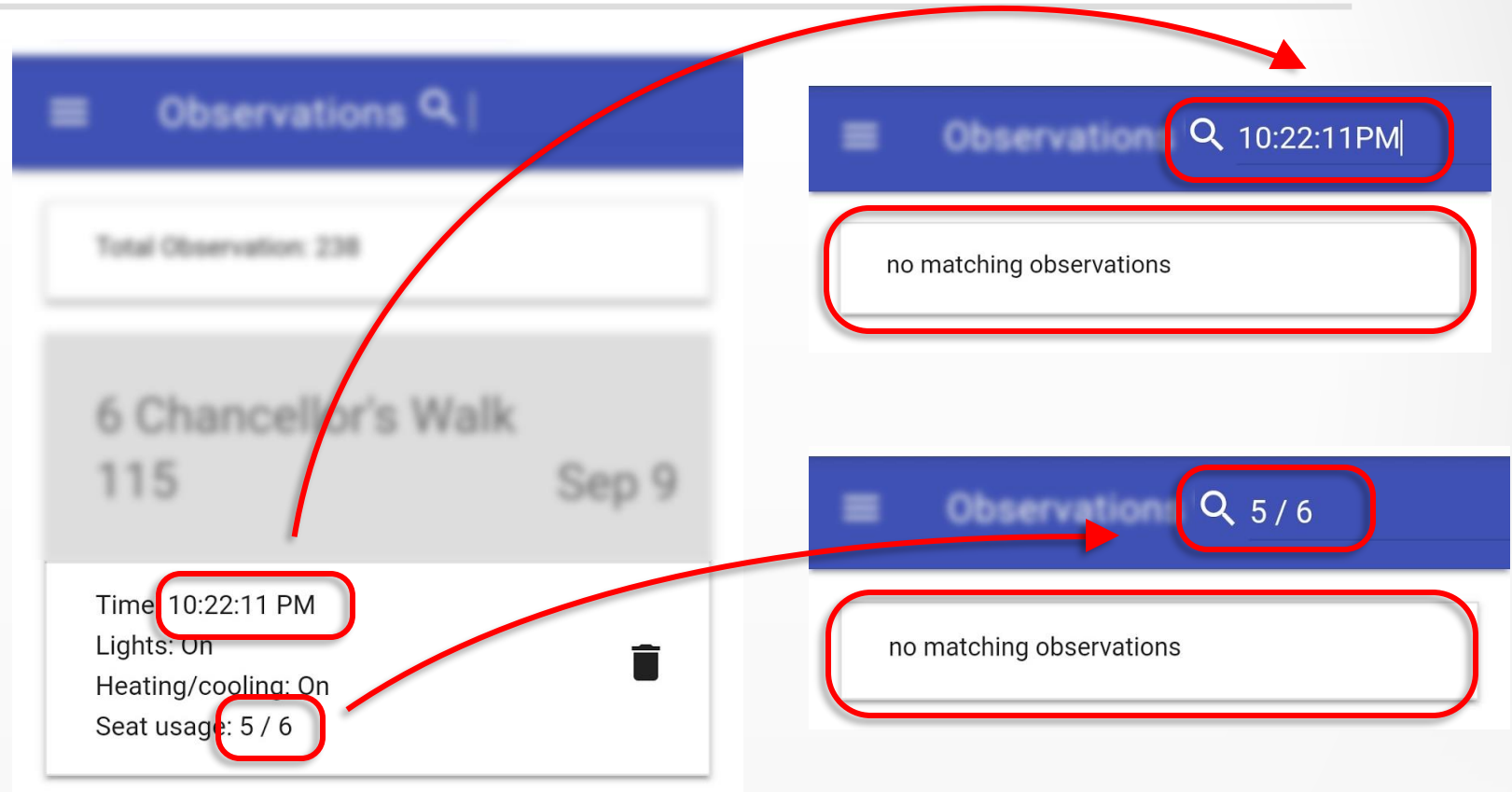- Future Improvement: Cloud

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When there is no Internet…

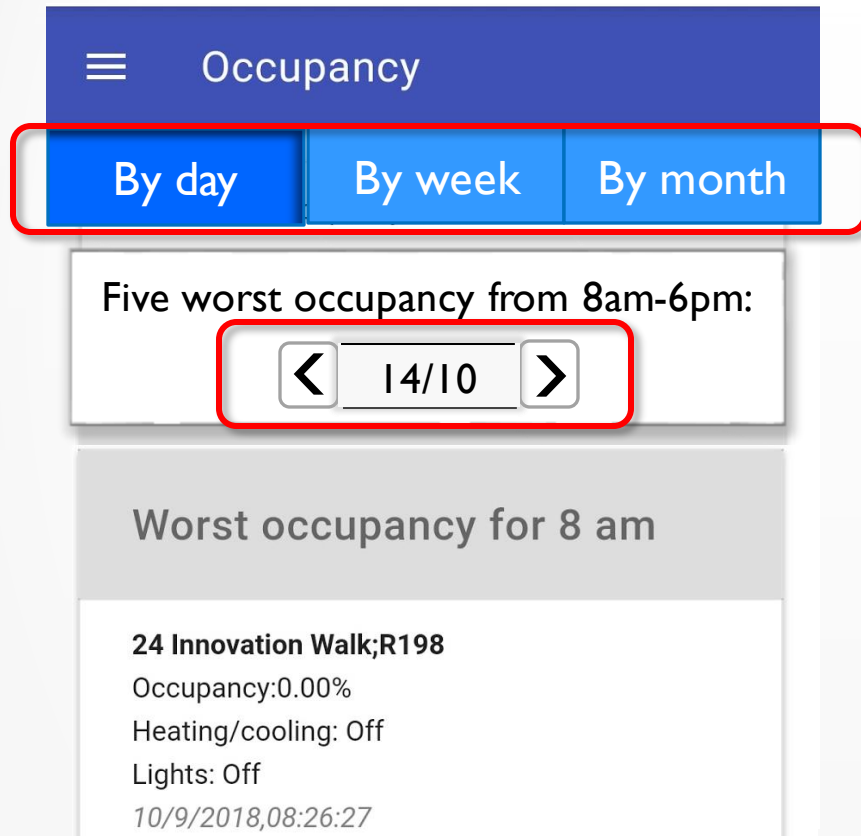- Internet connection is needed to launch the app and to determine user's location

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
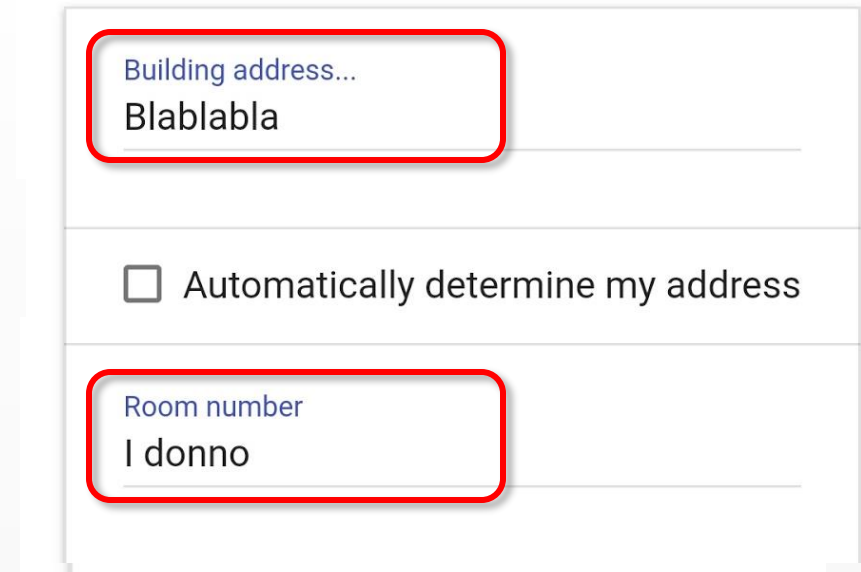
- Future improvement: more viewing choices

KNOWN BUGS AND LIMITATIONS

The inputs for building address and room number

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

Building address...
Blablabla

☐ Automatically determine my address

Room number
I donno

CONCLUSION

- 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