Ubiquitous and Mobile Computing
CS 4518: *BathroomBrowser*

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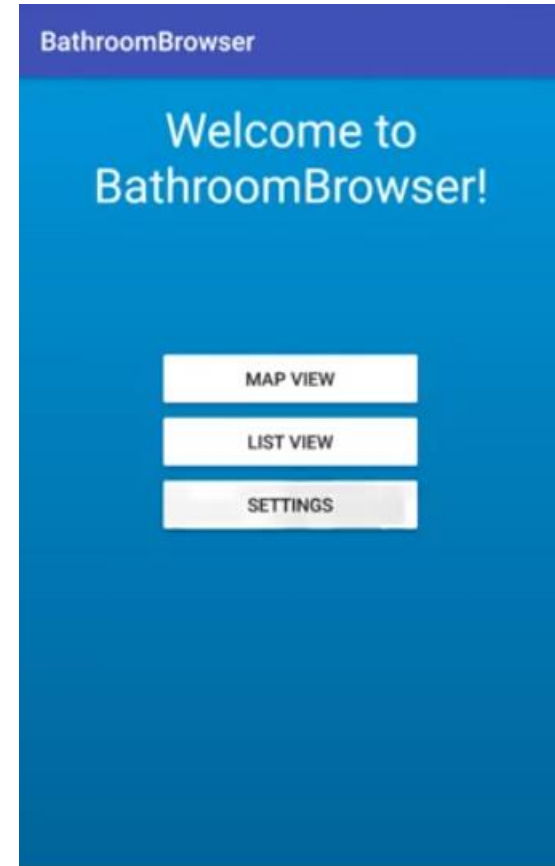
Nature Calls...

- Everyone uses the restroom several times a day
- People require different needs
  - Handicap accessibility
    - 13.1% of adults have mobility issues
  - Specific gender
  - Changing tables
    - 11.4% of adults are parents to infants
  - Feminine hygiene products
- Locations sometimes hard to find
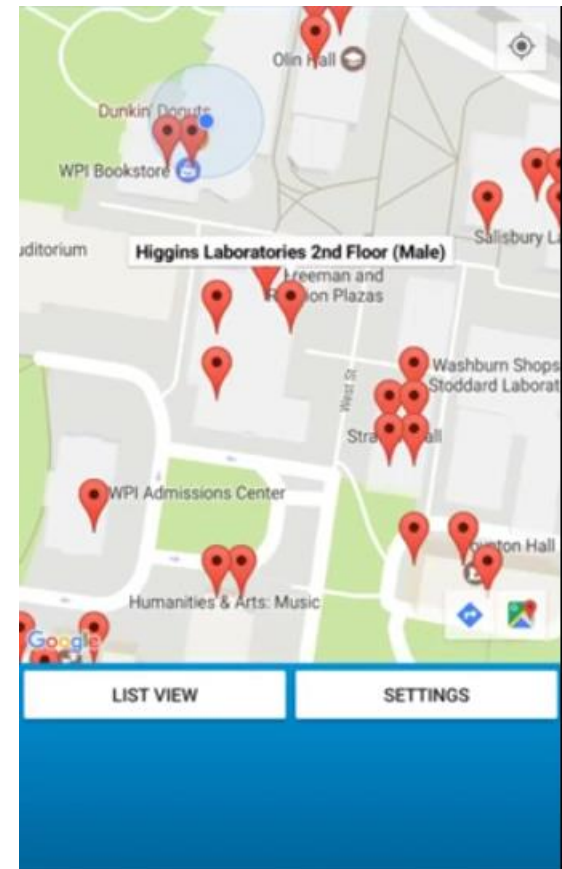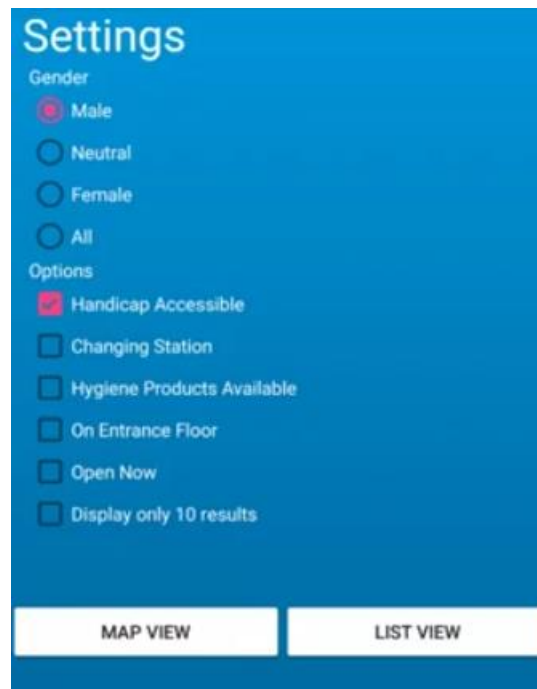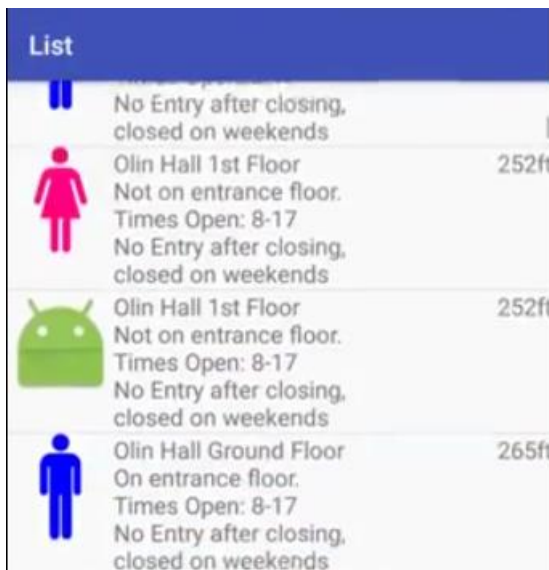
BathroomBrowser

- Find restrooms on campus by specific categories
- Categories:
  - Gender
  - Accessibility
  - Facilities layout
  - Services provided
  - Hours of operation

BathroomBrowser

- Users can select settings to filter search

- View locations on a map or in a list

BathroomBrowser

- Selecting a bathroom from list view shows more information about bathroom

BathroomBrowser

Rubin Campus Center 2nd Floor

Female
Stalls: 4 Urinals: 0
On entrance floor.
Handicap accessible.
-

RETURN TO LIST   MAP VIEW

BathroomBrowser

Goddard Hall 1st Floor

Neutral
Stalls: 1 Urinals: 0
On entrance floor.
Handicap accessible.
Chem/Bio WPI ID grants entry after closing

RETURN TO LIST   MAP VIEW

BathroomBrowser

Rubin Campus Center 3rd Floor

Male
Stalls: 2 Urinals: 2
Not on entrance floor.
Handicap accessible.
-

RETURN TO LIST   MAP VIEW

Demo

https://www.youtube.com/watch?v=WHUhQGFdQEw&feature=youtu.be

Implementation

- Activity screens
    - Splash screen
    - List view
    - Map view
    - Settings screen
    - Bathroom screen
- List and map populated by ListAdapter object
- SQLite database stores bathroom information

Results and User Evaluation

- 109 on campus bathrooms catalogued
- Simple UI implementation
- No major issues with location detection or database queries
- Overall positive testing feedback
  - "Didn't know bathrooms existed [here]"
  - "intuitive design"
  - "would use if expanded"
  - "wish map markers brought up bathroom details"

Potential Future Plans

- Add pictures of bathrooms
- Finish indexing remaining on campus bathrooms
- Index off campus locations
- Allow users to rate quality of bathrooms
- Improve UI design

Boynton Hall Basement
Women's Bathroom

Questions?

References

Disability Status and Types - Mobility Disability 2014 CDC Data. 1 June 2016. Raw data. United States & Territories.

https://dhds.cdc.gov/dataviews/report?reportId=18&viewId=1522&geoReportId=3201&geoId=1&geoSubsetId=&z=1

Parents With Coresident Children Under 18, by Living Arrangement, Sex, and Selected Characteristics: 2016. 16 Nov. 2016. Raw data. N.p.

https://www.census.gov/hhes/families/files/cps2016/tabA3.xls