

## Real World Data Filtering Scenario

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This *data filtering* application makes use of time of day, user location, noise frequencies, network strength, and access to measure 'Space Ambience' of an area - that is, how optimal a space is to be situated in. Aside from the measured environmental variables, there are reviews and ratings in relation to the experience of using the space to study. The final scenario describes the polishing of the visuals and user interaction. This will include collecting the sensor data, and making the website fully functional. This will require utilizing the code created in the previous scenarios to send more data to the database, and to expand functionality on the website.

Users should be able to view a space and/or specific area of a space, with the metrics retrieved from the recorded measurements of the public ambience. Database connectivity should be accessed remotely rather than locally on a single device. Aside from static data like operating hours, and furniture in space, data regarding Wi-Fi and cellular data strength or noise level should be updated frequently to provide a mostly accurate representation of the 'Space Ambience Rating' at the space. Users should be able to interact with the website without confusion and find a space that would fit their criteria needs.

### **Scenario: Website Overhaul, User Interaction, Database Connection, and Space Ambience Analytics**

The user will be able to interact with spaces at a glance by being able to quickly skim through high priority stats of a space. Users will also be able to view more detailed information about a space that has static and dynamic data. The dynamic numeric information will be updated periodically to reflect what is likely the current status of the public ambience for a space. The user will be able to easily understand the symbols and data being displayed to make a decision without spending too much time trying to figure out what space they would like to visit. Navigation through the site will be smooth and require a small amount of clicks that result in few errors and repeating themselves to get to a task. Apart from official information provided for a space, the user can make an update to one of the public ambience categories that can be measured visually and rate the accuracy of the data provided by the collected data from the sensors.

The website and database will be accessed at any time from switching from a desktop server to a hosting service. This allows users to interact with the website and get up to date information at any time. The raspberry pi will also be able to send data to the database at any moment.

A feature to allow users to better understand the layout and location of a building will be an interactive map. The map will be similar to the UIC MAP which allows people to hover over a highlighted area and view a short description of the building. Upon selecting it, users can view more detailed information about that space. There will be an overview layout of a floor or a room if applicable. Otherwise, it will provide detailed information about that space. This should alleviate confusion and allow users to decide if that space truly meets their needs even if the public ambience data collected meets their criteria needs.

## Scenario: Action Plan

Step 1: Review recommended changes requested by client

Step 2: Update changes to backlog

Step 3: Apply first round of requested changes of making website more dynamic

Step 4: Add an interactive map

Step 5: Add overview layout view of an available room

If time allows, some additional features to consider adding:

Step 6: Making room features more dynamic and visible in real time

Step 7: Individual layout of each available room and available/occupied spaces

Step 8: Add search feature to map with a filter search

**Figure 1 - Website Layout and Interaction**

