Real World Data Filtering Scenario

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This ***data filtering*** application makes use of time of day, user location, noise levels, and network coverage to assign 'Public Space Ambiance' ratings - a rating that determines the amount of noise in the user's current setting as well as metrics regarding the experience to do work in space. The first scenario describes the initial setup of the application. This mainly consists of an account creation for user and database set up.

Users should be able to access the application and easily create a new account. The user's account information should be stored in the user account database, encrypted for security measures. Once inside the app, users should be able to view various metrics including the amount of people in a certain space, network coverage information, survey data and most importantly, noise levels ratings in surrounding areas around their current location. This noise level data will be sourced from a mix of current, and historical data from the application's database.

Scenario: Account Creation and Database Development

The user will be greeted with an introduction screen where they will be prompted to enter their login information. If the user does not have an account registered within the application's database, they may click the SIGN UP button to create an account.

Upon pressing the SIGN UP button, the user will be presented with a form where they can enter an email and password to create their account. There will be two text fields for password creation for password matching in addition to meeting the password complexity requirements specified on the form (the password must be at least eight characters in length, contain a capital letter, a number and a symbol). This information will be verified through the application's servers to make sure that no existing account exists with the user-provided email, that the email is valid, and that the password is valid. If the application successfully authenticates the user with the information provided, the user will be sent to an empty home page.

Alternatively, if the user decides to enter their credentials into the login fields, the server will verify if the email is a valid email. It will also verify the password format, run the password and email through the encryptor, and check if the login information is in the database. If the user-provided credentials are not in the database, the application will tell the user that their information is either incorrect with an invalid username or password respectively, or simply non-existent. If time permits, additional safety precautions such as rate limiting users and data sanitation will be added to the server code to make sure that any interaction with the app is secure.

There will be two databases for this application's backend: one database for storing user accounts, and another to store historical Silent Space data, including logging information on who is connected to the database and the metric information for a specific Space. The metric information includes the Headcount Network, Surveys, Coverage Network, Ambience Rating and primarily the Ambience (Noise) Level. It would also be worthy to store information about a

list of users in that specific space, so that if time permits, the application would provide recommendations to users about popular spaces and relevant ones to make informed decisions about the area they would want to perform work in.

Once the user's information is stored on the database, they will be able to view the Silent Space data on the web page of whichever space they choose. The data displayed will include the metric information available in the database (the data will not be an accurate representation of the space). The user will be viewing a prototype version of the data with select spaces through a non-interactable UI. It will serve to give an idea of a potential presentation of the data that properly informs the user of the space's details. A user who views the UI will provide feedback of their experience and suggestions for the UI that will be considered for a future release. The user will also suggest locations that can be considered quiet as well as what in the ambience affects how well they can be productive and what they consider to be essential when looking for a quiet place to work.

Figure 1 - Diagram of Account Creation & Login Process