# SingTourX

## An Indoor Positioning and Route Mapping Application

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## Project Objectives:

As newer and larger buildings and infrastructures get developed, there is an ever-increasing need for a robust indoor localization system that helps us navigate indoors. In this project, a tour application system named SingTourX was developed, consisting of a frontend mobile app (for tourists) and a web app (for admins) with backend support from a hosted server. To support the localization, a sensor fusion algorithm that makes use of Wi-Fi signal strength within the building and IMU sensor readings within the smartphones is implemented using a Kalman filter.
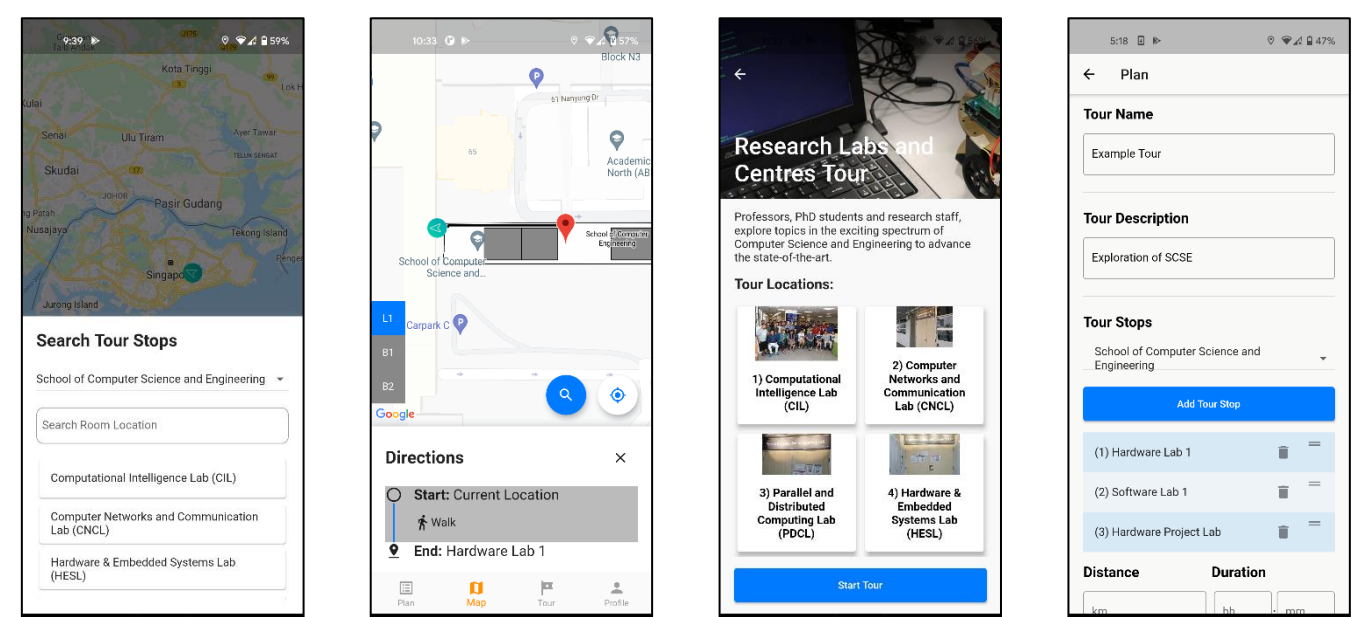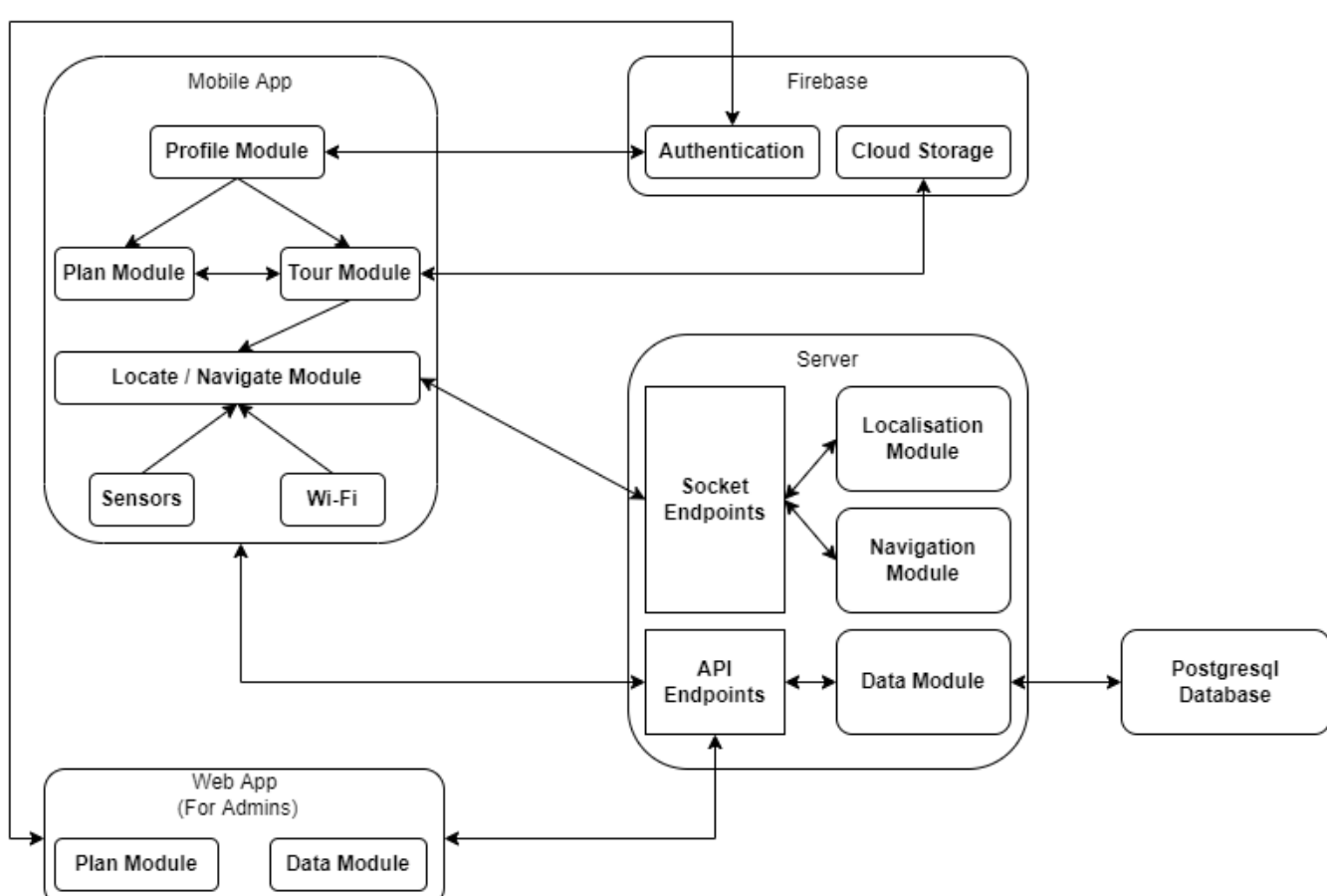
## Features of the Application:

For the Mobile App:

1. Real-Time Location Tracking (**Locate**)

2. Search, Locate and Navigate Rooms (**Navigate**)

3. Self-Guided Tours (**Tour**)

4. Self-Planned Tours (**Plan**)

5. User Activity **Data Collection**

For the Web App:

1. Create and Edit Buildings, Floors, Room and Tours

2. User Activity Data Collection Settings and Analysis
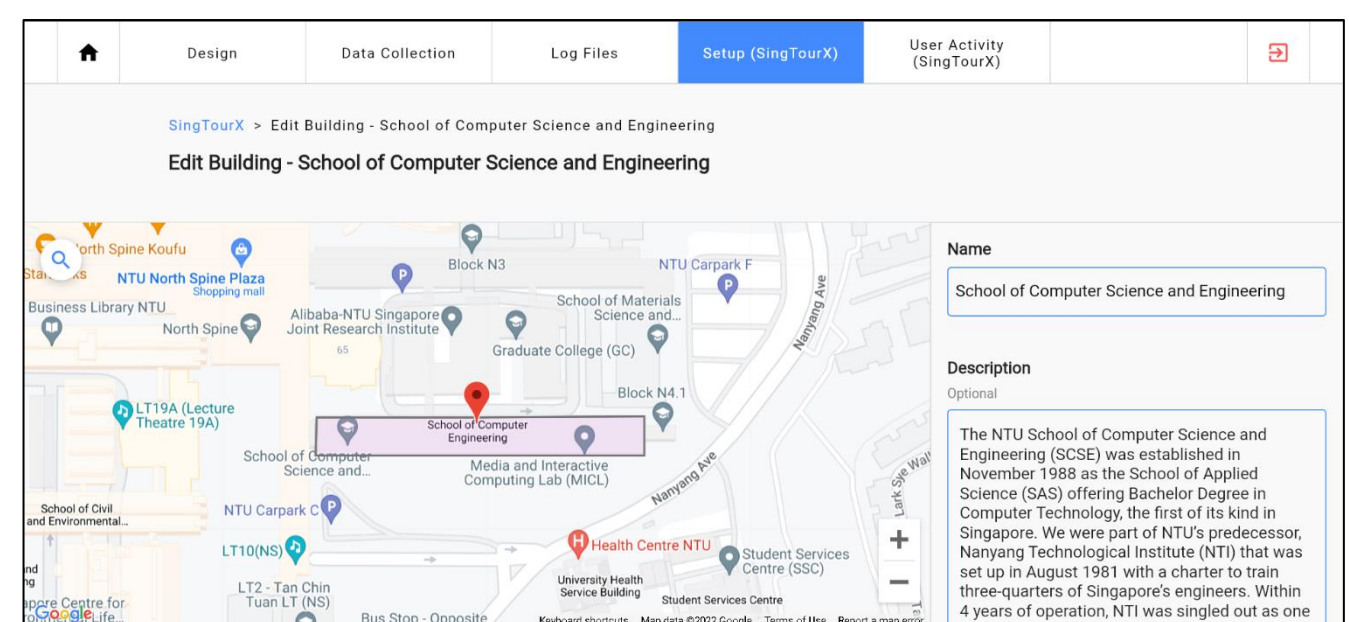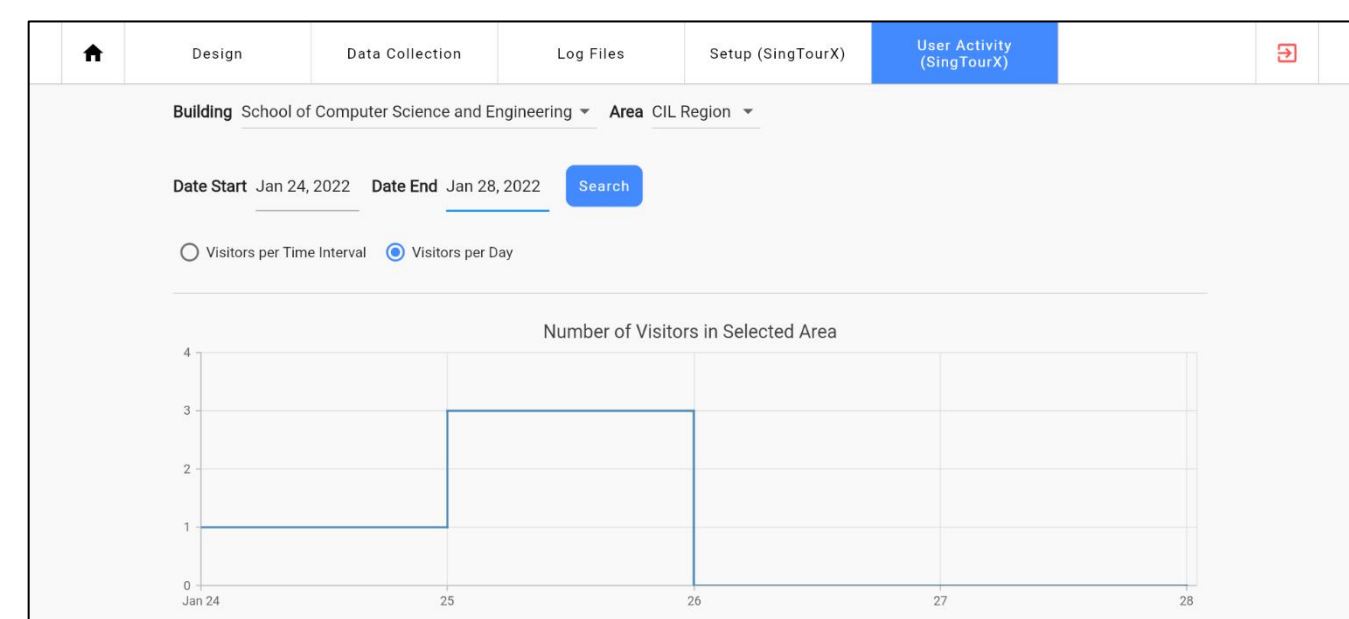
## System Architecture:



Locate    Navigate    Tour    Plan



Administrator Controls



User Activity Analysis