

Documentation of requirements

Functional

1. Predictive Crowding and Timing
 - 1.1. System must integrate dynamic datasets from LTA's DataMall to extract real-time data on the population density of public transport.
 - 1.2. System must be able to display accurate arrival timing of buses and trains in minutes time format.
 - 1.3. System must be able to display crowding levels of either MRT platform or bus stops for a specified time.
2. Personalized Route Recommendation
 - 2.1. User must be able to input their start and destination points and select preferences (eg least time, least crowded)
 - 2.2. System must calculate and provide alternate routes based on user preferences for less crowded paths or faster travel times.
 - 2.3. System must be able to compare travel times based on different modes of transport.
 - 2.4. System must be able to suggest the best option based on time, comfort, and rewards.
3. Points System
 - 3.1. System must implement a points system where users earn points for actions such as using greener mode of transport
 - 3.2. Users who consistently choose a greener mode of transport should receive rewards or discounts from local businesses.

Non-Functional

1. Security: System should be protected against unauthorized accesses and malware attacks.
2. PDPA: Protection of user's traveling history
3. User-friendly: UI should be intuitive and easy to use
4. Reliability: System should be consistent in providing accurate arrival timing of buses and trains & consistent uptime, especially during peak hours
5. Usability: Interface should be intuitive and user-friendly
6. Performance: System should provide a smooth and responsive user experience even during peak usage times.
7. Scalability: Open-close concept, new functions can be added easily (System should be able to scale gracefully to accommodate new features and functionalities)