Functional Requirements

1. The app must be able to provide location services
    1. The app must access the device's GPS to determine the user's current location
    2. The app must provide a manual location input option to give the general radius of the searched area
2. Carpark Data
    1. Carpark data must include names, addresses, capacity, available slots, pricing, distance from users and opening hours
3. The app must contain search and filter functions
    1. Users must be able to search for carparks based on location, distance and availability (Maybe price as well)
    2. Users should be able to set a preferred search radius (e.g. 1 km, 5 km) for nearby carparks
    3. The app must filter and display carparks that are located within the user's chosen radius
    4. Carparks outside selected radius must be excluded from the results
    5. Carparks with no more capacity can also be excluded
4. The app must contain a map view
    1. The map interface must display markers for each carpark
    2. Users must have the ability to obtain directions to a selected carpark from their current location using the map
    3. Tapping on a map marker must display relevant carpark information
    4. The map marker should indicate red when the carpark is full/unavailable
    5. The map marker should indicate green when the carpark is fully available
    6. The map marker should indicate yellow when the carpark is almost fully occupied
5. The app must contain user specific features
    1. The app provides favourites tabs to view user's handpicked carparks
    2. The app provides pinpoint features so that user can track the car location in the map
    3. The app has cost tracking functions to keep track of spendings on carpark costs

Non-Functional Requirements

1. Performance
    1. App must load within 3 seconds
    2. App must respond to user actions with 1 second
    3. Slot availability updates must occur every 60 seconds
2. Usability
    1. Users should be able to start using the app intuitively, without the need for extensive tutorials or guidance
    2. Users must be able to find available parking in no more than 2 steps
    3. Users must be able to adjust the search radius with a slider or numerical input
    4. In-app support must be available to address user questions and issues related to map functionality and location settings
3. Compatibility
    1. Map view must be compatible with a variety of devices and screen sizes
4. Privacy
    1. The app must clearly inform users of the purpose of collecting location data and seek their permission
    2. User must have the ability to disable location sharing at any time
5. Localization
    1. Map markers and distance units must be presented in the user's chosen language and regional settings
6. Accessibility
    1. The map interface must include appropriate labels and alternative text for screen readers
    2. Users with disabilities must be able to interact with the map effectively
7. Accuracy
    1. The car park information displayed should be accurate
8. Support
    1. Proper documentation must be provided for future developers
    2. The app must include help and feedback buttons for the users
    3. The app must provide FAQ for users that have questions