Functional Requirements

1. The app must be able to provide location services
    1. The app must be able access the device's GPS to determine the user's current location
    2. The app must provide a manual location input option to show available carparks in 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 display and filter parking lots that are inside the user-specified radius.
    4. Carparks outside selected radius must be excluded from the results
    5. Carparks with no more available slots must also be excluded
4. The app must contain a map view of a particular area
    1. The map must display markers for every carpark available in the API
    2. Users must have the ability to get directions from where they are to a certain parking lot.
    3. Tapping on a map marker must display relevant carpark information
    4. The map marker should flash a red light when the parking lot is full or unavailable.
    5. The map marker should show green when all spaces in the parking lot are taken.
    6. The map marker should Indicate in yellow when nearly all spaces in the parking lot are taken.
5. The app must contain user specific features
    1. The app provides a favourite tab to allow access to user's bookmarked carparks
    2. The app provides pinpoint features so that user can track the car location in the map
    3. The app contains features for tracking expenses related to

parking

Non-Functional Requirements

1. Performance
    1. App must load within 3 seconds
    2. App must be responsive to user actions with a limit of 1 second
    3. Slot availability updates must occur every 60 seconds consistently
2. Usability
    1. Users should be able to begin utilizing the app without the need for in-depth instructions or tutorials.
    2. Users must be able to locate parking that is available in only two steps.
    3. Users must be able to Change the search radius by entering numbers or using a slider.
    4. In-app support must be available to respond to inquiries from users about location settings, map/app functionality, and other related topics
3. Compatibility
    1. Map size and orientation must be compatible with a variety of devices and screen sizes
4. Privacy
    1. The app must clearly and outrightly inform users of the purpose of data collection before seeking their permission
    2. User must have the ability to disable location sharing at any time whenever they feel like it
5. Localization
    1. Map markers and metric units (must be represented in the user's chosen language and regional settings)
6. Accessibility
    1. The map interface must and should include appropriate labels and readable text for screen readers
    2. Users with disabilities should be able to easily interact with the map effectively
7. Accuracy
    1. The car park information displayed should be accurate based on the API
8. Support
    1. Proper documentation of code must be provided for future developers to improve / debug
    2. The app must include help and feedback functions for the users

3. The app must provide a FAQ board for users that may have questions