**Functional Requirements**

1. The web application must allow the user to access the URL using any browser.
2. The web application must request for permission before accessing the user’s location via GPS.  
   1. If permission is denied by the user, the application must show a map consisting of all carparks in Singapore.
   2. If permission is granted, the application must show a map consisting of carparks nearest to the user up to a maximum distance of 5km radius which are ranked by recommended by default.
      1. The most recommended place is based on traffic status and time taken to the carpark.
      2. The user can choose to rank the list of car parks by distance, rating, price, recommendation.
3. The web application must allow the user to locate a specific place on the map by:  
   1. The Postal code of the place
   2. The Name of the place
   3. Selecting a mini pin on the carpark map
   4. Drop a pin on the carpark map
4. The web application must enable the user to view a list of car parks without the map.
5. The web application must display more detailed information about a carpark.  
   1. The web application must display the carpark’s full name, hourly charged rate, and full address, real time available slots.
   2. The web application must display the carpark’s rating scores, the number of total ratings and reviews.
      1. When a user taps on ratings, the application must ask the user to login prior to giving a rating or leaving a review.
         1. If user is already logged in,
            1. Users must be able to leave a rating out of five stars based on their experience in the carpark.
            2. Users must also be allowed to leave an optional review alongside the rating.
         2. If the user is not logged in, the application must provide an informative message to the user asking them to login.
   3. The web application must enable the user to choose the specific carpark.
      1. When the user taps on the navigation button for a specific carpark, the user would be redirected to the place step by step to the carpark.

**Non-Functional Requirements**

1. The web application must be compatible with both desktop browsers and mainstream mobile browsers.
2. The web application must fetch carpark data details within 500ms when a user taps into any carpark.
   1. If the data fetching fails, the application must retry up to 3 times before displaying an informative error message.
3. The web application must be operable with either hands.
   1. User must be able perform the following functions single handedly.
      1. Search for a carpark
      2. View the list of carparks without searching
      3. Pan the map

1. The web application must accumulate the total ratings and calculate the weighted average from the total users.

**Data dictionary**

A set of terms matching with a description of the term in the context of the application.

**General terms**

| **Term** | **Description** |
| --- | --- |
| Map marker | An indication of where the carpark is, on the map. |
| Rating | A measure of users’ satisfaction on a particular area ranging from 1 to 5 stars where 1 depicts very unsatisfactory and 5 depicts very satisfactory. |
| Review | Comments from users describing how satisfied they are with a certain clinic. |
| User | A person who uses the application to look for carparks. |
| Search | Search for carparks based on the user's given input. |
| Km | A unit of length in the metric system: Kilometer. |
| Ms | A thousandth of a second. |