

## **Upgraded Car Park Availability API**

**API Description:** The Upgraded Carpark Availability API provides real-time information about parking lot availability. It allows users to retrieve data about available parking lots near their location based on the carpark number, date, and time.

Base URL: <https://api.data.gov.sg/v1/transport/lot-finder>

Endpoints:

1. Retrieve Car Park Availability near user location:
  - Description: Retrieve car parks with empty lots near user's input location.
  - Endpoint: GET /carparks/{x\_user\_coord}/{y\_user\_coord}
  - Parameters:
    - a. x\_user\_coord (required, float): x-coordinate of user's input location
    - b. y\_user\_coord (required, float): y-coordinate of user's input location
  - Response:
    - a. carpark\_avail\_data (array): An array of car park availability data.
      - i. carpark\_number (string): The unique identifier of the car park.
      - ii. address (string): The address of the car park
      - iii. update\_datetime (string): The date and time of the availability information.
      - iv. x\_coord (float): The x-coordinate of the carpark location.
      - v. y\_coord (float): The y-coordinate of the carpark location.
      - vi. carpark\_info (array): An array of carpark lot information.
        1. lot\_type (string): The type of parking lot.
        2. lots\_available (integer): The number of available parking lots.

## **Necessary APIs required**

1. Car Park Availability API
2. HDB Carpark Information API
3. Geolocation API

## **Car Park Availability API**

**API Description:** The Upgraded Carpark Availability API provides real-time information about parking lot availability. It allows users to retrieve data about available parking lots based on the carpark number, date, and time.

Base URL: <https://api.data.gov.sg/v1/transport/carpark-availability>

Endpoints:

1. Retrieve Car Park Availability:

- Description: Retrieves the availability of parking lots for a specific carpark number and datetime.
- Endpoint: GET /carparks/{carpark\_number}
- Parameters:
  - a. carpark\_number (required, string): The unique identifier of the car park.
- Response:
  - a. carpark\_avail\_data (array): An array of car park availability data.
    - i. carpark\_number (string): The unique identifier of the car park.
    - ii. update\_datetime (string): The date and time of the availability information.
    - iii. carpark\_info (array): An array of carpark lot information.
      - 1. lot\_type (string): The type of parking lot.
      - 2. lots\_available (integer): The number of available parking lots.
      - 3. total\_lots (integer): The total number of parking lots.

## **HDB Carpark Information API**

**API Description:** The HDB Carpark Information API provides up-to-date information about specific details of each HDB carpark in Singapore

Base URL: <https://api.data.gov.sg/v1/transport/carpark-details>

Endpoints:

1. Retrieve Car Park Information:

- Description: Retrieves detailed information about a specific car park
- Endpoint: GET /carparks/{carpark\_number}
- Parameters:
  - a. carpark\_number (required, string): The unique identifier of the car park.
- Response:
  - a. carpark\_info\_data (array): An array of carpark information data.
    - i. car\_park\_no (string): The unique identifier of the car park.
    - ii. address (string): The address of the car park.
    - iii. x\_coord (float): The x-coordinate of the carpark location.
    - iv. y\_coord (float): The y-coordinate of the carpark location.
    - v. car\_park\_type (string): The type of car park.
    - vi. type\_of\_parking\_system (string): The type of parking system.

- vii. short\_term\_parking (string): The availability of short-term parking.
- viii. free\_parking (string): The availability of free parking.
- ix. night\_parking (string): The availability of night parking.
- x. car\_park\_decks (integer): The number of car park decks.
- xi. gantry\_height (float): The height of the car park gantry.
- xii. car\_park\_basement (string): Indicates if the car park has a basement.

## **User Geolocation API**

**API Description:** The user Geolocation API provides information about the desired/current location of the user.

Base URL: <https://api.Geolocator.com.sg>

Endpoints:

### **1. Retrieve User Information:**

- Description: Retrieves User's desired location in terms of x and y coordinates
- Endpoint: GET /user\_location/{user\_id}
- Parameters:
  - a. user\_id(required, string): The unique identifier of the user.
- Response:
  - a. user\_location\_data (array): An array of carpark information data.
    - i. x\_user\_coord (float): The x-coordinate of the user's desired location.
    - ii. y\_user\_coord (float): The y-coordinate of the user's desired location.