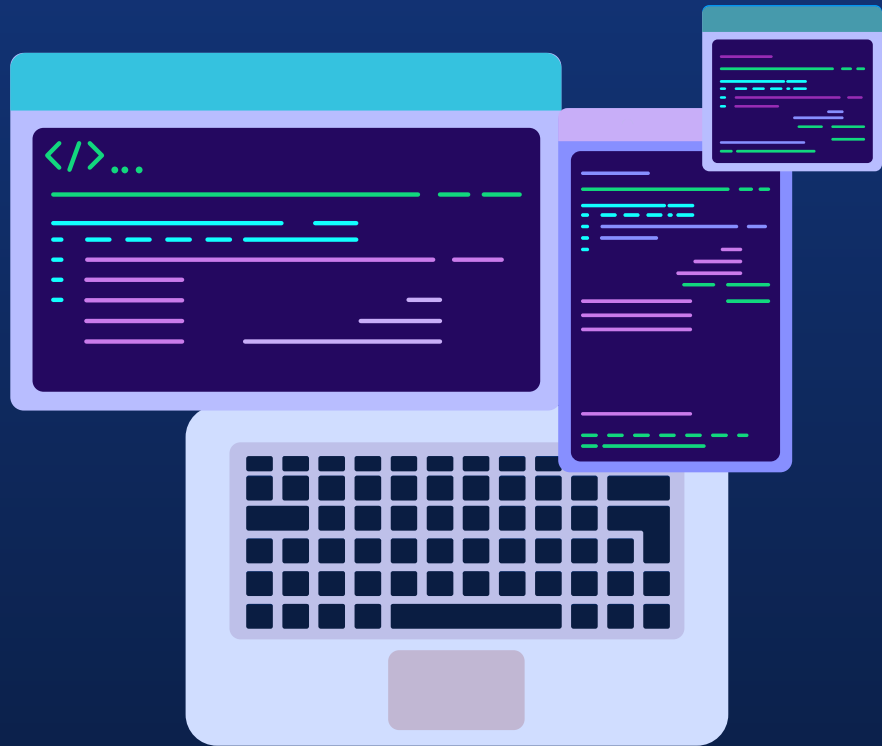


# Carpark NF

Pineapple

Potala, Jin Min, Nicholas, Wei Hong,  
Haozheng, Jia Ying



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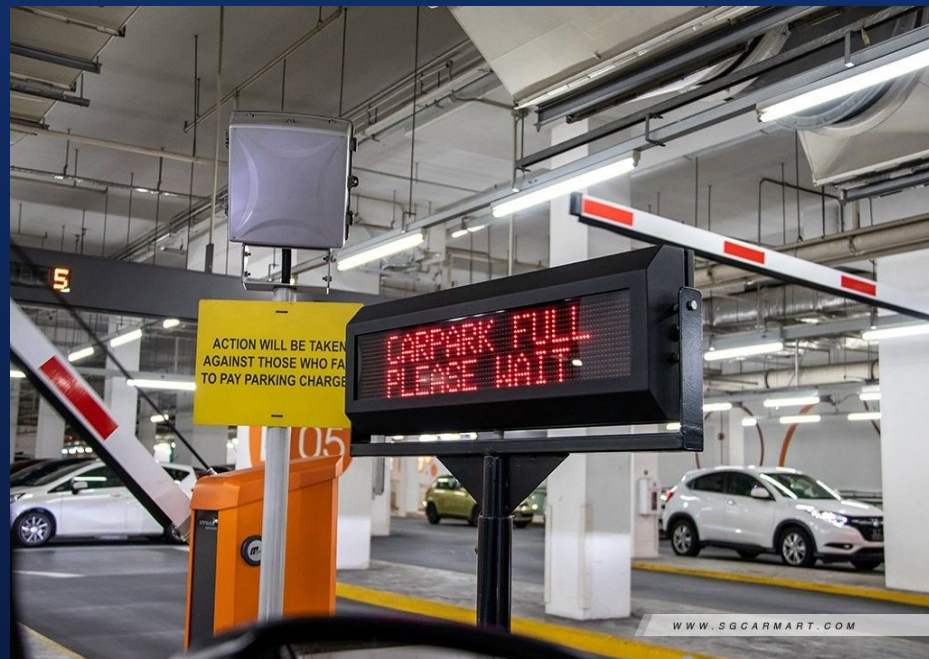
01

# Overview

Introduction of Carpark NF



See you at 12pm. If you are  
late then we are **OVER!**





# Carpark NF

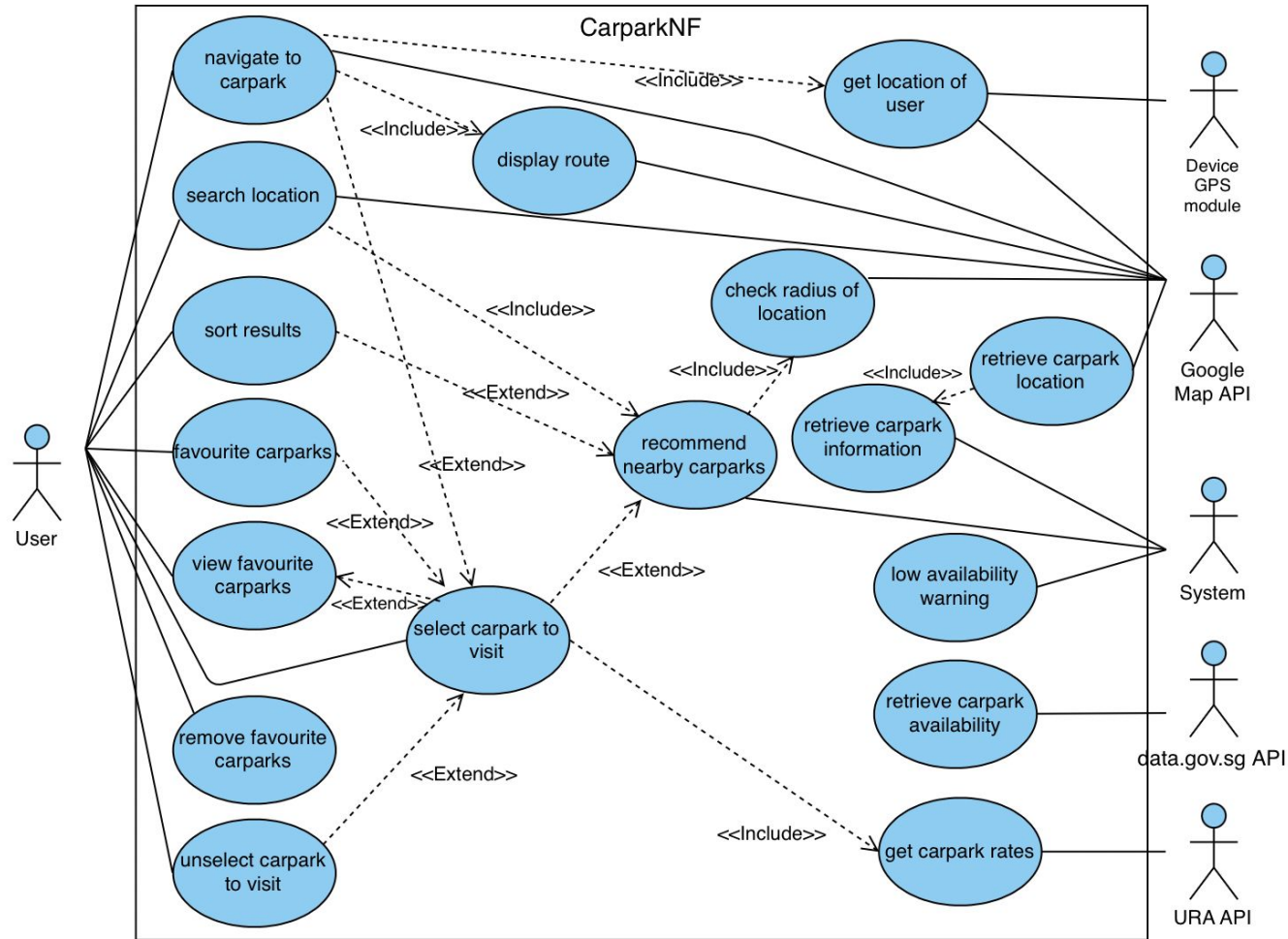
- Web application that allows users to search for a location and then showing them a list of car parks nearby (within 500m) that location
  - Shows the availability of the carpark so that users can plan their journey beforehand
- Allows users to favourite their frequently visited car parks, and navigate to them
- Target/Expected users of our application is drivers



02

# Use Case Model





03

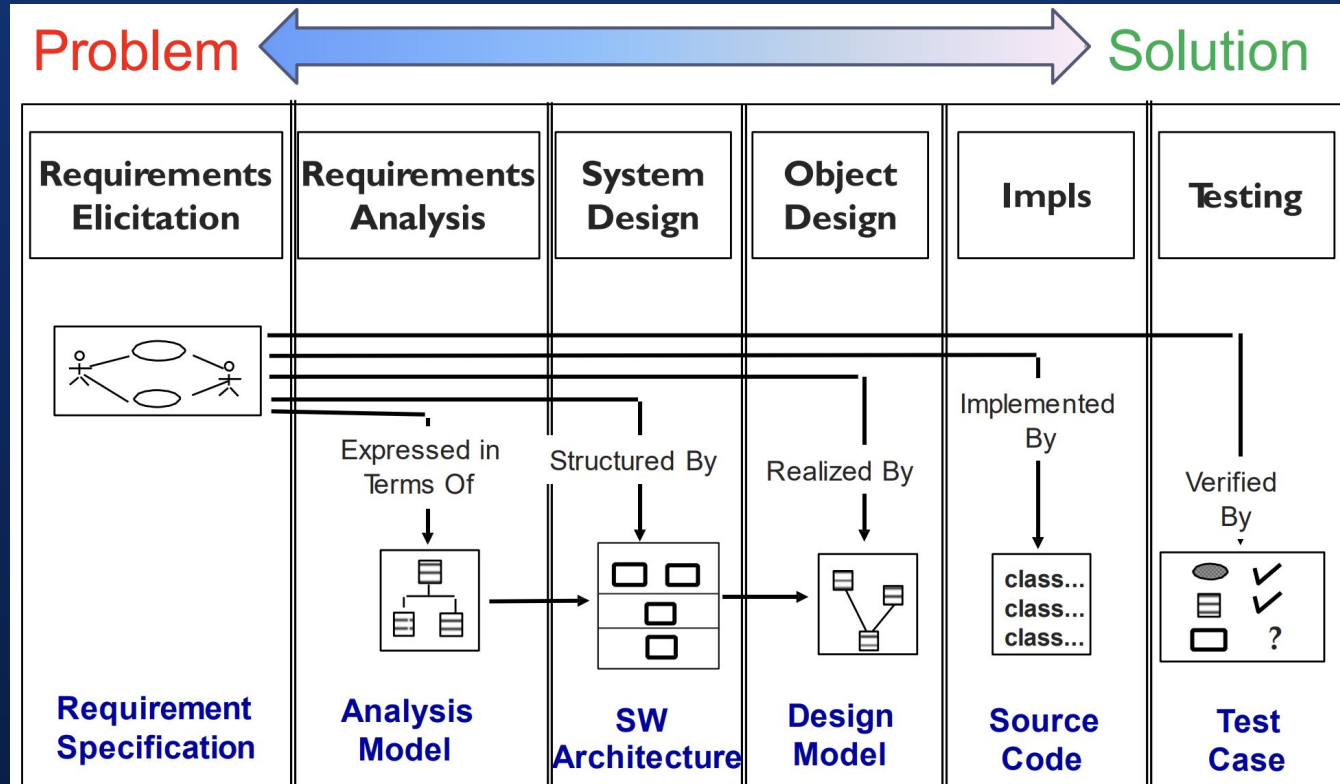
# SE Practices







# Software Development Lifecycle





# Design Practices



## Single Responsibility

- Easier to maintain
- Reusability



## Dependency Injection

- Allows ease of testing, reusability of code, modularity
- Helps with loose coupling

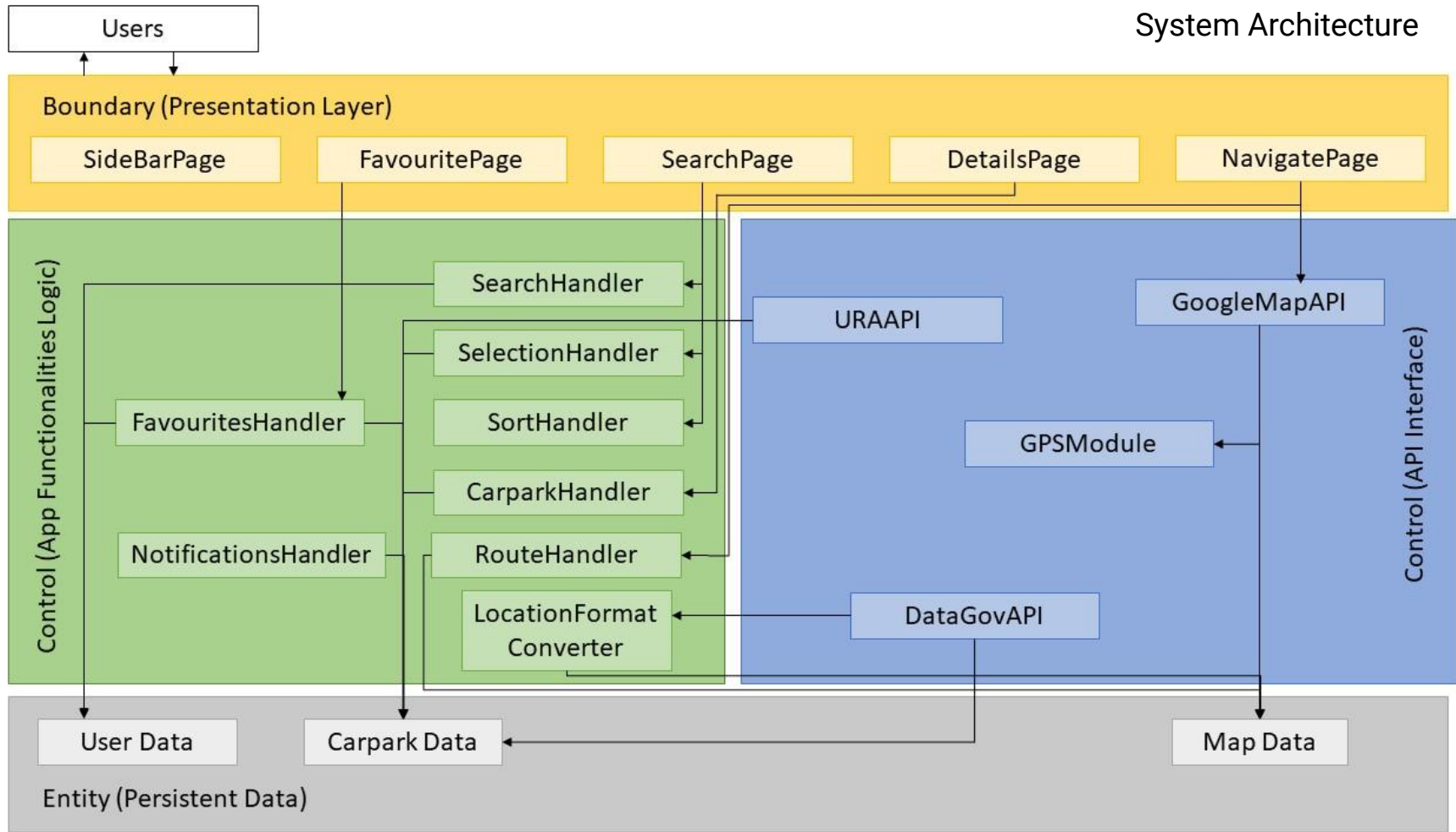


04

# System Design



# System Architecture



# Design Patterns



## Facade Pattern

- Makes code easier to use and understand
- Reduces dependencies on classes



## Observer Pattern

- Enables loose coupling
- Classes are only linked when necessary
- When one class needs to be changed, only a few will be affected - making codes reusable

05

# Traceability

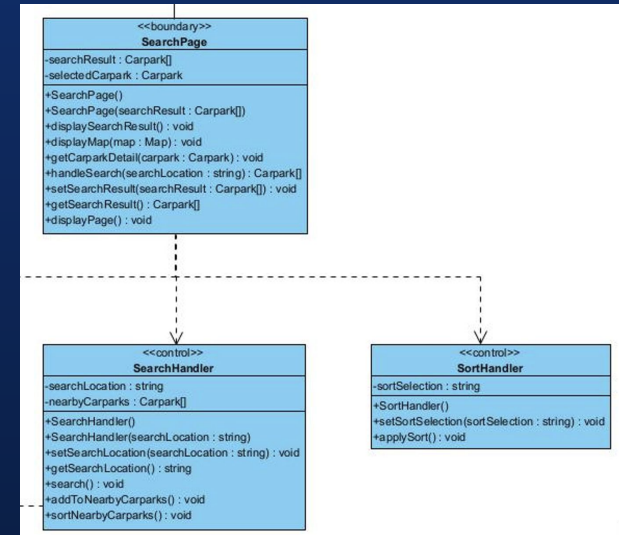


# Traceability

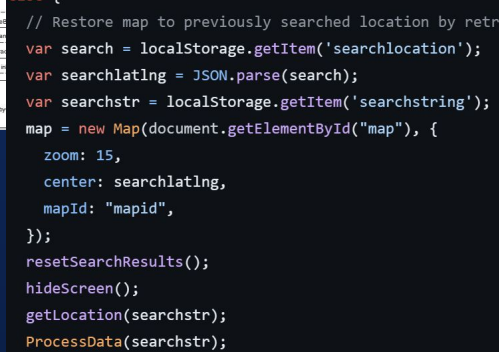
- Throughout the SDLC, we ensured our requirements are atomic such that it can be verifiable, traceable and unambiguous
- Example: Search functionality requirement

## 2. Search

- The system must allow user to search for a location.
  - The user must be able to search for a location by entering a 6-digit postal code or a street name.
  - The system must be able to recommend a list of car parks within a radius of 500 metres of the searched location.
    - Each carpark in the list of car parks displayed must contain information related to that carpark.
      - Information includes:
        - Carpark distance from searched location
        - Carpark address
        - Carpark availability
        - Carpark rate
  - The user must be able to sort the list of car parks by ascending order of distance from searched location or descending order of availability.
    - By default, the list of car parks is sorted by ascending order of distance from searched location.



Actor:	User, Google Maps API
Description:	To search for <u>carparks</u> near the user's searched location
Preconditions:	1. Device must be connected to Wi-Fi/Mobile Data
Postconditions:	1. <u>Carparks</u> that fall within the radius of the searched location will be found and saved.
Priority:	High
Frequency of Use:	0-20 times per day
Flow of Events:	<ol style="list-style-type: none"> <li>1. User navigate to the Search page from the sidebar</li> <li>2. User will enter the 6-digit postal code or street name of his desired location</li> <li>3. System will search for <u>carparks</u> that are near the location</li> <li>4. Nearby <u>carparks</u> will be saved as a search result.</li> </ol>
Alternative Flows:	-
Exceptions:	-
Includes:	Recommend nearby carpark
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

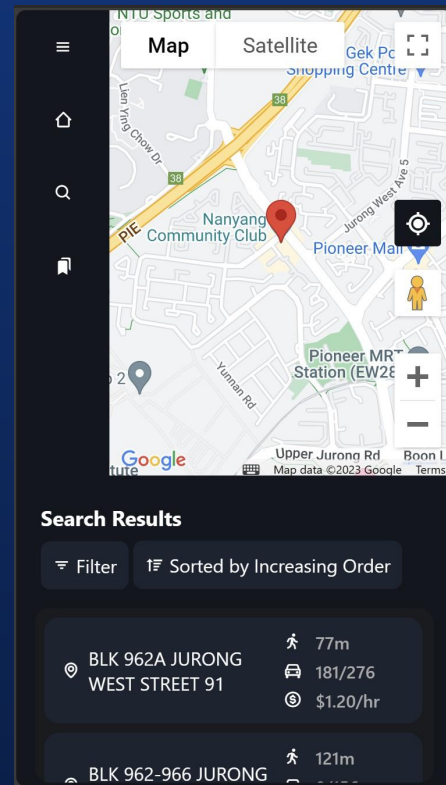




# Traceability

Test ID	Scenario	Expected Result	Actual Result
1	Search by 6-digit postal code (searched location)	List of carparks within 500 metres radius of searched location is displayed to the user	List of carparks within 500 metres radius of searched location is displayed to the user
2	Search by street name (searched location)	List of carparks within 500 metres radius of searched location is displayed to the user	List of carparks within 500 metres radius of searched location is displayed to the user
3	Search empty string	Popup <u>stating</u> "No results found for search."	Popup <u>stating</u> "No results found for search."

Search string	Expected Result	Actual Result
"530115" (Kovan)	List of carparks within 500 metres radius of an HDB block in Kovan is displayed to the user	List of carparks within 500 metres radius of an HDB block in Kovan is displayed to the user
"Nanyang CC"	List of carparks within 500 metres radius of Nanyang CC is displayed to the user	List of carparks within 500 metres radius of Nanyang CC is displayed to the user
"NTU"	"No results found" message displayed on results page. (No carparks nearby)	"No results found" message displayed on results page. (No carparks nearby)
" <u>abcde</u> fg"	Popup <u>stating</u> "No results found for search."	Popup <u>stating</u> "No results found for search."
" " (empty string)	Popup <u>stating</u> "No results found for search."	Popup <u>stating</u> "No results found for search."



06

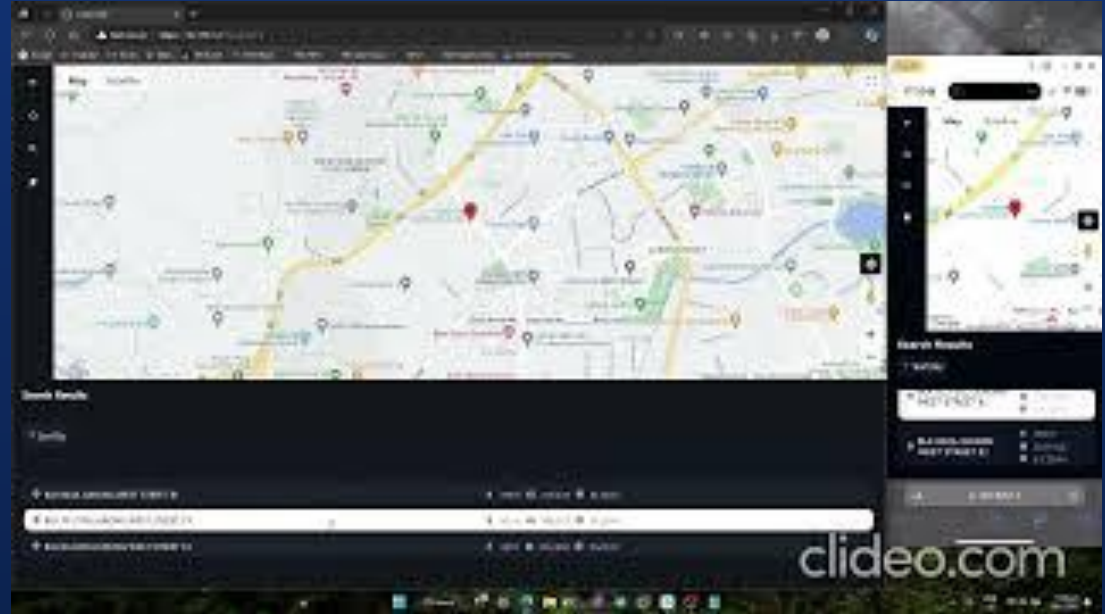
Demo





# Flow

1. Enter app
2. Search
  - a. Gibberish
  - b. "Nanyang CC"
  - c. "310256"
3. Sort
  - a. By descending availability
  - b. By ascending distance
4. Select carpark (from search results)
5. Navigate
6. Favourite carpark
7. Go to favourites page
8. Click on carpark
9. Unfavourite carpark
10. Back to favourites page



Try it for yourself!



Thank you

