



TeleBot



Lab Group: SEP1
Group: Number1
Bot Name: Park Your Car

Done by: Jun Han, Sheng Kai, Zheng Xuan, Max, Benedict

Why Parking?



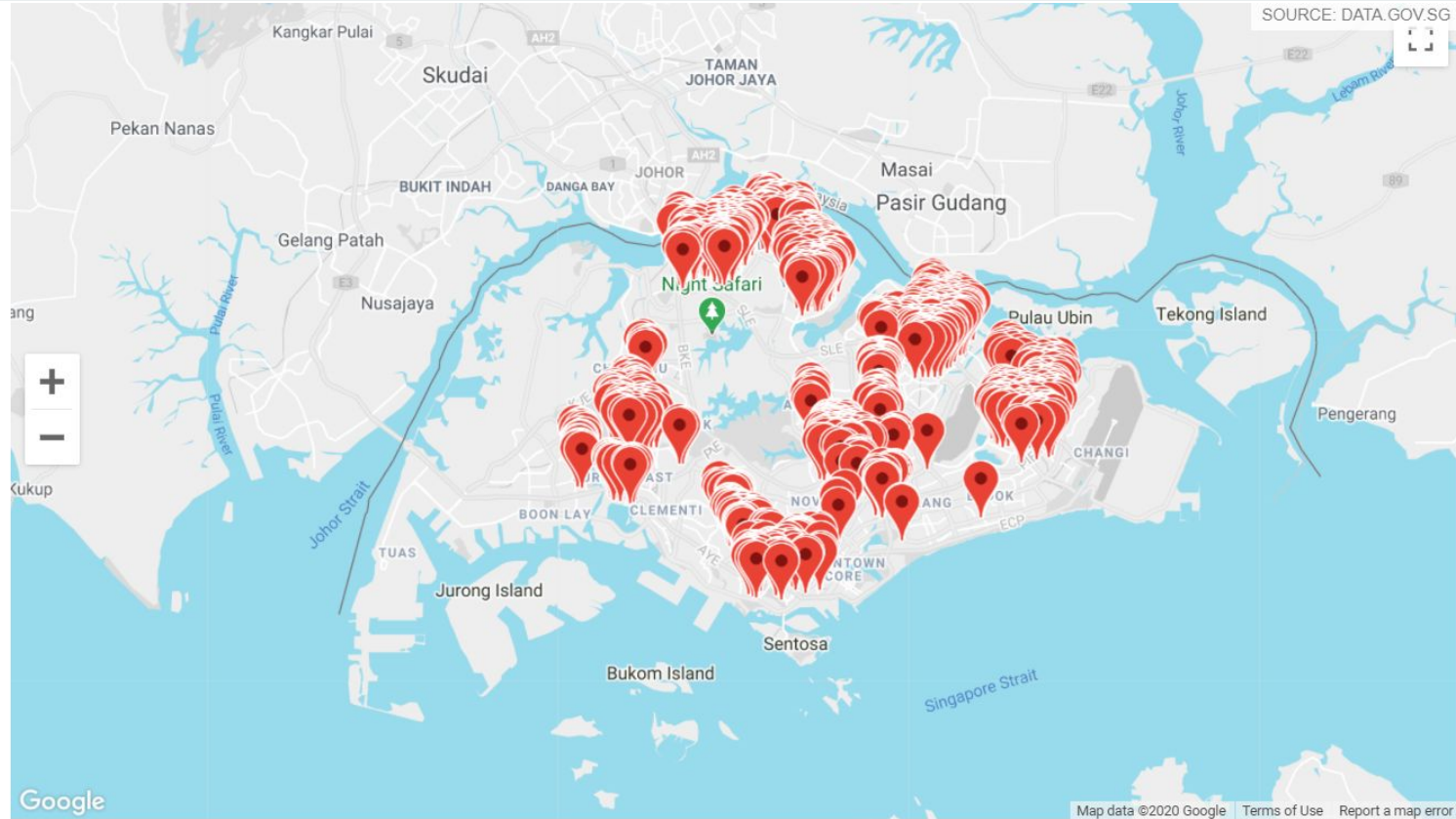
- Motorists often can't find a place to park their vehicles.
 - Waste time and fuel locating a vacant lot.
 - Unsure of nearest car park or parking prices.

Why Telegram Bot?



- Park Your Car aims to tackle this widespread issue affecting a large audience daily.
- Mobile based application for quick and convenient accessibility.
- Interactive and provides specific information to end users.
- Growing number of daily users.

API Used (1) - HDB Carpark Information



Information about HDB carparks such as operating hours, car park location (in SVY21), type of parking system, etc.

Note: The Park and Ride Scheme has ceased with effect from 1 Dec 2016

API Used (2) - HDB Carpark Availability

Carpark Availability

FILES IN THIS DATASET

Carpark Availability



Views:



< > Embed Chart

API Documentation

GET

<https://api.data.gov.sg/v1/transport/carpark-availability> Get the latest carpark availability in Singapore

- Retrieved every minute
- Use the `date_time` parameter to retrieve the latest carpark availability at that moment in time
- Detailed carpark information can be found at <https://data.gov.sg/dataset/hdb-carpark-information>
- We recommend that this endpoint be called every minute

Parameters

Try it out

Name	Description
<code>date_time</code> string (query)	YYYY-MM-DD[T]HH:mm:ss (SGT)

How did each diagram help?



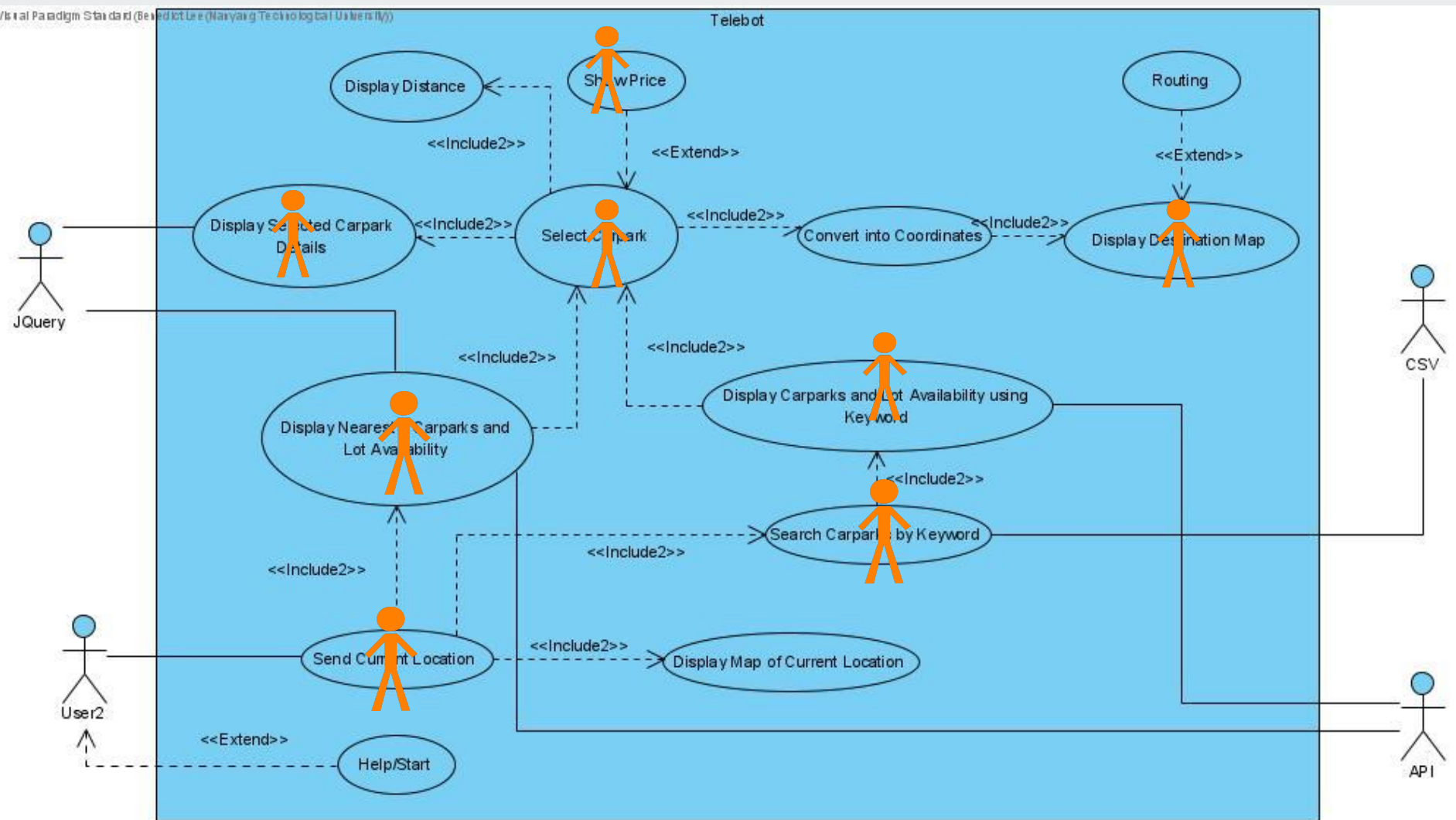
- **Use Case Diagram** - Identify system actors and functions.
- **Class Diagram** - Assign roles to classes and identify their relationships.
- **Conceptual Model** - Determines how various class types interact with each other.
- **Dialog Map** - Provides project flow overview to identify potential issues.
- **Sequence Diagram** - Map flow of user interaction to identify potential issues.

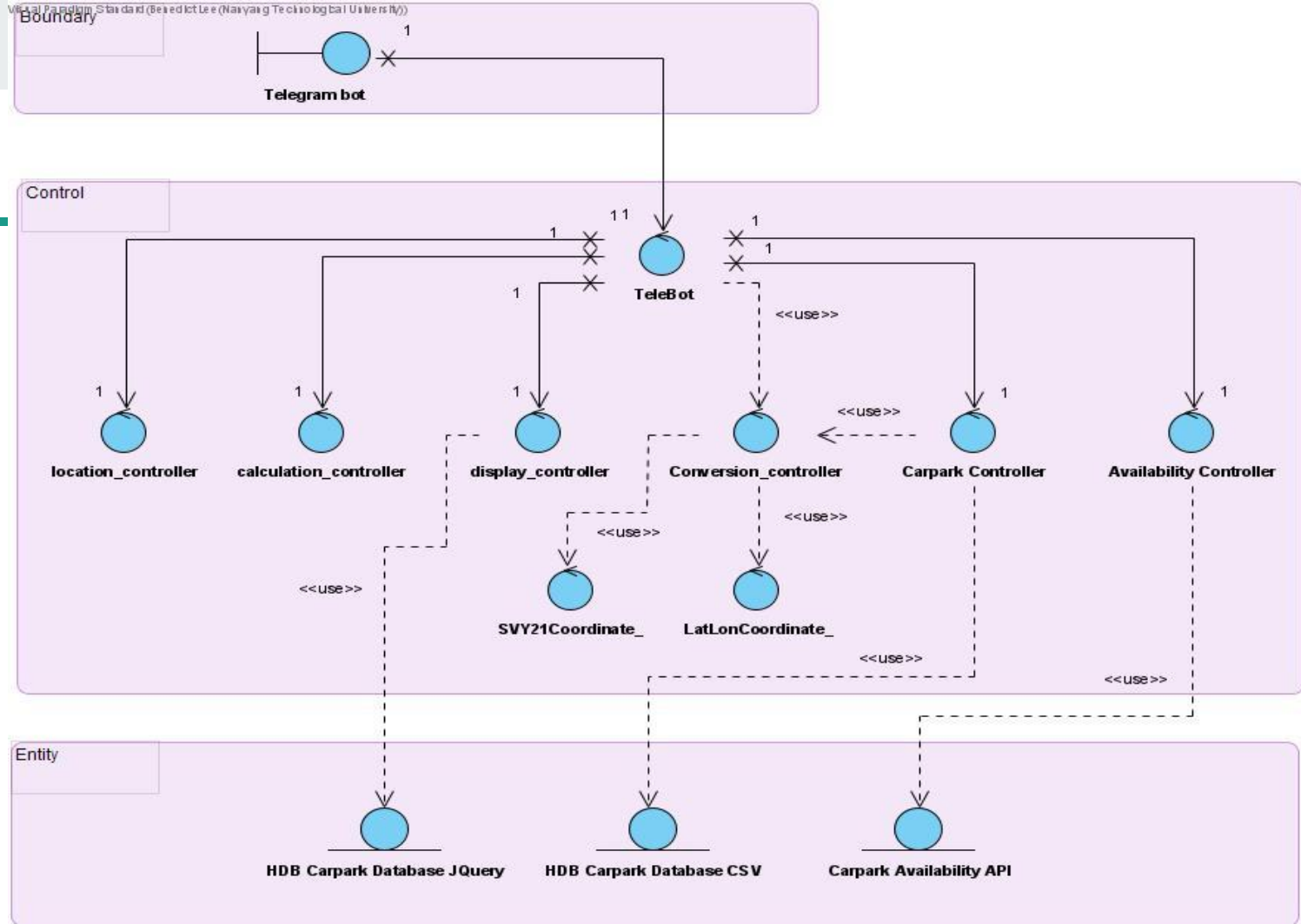
JQuery

CSV

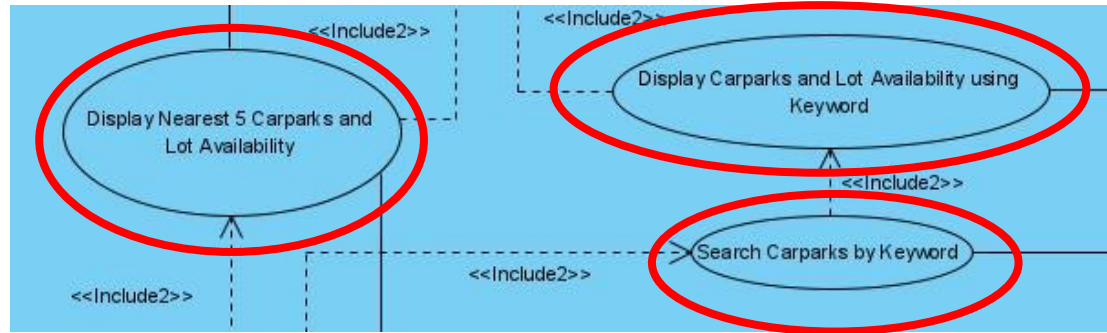
User2

API



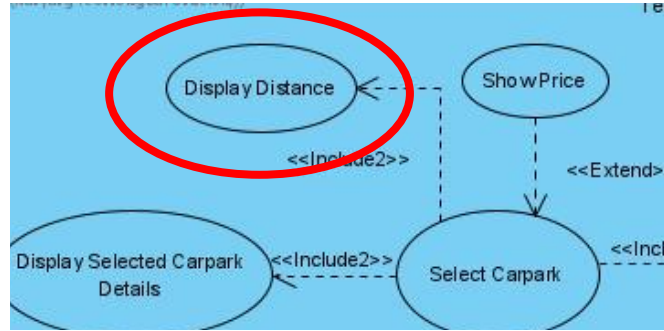


Highlight 1 - Decision Fork



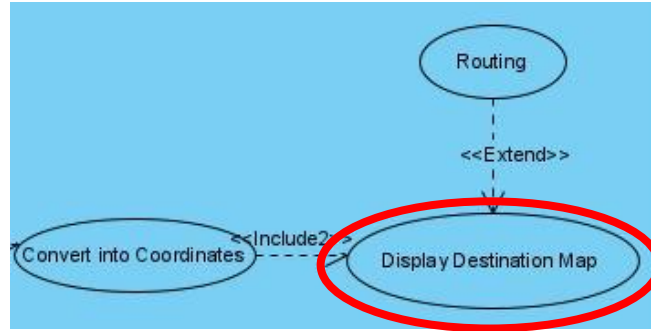
- Choice between nearest-car parks in the vicinity OR destination address.
- Display top 5 nearest car parks OR car parks that have similar addresses to the input.

Highlight 2 - Distance Output



- Calculate the distance between the user and the destination location.
- CSV gives X-Y Coord in SVY21 EPSG:3414 format.
- Have to convert to WGS84 to SVY21 to calculate distance.

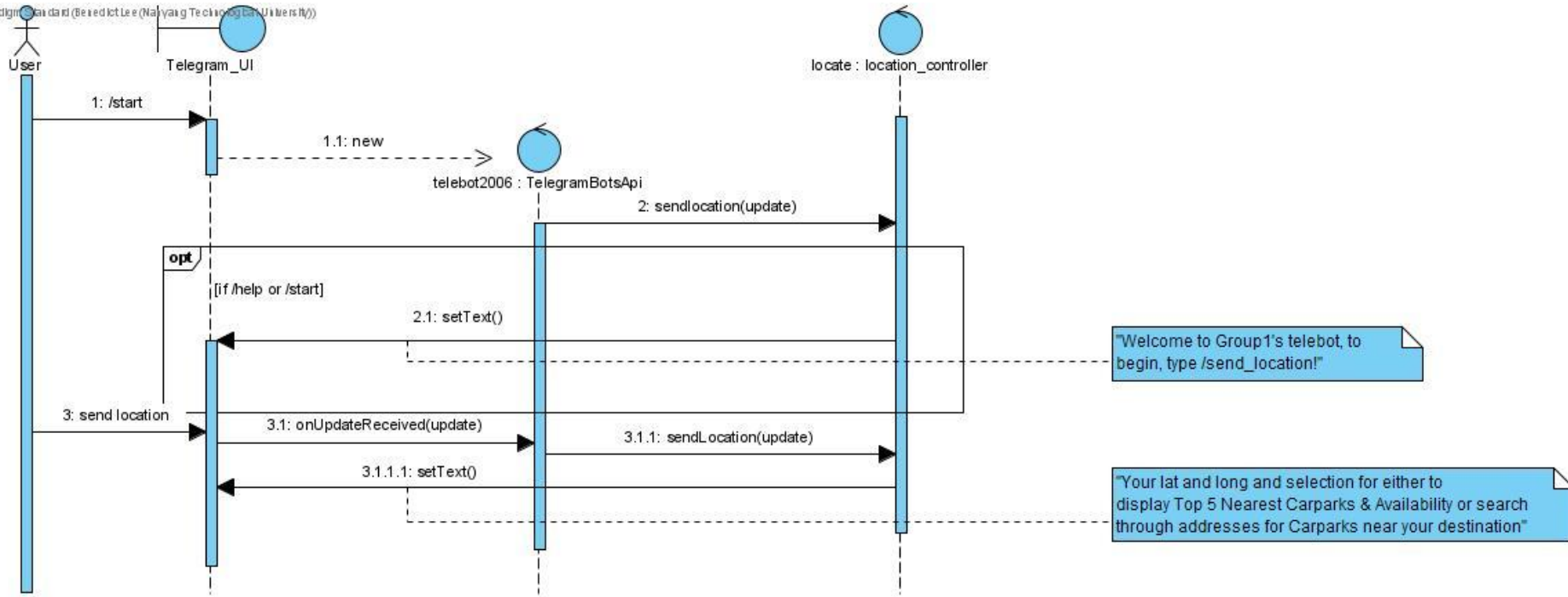
Highlight 3 - Display Map



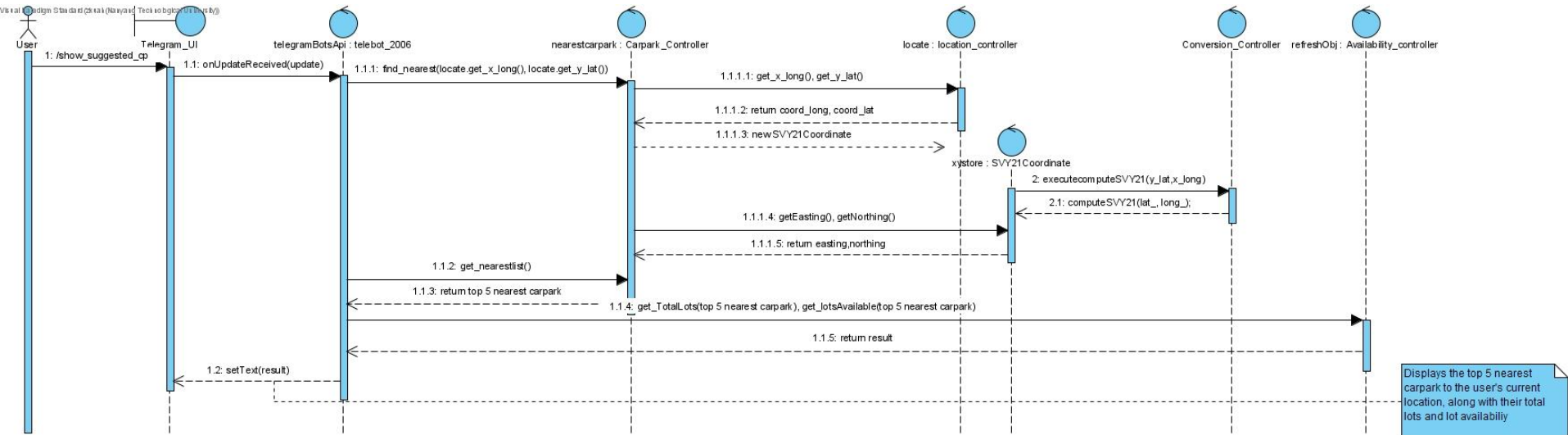
- Display the selected carpark by the user in a GUI map
- Convert back from SVY21 to WGS84 to plot in user's map application

input_address()

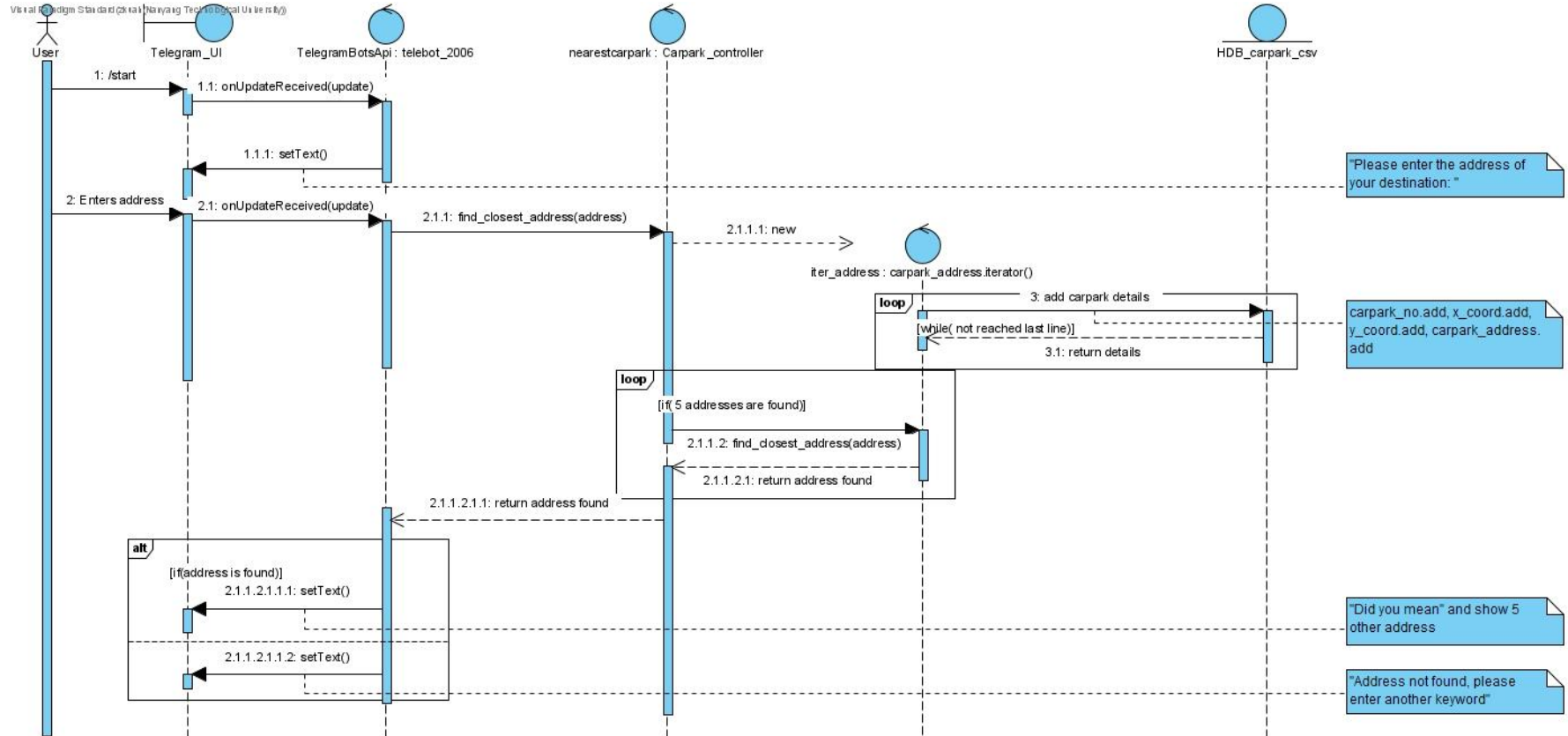
Visual Paradigm Standard (Beibei Li, Lee (Nanyang Technological University))



show_suggested_carpark()



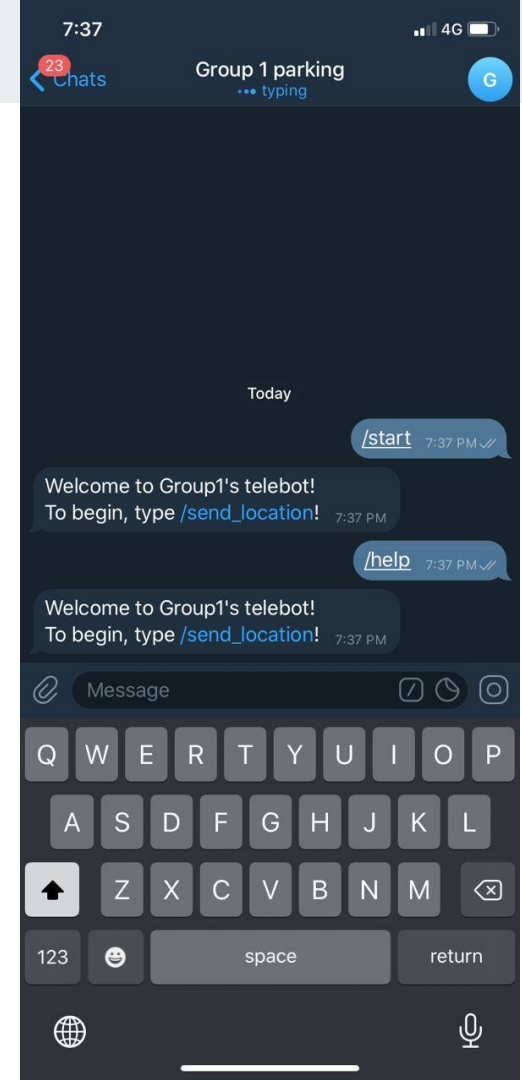
input_destination()



Test Cases (1)

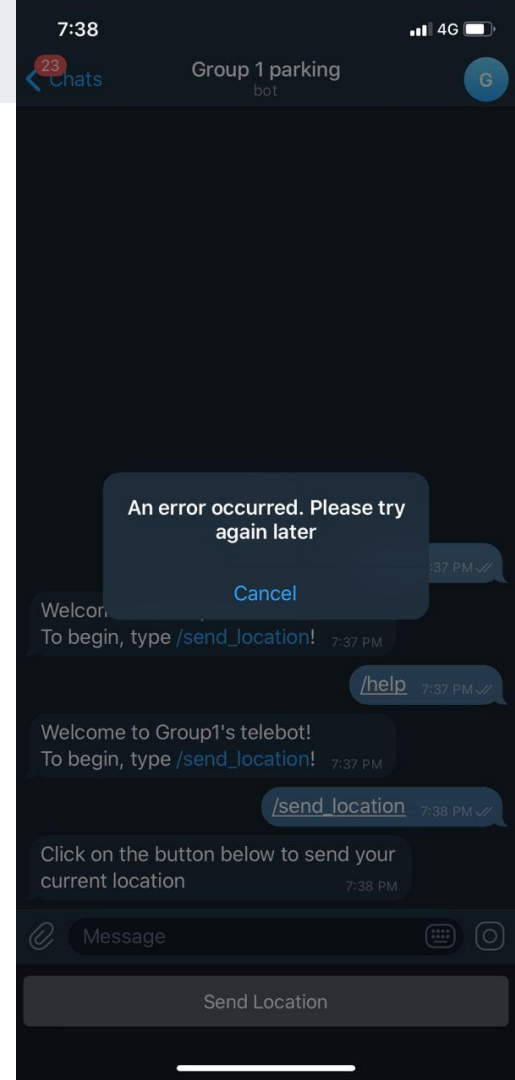
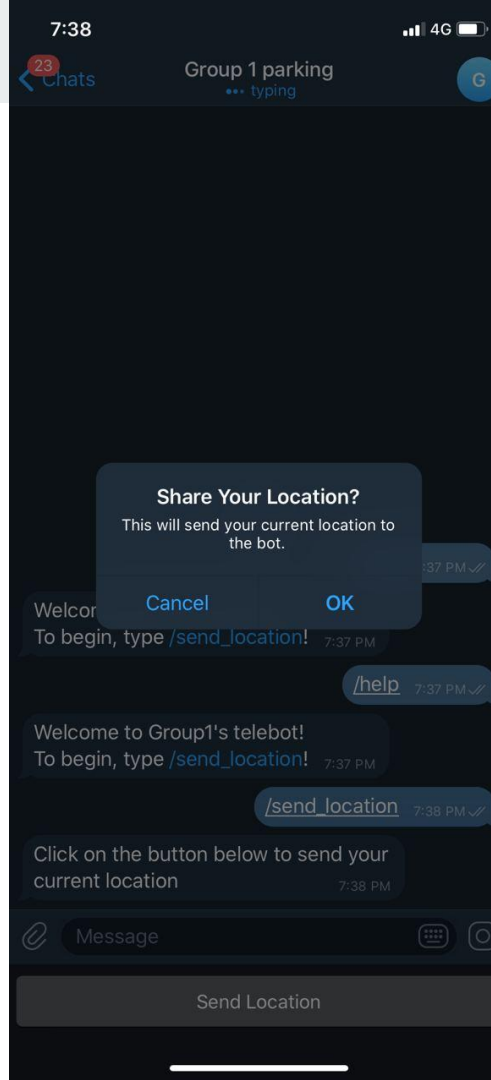
- User starts with /start command.
 - User is unaware, enters /help command.

User input: "/start", "/help"



Test Cases (2)

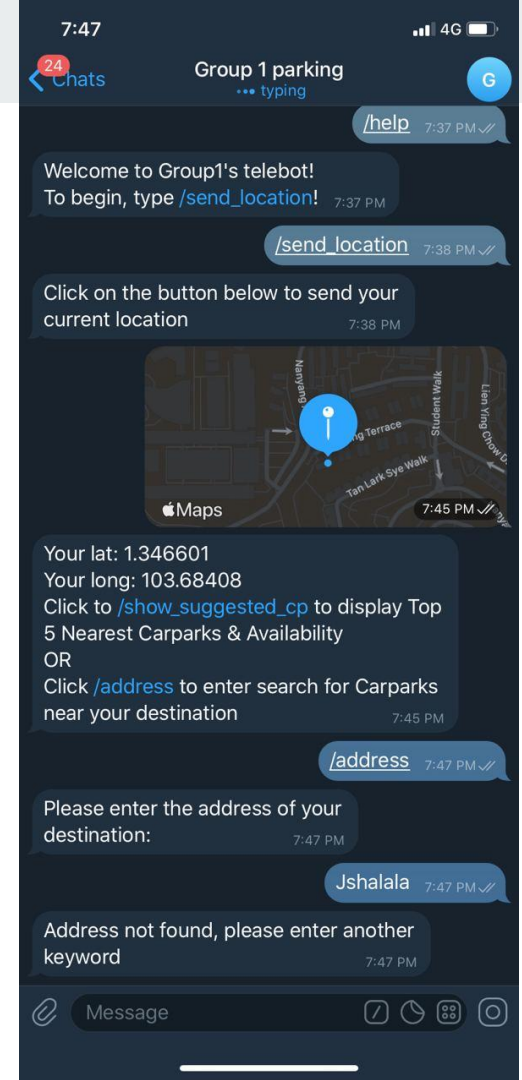
- Device's GPS or location setting is disabled.
 - Device will prompt an error.



Test Cases (3)

- Input Invalid address.
 - Show error message, prompt user to re-enter.

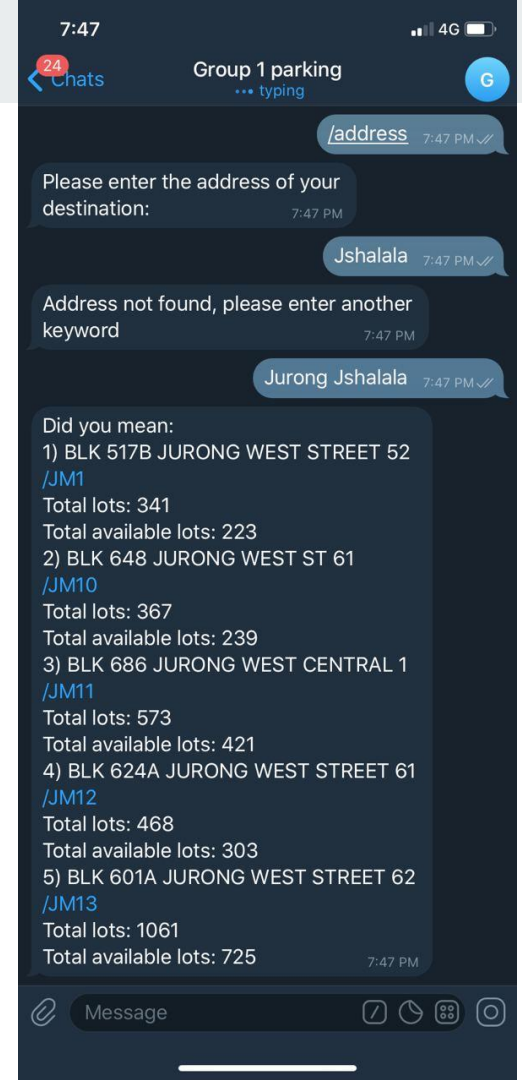
User input: "Jshalala"



Test Cases (4)

- Input partial address.
 - Show list of relevant data to complete partial address.

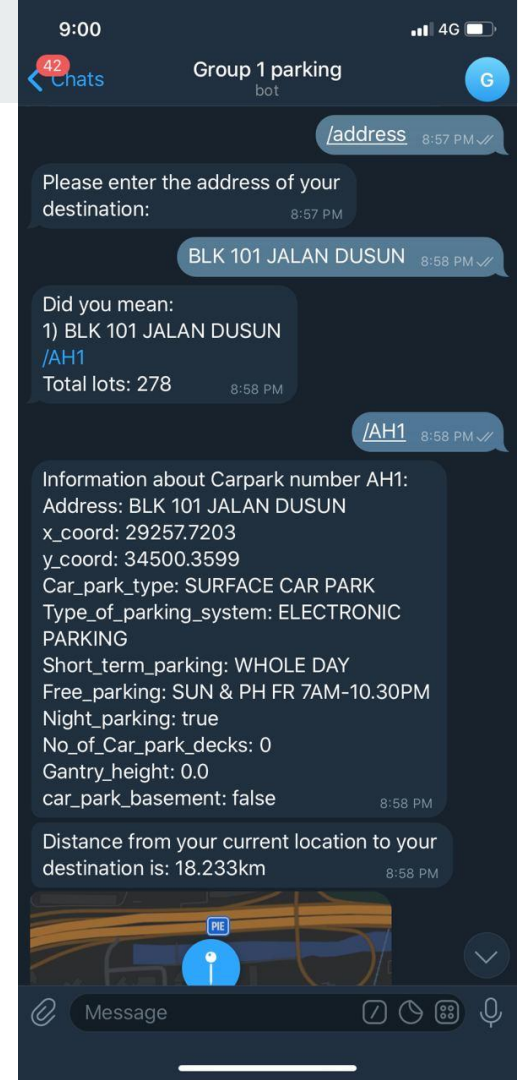
User input: "Jurong Jshalala"



Test Cases (5)

- Full target address
 - Show the complete address

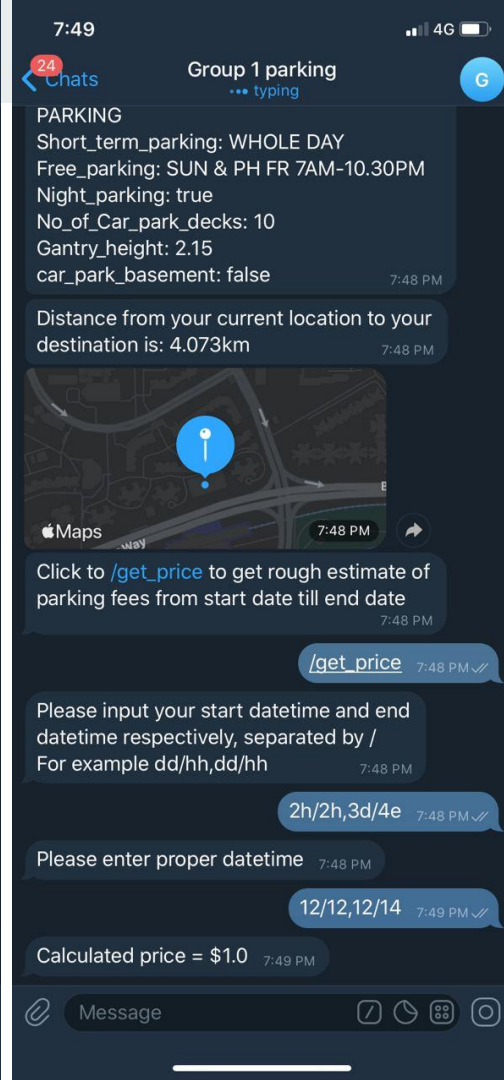
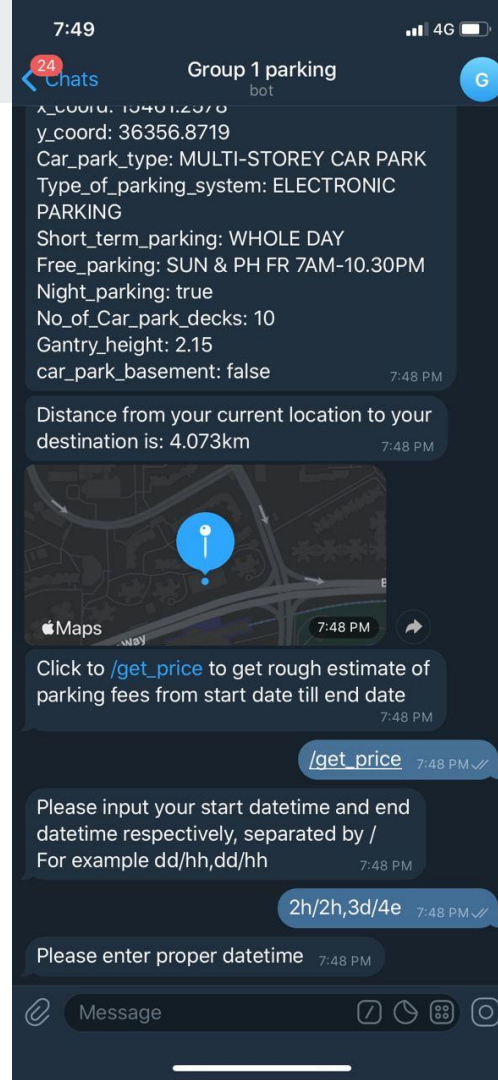
User input: "BLK 101 JALAN DUSUN"



Test Cases (6)

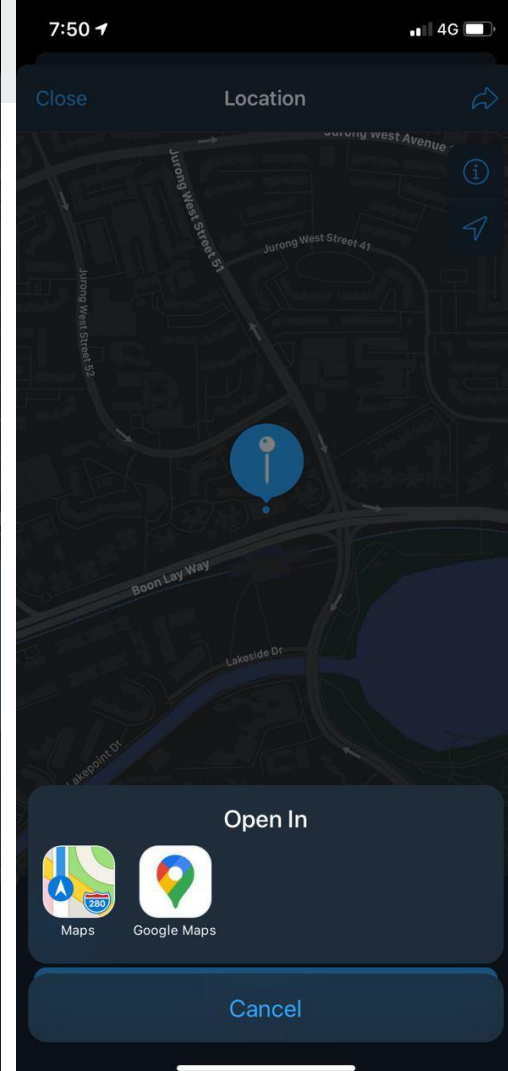
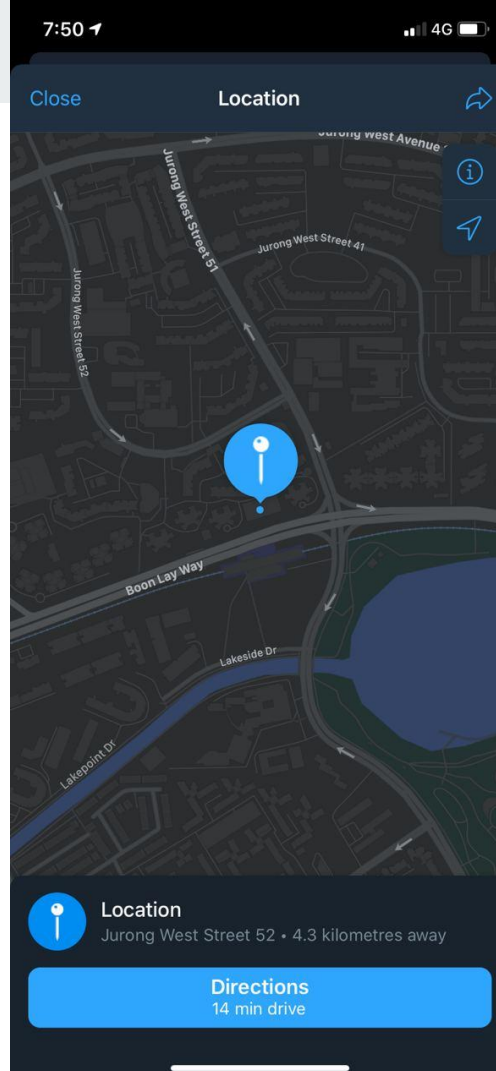
- Input incorrect date and time format.
 - Show error message, prompt user to re-enter.

User input: 2h/2h,3d/4e



Test Cases (7)

- Routing
 - Prompt user to open map application for navigation to destination.



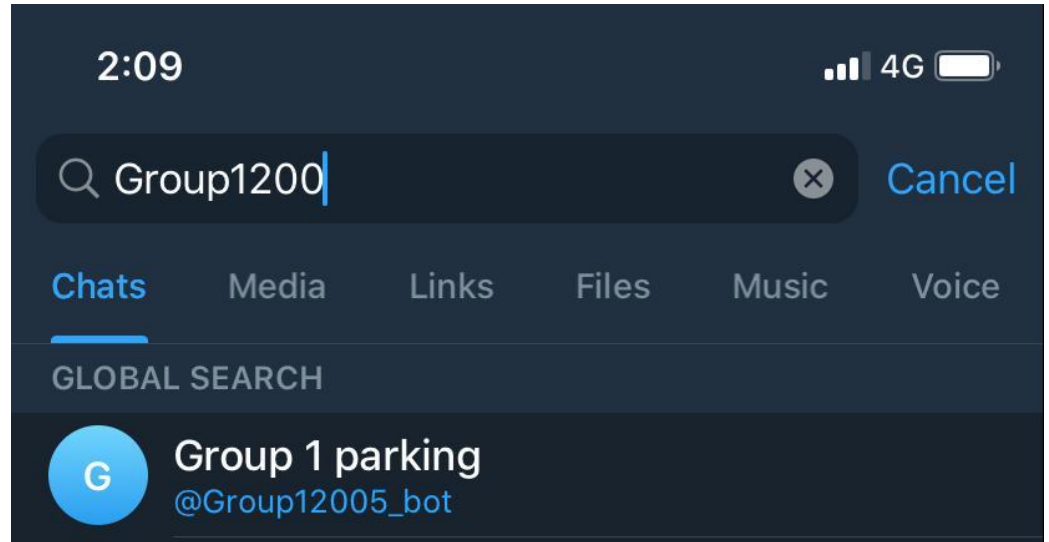
[illegible]



Demo



Try It Yourself!





Thank You
Q&A