

Cab Booking System

This Application is a cab booking platform to allow a rider to book a cab.

Main Functionality of this application

- * Register a rider
- * Register a driver/cab
- * A rider can book a cab
- * Update a cab's location
- * A driver can switch on/off his availability
- * Fetch history of all rides taken by a rider
- * End the Trip

Extra/Extended Features

- * Calculate Trip Distance and Total Fare
- * Display Fare and trip distance in ride history
- * Storing rider and driver data to file using Pickle

Customizability in Command-Line Parameters

Some of the command line parameters have default values like

1. No of drivers
2. Current location
3. Default operation for exit

And others etc.

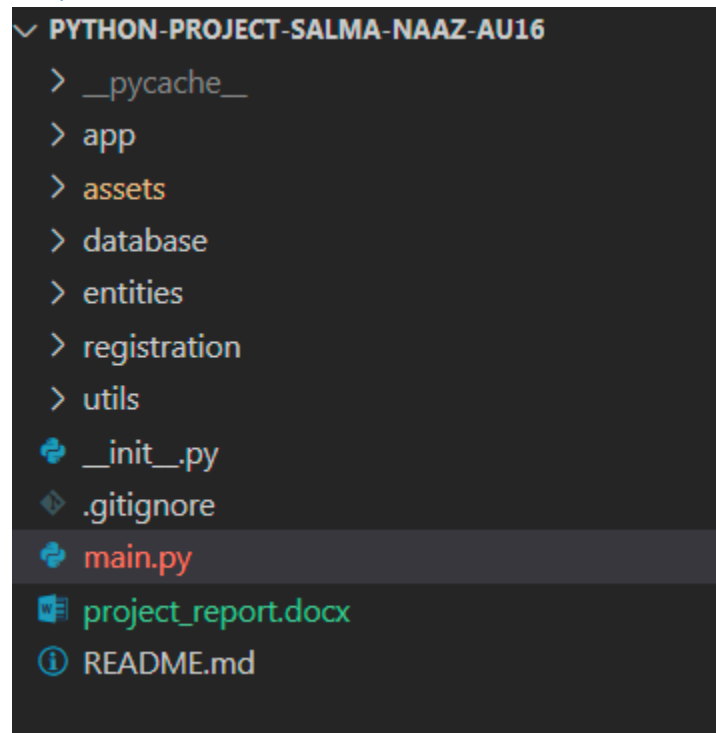
Execution Flow

First it will register driver, rider and book a cab with calculating distance and fare.

After first booking application will allow user to give choices and perform required operation until

""EXIT"" is selected

Project Structure



Launch Application

Execute main.py

```
PS C:\attainu\python-project-salma-naaz-au16> & 'C:\Users\admin\AppData\Local\Program
extensions\ms-python.python-2021.2.576481509\pythonFiles\lib\python\debugpy\launcher'
6\main.py'
Welcome to Cab booking system

Services available are :
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

Registering Driver and Cab details
Enter no of Drivers to Register, default = <1>:
```

Welcome Messages are displayed on launch and Proceed with services available.

Some of the input parameters accept default value if left empty.

1. Register Driver and Cab

```
PS C:\attainu\python-project-salma-naaz-au16> & C:/Users/admin/AppData/Local/Programs/
Python/Python38/python.exe c:/attainu/python-project-salma-naaz-au16/main.py
Welcome to Cab booking system

Services available are :
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

Registering Driver and Cab details
Enter no of Drivers to Register, default = <1>: 1
Enter your Name: driver1
Enter your Cab no: TS01AB1234
Enter Your Mobile Number: 9369741253
Enter <yes> if you are Available else <no>: yes
Enter Your Location Coordinate X: 100
Enter Your Location Coordinate Y: 200
Driver info has been stored to database

Driver Registered Successfully: {'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200}
```

2. Register Rider

```
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

Registering Driver and Cab details
Enter no of Drivers to Register, default = <1>: 1
Enter your Name: driver1
Enter your Cab no: TS01AB1234
Enter Your Mobile Number: 9369741253
Enter <yes> if you are Available else <no>: yes
Enter Your Location Coordinate X: 100
Enter Your Location Coordinate Y: 200
Driver info has been stored to database

Driver Registered Successfully: {'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200}

Registering Rider details
Enter Your Name: Rider1
Enter your city: Hyderabad
Your Mobile Number Please: 8569332255
Enter Your Location Coordinate X: 100
Enter Your Location Coordinate Y: 200
Rider info has been stored to database

Rider Registered Successfully : {'name': 'Rider1', 'location': 'Hyderabad', 'phone_no': '8569332255', 'x': 100, 'y': 200}
```

3. List all Riders and Drivers registered

```
Enter no of Drivers to Register, default = <1>: 1
Enter your Name: driver1
Enter your Cab no: TS01AB1234
Enter Your Mobile Number: 9369741253
Enter <yes> if you are Available else <no>: yes
Enter Your Location Coordinate X: 100
Enter Your Location Coordinate Y: 200
Driver info has been stored to database

Driver Registered Successfully: {'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200}

Registering Rider details
Enter Your Name: Rider1
Enter your city: Hyderabad
Your Mobile Number Please: 8569332255
Enter Your Location Coordinate X: 100
Enter Your Location Coordinate Y: 200
Rider info has been stored to database

Rider Registered Successfully : {'name': 'Rider1', 'location': 'Hyderabad', 'phone_no': '8569332255', 'x': 100, 'y': 200}
List of all Drivers and Riders are :

[{'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200}]
[{'name': 'Rider1', 'location': 'Hyderabad', 'phone_no': '8569332255', 'x': 100, 'y': 200}]
```

Please turn on the turn availability (yes/no) to book a ride.

4. Book and Ride

- a. Only 1 type of cab is available (Sedan), It will ask for cab type till correct type is entered.
- b. Booked cab will be marked as unavailable for other riders as cannot be shared.

```
Please type cab type available <sedan> to book a ride:: mini
Invalid selected car type.
Please type cab type available <sedan> to book a ride:: SUV
Invalid selected car type.
Please type cab type available <sedan> to book a ride:: sedan
Please enter destination location to book a ride:
enter x Coordinate: 500
enter y Coordinate: 600

List of all cab/drivers available: [{'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200}]

This driver driver1 is 0.0 KM from you

Nearest driver/cab : {'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 100, 'y': 200} booked and will reach your location for pick up
Updating Cab's availability as : no

Enjoy your ride!!
You have reached your destination
```

5. End Trip

- a. Calculate Total Distance and Fare
- b. Release the cab - mark cab available to book again

```
Your Trip Distance is: 565.685424949238 KM

Your destination has arrived!!

Total cost for trip to be paid is Rs. 2828.42712474619
Releasing cab
Updating Cab's availability as : yes
Updating Cab's new location : X = 500 Y = 600
```

6. Continue to use the services available as performed above till user enters Exit to end the application.

Available Services:

1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

Selected 4 for check ride history

```
Please select your choice below for services leave empty to exit application
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

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[{'rider': {'name': 'Rider1', 'location': 'Hyderabad', 'phone_no': '8569332255', 'x': 100, 'y': 200}, 'trip_distance': 565.685424949238, 'trip_fare': 2828.42712474619}]

Please select your choice below for services leave empty to exit application
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

█
```

Selected 3 for booking a ride again

```
Please select your choice below for services leave empty to exit application
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

3

Please type cab type available <sedan> to book a ride::  sedan
Please enter destination location to book a ride:
enter x Coordinate: 1000
enter y Coordinate: 2000

List of all cab/drivers available: [{'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 500, 'y': 600}]

This driver driver1 is 565.685424949238 KM from you
```

```
Nearest driver/cab : {'name': 'driver1', 'cabno': 'TS01AB1234', 'contact': '9369741253', 'available': 'yes', 'x': 500, 'y': 600} booked and will reach your location for pick up
Updating Cab's availability as : no

Enjoy your ride!!
You have reached your destination

Your Trip Distance is: 2012.4611797498108 KM

Your destination has arrived!!

Total cost for trip to be paid is Rs. 10062.305898749053
Releasing cab
Updating Cab's availability as : yes
Updating Cab's new location : X = 1000 Y = 2000

Please select your choice below for services leave empty to exit application
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:
```

Selecting 7 or leave empty to end application

```
Please select your choice below for services leave empty to exit application
1. Register Driver
2. Register Rider
3. Book Cab & Ride
4. Check Ride History
5. Switch On/Off Driver Availability
6. Update Cab's Location
7. Exit:

7

Thank you, visit again!!
```

Some important things used in project

Used Pickle module to store data into file and read from file.

Distance calculation to find the nearest available cab.

Fare calculation based on source and destination with fare per KM.

Identifying driver by driver name to update location and availability.

Future improvements:

We can design user interface for the program so a normal user can easily interact with it. We can add more features like displaying different types of cabs and sharing rides between different riders.