E-Vehicle Share System

User Manual

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1. System Requirements

1.1 Hardware Requirements

- **Computer:** need a normal computer or Macbook
- **Operating System:** The App requires the Windows 10 system or macos
- **CPU:** Normal CPU
- **Graphics Card:** Integrated Graphics

1.2 Software Requirements

Python: You need to download the Python3.10 or higher version.
SQLite: You need to down IDE which is support the SQLite database.(e.g. Visual Studio Code)

2. How to Play

2.1 Start

To start the App, run the main.py and follow the instructions.Then you can choose the role you want to act.

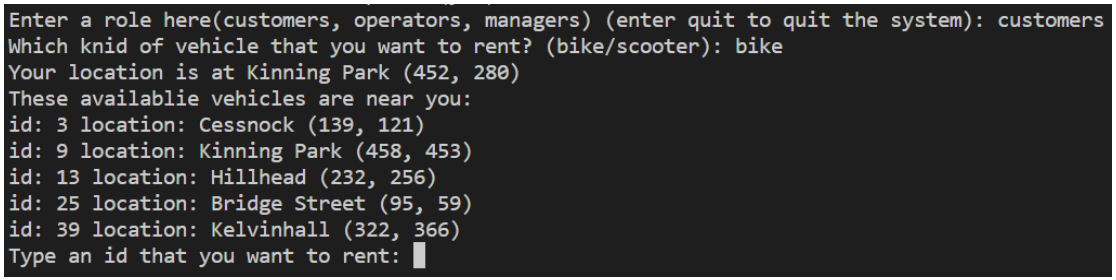

Figure 1

2.2 Customers

After selecting login customers, select the type of car rental. This displays the user area location and coordinates. It also displays information about vehicles and their location. As shown in Figure 2 .

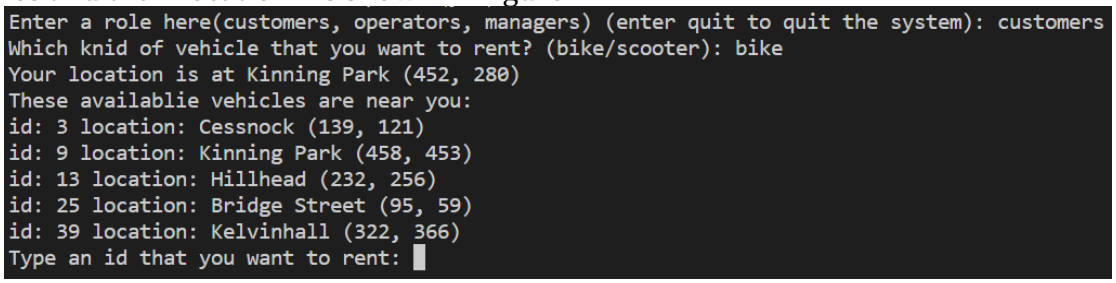

Figure 2

If there are no vehicles within a distance of 180, information on the location of all vehicles of this type is displayed. As shown in Figure 3.

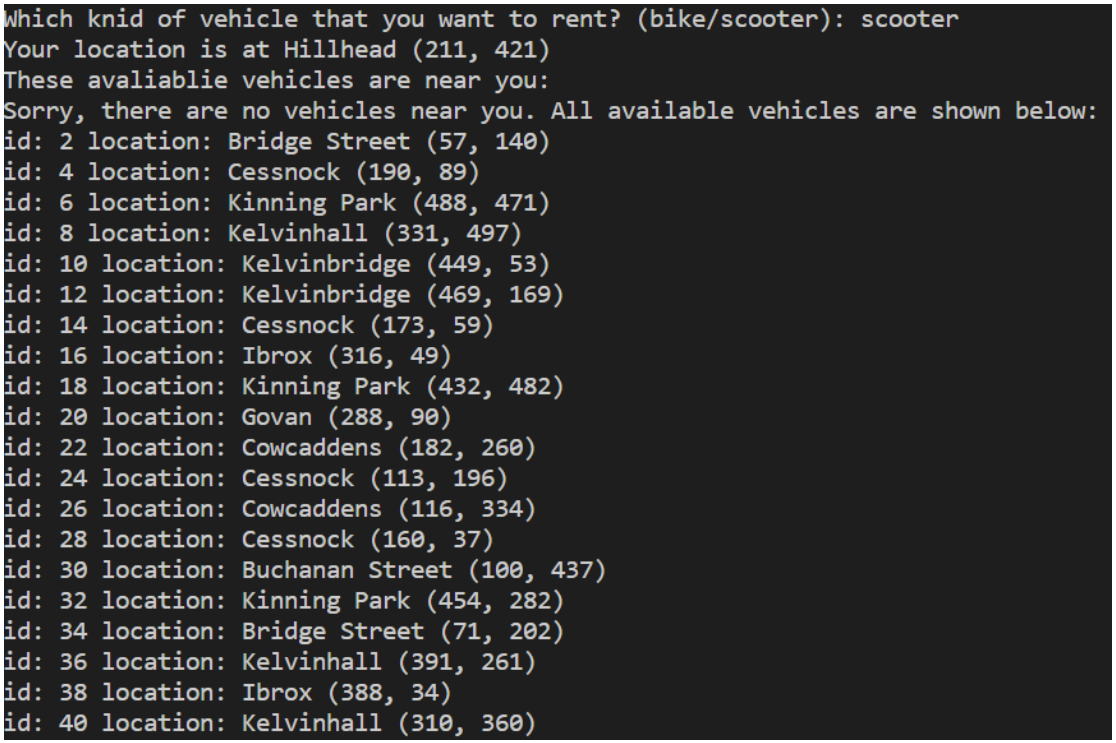

Figure 3

Next, select the rental car id, y is to continue riding the car, the car will continue to automatically move at random location coordinates. As shown in Figure 4.

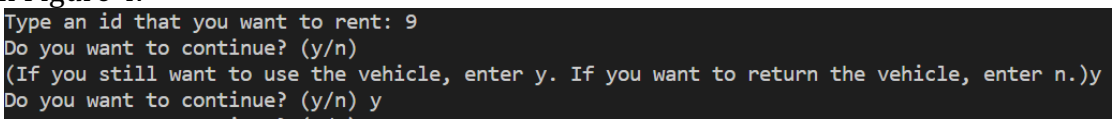

Figure 4

If the bike runs out of battery (y count > 20), it will be returned automatically and the running status will change to stopped. As well as displaying the contents of this order and the account balance. As shown in Figure 5.

```
Type an id that you want to rent: 3
Do you want to continue? (y/n)
(If you still want to use the vehicle, enter y. If you want to return the vehicle, enter n.)y
Do you want to continue? (y/n) y
Do you want to continue? (y/n) y
Do you want to continue? (y/n) y
Do you want to continue? (y/n) y
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Do you want to continue? (y/n) y
Do you want to continue? (y/n) y
Do you want to continue? (y/n) y
The vehilce battery is zero, it cannot work for now.
The vehicle has been returned, the location is Kelvinbridge (481, 68).
Your account have 5 pounds
You rode 11 seconds, and you rode bike, the time you rode is between 0 to 30 seconds
Your account will be charged 2 pound(s) automatically
Your account have 3 pounds.
Is this vehicle needs to be repaired(y/n)?
```

Figure 5

When the customers choice return bike. Shows the ride time, the type of tool used, the account balance before billing, the order price and the account balance after billing. As shown in Figure 6 .

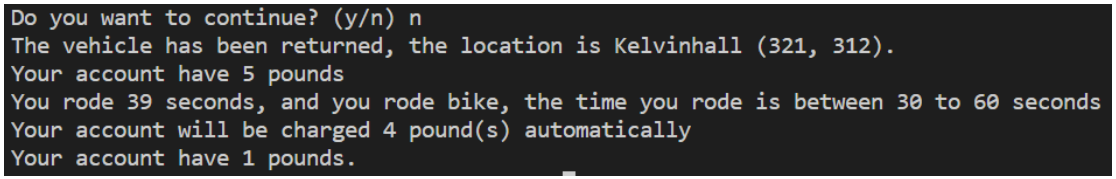

Figure 6

When the account balance is low, it will prompt for a minimum amount of money to be topped up. The account balance will be displayed when the top up is complete. As shown in Figure 7 in Appendix A.

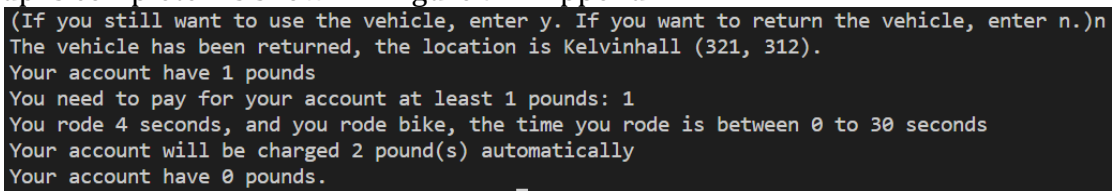

Figure 7

Select if repairs are required and return to the role selection screen. As shown in Figure 8 in Appendix A.

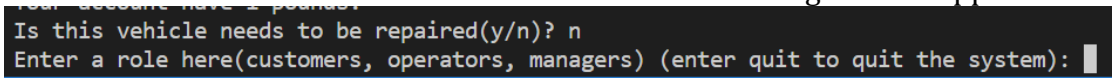

Figure 8

2.3 Operators

Select operators to enter the operators function, which will display the location information of all vehicles. As shown in Figure 9.

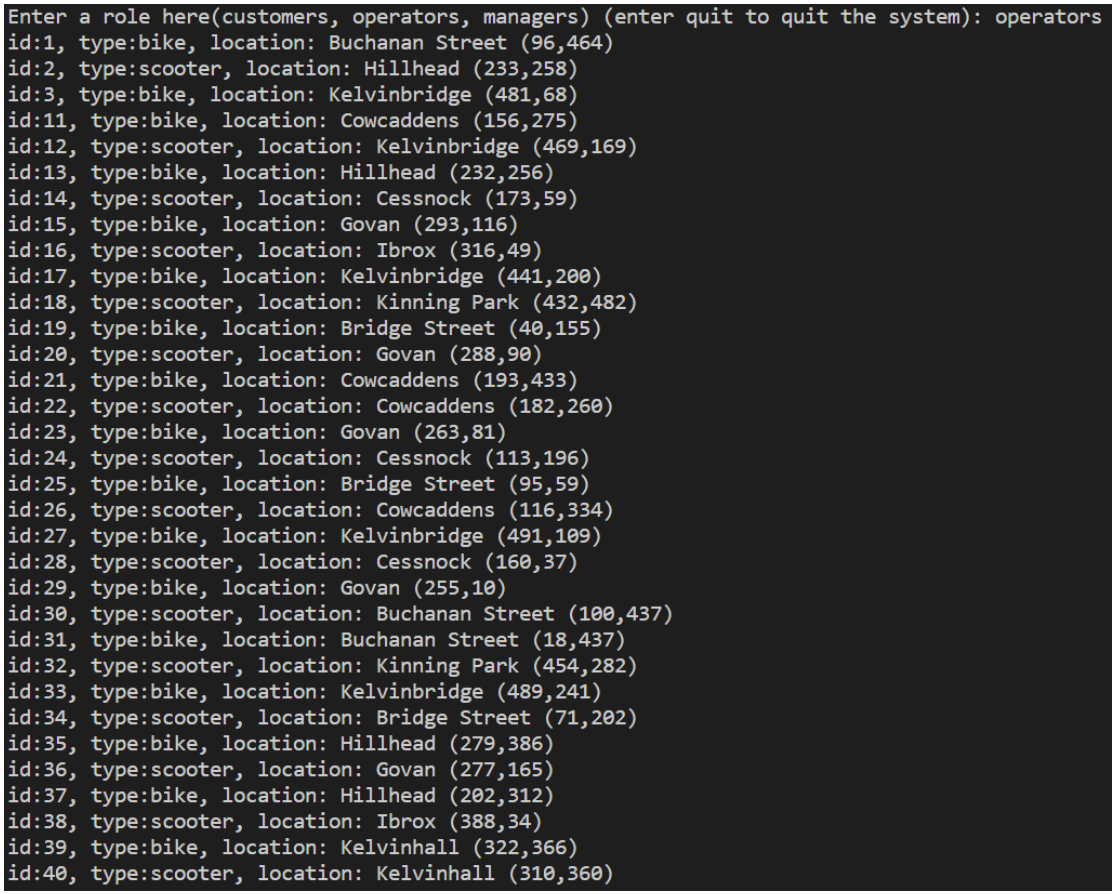

Figure 9

Next the id of the vehicle to be repaired is displayed and repaired manually. If there are no vehicles to be repaired it shows that there are no vehicles to be repaired. As shown in Figure 10, 11.

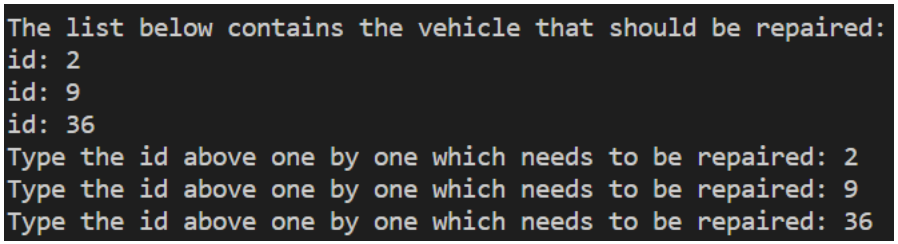

Figure 10

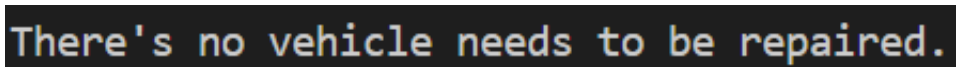

Figure 11

Next all vehicles that need to be charged are displayed and charged manually. If there are no vehicles to be charged the display shows that there are no vehicles to be charged. As shown in Figure 12,13.

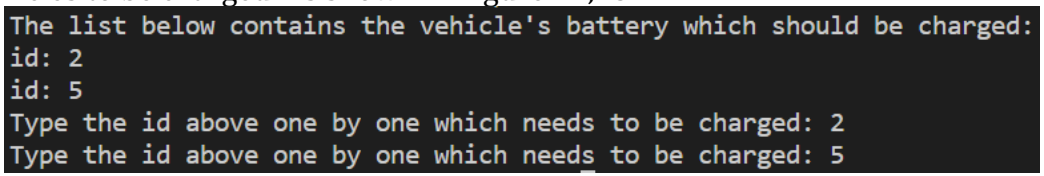

Figure 12

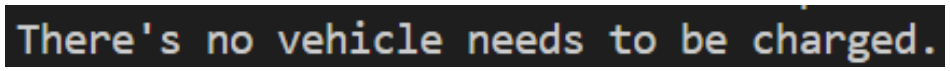

Figure 13

Operators can move the specified id vehicle to the specified name location. As shown in Figure 14 . Finally the updated position is displayed again. As shown in Figure 15 in Appendix A.

```
Do you wnat to move any vehicle (y/n)?
You can enter the place among (Bridge Street, Buchanan Street, Cessnock, Cowcaddens, Govan, Hillhead, Ibrox, Kelvinhall, Kelvinbridge, Kinning Park)
If you want to move, you can type y.y
Type an vehicle id which do you want to move (from 1 to 40): 40
Enter the name of the lacation: Hillhead
Do you wnat to move any other vehicle (y/n)? y
Type an vehicle id which do you want to move (from 1 to 40): 39
Enter the name of the lacation: Cessnock
Do you wnat to move any other vehicle (y/n)? n

Do you want to show all the vehicle's location again(y/n)?
```

Figure 14

```
Do you want to show all the vehicle's location again(y/n)? y
Show all the vehicle's location again:
id:1, type:bike, location: Buchanan Street (96,464)
id:2, type:scooter, location: Hillhead (233,258)
id:3, type:bike, location: Kelvinbridge (481,68)
id:4, type:scooter, location: Cessnock (190,89)
id:5, type:bike, location: Cowcaddens (106,282)
id:6, type:scooter, location: Kinning Park (488,471)
id:7, type:bike, location: Ibrox (373,159)
id:8, type:scooter, location: Kelvinhall (331,497)
id:9, type:bike, location: Kelvinhall (321,312)
id:10, type:scooter, location: Kelvinbridge (449,53)
id:11, type:bike, location: Cowcaddens (156,275)
id:12, type:scooter, location: Kelvinbridge (469,169)
id:13, type:bike, location: Hillhead (232,256)
id:14, type:scooter, location: Cessnock (173,59)
id:15, type:bike, location: Govan (293,116)
id:16, type:scooter, location: Ibrox (316,49)
id:17, type:bike, location: Kelvinbridge (441,200)
id:18, type:scooter, location: Kinning Park (432,482)
id:19, type:bike, location: Bridge Street (40,155)
id:20, type:scooter, location: Govan (288,90)
id:21, type:bike, location: Cowcaddens (193,433)
id:22, type:scooter, location: Cowcaddens (182,260)
id:23, type:bike, location: Govan (263,81)
id:24, type:scooter, location: Cessnock (113,196)
id:25, type:bike, location: Bridge Street (95,59)
id:26, type:scooter, location: Cowcaddens (116,334)
id:27, type:bike, location: Kelvinbridge (491,109)
id:28, type:scooter, location: Cessnock (160,37)
id:29, type:bike, location: Govan (255,10)
id:30, type:scooter, location: Buchanan Street (100,437)
id:31, type:bike, location: Buchanan Street (18,437)
id:32, type:scooter, location: Kinning Park (454,282)
id:33, type:bike, location: Kelvinbridge (489,241)
id:34, type:scooter, location: Bridge Street (71,202)
id:35, type:bike, location: Hillhead (279,386)
id:36, type:scooter, location: Govan (277,165)
id:37, type:bike, location: Hillhead (202,312)
id:38, type:scooter, location: Ibrox (388,34)
id:39, type:bike, location: Cessnock (105,247)
id:40, type:scooter, location: Hillhead (285,452)
Enter a role here(customers, operators, managers) (enter quit to quit the system):
```

Figure 15

2.4 Managers

Select the managers function. Enter the time period you wish to check. As shown in Figure 16.

```
Enter a role here(customers, operators, managers) (enter quit to quit the system): managers
Please enter a start_time using Y-m-d H:M:S style2022-11-5 16:00:00
Please enter a ending_time using Y-m-d H:M:S style2022-11-7 10:54:00
```

Figure 16

Here the current status of the bike movement appears (running, ready to run and in need of repair). As shown in Figure 17

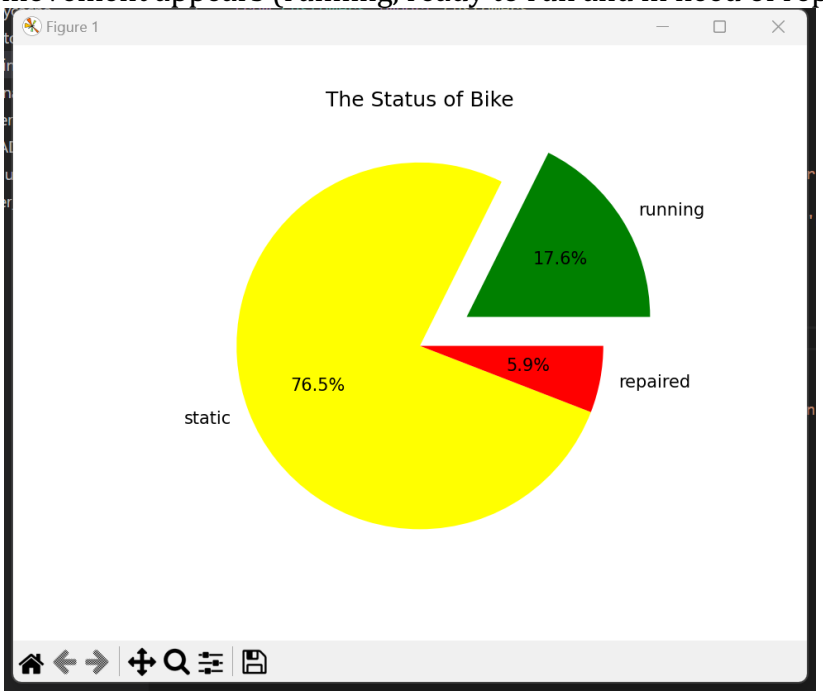

Figure 17

Here the current status of the Scooter movement appears (running, ready to run and in need of repair). As shown in Figure 18.

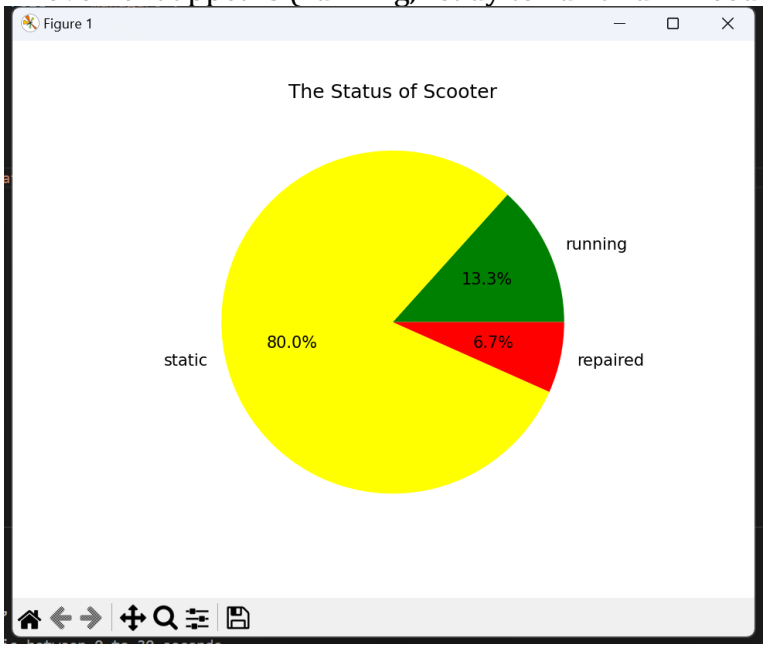

Figure 18

.Next, it shows the number of vehicles in use. As shown in Figure 19.

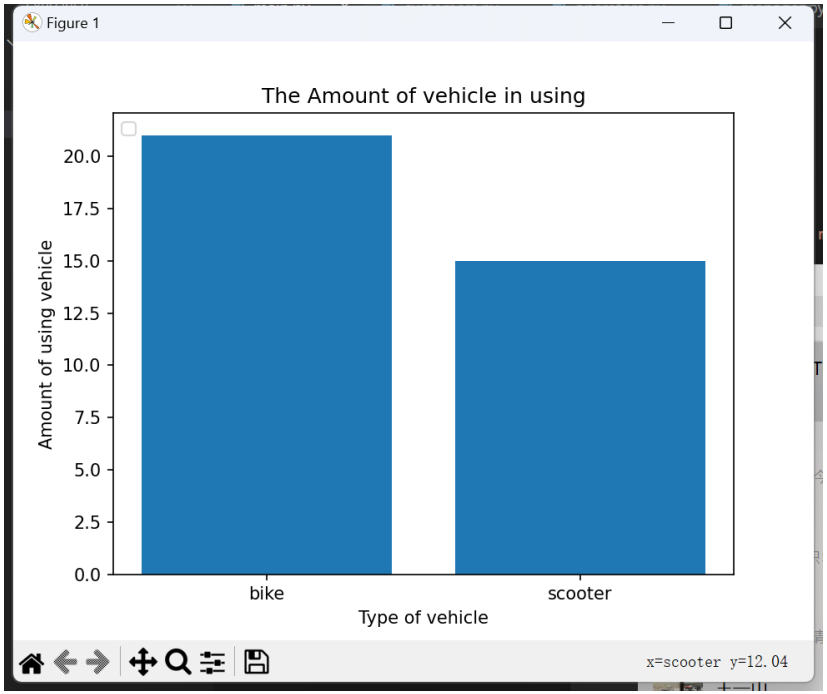

Figure 19

Next, it shows total and average time of bicycle use. As shown in Figure 20 in Appendix A.

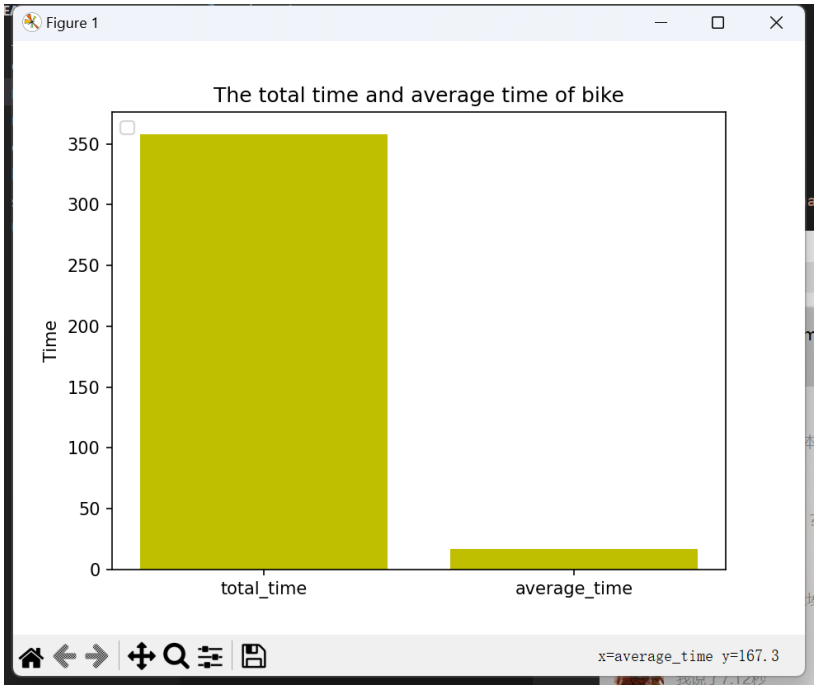

Figure 20

Next, it shows total and average time of scooter use. As shown in Figure 21 in Appendix A.

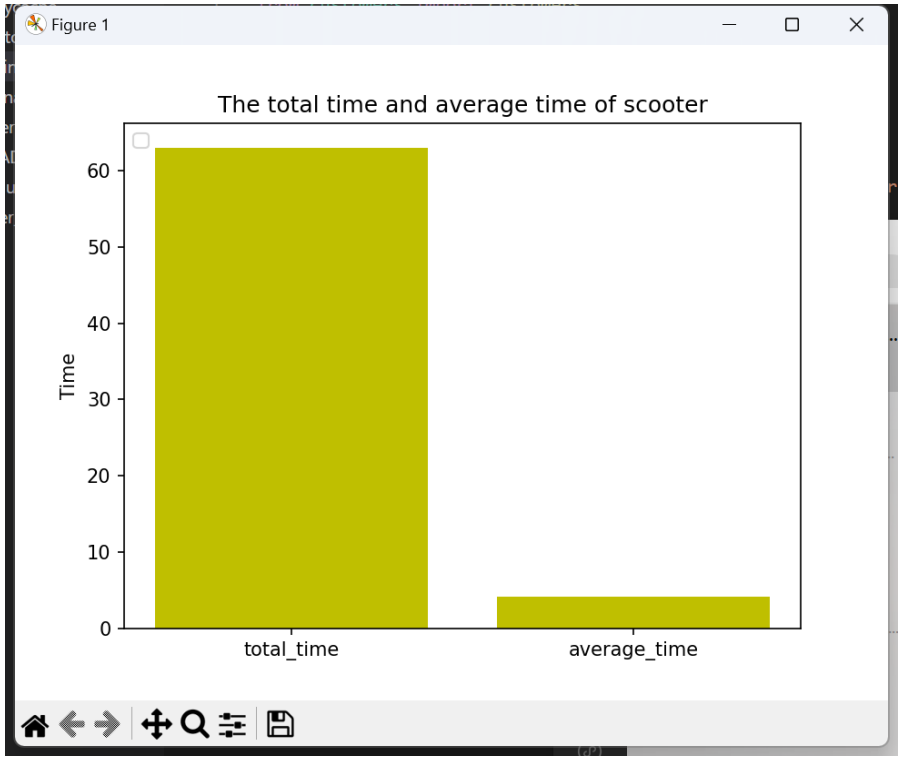
Figure 1
The total time and average time of scooter
Time
60
50
40
30
20
10
0
total_time
average_time
Figure 21