



# **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.

```
Enter a role here(customers, operators, managers) (enter quit to quit the system): customers
Which knid of vehicle that you want to rent? (bike/scooter): bike
Your location is at Kinning Park (452, 280)
These availablie vehicles are near you:
id: 3 location: Cessnock (139, 121)
id: 9 location: Kinning Park (458, 453)
id: 13 location: Hillhead (232, 256)
id: 25 location: Bridge Street (95, 59)
id: 39 location: Kelvinhall (322, 366)
Type an id that you want to rent: █
```

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 .

```
Enter a role here(customers, operators, managers) (enter quit to quit the system): customers
Which knid of vehicle that you want to rent? (bike/scooter): bike
Your location is at Kinning Park (452, 280)
These availablie vehicles are near you:
id: 3 location: Cessnock (139, 121)
id: 9 location: Kinning Park (458, 453)
id: 13 location: Hillhead (232, 256)
id: 25 location: Bridge Street (95, 59)
id: 39 location: Kelvinhall (322, 366)
Type an id that you want to rent: █
```

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.

```
Which kind of vehicle that you want to rent? (bike/scooter): scooter
Your location is at Hillhead (211, 421)
These available vehicles are near you:
Sorry, there are no vehicles near you. All available vehicles are shown below:
id: 2 location: Bridge Street (57, 140)
id: 4 location: Cessnock (190, 89)
id: 6 location: Kinning Park (488, 471)
id: 8 location: Kelvinhall (331, 497)
id: 10 location: Kelvinbridge (449, 53)
id: 12 location: Kelvinbridge (469, 169)
id: 14 location: Cessnock (173, 59)
id: 16 location: Ibrox (316, 49)
id: 18 location: Kinning Park (432, 482)
id: 20 location: Govan (288, 90)
id: 22 location: Cowcaddens (182, 260)
id: 24 location: Cessnock (113, 196)
id: 26 location: Cowcaddens (116, 334)
id: 28 location: Cessnock (160, 37)
id: 30 location: Buchanan Street (100, 437)
id: 32 location: Kinning Park (454, 282)
id: 34 location: Bridge Street (71, 202)
id: 36 location: Kelvinhall (391, 261)
id: 38 location: Ibrox (388, 34)
id: 40 location: Kelvinhall (310, 360)
```

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.

```
Type an id that you want to rent: 9
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
```

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  
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  
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  
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 .

```

Do you want to continue? (y/n) n
The vehicle has been returned, the location is Kelvinhall (321, 312).
Your account have 5 pounds
You rode 39 seconds, and you rode bike, the time you rode is between 30 to 60 seconds
Your account will be charged 4 pound(s) automatically
Your account have 1 pounds.

```

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.

```

(If you still want to use the vehicle, enter y. If you want to return the vehicle, enter n.)n
The vehicle has been returned, the location is Kelvinhall (321, 312).
Your account have 1 pounds
You need to pay for your account at least 1 pounds: 1
You rode 4 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 0 pounds.

```

Figure 7

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

```

Your account have 1 pounds.
Is this vehicle needs to be repaired(y/n)? n
Enter a role here(customers, operators, managers) (enter quit to quit the system):

```

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.

```
Enter a role here(customers, operators, managers) (enter quit to quit the system): operators
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: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: Kelvinhall (322,366)
id:40, type:scooter, location: Kelvinhall (310,360)
```

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.



```
The list below contains the vehicle that should be repaired:  
id: 2  
id: 9  
id: 36  
Type the id above one by one which needs to be repaired: 2  
Type the id above one by one which needs to be repaired: 9  
Type the id above one by one which needs to be repaired: 36
```

Figure 10

```
There's no vehicle needs to be repaired.
```

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.

```
The list below contains the vehicle's battery which should be charged:  
id: 2  
id: 5  
Type the id above one by one which needs to be charged: 2  
Type the id above one by one which needs to be charged: 5
```

Figure 12

```
There's no vehicle needs to be charged.
```

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 want 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 location: Hillhead
Do you want 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 location: Cessnock
Do you want 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

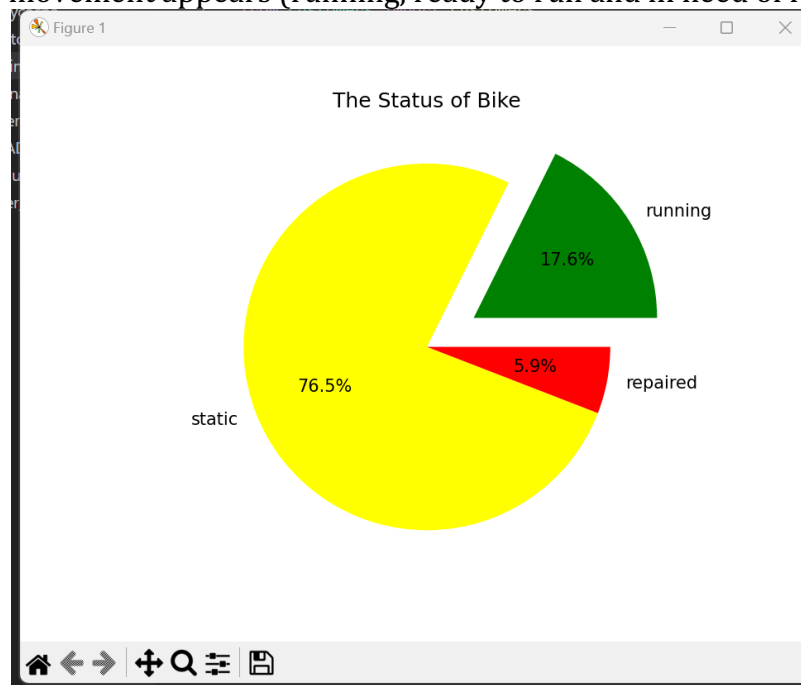


Figure 17

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

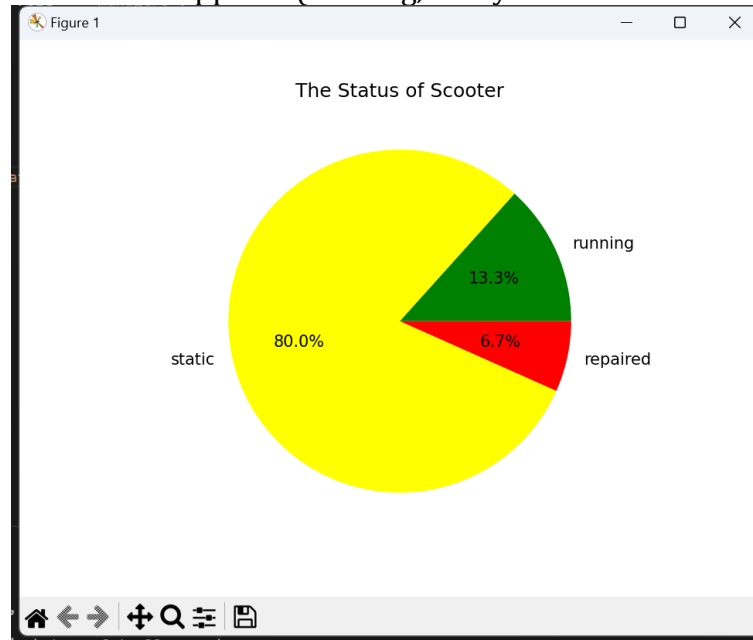


Figure 18

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

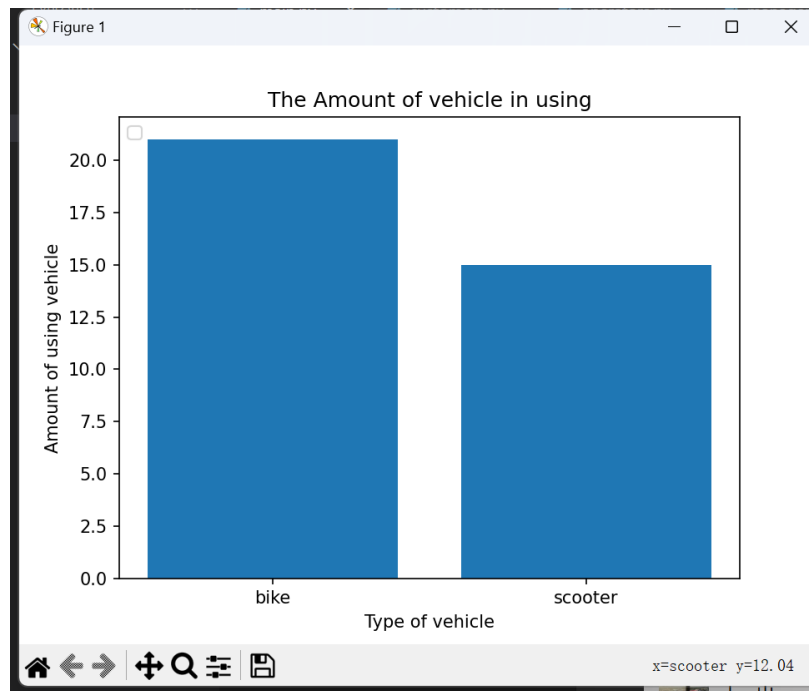


Figure 19

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

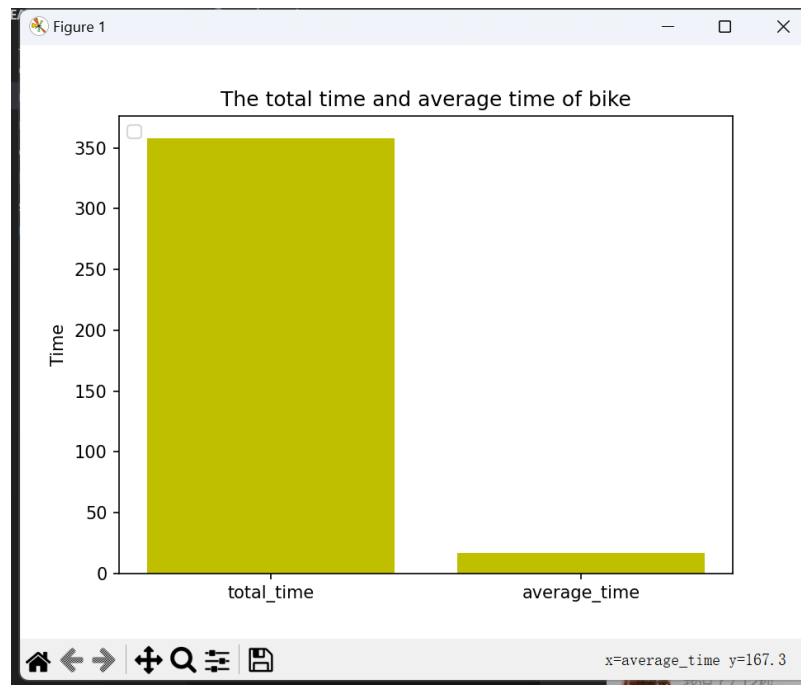


Figure 20

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



Figure 21