

# INSTRUCTION MANUAL

Command printed on Screen	Instruction
Enter the number of cities:	Enter a natural number only
Are city_i and city_j connected? y/n	y (if connected), n (if not connected)
Enter the distance between city_i and city_j:	Enter a positive number only
Enter the number of electric vehicles:	Enter a natural number only
Enter the source position of vehicle_i:	Enter an integer between 0 to (number of cities -1) (both included)
Enter the destination position of vehicle_i:	Enter an integer between 0 to (number of cities -1) (both included)
Enter initial battery charge of vehicle_i:	Enter a non-negative integer
Enter charging rate of vehicle_i:	Enter a positive number
Enter discharging rate of vehicle_i:	Enter a positive number
Enter maximum battery charge of vehicle_i:	Enter a positive number (not less than the initial battery charge)
Enter the average speed of vehicle_i:	Enter a positive number

**NOTE: THE CODE HAS TO BE RUN AGAIN IF ANY ONE OF THE FOLLOWING INPUTS IS NOT GIVEN ACCORDING TO THE INSTRUCTIONS**

```
Command Prompt
C:\Users\Ishaq\Documents\pyprog>python heuristicalgorithm.py
Enter the number of cities: 3
The cities are named as city_i where i ranges from 0 to 2
Are city_0 and city_1 connected?: y/n : y
Enter the distance between city_0 and city_1: 10
Are city_0 and city_2 connected?: y/n : y
Enter the distance between city_0 and city_2: 15
Are city_1 and city_2 connected?: y/n : y
Enter the distance between city_1 and city_2: 20
Enter the number of electric vehicles: 2
Enter the source position of vehicle_0: 0
Enter the destination position of vehicle_0: 2
Enter the initial battery charge of vehicle_0: 65
Enter the charging rate of vehicle_0: 5
Enter the discharging rate of vehicle_0: 2
Enter the maximum battery charge of vehicle_0: 100
Enter the average speed of vehicle_0: 1

Enter the source position of vehicle_1: 2
Enter the destination position of vehicle_1: 1
Enter the initial battery charge of vehicle_1: 67
Enter the charging rate of vehicle_1: 6
Enter the discharging rate of vehicle_1: 5
Enter the maximum battery charge of vehicle_1: 115
Enter the average speed of vehicle_1: 1

Vehicle 1
path: [2, 1]
time elapsed = 20.0
travel time = 20.0
total charging time = 0
total resting time = 0
current battery charge = 63.0

Vehicle 0
path: [0, 2]
time elapsed = 15.0
travel time = 15.0
total charging time = 0
total resting time = 0
current battery charge = 57.5

C:\Users\Ishaq\Documents\pyprog>
```