COMP601: Data Structures and Algorithms

Assignment 1 - Task1

Task 1 is simulation a car part system. User will have a menu to selection the action they want to do. User can park a car, check available car parks, check occupied car park, check a specific car-park status, check parking time for a car, and track total parking time when they are leaving the car park.

The data structure I designed can count how many cars is in the park, also will allow car object store into it, if the park already occupied, program will prevent user override the car object in it (e.g. Park No 1 already parked a car in, you cannot park another car into Park 1). Also, time will get for system, and use it to calculate the occupied time for each car, occupied time will also be show when method leavePark be used.

Sample output (from console)

Welcome to car park system

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

1

Function 1: show all available car parks

Available car park: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Which car park you want to park

2

Car No: 828, Checked in time: 19:24:08.365

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

2

Function 1: show all available car parks

Available car park: 0 1 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

3

Function 2: show all Occupied car parks

Occupied car park: 2

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

4

Which location you want check?

2

Function 3: show a car which parked in a specific car-park location

Car No: 828, Checked in time: 19:24:08.365

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

5

What is your car number?

828

Function 4: The parking time for any parked car

The Car parking time is :13.682999999999998 Seconds

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

6

Which location show you are parking?

2

Function 5: The total parking time of a car when its leaving the car park

Car No: 828, Checked in time: 19:24:08.365 is leaving.

The total parking time is :17.726999999999997 Seconds

1. parking your car

2. Show available car parks

3. Show occupied car parks

4. Show car parked at a location

5. Show your car parking time

6. Leaving car park

7. Stop Program

7

Good bye