

Programming Exercise – Car Park

Create a simulation of a car park. The program will record vehicles entering and exiting the car park, as well as the total balance of parking fees paid.

Requirements

Cars can park in the car park for \$2 per hour.
Trucks can park in the car park for \$3 per hour.

For example a car parked for 2 hours will pay \$4.
and a truck parked for 2 hours will pay \$6.

The program can also be asked for a balance report that will show how many vehicles have entered and exited, the number of spaces available and how much money has been paid so far.

Trucks take up 2 car spaces.

The requirements for the interface:

1. The user records vehicles entering and exiting the car park.
2. Upon exiting the car park a time in whole hours spent in the car park is also entered.
3. The user can request a balance report of the car park at any time.
4. The program can be exited at any time.
5. The program should validate user input.

Deliverables

- The solution submitted should include structure, source code, configuration and any tests or test code you deem necessary - no need to package class files.
- Solve the problem in Java, C# or in a specific language that you may have been directed to use.
- Solve the problem as though it were "production level" code.
- It is not required to provide any graphical interface.

In order to get around firewall issues we recommend the solution be packaged as a password protected zip file.

Examples

Example 1

Program: How many spaces does the car park have?

User: 10

User: ENTER CAR

User: ENTER TRUCK

User: REPORT

Program:

Cars Entered: 1
Trucks Entered: 1
Cars Exited: 0
Trucks Exited: 0
Parking Cars: 1
Parking Trucks: 1
Spaces available: 7
Fees paid: \$0

User: QUIT

Example 2

Program: How many spaces does the car park have?

User: 15

User: ENTER CAR

User: ENTER TRUCK

User: EXIT CAR 2

User: REPORT

Program:

Cars Entered: 1
Trucks Entered: 1
Cars Exited: 1
Trucks Exited: 0
Parking Cars: 0
Parking Trucks: 1
Spaces available: 13
Fees paid: \$4

User: QUIT