BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
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CS F213 (Object Oriented Programming) - Lab 3, Date: 21/08/24

Lab Problem Statement

You have a class **Car**. You have to declare three fields- **horsepower** and **fuel** of datatype int and **mileage** of datatype double. The default value is 100 for horsepower and 0 for fuel and mileage.

You also need to write three constructors:

a) with three inputs
b) with two inputs (horsepower and fuel)
c) with a Car as a parameter

(Note: no repetition of code must take place while writing constructors).

You also need to write the following methods

a) **setMileage()** with a return type **void** which increases the mileage of the object by horsepower * fuel units and set the fuel as 0;

(Read the instructions at the end of this document.)

Example:

Input 1:

2
100 20 5000.5
150 500 30000.5

Output 1:

100 0 7000.5
150 0 105000.5

Input 2:

5

```
100 20 500.5
50 0 400.75
2000 1200 35000
450 120 0
100 1 0.5
```

Output 2:

```
100 0 2500.5
50 0 400.75
2000 0 2435000.0
450 0 54000.0
100 0 100.5
```

Instructions:

Follow the steps given below to complete the OOP lab problem.

Step 1: Read the Lab Question

Read and understand the Lab problem given above.

Step 2: Edit the Solution Java file

Edit the solution java file to solve the given problem. For Lab 3, the solution java file is named: `L3_Q1_Soln.java`. Note that `L3` refers to Lab 3 and `Q1` refers to Question 1. The exact name of the solution java file will be dependent on the Lab and Question numbers.

Step 3: See the input and the expected output

Use the following command to see the input and the expected output for test case `T1`. Note that `L3` refers to Lab 3, `Q1` refers to Question 1 and `T1` refers to test case 1.

```
:~$ ./RunTestCase L3 Q1 YourBITSId T1
```

Use your own (13 character) BITS Id in place of `YourBITSId` in the above command. Type your BITS Id in upper case (capital letters). Ensure that you enter your BITS Id in 202XA7PSXXXXG format.

Run the command from within the folder containing the executables and the java files.

Step 4: Modify the solution java file

Modify the solution Java file and repeat Step 3 until all the test cases are passed. The test cases are numbered `T1`, `T2`, etc.

Step 5: Passing evaluative test cases

There are evaluative test cases whose expected output is masked. The evaluative test cases are numbered ET1, ET2, etc. The lab marks will be based on the evaluative test cases. Use the following command to check whether your solution passes the evaluative test cases.

```
:~$ ./RunTestCase L3 Q1 YourBITSId ET1
```

Ensure that your solution passes all the evaluative test cases ET1, ET2, etc. The expected output of the evaluative test cases are *hidden*.

Step 6: Create submission zip file

Use the following command to create the submission zip file.

```
:~$ ./CreateSubmission L3 YourBITSId
```

The first command line argument must correspond to the lab number and the second command line argument must be your 13 character BITS id.

The above command will create a zip file. The command will also list the evaluative test cases that your solution program has passed.

Step 7: Upload submission zip file

Upload the submission zip file created in Step 6. Do not change the name of the zip file or modify any file inside the zip file. You will not be awarded marks if the zip file is tampered with in any manner.