Lab Assignment 8

2021 – 2022 Spring, CMPE 211 Fundamentals of Programming II

The purpose of this assignment is to determine whether the speeds achieved by a high-speed train driver in two different train models are safe.

In this assignment, your program must have a Main class and Train class like in the below;

```
class Main {
   public static void main(String[] args) {

     STAR21 d1 = new STAR21 (420);
     d1.engineStart();

     System.out.println("----------New Entrance----------");

     WIN350 d2 = new WIN350 (350);
     d2.engineStart();

   }
 }

class Train {

   public String name() {
     return "Train";
   }

 }
```

You will have an abstract class name is “HighSpeedTrains” which will be children of Train class.

- It will hold topSpeed variable which is the same for all High Speed Trains, it is equal to 425 kmh.
- It will hold two abstract methods which are;

  abstract void engineStart();
  abstract void showSpeed();

- There will be two HighSpeedTrains model classes which are “WIN350” and “STAR21”. Both of these classes are created from HighSpeedTrains class.

- On each class you have to keep speed limit of the trains which is already defined before as 425 kmh. This information must be inherited from the **HighSpeedTrains** class.

- There is another variable you need will have to keep model name of the train which are “WIN350” and “STAR21”.

  - Also, you have to keep the driver speed request on these model classes.
  - In these model classes, you have to implement body of the **engineStart()** and **showSpeed()** methods.
- **showSpeed()** method will compare train speed limit with the driver speed request. If the driver requested speed is greater than the train speed limit, it will show the warning. Else, it will write an output that, it is safe to drive.

- **engineStart()** method will write the informations about the train and its model.

- You have to use **"Thread.sleep(x)"** commands between the messages while you showing.

- You can use between **1000-3000 ms** for these waiting time.

- Do not forget that, **showSpeed()** method must be implemented inside **engineStart()** Method.

Important Warning:

- All of your train information must be taken from the inherited class except for model names.

- After completing your laboratory assignment, do not lose your works that you already made. **You will have to use same project to complete the second phase of the laboratory assignment.**

Expected Results:

```
Engine is started!
Welcome to Train STAR21
Driver want to achieve 420 kmh speed
Let's check your speed If It is safe...
Limited Top Speed is: 425 kmh.
It is safe to drive at 420 speed!
---------------New Entrance-------------
Engine is started!
Welcome to Train WIN350
Driver want to achieve 350 kmh speed
Let's check your speed If It is safe...
Limited Top Speed is: 425 kmh.
It is safe to drive at 350 speed!
```