CS3733-D13 Pair Programming Assignment

Description

This assignment requires you to practice pair programming, reflect on the experience, and summarize the reflection and draw conclusions about whether the practice is one that supports your work style.

You will develop the program specified below with a pair-programming partner. During your programming session you will take notes about what you did, how much time you spent as the pilot, how much as the navigator, how often you switched roles, and so on. After you are done, you will write a summary that assesses the experience. Specifics on what you will deliver are detailed below. You will submit the work individually. If your partner is in the class he or she can submit the same code as their solution, but they will have a different assessment. Your partner does not need to be a member of the class.

Program specification

In class we began the development of the code for this assignment. The problem is rather simple.

> You need to keep track of frequent flyers for an airline. You will need to create a `FrequentFlyer` class to which you will be able to submit points earned and request rewards. The frequent flyers earn points for the miles they fly. There are four levels of frequent flyers: BASIC, SILVER, GOLD, and PLATINUM. One achieves the different levels by flying a required number of miles (we won't worry about whether the levels change based upon less miles flown in subsequent years). The following table describes the levels, the minimum miles needed to achieve the level, and the points received for each mile flown when a frequent flyer is at a specific level.

Level	Miles needed to fly achieve the level	Points awarded per mile flown
BASIC	0	1
SILVER	25,000	1.25
GOLD	50,000	1.5
PLATINUM	100,000	2

> When a frequent flyer completes any flight, the miles for the flight are entered into the frequent flyer's account (that is the FrequentFlyer class via an appropriate method), points are accumulated and entered into the frequent flyer's available point total. If the miles for the flight causes the level for the frequent flyer to increase, then the points are prorated. For example, say that a frequent flyer currently has flown 24,500 miles and now flies 1,000 more miles. The points awarded will be calculated as follows:
>
> - 500 miles @ 1 point / mile = 500 points (raises the miles flown to 25,000)
> - 500 miles @ 1.25 points / mile = 625 points (miles flown is now 25,500)

Frequent flyers can use points to pay for a flight. There are no mixed payments for this airline. It costs 10 points for every mile flown. So, if a flight is for 200 miles, the flyer needs 2000 points. The number of points accrued has no bearing on the frequent flyer's level.

Starter code

You are given the starting Eclipse project with this document in it. You simply choose **Import>Existing projects into workspace…** in Eclipse and then point it at the zipped archive. This will let you import the project called *PairProgrammingD13* into Eclipse. This is where you will work.

The starter code contains the following:

- A **src** and **test** source folder. The **src** folder is where all of your implementation code goes. You may use the **test** folder to store your tests, but this is not necessary for this assignment. It will be necessary for future assignments, so you may want to get used to doing this.
- Several implementation classes that I have written.
- A FrequentFlyer.java file that contains stubs for all of the code you need to implement. The javadoc comments describe what the methods should do.
- In the **test** folder is a file called FrequentFlyerTest. This contains some simple tests that are similar to what I will run on your code to ensure that you have correctly implemented the solution correctly.

Expectations

You will write code that is readable, correct, and commented. You should also write tests to show that your code works. I will have my own tests that I will run on your code.

When you are done with implementing the code, you will complete the Pair Programming assessment document that I have attached to this assignment.

Deliverables

You will put the Pair Programming Assessment in the top level of your Eclipse project and then export your project to a zip file. You then will submit the project (containing your assessment) to myWPI by clicking on this assignment and then supplying the file in the submission section.