COSC 1P02 Assignment 7

"Just the Stats, Ma'am"

***Due: Nov. 30, 2018 @ 4:00 pm** (late date Dec. 3 @ 4:00 pm)*

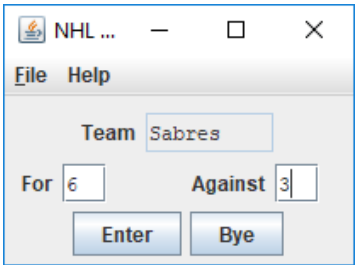
The emphasis for this assignment is employing a GUI and file processing in a program and working with multiple classes. In preparation for this assignment, create a folder called `Assign_7` for the DrJava project for the assignment.

Niagara Hockey League (NHL) Stats

The NHL (Niagara Hockey League) needs a program to report team statistics through the season. The data for the teams is kept in an `ASCIIDataFile` consisting of one record (line) per team containing: team name (`String`), goals for (`int`), goals against (`int`), points (`int`).

Each evening, a number of teams will play each other, some teams do not play (have a bye). When the games have concluded, the results for each team are used to update the statistics and generate a report.

A `BasicForm` prompting with each team name in turn, is used to enter the goals for and against the team, if it played that night, otherwise the team had a bye and no score is entered. The form might look like:



Where the score of 6-3 was just entered for the Sabres. Pressing `Enter` will record the score. It the team didn't play, the `Bye` button is pressed instead of entering a score. When the score is recorded, the goals for and against are added to the goals for and against the team and the points for the team are updated. If the goals for were more than against they are awarded 2 points, if the for and against are equal, they are awarded 1 point. Otherwise they get no points. The report (after updating) will be formatted as follows:

```
                        NHL Hockey Statistics

    Team     For Against Points
Sabres        38      28     20
Canadians     40      32     19
Bruins        41      40     11
Senators      31      40     13
Leafs         28      50      9
```

Write a program which reads the supplied data file, obtains the new scores (form) and produces an updated file (`ASCIIOutputFIle`) and report (`ReportPrinter`).

You must use two classes in this program. Amongst other things, the `Team` class should include a method:

```
public void play ( int gF, int gA ) {
```

where `gF` is the goals for in the game and `gA` are the goals against in the game. The method `play` updates the goals for, goals against and points for the team.

Hints:

1. Start by writing a loop which reads the data file until EOF. After you read each record write it out to the `ASCIIOutputFile`. Verify that the output file matches the input file.
2. Design a report using `ReportPrinter`. Write the statistics to the report as well as the new data file (Note: these are still the original statistics). Verify the format and contents of the report.
3. Create a `BasicForm` with the required fields. Integrate it in the code for part 2. Each time through the loop load the team name into the `Team` field. Read the other 2 fields on `Accept` and update the statistics. Now the updated statistics will be printed and written to the new file.

Submission:

Details regarding preparation and submission of assignments in COSC 1P02 are found on the COSC 1P02 Sakai Site as `Assignment Guidelines` under `Course Documents`. This document includes a discussion of assignment preparation, programming standards, evaluation criteria and academic conduct (including styles for citation) in addition to the detailed assignment submission process copied below.

To prepare and submit the assignment electronically, follow the procedure below:

1. Ensure your submission folder (`Assign_7`) contains the DrJava project for the assignment.
2. Using DrJava, print (as a pdf file, e.g. using "printer" `Microsoft Print to PDF` or similar) the `.java` files of your two classes for the assignment using the name *`ClassName`*`.pdf` where *`ClassName`* is the class name (i.e. same name as the `.java` file) and save the `.pdf` files at the **top level** of the submission folder (i.e. directly within `Assign_7`).
3. Run the program using the following data as input (i.e. to the form):

```
Sabres:     for 6   against 3
Canadians:  for 5   against 2
Bruins      bye
Senators:   for 3   against 6
Leafs:      for 2   against 5
```

4. When the program presents the `Print` dialog for the `ReportPrinter` choose `Microsoft Print to PDF`. When it presents the `Save` dialog, save the file as `report.pdf` at the **top level** of the submission folder (i.e. directly within `Assign_7`).

5. Create a `.zip` file of your submission by right-clicking on the top-level folder (i.e. `Assign_7`) and selecting `Send to/Compressed (zipped) folder`. A zipped version of the folder will be created. Use the default name (`Assign_7.zip`).
6. Log on to Sakai and select the COSC 1P02 site.
7. On the `Assignments` page select `Assignment 7`. Attach your `.zip` file (e.g. `Assign_7.zip`) to the assignment submission (use the `Add/Remove Attachments` button and select `Browse`). Navigate to where you stored your assignment and select the `.zip` file (`Assign_7.zip`). The file will be added to your submission. Be sure to check the `Honor Pledge` checkbox. Press `Submit` to submit the assignment. You should receive a confirmation email.

DrJava

The `.zip` folder you submit should contain the project folder, including all files relevant to the project—the `.java` and `.class` files for the assignment—and the `.pdf` files for program listings and output at the top level.

Other Platforms

If you are using an IDE other than DrJava to prepare your assignment, you must include the `.java` source files and the `.pdf` files described above for each part as well as an executable file (likely `.class` or `.jar`) that will execute on the lab machines.