**CSC 2220 – Programming in Java**
**Fall 2020 Semester, Block A**
**Programming Assignments 4 and 5**
**Due Date: Friday, September 25, 2020, by 11:55pm, to Moodle(?)**

# General Rules of Engagement

Unless otherwise stated, you are not to collaborate on this, or any, assignment. Refer to the Cheating Policy in the syllabus for more information.

When you turn in on Moodle, you'll probably have several Java classes to submit. Submit everything via .zip file. All of the .java files that are necessary.

Although you won't necessarily see a deduction, do take care to make sure spelling and spacing have been addressed and are correct.

Make sure to comment your code. You should have a header for each of your .java files, which includes name and description of what the class does. You should also have comments throughout your code. Failure to do so will result in a loss of points.

No late work will be accepted. If you are up against a deadline and Moodle isn't responsive for some reason, remember you can always email your zip file to me, at rjh7g@mcs.uvawise.edu for no penalty. Just remember to use common sense.

Make sure that you name things meaningfully. This is just good programming practice and a way to self-document your code beyond writing comments.

# Programming Assignment Description

We need to get our digitized wooden baseball game up and running. You're allowed to work in pairs for this assignment.

The first thing that needs to be accomplished is how to determine where the teams come from. Ask the user:

```
Select an option for the Away team
1) Use the default Away team.
2) Load a file containing stats for the Away team (you'll need
to know the file name).
3) Create my own Away team.
Your selection:  1
Select an option for the Home team
1) Use the default Home team.
2) Load a file containing stats for the Home team (you'll need
to know the file name).
```

```
3) Create my own Home team.
Your selection:  1
```

Next, display whether we're in the top/bottom of an inning and that inning number. For every play display what base runners are on what base. A play should then be determined:

```
Top of the 1st inning.
Up to the plate: Fernando Tatis, Jr.
Single!
0 outs.

First Base: Tatis, Jr.
Second Base:  (Empty)
Third Base:  (Empty)

Up to the plate: Ryne Sandberg
Fly out.
1 out.

First Base: Tatis, Jr.
Second Base:  (Empty)
Third Base:  (Empty)
```

Remember that you'll need to clear the bases after each half-inning. Also, you'll need to display the current runs and hits each team has. The notation of Mid is used to signify that the top of an inning has finished; End is used where the bottom half of an inning is finished.

```
Team         Runs  Hits
Away            4     4
Home            0     0
Mid 2
```

Lastly, print runs by inning and box score information for each team once the game has completed. Unlike what you see in this example, you'll need some headers…

```
Team         Runs  Hits
Away           28    24
Home            7     9
End 9

End of the game.

Team       1   2   3   4   5   6   7   8   9
Away       4   0   6   4   4   0   6   0   4
Home       0   3   0   2   1   0   0   1   0
```

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fernando | Tatis, Jr. | ss | 5 | 5 | 2 | 0 | 1 | 0 | 1 | 3 | 2 | 0 | 0.800 | 0.625 | 0.400 |
| Ryne | Sandberg | 2b | 5 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0.200 | 0.429 | 0.200 |
| Bryce | Harper | lf | 5 | 4 | 3 | 0 | 1 | 1 | 7 | 2 | 1 | 0 | 1.600 | 0.714 | 0.600 |
| Roberto | Clemente | cf | 6 | 4 | 5 | 1 | 3 | 1 | 5 | 1 | 1 | 0 | 2.500 | 0.857 | 0.833 |
| Tony | Gwynn | rf | 4 | 2 | 1 | 0 | 1 | 0 | 1 | 3 | 2 | 0 | 0.750 | 0.571 | 0.250 |
| Nolan | Arenado | 3b | 6 | 2 | 1 | 0 | 1 | 0 | 3 | 1 | 3 | 0 | 0.500 | 0.286 | 0.167 |
| Albert | Pujols | 1b | 7 | 5 | 6 | 2 | 1 | 1 | 3 | 0 | 0 | 0 | 1.857 | 0.857 | 0.857 |
| Johnny | Bench | c | 6 | 2 | 2 | 0 | 0 | 1 | 3 | 1 | 3 | 0 | 0.833 | 0.429 | 0.333 |
| Hank | Aaron | dh | 7 | 3 | 3 | 0 | 1 | 1 | 4 | 0 | 1 | 0 | 1.143 | 0.429 | 0.429 |
| Tim | Hudson | p | | 9 | 3 | 9 | 7 | 8 | 4 | 13 | | | 7.00 | 1.33 | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rickey | Henderson | cf | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0.000 | 0.200 | 0.000 |
| Mike | Trout | rf | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0.200 | 0.200 | 0.200 |
| Adrian | Beltre | 3b | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.000 | 0.000 | 0.000 |
| David | Ortiz | dh | 4 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 1.250 | 0.500 | 0.500 |
| Frank | Thomas | 1b | 3 | 2 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 2.667 | 0.750 | 0.667 |
| Cal | Ripken, Jr. | ss | 4 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0.750 | 0.250 | 0.250 |
| Craig | Biggio | 2b | 4 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0.500 | 0.250 | 0.250 |
| Ken | Griffey, Jr. | lf | 4 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1.000 | 0.250 | 0.250 |
| Mike | Napoli | c | 3 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0.667 | 0.500 | 0.333 |
| Nolan | Ryan | p | | 9 | 13 | 24 | 28 | 14 | 5 | 8 | | | 28.00 | 4.11 | |

Feel free to reuse classes we've used for previous assignments.

Ideas:

- Create a class that has nine batters and a pitcher. This class might also have other information, such as location and team name.

- There's a way to do the above with the roster polymorphically. You'll just have to figure out how to handle it.

- Bonus if you get the file I/O mechanism working. Read in players with their stats as well as write the updated stats to files after the game. Number of points TBD.

- Teams will be assigned at random. Whoever is left out has the option to work with me. I'll help you out when you get into a major rut, especially.

- We'll spend some of class time on Friday, September 18, to get started on this.

**Turn in your files to Moodle by 11:55pm, Friday, September 25. As usual, all files need to be submitted via zip file.**