

## More Basketball (a.k.a. Basketball, Stage 2)

To receive full credit, you must follow the steps and record reflections as you make progress. This assignment assumes that you already completed the **Basketball** assignment.

The Basketball specifications remain in place. However, now players play in various contests and could be asked at any time to give their stats (the hit streak, percentage, or raw data) for any contest they have been in. There are unit tests that will test this functionality. It may be that your original design allowed you to do this, in which case great job- you are already done with this new part of the assignment!

The other additional feature we are requiring is that it must be possible that for any given player, you must be able to report the game in which they had the best shooting streak and also the game in which they had the highest percentage.

(New methods are provided in a BasketballMain class that you need to implement)

### **Part A: UML diagram of your new design DUE FRIDAY by 11:55pm!**

Create a UML diagram to accomplish these new requirements. Start with your final coded UML version and try to re-use as much of it as possible. It may require a total redesign, but try to make use of functionality that you have. This should be created using a computer generated graphics (NOT handwritten) – use [UMLet](#) (easy drag and drop) or [PlantUML](#) (sort of a coding language which is what we use to generate diagrams for class). PlantUML has a [Google Doc chrome extension](#) which can be convenient to use from the web.

**To submit it**, (1) checkout the MoreBasketball project from SVN. (2) Save a pdf of your UML diagram in the project in the “uml” package. (3) Commit both the UML source file (.uxf if UMLet) and the pdf (be sure to select the Basketball project before choosing “commit” and check to see that it sees the new file). If you used PlantUML, just save and commit a text file with the link to the google doc of your UML.

### **Part B: Implement Your (New) Design DUE Sunday by 11:55pm**

Using your UML design, create code that implements the design of the UML. It is quite possible that you had a problem in your original UML (this is OK!). If you discover you have to make changes to your design, then create a new UML diagram and write a summary on what you had to change and why (see reflection question #1,2,3 in part C). Our goal here is to assess if you can successfully translate UML-to-code, code-to-UML, and also understand on a more concrete level why design principles can make your code easier to use.

### **Part C: Reflection DUE Sunday by 11:55pm**

Write in responses to the questions provided in the reflection\_questions.txt file located in your Basketball repository.

**Starter Files:**

You are given two starting files and a test file:

*BasketballUtility* - this gives you a function to generate random variables in a repeatable way (same as Basketball)

*BasketballMain* - this allows you to run commands from the console (You will want to copy and paste \*SOME\* of your code from the Basketball assignment into here, but be careful and do not replace the entire file, as there is new code in here that you will need to use).

In particular, you are asked to implement the following **new methods**:

```
public String handleGetBestStreakContestName(String playerName ) {  
public String handleGetBestPercentageContestName(String playerName ) {
```

You are also given sample text to enter in your complete code to test it out. These are located in file(s) labeled input\*.txt in the main Basketball folder.

## Sample output

Welcome to BasketBall. Enter commands. Type 'exit' to end.

**create-player Abby 0.6**

Log: player "Abby" created

**create-contest Grandtoss1 42**

Log: contest "Grandtoss1" created

**add-player-to-contest Abby Grandtoss1**

Log: player "Abby" added to contest "Grandtoss1"

**run-contest Grandtoss1**

Log: Contest "Grandtoss1" was run

**view-contest-report Abby Grandtoss1**

Reporting Stats for Player: Abby in Contest: Grandtoss1

Raw Data: \_X\_XXX\_X\_\_XX\_\_\_\_XXX\_X\_XXX\_XX\_XXXXXXXX\_X

Hit Streak: 7

Percentage: 57.14285714285714%

Log: Viewing report on Abby in contest: Grandtoss1

**create-contest Grandtoss2 42**

Log: contest "Grandtoss2" created

**add-player-to-contest Abby Grandtoss2**

Log: player "Abby" added to contest "Grandtoss2"

**run-contest Grandtoss2**

Log: Contest "Grandtoss2" was run

**view-contest-report Abby Grandtoss2**

Reporting Stats for Player: Abby in Contest: Grandtoss2

Raw Data: \_XX\_XXXXX\_XX\_X\_X\_XX\_X\_XX\_XX\_XX\_X\_XX\_

Hit Streak: 5

Percentage: 59.523809523809526%

Log: Viewing report on Abby in contest: Grandtoss2

**get-player-best-streak Abby**

Abby's best streak was in the game "Grandtoss1"

\_X\_XXX\_X\_\_XX\_\_\_\_XXX\_X\_XXX\_XX\_XXXXXXXX\_X

With 7 shots made in a row!

Log: player "Abby" best streak reported.

**get-player-best-percentage Abby**

Abby's best percentage was in the game "Grandtoss2"

\_XX\_XXXXX\_XX\_X\_X\_XX\_X\_XX\_XX\_XX\_X\_XX\_

With 59.523809523809526% of shots made!

Log: player "Abby" best percentage reported.