

Basketball Warm Up:

Consider the following scenario:

A customer would like to run a simulation of basketball players that compete in shooting contests. Each basketball player has a name and an accuracy which reflects the chance that he or she will make a given shot. A shooting contest will have a title and a certain number of shots that are included. During a shooting contest, each player takes all of their shots before the next player then has a turn to take all of their shots. The customer would like to be able to add multiple players to a contest, decide when the contest is run, and be able to view a report about a given contest for a specific player. One piece of information to report for a contest is the total percentage of shots made. Another piece of information to report is the maximum number of shots made in a row. Finally, there should be a way to view the hits and misses (via textual representation) of a player like this:

```
__X__X__XX__XXXX__X__X
```

Where an “X” indicates a made shot and “_” indicates a miss. In the above example, the maximum hit streak was 4 because four shots were made in a row (XXXX).

Your assignment is to develop code to allow this simulation. You do not need to write any unit tests, you can simply write a main method to test out your code and show that it is working.

We have provided a `BasketballMain.java` and a `BasketballUtility.java` that are for you to start from, however, you are free to create more classes as you see fit.

To simulate if a shot is made, you can use a random number generator. We provide an example of this in the `BasketballUtility.java` main method. You should use the static method:

```
double x = BasketballUtility.getRandomDouble();
```

to get your random numbers which will be between 0 (inclusive) and 1 (exclusive) for determining if a particular shot is missed or not. You can use an accuracy level to determine if a shot is made by comparing the random number to the accuracy. There is example code showing how this can be done inside the `BasketballUtility.java` main method.

We have created this method for you because while it is random, it is deterministic, meaning that it will produce the same random numbers each time. This is useful for debugging, however, if you want to disable the deterministic nature and want it to be random each time, you can look at the comments in `BasketballUtility` to see how to do so.