

Programming and Logic I

Basketball Player ArrayList Assignment

Create a program called <yourName>BBArrayList.java. This program will open a file, basketballplayers.txt, for reading. This input file contains basketball player information. Your program will create a method called fillBBArrayList() that will read from the file and fill a BasketballPlayer ArrayList. Then, you will create a method called printBBPlayers() that will print the contents of the ArrayList.

Files to submit:

- <yourName>BasketballPlayer.java (the most recent one, from Lecture Module 12)
- <yourName>BBArrayList.java

BBArrayList.java

main()

Create an ArrayList of type BasketballPlayer. Then call two methods, fillBBArrayList() and printBBPlayers(), with the ArrayList as the argument. The main method should have about three lines of code.

*Note your ArrayList is of type BasketballPlayer. It is NOT of type String. You are creating ONE ArrayList.

fillBBArrayList()

This method defines one parameter, an ArrayList of type BasketballPlayer.

The input file includes information about a number of basketball players. For each player, their name, team, position, shot attempts, and shots made are included. The file provided includes information for seven players, but the file may contain information for any number of players. However, the format of five lines for each player will be the same and the information will be in the same order.

Iterate through the file using a while loop.

Inside the loop

- obtain all the information for that player (i.e., read five lines of data; you can store the values in variables)
- create a BasketballPlayer object using that data
- add the BasketballPlayer object to the ArrayList.

When the method completes using the provided file, the ArrayList will contain seven BasketballPlayer objects.

printBasketballPlayers()

This method defines one parameter, an ArrayList of type BasketballPlayer. Iterate through the ArrayList and print the basketball player information using the displayPlayer() method in the BasketballPlayer class.

Notes:

- Hard code the name of the file, basketballplayers.txt, into your program.
- You'll need to use the Scanner `nextLine()` method to get name, team, position. The `nextInt()` method can be used to get the numeric values. In the loop, after you have acquired all the values for a player, you'll need a "dummy" call to `nextLine()` to get rid of the remaining newline character.
- Make sure the method `printBBPlayers()` is printing the contents of the ArrayList *passed* to the method. Do not create an ArrayList in this method.
- Make sure field goal percentage is displayed in the output. This should already be a part of BasketballPlayer's `displayPlayer` method, which you should be using as you iterate through the ArrayList. No reason to reinvent the wheel!

Upload your completed `<yourLastName>BBArrayList.java` and `<yourLastName>BasketballPlayer.java` files to Blackboard.

The following page contains the output of your program:

```
> run ConwayBBArrayList
-----
Basketball Player: Russell Westbrook
Team: Houston Rockets

Position: Point Guard

Shots Made: 145
Shot Attempts: 354

Field Goal Percentage: 41.0
-----
Basketball Player: Kawhi Leonard
Team: LA Clippers

Position: Forward

Shots Made: 144
Shot Attempts: 328

Field Goal Percentage: 43.9
-----
Basketball Player: James Harden
Team: Houston Rockets

Position: Shooting Guard

Shots Made: 215
Shot Attempts: 496

Field Goal Percentage: 43.3
-----
```

Basketball Player: Nikola Jokic
Team: Denver Nuggets

Position: Center

Shots Made: 112
Shot Attempts: 248

Field Goal Percentage: 45.2

Basketball Player: Joel Embiid
Team: Philadelphia 76ers

Position: Center

Shots Made: 123
Shot Attempts: 271

Field Goal Percentage: 45.4

Basketball Player: Paul George
Team: LA Clippers

Position: Small Forward

Shots Made: 82
Shot Attempts: 183

Field Goal Percentage: 44.8

Basketball Player: Pascal Siakam
Team: Toronto Raptors

Position: Power Forward

Shots Made: 188
Shot Attempts: 403

Field Goal Percentage: 46.7

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