

# ITP 109: Introduction to Java Programming

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## Assignment 6

### Goal

In this assignment you will create a program that manipulates the data from CSV team roster files. The program will track basic basketball statistics. Doing so you will practice...

- Creating methods
- Using ArrayLists
- Working with *encapsulated* classes

### Requirements

**TeamUSC Class Methods That You Must Complete:**

**public void printPlayer(String nameOfPlayer)**

- Takes in a string which is the name of the player
- Finds that player in the ArrayList
- Calls the print() method on the given player

**public void printPlayer(int numberOfPlayer)**

- Takes in a number which is the basketball number of the player
- Finds that player in the ArrayList
- Calls the print() method on the given player

**public void printBestPlayer()**

- Finds the player with the highest overall score in the ArrayList
- Calls the print() method on that player
- DOES **NOT** USE SORTING (**DO NOT** CALL A SORT METHOD)

**public void printShortestPlayer()**

- Finds the player with the shortest height in inches, in the ArrayList
- Calls the print() method on that player
- DOES **NOT** USE SORTING (**DO NOT** CALL A SORT METHOD)

**public void printTallestPlayer()**

- Finds the player with the tallest height in inches, in the ArrayList
- Calls the print() method on that player
- DOES **NOT** USE SORTING (**DO NOT** CALL A SORT METHOD)

- Make sure to **comment** ALL code (besides getters and setters) and use good style like proper indentation.
- HINT: For everyone turning in homework with horrible indentation, right before you submit:
  - For PC: Hold down Control + A, then hold down Control+Shift+i
  - For MAC: Hold down Command + A, then hold down Command+Shift+i
- This will auto-indent your code & make your grader less inclined to hate you! (Just kidding they don't hate you)

## Sample output of printAllStats() method:

Before Sorting:

```
BlueJ: Terminal Window - BasketballT...
File: roster.txt
***** TEAM USC *****

*** COACHES ***

Coach: Andy Enfield
Wins: 60
Loses: 12
Ratio: 83%
Coach: Tony Bland
Wins: 55
Loses: 9
Ratio: 86%
Coach: Jason Hart
Wins: 12
Loses: 4
Ratio: 75%
Coach: Jim Boeheim
Wins: 23
Loses: 3
Ratio: 88%
Coach: Steve Fisher
Wins: 20
Loses: 10
Ratio: 67%

*** PLAYERS ***

Player: 0, Darion Clark
Height: 79 inches
Weight: 220 lbs
Shooting Average: 23%
Overall Score: 0.14
Player: 2, Malik Martin
Height: 83 inches
Weight: 220 lbs
Shooting Average: 38%
Overall Score: 0.24
Player: 3, Shaquan Aaron
Height: 79 inches
Weight: 175 lbs
Shooting Average: 25%
Overall Score: 0.11
Player: 4, Chimezie Metu
Height: 83 inches
Weight: 215 lbs
Shooting Average: 8%
Overall Score: 0.12
Player: 11, Jordan McLaughlin
Height: 73 inches
Weight: 10 lbs
Shooting Average: 30%
Overall Score: 1.74
Player: 12, Julian Jacobs
Height: 76 inches
```

After Sorting:

```
BlueJ: Terminal Window - BasketballT...
File: roster.txt
***** TEAM USC *****

*** COACHES ***

Coach: Jim Boeheim
Wins: 23
Loses: 3
Ratio: 88%
Coach: Tony Bland
Wins: 55
Loses: 9
Ratio: 86%
Coach: Andy Enfield
Wins: 60
Loses: 12
Ratio: 83%
Coach: Jason Hart
Wins: 12
Loses: 4
Ratio: 75%
Coach: Steve Fisher
Wins: 20
Loses: 10
Ratio: 67%

*** PLAYERS ***

Player: 11, Jordan McLaughlin
Height: 73 inches
Weight: 10 lbs
Shooting Average: 30%
Overall Score: 1.74
Player: 13, Samer Dhillon
Height: 79 inches
Weight: 220 lbs
Shooting Average: 50%
Overall Score: 0.52
Player: 40, David Garry
Height: 72 inches
Weight: 170 lbs
Shooting Average: 100%
Overall Score: 0.44
Player: 30, Elijah Stewart
Height: 77 inches
Weight: 180 lbs
Shooting Average: 30%
Overall Score: 0.41
Player: 2, Malik Martin
Height: 83 inches
Weight: 220 lbs
Shooting Average: 38%
Overall Score: 0.24
Player: 14, Strahinja Gavrilovic
Height: 81 inches
```

## Deliverables

1. A compressed **Assignment6** folder containing all the Java files (Player, Coach, TeamUSC, Encapsulated). It must be submitted through Blackboard.

Here are the instructions for submission

- a) Navigate to your project folder.
- b) Create a compressed folder with all your code (include the **src** folder—if you don't have a **src** folder, make sure you include all your **.java** files that are within the project folder).
- c) Name the folder as follows  
**ITP109\_assignment#\_lastname\_firstname**      *(replace # with this assignment number)*
- d) Upload zip file to Blackboard site for our course

If you would like to test your code on some longer input files, which I would highly recommend before you submit, you can find them at [basketball.dgarry.com](http://basketball.dgarry.com). Simply replace the contents of your .txt file with the input at that link, and then run your code. The expected outputs will also be available at that link.

## Grading

Item	Points
Everything done in class is present and correct	15
printPlayer(String) method works correctly	5
printPlayer(int) method works correctly	5
printBestPlayer() method works correctly (not hardcoded, no sorting used, only search algorithms – any would suffice)	8
printShortestPlayer() method works correctly (not hardcoded, no sorting used, only search algorithms – any would suffice)	5
printTallestPlayer() method works correctly (not hardcoded, no sorting used, only search algorithms – any would suffice)	5
Free point if you turn in all the files #becauseican	1
Comments, style, and proper submission (If you do not indent your code correctly and comment it before submitting you will lose all of these points)	5
<b>Total</b>	<b>49</b>