Lab report 2

(Carter Smith)

Compiled with "g++ -o main *.cpp *.h"

(a)   The concepts explored in this lab involve classes and how to access their attribute and member functions, as well as proper use of class definition files and class implementation files. These concepts are the core of object-oriented programming and allows for more abstraction which is good for a career in cs. Abstraction is the biggest thing because it's vital to a lot of software and it's security. For this data structures it's important for alot of the same reasons!

Left terminal:
```
cardini@cardini-Yoga-6:~/Desktop/data_structures/wk_03/lab/lab_02

Your opponent shoots and scores 2 points!

Player with possession...
Eddie Murphy's Stats:
Shots Taken:      10
Shots Made:       10
Passes Attempted: 1
Passes Made:      0

[1] shoot, [2] pass, [3] see current score and remaining possessions, [4] see al
l Player's Stats
Type a number between 1 and 4 to make your selection: 1
Enter the amount of points you want to shoot for (1-3): 3
You shoot and score 3 points!

Your opponent shoots and scores 1 point!

Player with possession...
Sean William Scott's Stats:
Shots Taken:      3
Shots Made:       1
Passes Attempted: 3
Passes Made:      1

[1] shoot, [2] pass, [3] see current score and remaining possessions, [4] see al
l Player's Stats
Type a number between 1 and 4 to make your selection: 2
[1] Grace Harper, [2] Thomas Edison, [3] Tyler Perry, [4] Eddie Murphy,
Choose a player to pass the ball to (enter 1-4): 1

Pass was unsuccessful opponents now have possession!

Your opponent shoots and scores 3 points!

------GAME HAS FINISHED------
YOU LOST!!!
Your final score is: 51  Your oppenents final score is: 52

~/De/da/wk_03/l/lab_02      ✓ took 10m 52s      at 09:31:25 PM
```

Right terminal:
```
./main

Player with possession...
Sean William Scott's Stats:
Shots Taken:      0
Shots Made:       0
Passes Attempted: 0
Passes Made:      0

[1] shoot, [2] pass, [3] see current score and remaining possessions, [4] see al
l Player's Stats
Type a number between 1 and 4 to make your selection: 2
[1] Grace Harper, [2] Thomas Edison, [3] Tyler Perry, [4] Eddie Murphy,
Choose a player to pass the ball to (enter 1-4): 1

Ball was successfully passed from Sean William Scott to Grace Harper!

Grace Harper's Stats:
Shots Taken:      0
Shots Made:       0
Passes Attempted: 0
Passes Made:      0

[1] shoot, [2] pass, [3] see current score and remaining possessions, [4] see al
l Player's Stats
Type a number between 1 and 4 to make your selection: 1
Enter the amount of points you want to shoot for (1-3): 3
You shoot and score 3 points!

Your opponent shoots and scores 2 points!

Player with possession...
Sean William Scott's Stats:
Shots Taken:      0
Shots Made:       0
Passes Attempted: 1
Passes Made:      1

[1] shoot, [2] pass, [3] see current score and remaining possessions, [4] see al
l Player's Stats
Type a number between 1 and 4 to make your selection:
```

(b)   Aside from the required PassBall() and TakeShot() functions I created 2 functions. The functions were playerStats() and playerNames(), I created them so I could access the private members of the class. Specifically, playerStats() would print out all the data assigned to a player and playerNames() would return the name of the player at a given index. In my main file I had 2 functions options() and opponentCalculator(), these were created for readability and simplicity, opponentCalculator() was kind of necessary to avoid having to write the whole thing when I needed to or breaking at a particular point. In hindsight I should have written more functions inside of main to simplify it even more.