**LAB 2**

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1. *A description of the objectives/concepts explored in this assignment including why you think they are important to this course and a career in CS and/or Engineering.*

The objective of this class was about how to use a class and its public variables as well as their member functions. The class function is especially important as throughout the course, we would focus on object-oriented programming, and by understanding the concept of how a class work which will help a typical CS student develop a mindset on how to create not only one main class like in this lab assignment, but also capable of creating many classes and linking all of them together efficiently. For the member functions as well as the public variables, in the future topic, we would learn about linked-list, stack and queue, which would cause more confusion during coding, by developing early-stage about these basic functions and efficiency in using variables included in this lab which helped us practice on connecting all of them together and make the program run smoothly. Overall, the lab prepared us for a mindset and some knowledge to move on with more complicated and complex concepts in this course as well as in the CS career.

1. *What public and private functions you created for your classes and in your main function and why.*

We did not create any private function, however; we created 7 private variables: name, shotsMade, shotsTaken, passesAttempted, passesMade, shotpercent, passpercent. The reason we made those variables in private is that classes should only access behavior by calling methods on the class, not by changing values of variables directly, in other words, if any classes can access to the variables and change the value, then it is difficult to ensure the value is cogent.

For the public functions, we have created 2 BBPlayer() functions which are both constructors, one is default constructor, and the other is parameterized constructor. The function PassBall() is the pass ball action, it takes no parameter, determine if player could make a pass or not, and returns Boolean data, which player could choose during the program run time. The TakeShot() function takes two integer variables, control the mode of shot such as 1 score shot, 2 score shot, and 3 score shot, and calculate based on the successPercent, finally return integer value. The other integer parameter controls the mode, being whether the successPercent is that of the enemy’s or the individual players shotPercent Those getName() and setName() are used to get and set username. The successPercent takes 1 integer value, and returns an integer value, used for control pass, shot, and rebound action. The display() function is a void function which is used to display the statistics of player: name, shots taken, shots made, shots percentage, passes attempted, passes made, pass percentage.

1. *Program output screenshots (executed on Visual Studio Code).*

We used 3 possessions for testing the output.

