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Project 1: Classes, Objects, and Arrays

These classes (Score and Scoreboard) could be used in any basic videogame that wants to implement the specific methods that these classes offer. Basic games, like Donkey Kong, implement methods such as scores, multipliers, and lives. When the player, as” Jumpman”, jumps over barrels and saves “Lady” from Donkey Kong, he gets points added to his score. He also has a certain amount of chances, or lives, to save her before the game is over. After losing all of his lives, the player is presented with a scoreboard. The scoreboard allows the current player to compare his score with those of other players. This scoreboard only presents the top players scores, with any scores lower than those not being shown on the board.

This code works very well for basic, arcade style games; although, it would not be very useful if trying to develop a larger game. However, the code uses every method that is useful for the games in which it is designed to work.

For the testing code, values were chosen to test every outcome that the player could get. This checked to see if anything that the player could do in these classes would break them, or cause them to work improperly.

SCORE CLASS

First, testing was done on the add\_points method of the Score class. This included:

1. Testing the standard add\_points modifier, and to ensure that the correct level was given
2. Testing the upper and lower bounds of each level
3. Testing the multiplier when adding points

Second, testing was done on subtract\_points method of the Score class. The testing procedure includes:

1. Testing the basic function of subtract\_points
2. Testing  if the method works properly when the multiplier was incremented before and the player lose points at sometime
3. Testing the method when the pointes subtracted from the player is more than his current score
4. Testing the method when the pointes subtracted from the player is equal to his current score

Basic testing was then done on several “get” methods, including:

1. Retrieving the player’s name
2. Retrieving the player’s current score
3. Retrieving the player’s current multiplier
4. Retrieving the player’s current level
5. Retrieving the player’s current lives remaining

Lastly, testing was done on the lives methods

1. Testing the ability to lose a life
2. Testing the output if all three lives were lost
3. Testing the ability to gain a life

SCOREBOARD CLASS

Testing done on the \_\_init\_\_method of the Scoreboard class includes:

1. Testing if the method build up the Scoreboard array with right numbers of capacity

Testing on the update method of the Scoreboard class includes:

1. Testing when the first player was passed to the scoreboard
2. Testing when the second player was passed to the scoreboard
3. Testing when the third player was passed to the scoreboard
4. Testing when the fourth player was passed to the scoreboard
5. Testing when the fifth player was passed to the scoreboard
6. Testing when a player who has the same score as the last on the scoreboard
7. Testing when overloading the scoreboard when it is full

\*\*While completing this project, we conformed to all of the William and Mary Honor Code guidelines. No parts of this project were completed without the other partner present. \*\*