

## NBA Points Challenge

PoCoS - Unit 02 Python Grande

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Edited by Mr. Schlenker

### Directions

1. Create a new VSC file and name it "NBAPoints.py"
2. Copy-paste the following **data** into the file:

```
homeTeamPoints =
[85,91,136,133,106,114,110,125,129,116,104,105,110,114,99,136,141,96,126,101,133,116,111,129,132,115,106,112,86,107,108,110,120,126,140,103,92,103,119,
97,122,115,118,106,94,125,129,134,113,123,139,111,124,114,127,128,126,131,101,107,103,86,111,124,104,119,110,106,108,98,118,117,113,104,117,115,106,12
9,112,93,129,105,141,118,127,116,101,118,96,111,108,130,112,116,116,110,126,138,106,116,76,105,135,137,123,119,127,101,125,111,140,118,99,113,92,115,95
,100,92,117,119,142,120,108,122,119,119,112,106,108,127,105,117,105,119,112,125,111,116,116,129,119,120,109,107,95,128,108,125,127,129,100,134,103,117
,115,119,137,96,113,108,128,117,129,129,118,85,89,112,113,116,123,114,113,124,92,133,128,139,115,107,119,109,121,127,119,106,103,115,125,106,127,125,1
00,97,115,111,130,101,104,151,104,100,113,110,129,97,117,117,106,152,110,97,114,123,139,112,111,106,104,108,103,112,98,112,117,81,124,106,140,99,118,11
2,113,125,127,114,107,102,119,134,92,117,121,87,117,96,107,106,117,111,83,86,118,107,116,111,139,100,118,118,129,107,107,130,97,119,103,87,118,112,115,
109,119,123,116,100,140,113,108,120,120,98,128,138,131,122,103,117,106,115,99,121,100,107,123,118,123,107,121,128,97,128,110,101,113,104,115,112,128,
124,116,108,104,122,114,100,139,140,99,110,109,103,101,111,111,117,105,134,98,109,114,106,109,112,109,116,113,114,110,108,123,115,106,123,128,98,113,9
9,103,119,103,117,104,101,120,99,115,126,118,126,111,135,122,103,114,106,114,102,96,116,106,128,104,120,127,104,115,109,105,103,118,120,123,106,116,84
,98,99,123,103,128,126,101,117,106,117]

awayTeamPoints =
[93,111,130,118,100,122,124,115,117,113,113,88,111,113,115,125,118,99,118,104,86,104,113,119,103,106,100,108,116,101,94,106,130,129,112,109,102,114,80,
108,124,98,109,118,112,119,112,137,115,112,123,131,97,112,81,116,117,103,115,104,112,115,107,105,112,98,120,122,113,106,101,127,101,113,105,128,126,12
4,104,103,125,135,133,123,105,112,91,111,114,104,115,111,106,101,120,103,114,117,114,105,87,106,126,126,111,123,120,113,100,112,135,111,106,114,133,10
9,111,116,95,124,118,115,125,117,102,107,118,107,115,101,91,97,114,103,125,101,117,121,108,100,88,118,127,103,121,98,111,120,110,99,102,112,139,112,125
,123,97,106,82,109,105,123,109,108,102,106,92,102,131,107,95,100,90,129,107,105,118,121,111,127,111,127,115,107,117,104,100,124,106,115,127,120,112,12
0,92,104,125,114,109,96,131,133,115,92,109,133,107,126,110,110,133,97,112,109,108,129,107,121,118,113,91,116,125,109,118,122,98,131,113,111,103,129,12
4,128,133,106,120,95,95,95,129,100,110,105,112,121,129,110,100,122,117,106,106,113,112,126,98,107,107,120,88,124,102,115,133,117,123,136,90,116,122,12
4,95,106,101,114,89,111,109,115,121,112,121,123,132,134,95,116,106,100,106,104,130,86,117,127,119,110,118,110,102,124,103,117,95,101,117,112,114,99,121
,127,86,105,102,104,92,109,105,108,125,91,111,122,101,123,113,116,121,94,92,129,127,100,115,98,102,92,129,112,122,89,122,107,108,104,107,115,101,111,1
12,114,87,115,89,113,94,123,128,110,104,98,132,111,118,121,99,140,121,109,111,121,114,111,123,118,111,117,106,85,122,108,112,113,109,124,76,102,84,111,1
09,123,112,122,93,104,107]
```

#### Data notes:

- To figure out the score of the games and who won the first game, you take the first number from the homeTeamPoints and compare it to the first number of the awayTeamPoints
- The data for the points scored in each NBA game between 1/1/2020 and 3/12/2020 (when the season was postponed due to covid)

3. Think about your hypotheses to the following **"analysis questions"**:
  - a. Do NBA home teams average more points?
  - b. Do home teams win more games?
  - c. How big of a difference is there between "averaging more points" and "winning more games" (between home/away teams)?
  - d. Do home teams win more close games (decided by 3 points or fewer)?
4. **Write the code** to answer the "analysis questions" with the following **analyses**:
  - a. Calculate and print the average points per game for the home and away teams:  
Home team - average points :      XX.X  
Away team - average points :      XX.X  
  
Numbers should have tabs and line up. Numbers should have one decimal.
  - b. Calculate and print the number and percentage of wins for the home and away teams:  
Home team - wins:      XXX (YY%)  
Away team - wins:      XXX (YY%)

XXX is the number of games, YY% is the % of games won (with no decimal). Numbers should have tabs and line up.

- c. Repeat #3 for only games decided by 3 points or fewer:

For games decided by 3 points or fewer:

Home team - wins:   XXX (YY%)

Away team - wins:   XXX (YY%)

XXX is the number of games, YY% is the % of games won (with no decimal). Numbers should have tabs and line up.

5. After you get it to work, try to **condense your code** as much as possible.  
Also, make sure to follow all the **programming conventions** ([in this doc](#)).
6. Show Mr. Schlenker your code to get credit.