Assignment 2

Introduction

For this assignment, read the scenario below and then respond to the problem statement described.

Scenario

The 'Man of the Match' award of a 50-over cricket match is decided by computing points earned byplayers. The points are calculated on the basis of the following rules:

Batting

- 1 point for 2 runs scored
- Additional 5 points for a half-century
- Additional 10 points for a century
- 2 points for strike rate (runs/balls faced) of 80-100
- Additional 4 points for strike rate>100
- 1 point for hitting a boundary (four) and 2 points for over boundary (six)

Bowling

- 10 points for each wicket
- Additional 5 points for three wickets in innings
- Additional 10 points for 5 wickets or more in innings
- 4 points for economy rate (runs given per over) between 3.5 and 4.5
- 7 points for an economy rate between 2 and 3.5
- 10 points for an economy rate less than 2

Fielding

- 10 points each for catch/stumping/run out

The performance of each player is stored in a dictionary object. Displayed below is data for 5 players.

```
p1={'name': 'Virat Kohli' , 'role' : 'bat' , 'runs' :112 , '4' :10 , '6' :0 ,
'balls':119, 'field':0}

p2={'name':'du Plessis', 'role':'bat', 'runs'  :120, '4':11,
'6':2,'balls':112 , 'field':0}

p3={'name':'Bhuvneshwar Kumar', 'role':'bowl', 'wkts':1, 'overs':10, 'runs'
:71, 'field':1}

p4={'name': 'Yuzvendra Chahal' , 'role' : 'bowl' , 'wkts' :2 , 'overs' :10 ,
'runs':45, 'field':0}

p5={'name': 'Kuldeep Yadav', 'role': 'bowl'       ,     'wkts':3 , 'overs'
            :10 , 'runs'    :34 ,
'field':0}
```

Problem Statement

Assuming that these are the top 5 performers, write a Python program to decide the player with the highest points. Develop separate functions to compute batting and bowling points and save them in a module. These functions should be imported into the main code.

Assignment Submission

Your submission should have a fully functional code with:

1. One module containing the required functions.
2. One script file with the main code which computes the top player amongst the 5 given players.

When your script is run, it should generate a result which might look like this:

```
{'name': 'Virat Kohli', 'batscore': 83}
{'name': 'du Plessis', 'batscore': 94}
{'name': 'Bhuvneshwar Kumar', 'bowlscore':
10}
{'name': 'Yuzvendra Chahal', 'bowlscore': 24}
{'name': 'Kuldeep Yadav', 'bowlscore': 42}
>>>
```

Hint

The calculation of points will require conditional logic to be applied. Since this is to be performed for 5 players, there's looping involved. Defining and calling functions from a module is also required.

You can approach this assignment in the following sequence:

1. First, create the required variables.
2. Next, convert the rules into expressions and conditions. For example, points = runs/2 or if runs >50, points = points+2 and so on.
3. Next, define each of the two functions for batting or fielding and bowling.
4. Finally, write your program using the conditions and the functions.

Learning outcomes being evaluated

- Use conditional logic in Python programs
- Write programs using conditionals, loops, iterators and generators, functions and modules and packages.