

## Miscellaneous / Combined Questions

### Question 7: Basketball Tournament Scoring (Loops and Summation)

Your coach is tracking team performances across several rounds of practice.

#### a) Counting Rounds (2 marks)

Write a loop that prints the message: "Round X begins!" for each of the 4 rounds.

##### Expected Output:

```
Round 1 begins!  
Round 2 begins!  
Round 3 begins!  
Round 4 begins!
```

#### b) Recording and Summing Scores (4 marks)

Modify your program to ask the user for the score in each round (out of 20) and compute the total score.

##### Example Output:

```
Enter score for Round 1: 15  
Enter score for Round 2: 10  
Enter score for Round 3: 18  
Enter score for Round 4: 12  
Total score : 55
```

#### c) Evaluating Performance (4 marks)

Extend your program to calculate and print:

- The average score per round.
- A message based on the result:
  - If the average is 15 or higher → print "Excellent performance"
  - Otherwise → print "You need to practice"

##### Example Output:

```
...( Lines before indicating scores entered for each round ) ...  
Total score : 55  
Average per round : 13.75  
Keep practicing!
```

**Question Value:** The question familiarizes students with how loops work, how to set up a counter / summation etc.

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### Question 8: Combining Team Results (Working with Lists)

Two basketball teams played several games. Their scores are stored in sorted lists:

teamA = [45 , 52 , 61 , 70]

teamB = [48 , 55 , 60 , 68 , 73]

#### a) The Results (5 marks)

The coach wants a summary announcing:

- Each team's total and average score, and
- The "Top Scorer Award" — the single highest score across both teams.

#### Expected Output:

Team A Total : 228 , Average : 57.0

Team B Total : 304 , Average : 60.8

Top Scorer Award : Team B (73 points )

#### b) Merging Sorted Results (4 marks)

Create one combined list that shows all scores in sorted order.

#### Example Output:

[" A - 45" , " B - 48" , " A - 52" , " B - 55" , " B - 60" ,  
" A - 61" , " B - 68" , " A - 70" , " B - 73"]

**Hint:** Each team's list is already sorted, you can now just compare the smallest remaining score in each as you merge

**Question Value:** The first subpart familiarizes students with lists, like list-indexing and iterating over the list. The second subpart is an adaptation of a popular programming problem where we are merging sorted lists, but as a real-world example.

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### Question 9: Volleyball Court (Nested Lists)

In volleyball, players stand on two sides of the court. We can represent this setup using something called a nested list, which is just a list that contains other lists. Consider the following

#### Example:

```
court = [  
    [47 , 68 , 27 , 79] , # Team A  
    [35 , 84 , 21 , 66]  # Team B  
]
```

Here the list " courts " is made up of other lists ( each list stands for a team , where each entry in the list is the jersey number for that player ( or player ID )

#### a) Setting Up the Court (3 marks)

Ask the user how many players are on each team. Then, ask for the player IDs (numbers) for both Team A and Team B, and build the nested list court.

**Example Input/Output:**

How many players per team ? 4

Enter 4 player IDs for Team A :

47 68 27 79

Enter 4 player IDs for Team B :

35 84 21 66

Court layout :

47 68 27 79

-----

35 84 21 66

**Hint:** Use a list for each team and store each list inside another list to represent the entire court.

**b) Accessing Players (3 marks)**

Write code that:

- Prints the player ID at position x in Team A's list.
- Prints a range of players from Team B (for example, positions a through c).

**Example Input/Output:**

Enter position for Team A player : 2

Enter start and end positions for Team B range : 1 3

Team A player at position 2: 27

Team B players from position 1 to 3: [84 , 21 , 66]

**Remember:** You need to solve this question by assuming you only have your nested list provided. Team A is the first list, and Team B is the second list inside the nested list. Also, Python starts counting from 0, not 1 — so the first position is actually 0, the second is 1, and so on.

**c) Switching Sides (4 marks)**

Simulate switching sides after a set by swapping the two teams' positions in the court (you could also add a message indicating the switch)

**Expected Output:**

New court layout :

35 84 21 66

-----

47 68 27 79

Teams have switched sides!

**The value:** Teaches students about nested lists and how to work with them, using a real-life example. The question is broken down into subparts and build up in difficulty.

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