Bloomberg STARTUP

Week 7 - Take Home

1) What's wrong with this code?

Look at the following snippets of code and identify what is causing the issue. How can the code be fixed?

1A)

```
1.  animals = [ "cat". "dog". "panda" ]
```

1B)

```
1.  animals = [ "cat", "dog", "panda" ]
2.  print("animals[3] =", animals[3])
```

1C)

```
1.  animals = [ "cat", "dog", "panda" ]
2.  animals.remove("bear")
```

2) What does this code do?

Look at the following snippets of code and write what the output will be when it runs.

2A)

```
1.  animals = [ "cat", "dog", "panda" ]
2.  animals[1] = "bear"
3.  print("animals:", animals)
```

2B)

```
values = [ 1, 2, 3 ]
values.append(1)
values.extend([4, 5])
print("values after adding elements:", values)

values.pop()
values.remove(1)
print("values after deleting elements:", values)

values.sort()
print("values after sorting:", values)
print("The length of the list is", len(values))
print("The sum of the values is", sum(values))
```

3) Finish the code

Please complete the code inside of the function to perform the correct functionality.

3A)

Write a function that requires two arguments, each of which is a list. The two lists must be the same length.
The first list contains students' names, and the second list contains their respective exam scores. The function prints the student's name who has the highest score among all students. It also prints the total number of students.

```
def find_highest_scores(students, scores):
     # your code here
```

Sample Input #1

```
students_list1 = [ "Johnny", "Sally", "Emily", "Mike", "Steven", "Jane" ]
scores_list1 = [ 80, 85, 98, 70, 95, 90 ]
```

Sample Output #1

```
Student Emily has the highest score 98 among 6 students
```

Sample Input #2

```
students_list2 = [ "Peter", "Anna", "Mike", "Jane" ]
scores_list2 = [ 80, 85, 90, 88 ]
```

Sample Output #2

```
Student Mike has the highest score 90 among 4 students
```

3B)

Write a function that takes two parameters as the inputs. The 1st parameter is a list representing the exam scores. The 2nd parameter is an integer. The function calculates the average score of all the scores that are higher than this input integer value. It then returns the average score.

```
def calculate_average(scores, value):
    # your code here
```

Sample Input #1

```
1. scores = [ 60, 65, 95, 80, 75, 90, 70, 85, 65, 85, 70, 95, 90 ]
2. value = 70
```

Sample Output #1

```
Average is 86.875
```

Output Explanation

The scores higher than 70 are: [95, 80, 75, 90, 85, 85, 95, 90].
So the average is:
(95 + 80 + 75 + 90 + 85 + 85 + 95 + 90) / 8 = 695 / 8 = 86.875

Sample Input #2

```
1. scores = [ 60, 65, 95, 80, 75, 90, 70, 85, 65, 85, 70, 95, 90 ]
2. value = 80
```

Sample Output #2

```
Average is 90.0
```

Output Explanation

The scores higher than 80 are: [95, 90, 85, 85, 95, 90].
So the average is:
(95 + 90 + 85 + 85 + 95 + 90) / 6 = 540 / 6 = 90.0