

Python OOP Week 2 HW

Question 1

Given a 1D list of numbers find and print out any peak from the list. The list may have multiple peaks just print one of them out. A number is a peak if it is bigger than its left and right neighbour.

For example, in [1, 2, 3, 4, 5] the only peak is 5

For example, in [1, 3, 2, 7] both 3 and 7 are peaks

Here is the 1D list of numbers that you are given [2, 6, 1, 8, 4, 5, 6, 9, 1, 10]. Your code must work even after I change the numbers in the 1D list.

Question 2

You are given a 2D list with two sub-list. The first sub-list has a bunch of student names, and the second sub-list has all student ages. You need to write code which prints a welcome message for each student.

Here is the 2D list you are given.

```
names_and_ages = [["John", "Bob", "Sam"], [5, 8, 10]]
```

Your code should print

```
"Hello John, you are 5 years old"
```

```
"Hello Bob, you are 8 years old"
```

```
"Hello Sam, you are 10 years old"
```

Question 3

You are given a 1D list names. Write code that goes through each name and for each name, if the name contains the letter "A" or "a" then you should print a special message for that name. If the name does not have the letter "A" or "a" then do not print anything.

Here is the 1D list of names you are given.

```
names = ["Sally", "Bob", "Mila"]
```

Your code should print

```
"Hello Sally, you have the letter eh in your name"
```

```
"Hello Mila, you have the letter eh in your name"
```

Question 4

You are given a 2D list of numbers. Write code that finds the average (mean) of each sub-list and prints it out.

Here is the 2D list of numbers you are given.

```
numbers = [[1, 2, 3, 4, 0], [3, 3, 3, 3, 3], [10, 12], [7]]
```

Your code should print

```
2
```

```
3
```

```
11
```

```
7
```