LISTS in Programming   PRIMM

Predict the outcomes of these operations on lists.

a = [1, "Ger", 2, "Robin"] b = [3, 6, 9, 12]

Index	a[2] * b[-1]	
Slice	c = b[1:] print(c)	
Append	a = a + [3, "Phil"] print(a)	
Assign	a[1] = "Gerry" print(a)	
Append	b += [15, 18, 21] print(b)	
Delete	del b[3] print(b)	
In or Out	print(15 in b)	
Try Me !	d = a[::-1]	**Hint : Slice the list in steps of -1**

Read, Write and then Modify the Code below.

Length of Lists
This is very similar to strings

```
# 3 lists
list1 = [1, 2, 3, 4]
myList = ["Apples", 3, "Bananas", 7, "Carrots", 2]
Family_A = ["Georgina", "David", "Róisín", "Alan"]

# Find the length of each list
len_list1 = len(list1)
len_myList = len(myList)
len_Family_A = len(Family_A)

#print the lists with lengths
#note the casting of the list as a string. Why?
print(str(list1) + "\t"*6 + "Length = " , len_list1)
print(myList, "\t"*2 + "Length = " , len_myList)
print(str(Family_A) + "\t"*3 + "Length = " , len_Family_A)
```

Predict, Read and Modify. See comments below.

```python
# A student wanted to analyse 2 lists.
# And so wrote a program below.
# Predict what this student's code will do.
# Can you modify it to offer a User Interface?
# What comments would add to explain the code?

import random

randomLengthA = random.randint(11,20)
randomLengthB = random.randint(1,10)
listA = []
listB = []

for index in range(randomLengthA) :
    listA = listA + [random.randint(1,9)]
for index in range(randomLengthB) :
    listB = listB + [random.randint(1,9)]

combinedList = listA + listB
finalList = []
for index in range(len(combinedList)) :
    if combinedList[index] not in finalList :
        finalList = finalList + [combinedList[index]]

finalList.sort()
print("List A : ", listA)
print("List B : ", listB)
print("Final List of Elements : ", finalList)
```

NOTES to YOURSELF

What was difficult about understanding how the student's code worked? (Learning Outcomes 1.22 and 1.23)

Was it difficult to add a UI to the code? (LO 2.6 and 2.7)

How did the testing of your modified code help to improve your program? (LOs 2.20 and 2.21)