Week 05 Lab Lists

Creating and accessing list items and sub lists in Python

1.

i.) Create a list called list1 containing a 4 numbers.
ii.) Print out the first element in the list.
iii.) Print out the last element in the list.
iv.) Print out the length of the list.
v.) Make a copy of list 1.
Hint: list2 = [] + list1
vi.) Using a while loop add 1 to all the items in list1
vii.) Use a for loop to show each item in list1
viii.) Use print to show the items in list2

2.

i.) Create a list with the numbers 8 and 9 repeated 3 times
ii.) Replace the last two items in the list with the two 0s
iii.) Reverse all the items in the list using the `reverse` method
iv.) Print all the numbers in the list
v.) print the total of all the numbers

3.

i.) Create an list called `countries` containing a list of 4 countries.

```
"Spain",  "Brazil", "Portugal", "Bolivia"
```

ii.) Write a loop to print out the list of countries.
iii.) Add "`Italy`" to the end of the list using the `append` method.
iv.) Remove `"Bolivia"` from the list using the `remove` method.
v.) Divide the list into two lists. (use slicing)
   a. Put the first and second item in one list called `group1`
   b. Put the remaining items in a second list called `group2`

Parallel Arrays for Dance Scores

i.) Create a list of `scores` and a list of judges. These are the scores awarded by 5 different judges to one set of dancers in a dancing competition.

```
scoresForOneContestant  = [ 9, 8, 6, 7, 6 ]
judges = ["kim", "tim", "finn", "lynn", "wynn"]
```

ii. Write a loop to find out the `total` of all the scores and calculate the `average`
iii. Use the `min` and `max` methods to print the min and max values
Hint: Use `min(scoresForOneContestant )` which returns the value of the lowest item in the list.
iv. Using a loop print out the name of the judge(s) who awarded the lowest score
v. Using a loop count the number of judges who gave a `9` as a score and print this out.

Advanced:

vi. To get to the next round all the scores are added together and the minimum is subtracted. The number calculated must be greater 32. Your program should say whether this person will get through to the next round.

Race Results

i.) Ask the user to enter the names of 4 runners and add them to a list called runners.
ii.) For each runner ask the user to enter the time taken by each runner in seconds.
iii.) Find the winning time and print out the winner's name.
iv.) Print out the how many seconds behind the winner each of the other runners came.

Rainfall.java

i.) The following is the no. of millimetres of rainfall for cork for the first six months of the year. Create a list storing the no of millimetres of rain for each month.

```
amountOfRain = [117.1 ,52.4, 88.8, 16.0, 137.3,  54.3 ]
months =  ["Jan", "Feb", "Mar","Apr" ,"May" ,"Jun", ]
```

ii.) Create a bar chart to show the amount of rain. One * represents 10 millimetres of rain.
iii.) Write out the name of the wettest and driest month.

Note: the following code prints 3 stars.

```
stars =  "*"  *  34//10
print(stars)
```

Your output should look like this.

```
Jan:   ***********
Feb:   *****
Mar:   *********

Jan is the wettest and Mar is the driest
```