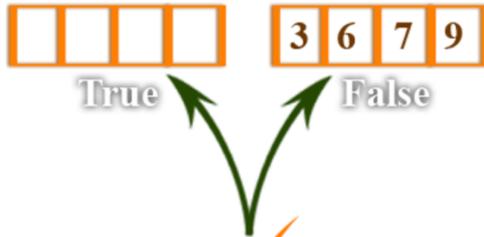


Assignment 4 – Lists (7.14 points each)

1. Write a Python program to check whether a list is empty or not:



- Python returns Boolean (true/false) when we check if list. For example, **if list3** or **if not list3** should return **True** or **False**.

2. Write a Python program to sum all the items in a list.

3. Modify program 1, so it returns the sum of the following 5 lists. Remember to store and re-use your code instead of summing the values for each list 5 times. *Hence, define a function that takes as an argument a list and **returns** the sum of values.*

- Copy the following lists and paste them in a Python file after you define the `sum_of_values` function
- Call the function and pass to it a different list each call as an argument
- Remember, it is not possible to sum a list of strings. Thus, the function should check whether it is possible to sum up the values for the given array or not.
- First, your function should check whether a list is empty or not. If a list is empty, simply, return 0 without executing the loop to sum values.

```
list1 = [5, 7, 4, 1, 8, 9, 56, 34, 65, 100]
list2 = [1, 2, 5, 6, 8, 6, 0, 19, 8, 10, 11, 12]
list3 = [1.1, 1.6, 7.8, 9.4, 6.7, 8.9, 99.7, 65.6, 45.5, 54.5, 12.7]
list4 = [10.5, 100.5, 20.5]
list5 = ["One", "Two", "Three", "Four", "Five", "Six", "Seven"]
```

4. Write a Python program to multiply all the items in a list
5. Write a Python program to get the largest number from a list
6. Write a Python program to get the smallest number from a list

7. Modify 4 and 5, so that, it returns largest and smallest character in a list:

```
List_of_characters = ['A', 'a', 'b', 'B', 'c', 'd', 'e', 'f']
```

8. Write a Python program to count the number of strings where the string length is 2 or more

Sample program:

```
['abc', 'xyz', 'aba', '1221', 'ab', 'ac', 'a', 'A', 'b']
```

Output: 6 items with length 2 or more

9. Write a Python program to remove duplicates from a list:

- To check if an item is in a list, you can simply use, if x in list2:

Example, to check whether a number is in the list

```
list4 = [10.5, 100.5, 20.5]
```

```
if 10.5 in list4:
```

```
    # DO SOMETHING
```

- Create another list, check each element, if it exists in the other list, simply do not add it
- You can add not in list4 to check if the list does not include it

10. Write a Python program that takes two lists and returns True if they have at least one common member (could be integer or string).

12. Write a Python program to print specified list after removing 0th, 4th, and 5th, elements.

Remember, del() function:

```
Sample List: ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow']
```

```
Expected Output: ['Green', 'White', 'Black']
```

13. Define a function that takes a list as an argument and returns a sorted list. Then, test your function with the followings:

```
def sort_a_list(list_to_sort):  
    # YOUR CODE HERE  
  
list_of_numbers = [1000, 65, 219, 0, 12, 9, 1, 6, 9, 21, 67]  
sorted_list = sort_a_list(list_of_numbers)  
print(sorted_list)
```

14. Write a Python program that will count the number of odd and even numbers in a list:

Sample program

Given the following list:

```
[1, 9, 8, 10, 11]
```

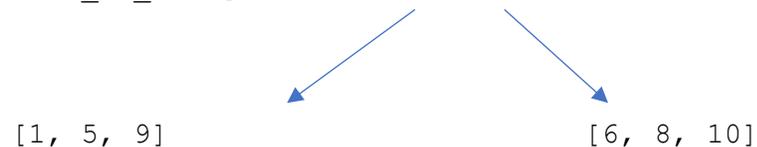
Output:

```
3 odd numbers and 2 even numbers
```

15. (Extra Credit – 10 points) Define a Python function that takes as an argument a list of integers that contains odd and even numbers, and your function is expected to separate odd and even numbers in different arrays. For example, given a list of integers, create two lists. The first list should contain odd values only, and the second list should contain even values only. Once separated, print the two lists. Test the defined function so it produces the following:

Sample program

```
List_of_integers = [1, 5, 6, 8, 9, 10]
```



Expected output:

```
List of odd numbers: [1, 5, 9]
```

```
List of even numbers: [6, 8, 10]
```

Due date: October 11th at 23:59PM. Read the policy on my site for late submissions.

Requirements: Add the following block comment at the very beginning of your source code (your python (.py) files). If your program does not work as it is expected, or compiles error, include that in the block comment as well. Please note, you will lose points for not adding the following block comments to your source file. *Remember to comment your code as well.*

```
"""
```

```
Author:      Your name
Assignment:  Assignment 1 – strings
Date:       SUBMISSION DATE
Description: describe what the program does
Input:      input that the program expects
Output:     what does the program return

Errors:     WRITE HERE IF THERE IS ANY ERROR
```

```
"""
```

Send me a screenshot of the compiled code (terminal) and your source (.py file) code to me and our TA with the email subject **CSC115 assignment4**