Introduction to Programming with Python
Weekly Programming Assignment – Week 7

All solution files must be submitted at CodeGrade enabled Link for grading.

All solutions must be uploaded on or before 27th October 2021 at 11:59 PM

Exercise 1

Write code that prompts the user enter any integer value as input continuously and append those values into an empty List until user enters -1 (terminating user input loop). Then display the values of Lists in decreasing order. The sample run is here.

```
>>> %Run p1_W7.py

  Enter an integer number:45
  Enter an integer number:-23
  Enter an integer number:90
  Enter an integer number:-4
  Enter an integer number:-1
  [90, 45, -4, -23]

>>> %Run p1_W7.py

  Enter an integer number:-1
  []
```

Exercise 2

List1 contains **[12, "abc", 45.90, "1a", -34, "###"].** Write a program to transfer the numbers only from **List1** to a new list and remove those numbers from **List1**. Print both lists. The expected output is here.

```
Python 3.7.9 (bundled)
>>> %Run p3_W2.py

  Values in List1: ['abc', '1a', '###']
  values in List2: [12, 45.9, -34]
```

Exercise 3

Write a program to define a function called **floatList()** that accepts the Lists given in the main program as parameter and returns the number of float values in it. The given input and expected output are here:

```
 8  L1 = [45, 89.0, 0, -0.45, 67, 12.2, 90, 38, 54.8]
 9  print("Number of float values:",floatList(L1))
10
```

```
Shell ×
Python 3.7.9 (bundled)
>>> %Run p5_W2.py
 Number of float values: 4
```

Exercise 4

Write a function **sortTuple()** that accepts a tuple contains integer elements as parameter and return its values in *descending* order. The main program should prompt the user to ask for number of integers as input for the newly created empty tuple to put in it (Is it possible? Not directly but.).

The values in the tuple must be updated after the execution of **sortTuple()** in aforenoted sorted form before it gets printed. You should not use sort function in the main program again. Your code should not print any values inside the function. [Hint: Tuple → List → Tuple]. To create an empty tuple in the main program → **T1= tuple().**

The sample run is here [some code lines of main program is hidden].

```
15 T1 = sortTuple(T1)
16 print(T1)
17
```

```
Shell ×
Python 3.7.9 (bundled)
>>> %Run p6_W2.py
 Number of integers as input:5
 Enter integer:12
 Enter integer:-45
 Enter integer:90
 Enter integer:78
 Enter integer:1312
 [1312, 90, 78, 12, -45]
```

Exercise 5

The **"Scores.txt"** contains marks obtained by group-2 students. Define a procedure **sortFileContents()** that accepts text file as parameter to read aforenoted file's contents and transfer those into a new list for sorting (increasing order). The sorted values should be written in the new file **"sortedScores.txt".** Then print the sorted values from the list. Submit only your code(.py) and Scores.txt files only. Don't submit "sortedScores.txt".

Scores.txt - Notepad

File Edit Format View Help

```
56
78
90
69
74
56
34
21
75
40
12
100
80
```
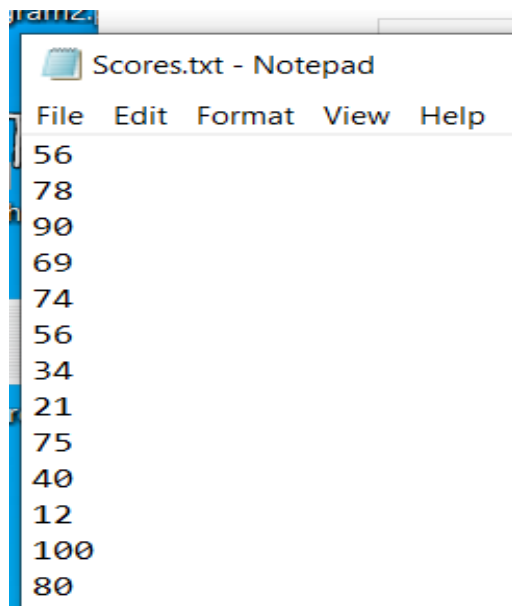
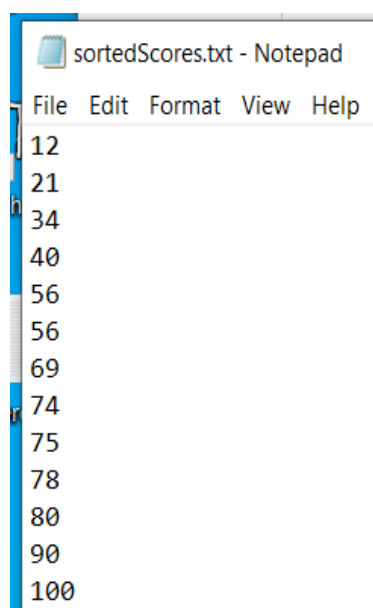After implementation of **sortFileContents()** The expected output will be:

```
13
14  #main program
15  sortFileContents("Scores.txt")
16
```

Shell ×

```
Python 3.7.9 (bundled)
>>> %Run p7_W2.py

 [12, 21, 34, 40, 56, 56, 69, 74, 75, 78, 80, 90, 100]

>>>
```

The new file should contain (open the file manually to confirm)

sortedScores.txt - Notepad

File Edit Format View Help

```
12
21
34
40
56
56
69
74
75
78
80
90
100
```

Exercise 6

Write a procedure **removeDuplicates()** that accepts list as parameter and removes duplicate elements in the list given as an argument. Hence, once the procedure is called, only a single instance of each element can be found in the list. It should be noted, your code should modify the existing list and you are not allowed to create a new list to remove or update the elements in the existing list. You may use nested loop inside the subprogram. Do not use any other data structure to get the results. [Hint: **pop()** and **len()** functions may be useful]. In addition, do not print the values of list in the procedure. The given input and expected output are here:

```
 9
10  #main program
11  list1 = [1, 2, 1, 3, 3, 2, -1, 5, 3, 5, -1, 2, 5]
12  removeDuplicates(list1)
13  print(list1)
```

Shell ×

```
Python 3.7.9 (bundled)
>>> %Run Q6_Demo7.py
```

   [-1, 1, 2, 3, 5]

Exercise / task Number	Codegrade link_Moodle for file solution files upload	Points / Marks
1	Exercise1_Week 7	10
2	Exercise2_ Week 7	10
3	Exercise3_Week 7	10
4	Exercise4_Week 7	10
5	Exercise5_Week 7 + Scores.txt file	10
6	Exercise6_Week 7	20