Topic 10 Workshop Labs

List – Exercises

Lab 01

Write a program that reads a list of scores and then assigns grades based on the following scheme: The grade is A if score is best – 10. The grade is B if score is best – 20. The grade is C if score is best – 30. The grade is D if score is best – 40. The grade is F otherwise.

Here is a sample run:

```
Enter scores: 40 55 70 58  ↵Enter
Student 0 score is 40 and grade is C
Student 1 score is 55 and grade is B
Student 2 score is 70 and grade is A
Student 3 score is 58 and grade is B
```

Lab 02

Write a program that reads some integers between 1 and 100 and counts the occurrences of each. Here is a sample run of the program:

```
Enter integers between 1 and 100: 2 5 6 5 4 3 23 43 2  ↵Enter
2 occurs 2 times
3 occurs 1 time
4 occurs 1 time
5 occurs 2 times
6 occurs 1 time
23 occurs 1 time
43 occurs 1 time
```

Note that if a number occurs more than one time, the plural word "times" is used in the output

Lab 03

Write a program that reads an unspecified number of scores and determines how many scores are above or equal to the average and how many scores are below the average. Assume the input numbers are separated by one space in one line.

Lab 04

Write a program that reads in numbers separated by a space in one line and displays distinct numbers (i.e., if a number appears multiple times, it is displayed only once). (Hint: Read all the numbers and store them in list1. Create a new list list2. Add a number in list1 to list2. If the number is already in the list, ignore it.) Here is the sample run of the program:

```
Enter ten numbers: 1 2 3 2 1 6 3 4 5 2  ↵Enter
The distinct numbers are: 1 2 3 6 4 5
```

Tuple - Exercises

What is wrong in the following code?

```
t = (1, 2, 3)
t.append(4)
t.remove(0)
t[0] = 1
```

Is the following code correct?

```
t1 = (1, 2, 3, 7, 9, 0, 5)
t2 = (1, 2, 5)
t1 = t2
```

Show the printout of the following code:

```
t = (1, 2, 3, 7, 9, 0, 5)
print(t)
print(t[0])
print(t[1: 3])
print(t[-1])
print(t[ : -1])
print(t[1 : -1])
```

Show the printout of the following code:

```
t = (1, 2, 3, 7, 9, 0, 5)
print(max(t))
print(min(t))
print(sum(t))
print(len(t))
```

Show the printout of the following code:

```
t1 = (1, 2, 3, 7, 9, 0, 5)
t2 = (1, 3, 22, 7, 9, 0, 5)
print(t1 == t2)
print(t1 != t2)
print(t1 > t2)
print(t1 < t2)
```

Set- Exercises

Lab 01

Create a Food class with fields, 'name' and 'cooking_method'. Create a __str__ () that returns the name and cooking_method of the Desert object. Create a __eq__ () to compare the equality of two Food objects. The methos should return true if both the name and cooking_method are equal (ignore case for both strings)

Create a Set and add several Food objects to the Set. Add the following Food objects,:
   a. some with same names and different types
   b. some with the same names and same types
   c. and some with different names and types
Display the contents of the Set to prove that duplicate Food objects are not added to the Set.

Lab 02
Write a program that prompts the user to enter a text file, reads words from the file, and displays all the nonduplicate words in ascending order