Week 3 (To Submit)

Exercise 1 (Python List)

Write a Python program to accept an input for 12 months (separate with comma) and now accept another input for months and find the difference from each other.

Note:

- List and set will be used.
- months.split(‘,’) is use.

Expected output:

```
Enter 12 months (separate with comman):Jan,Feb,March,April,May,June,July,Aug,Sept,Oct,Nov,Dec
Enter a month to be removed from the list:Oct
['Oct'] will be removed from the list
New List: ['Aug', 'May', 'Jan', 'June', 'July', 'Feb', 'Dec', 'April', 'Sept', 'Nov', 'March']
>>>
```

Exercise 2 (Python List)

Create a Python List as below:
Title = ['Student ID', 'Student Name', 'Marks', 'Grade']

And now create an empty python lists: Student1[], Student2[], Student3[]
Write a Python program to accept an input for Student ID, Student Name, Marks and Grade (separate with comma)

Write a Python program to shuffle and print the output by using a single print statement.
Note:

- “from random import shuffle” is use.
- shuffle() is use.

Expected output:

```
Enter Student ID, Student Name, Marks and Grade (separate with comma)
Student 1:100056899,Alex,50,Pass
Student 2:100074788,Amy,60,Credit
Student 3:100077899,Clara,80,Distinction
['Student ID', 'Student Name', 'Marks', 'Grade']
 ['100056899', 'Alex', '50', 'Pass']
 ['100074788', '60', 'Credit', 'Amy']
 ['Distinction', 'Clara', '80', '100077899']
>>>
```

Exercise 3 (Python List)

Given a list as below:

num_list = [[11,12,13], [45,55,56], [10,11,12], [71,28,94]]

Write a python program for the following output:

```
Output 1: [11, 12, 13, 71, 28, 94]
Output 2: [71, 28, 94, 45, 55, 56]
Output 3: [13]
Output 4: [10]
Output 5: [[11, 12, 13], [45, 55, 56], [10, 11, 12], [45, 55, 56], [10, 11, 12]]
>>>
```

Exercise 4 (Python Dictionary)

Write a Python program to find the sum, average, minimum and maximum values from the items in a dictionary.
Please store 5 students' marks into python dictionary: 78,64,62,56,71

Expected output:

```
Total marks (among 5 students): 331
Average marks (among 5 students): 66.2
Minimum marks (among 5 students): 56
Maximum marks (among 5 students): 78
>>>
```

Exercise 5 (Python Dictionary)

Create a python dictionary as below:
Student_List = 1000145:85.5, 1000159:77, 1000258:61.5, 1000112:55.8
Calculate and display the total and average of the values.

Write a python program to update the dictionary by adding 2 more information:
1000147:61.5 and 1000588:55
And now re-calculate and display the total and average of the values.

Note: "update" will be used.

Expected output:

```
Original List: {'1000145': 85.5, '1000112': 77, '1000258': 61.5, '1000159': 55.8}
Total: 279.8
Average: 69.95

After update: {'1000147': 50, '1000112': 77, '1000145': 85.5, '1000159': 55.8, '1000258': 61.5,
'1000588': 55}
Total: 384.8
Average: 64.13333333333334
>>>
```

Exercise 6 (Python Tuple)

Write a Python program to accept values (separate with comma) and store in tuple.
Print the values stored in tuple, sum up the values in tuple and display it. Print the maximum and minimum value in tuple.
Expected output:

```
Enter values (separate with comma): 4,5,7,4,4,6,8,9,2
~~~~~~~~~~~~~~~~~~~~~~
Values stored in tuple
Tuple :  (4, 5, 7, 4, 4, 6, 8, 9, 2)
~~~~~~~~~~~~~~~~~~~~~~
Total:  49
Maximum:  9
Minimum:  2
~~~~~~~~~~~~~~~~~~~~~~
```

And now accept a number to "count" number of times the number appeared in the tuple.

Expected output:

```
Enter values (separate with comma): 4,5,7,4,4,6,8,9,2
~~~~~~~~~~~~~~~~~~~~~~
Values stored in tuple
Tuple :  (4, 5, 7, 4, 4, 6, 8, 9, 2)
~~~~~~~~~~~~~~~~~~~~~~
Total:  49
Maximum:  9
Minimum:  2
~~~~~~~~~~~~~~~~~~~~~~
Enter a number:4
4 appeared 3 times in tuple list
>>>
```

Note:

- tuple(map(int, values.split(","))) is use to handle input.
- .count() is use to count the number of times the "number" appears in tuple.

Exercise 7 (Python Set)

Write a Python program to create a symmetric difference.
Sample data: *setx = set(["apple", "mango", "banana", "watermelon"])*
sety = set(["mango", "orange","watermelon", "kiwi"])

Expecting output: {'apple', 'orange', 'kiwi', 'banana'}

Exercise 8 (Python Set)

Write a Python program to create an empty set, name as color_set, now add the following items into color_set. (Note: add is use.)
color_set: white, pink, black
And now, using input function to accept user input then later update the color_set. (Note: update is use.)
Input: red, purple, green, blue, purple, orange, navy blue, apple green
Last, accept an input to remove the color from the set. (Note: discard is use.)