Week 5 (To Submit)

Exercise 1

Write a Python program to get the Fibonacci series between a start value (input by user) to an end value (input by user).

Note : The Fibonacci Sequence is the series of numbers :
example: 0, 1, 1, 2, 3, 5, 8, 13, 21, ...
Every next number is found by adding up the two numbers before it.
Expected Output :

```
Fibonacci Series
Enter the start value for Fibonacci: 4
Enter the end value for Fibonacci: 135
4
5
9
14
23
37
60
97
>>>
```

Exercise 2

Write a Python program to check the validity of a password (input from users).

Validation :

- At least 1 letter between [a-z] and 1 letter between [A-Z].
- At least 1 number between [0-9].
- At least 1 character from [$#@].
- Minimum length 6 characters.
- Maximum length 16 characters.

Note: using import re

Exercise 3

Write a Python program for Goole Grocery Store.
There are 3 categories provided by the store for customers to choose:

[V]egetable Category, [M]eat Category, [S]eafood Category and [C]alculate Order.
Customers will need to key in V, M, S and C for their choice. Note: the selection should not be case sensitive.

You can find items with prices; sell at Google Grocery Store at Table 1.
Note: (1) You are required to write the program by using While Loop structure.
(2) Your program allowed the customers to choose more than 1 category.
(3) Your program will calculate and display subtotal for each category selected by customers.
(4) In order to end the loop, calculate Order is used and is to display the main total.

Sample Output:

```
Welcome to Google Grocery Store. What would you like to order?

[M]eat Category.
[V]egetable Category.
[S]eafood Category.
[C]alculate Order.

What would you like to do? m
Meat Category
Chicken (per 100gram):5
Beef (per 100gram):1
Lamp (per 100gram):1
Subtotal for Meat category: 13.3

[M]eat Category.
[V]egetable Category.
[S]eafood Category.
[C]alculate Order.

What would you like to do? v
Vegetable Category
Brocolli (per 100gram):5
Cabbage (per 100gram):2
French Bean (per 100gram):5
Subtotal for Vegetable category: 7.05

[M]eat Category.
[V]egetable Category.
[S]eafood Category.
[C]alculate Order.

What would you like to do? c
Total: 20.35
Thank you, please come again
>>>
```

Vegetable Category	Meat Category	Seafood Category
Broccoli (per 100gram) – 0.8 Cabbage (per 100gram) – 0.65 French Beans (per 100gram) – 0.35	Chicken (per 100gram) – 1.2 Beef (per 100gram) – 3.5 Lamb (per 100gram) – 3.8	Fish (per 100gram) – 1.5 Crab (per 100gram) – 3.2 Prawn (per 100gram) – 3.5

Table 1

Exercise 4

Write a Python program by using Python – While Loop.
Create 2 empty lists named: studentname and studentmarks.
Use input to accept student names and student marks from users.
Display the student name, student marks and grade for each student then calculate total for all marks key-in and average marks for all.

Sample output:

```
Enter student's names (separated by using commas):Amy,Peter,Alice,James
Enter student's marks (separated by using commas):44,70,60,50
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Excellent Tution Center
Student Name: Amy       Mark: 44        Grade: Fail
Student Name: Peter     Mark: 70        Grade: Credit
Student Name: Alice     Mark: 60        Grade: Pass
Student Name: James     Mark: 50        Grade: Pass
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Total Marks: 224
Average Marks: 56.0
>>>
```

Exercise 5

Write a python program for a number guessing game. The player will input a number range for the game then later input the guess. The program informs the player, if this number is larger, smaller or equal to the secret number, i.e. the number which the program has randomly created. If the player wants to gives up, he or she can input a 0 or a negative number.
Note: random import is used.

Expected output:

```
~~Number Guessing Game~~
Enter a number range for the game:25
New number: 19
Number too large
New number: 18
Congratulation. You made it!
>>>
```

Exercise 6

Write a python program to find out the factorial from an input; using loop to repeat the process until the user key in ‘x’ or ‘X’ to exit the program.

Note:

- Note: using while loop to find out the factorial of an input.

Sample output:

```
Factorial of an input number

Enter 'x/X' for exit.
Enter a number: 6
The factorial of 6 is 720

Enter 'x/X' for exit.
Enter a number: -1
Factorial of negative numbers doesn't exist..!!

Enter 'x/X' for exit.
Enter a number: 0
Factorial of 0 is 1

Enter 'x/X' for exit.
Enter a number: x
Thank you for using!
>>>
```

Exercise 7

Write a python program for the following output.

Accept 3 values: Initial value, Ending value and Counter value for while loop.
The program be able to determine it is either an Increase loop or a Decrease loop from the values input and display the values after the process. If the value entered for Counter value to be a negative value, change it to a positive value for the process.

The program will continue if “c” or “C” is enters, “x” or “X” is to exit the program.

Sample output:

```
While Loop program
Enter Initial value:54
Enter Ending value:12
To increase/decrease the loop
Enter Counter value:5
Decrease loop
54
49
44
39
34
29
24
19
14
Enter c to continue and x to exit:c

While Loop program
Enter Initial value:16
Enter Ending value:24
To increase/decrease the loop
Enter Counter value:-2
Increase loop
16
18
20
22
Enter c to continue and x to exit:x
Thank you.
>>>
```