Case Study 01

1. A school has following rules for grading system:
   a. Below 25 - F
   b. 25 to 45 - E
   c. 45 to 50 - D
   d. 50 to 60 - C
   e. 60 to 80 - B
   f. Above 80 - A
   Ask user to enter marks and print the corresponding grade.

2. You have a list of names. Create a new list which contains only the names with non-repeating characters.
   Sample input = ['John','Peter','Meera','Mini','Krishna']
   Sample output = ['John',Krishna]

3. Take values of length and breadth of a rectangle from user and check if it is square or not.

4. A student will not be allowed to sit in exam if his/her attendance is less than 75%. Take following input from user Number of classes held Number of classes attended. And print percentage of class attended Is student is allowed to sit in exam or not.

5. Create a list by taking length of the list and elements of the list from user. Then find the sum of the elements of the list. Also create a new called even list which contains only even numbers from first list and odd list which contains odd numbers from the list.
   Sample input:
   Length of the list = 5
   List1 = [2,6,3,1,5]
   Sum = 17
   Even_list=[2,6]
   Odd_list=[3,1,5]

6. Create a sample chatbot for an ecommerce website.

7. Write a program to find the roots of a quadratic equation. Get the co-efficients of quadratic equation ax^2+bx+c and display whether the roots are real and equal or real and distinct or roots are imaginary. You have to find the roots and display it as well.

8. Given a range of first 10 numbers, write a Python program to iterate from start number to the end number and print the sum of the current number and previous number.
   Sample input: 1....10
   Sample output: Current Number 1 Previous Number 0 Sum: 1
   Current Number 2 Previous Number 1 Sum: 3
   Current Number 3 Previous Number 2 Sum: 5...
   .....
   Current Number 10 Previous Number 9 Sum: 19

9. Write a Python program to find the prime numbers in a given range. Get the range from user and print prime numbers in that range.

10. Write a Python program to print Fibonacci series in a given range. Get the range from user and print fibonacci numbers in that range.