<u>Assignment on Python Programming</u>

Solve the following Problems in Python:

1. Write a Python program to print a string from a given input string where all occurrences of its first char have been changed to '$', except the first char itself.
   Input String: 'energetic'
   Output : 'enrgtic'

2. Take a list of integers as input. Remove the duplicate integers from the list. Print the updated list.
   Sample Input : [1,2,1,3,5,3,7]
   Output: Number of unique items- [1,2,3,5,7]

3. Write a Python program to count the number of even and odd numbers from a list of numbers. Print the count. Then remove the even numbers from the list and print the updated list.

4. Write a python program that prints the following pattern :

   ```
   *
   * *
   * * *
   * * * *
   * * *
   * *
   *
   ```

5. Write a Python program to display all the prime numbers within a range. Given start=25 and end=50.
   <u>Expected Output:</u>
   Prime numbers between 25 and 50 are:
   29
   31
   37
   41
   43
   47

6. Given a two list. Create a third list by picking an odd-index element from the first list and even index elements from second.

Example:　　listOne = [3, 6, 9, 12, 15, 18, 21]
　　　　　　　listTwo = [4, 8, 12, 16, 20, 24, 28]

Expected Output:
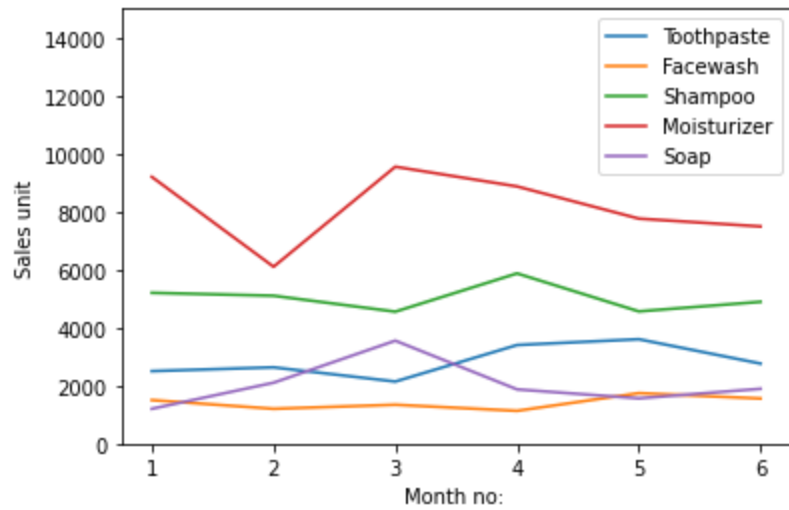　　　　　　Element at odd-index positions from list one:[6, 12, 18]
　　　　　　Element at even-index positions from list two: [4, 12, 20, 28]
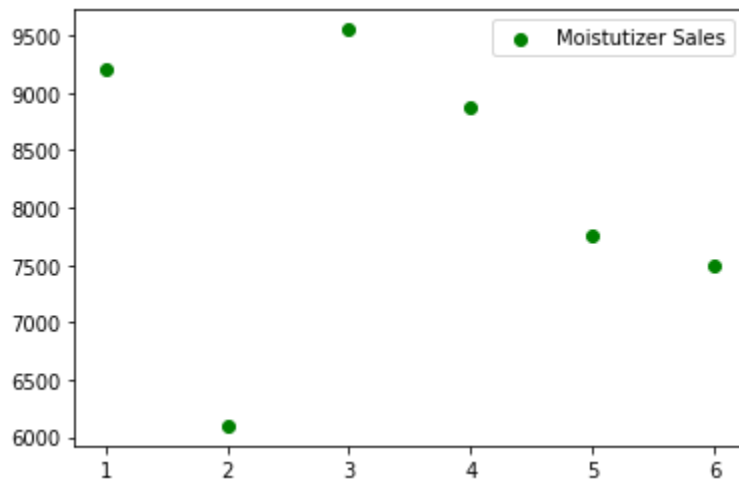　　　　　　Printing Final third list :[6, 12, 18, 4, 12, 20, 28]

7. See the following Table. The table contains 6 Month's sales data for different products of the company.

Month no	Toothpaste	Facewash	Shampoo	Moisturizer	Soap
1	2500	1500	5200	9200	1200
2	2630	1200	5100	6100	2100
3	2140	1340	4550	9550	3550
4	3400	1130	5870	8870	1870
5	3600	1740	4560	7760	1560
6	2760	1555	4890	7490	1890

i) Read all product sales data and show it using a multiline plot. Display the number of sales per month for each product using multiline plots. (i.e., Separate Plotline for each product). The graph will look like this: (check this with the value given at the table; you will understand)

ii) Read Moisturizer sales data for each month and show it using a scatter plot. The plot will look like this:

iii) Calculate the total number of sales each month and show the value using a bar diagram.

Submission Instructions:

- You have to solve each of these problems in separate **.py** files. Then keep your all **.py** files in a folder and zip the folder. The folder name should be your Student ID. Then upload the zipped folder on the given submission link on IMS.
- **Submission Deadline:** 4 November (Wednesday) [11:55 pm]
- Your code files will be checked in copy checker with other files. Any kind of plagiarism/ blind copy of codes will be punished with negative marks.