Programming in Python (CSE 3142)

MINOR ASSIGNMENT-10: CLASSES-I

1. Write a Python class to convert an integer to a roman numeral.

2. Write a Python class to convert a roman numeral to an integer.

3. Write a Python class to get all possible unique subsets from a set of distinct integers.

4. Write a python class BankAccounts to model a bank accounts maintenance system:
   a. To create bank account (name, account number),
   b. To deposit money and withdraw money
   c. To check minimum acc balance before withdraw and display message when withdraw amount violates the minimum acc balance condition,
   d. Give options to open, deposit, withdraw and display acc balance.

5. Define a class Item that keeps track of items available in the shop. The class should contain the following data members:
   name – Name of the item
   price – Price of the item
   quantity – Quantity of the item available in the stock
   The class should support the following methods:
   1. __init__ for initializing the data members.
   2.purchase for updating the quantity after a purchase made by the customer. The method should take the number of items to be purchased as an input.
   3. increaseStock for updating the quantity of an item for which new stock has arrived. The method should take the number of items to be added as an input.
   4. display that displays information about an item.

6. Define a class Student that keeps track of academic record of students in a school. The class should contain the following data members:
   rollNum – Roll number of students
   name – Name of student
   marksList – List of marks in five subjects
   stream – A: Arts, C: Commerce, S: Science
   percentage – Percentage computed using marks
   grade – Grade in each subject computed using marks
   division – Division computed on the basis of overall percentage.
   The class should support the following methods:
   1. __init__ for initializing the data members.
   2. setMarks to take marks for five subjects as an input from the user.
   3. getStream for accessing the stream of the student.
   4. percentage for computing the overall percentage for the student.
   5. gradeGen that generates grades for each student in each course on the basis of the marks obtained. Criteria for computing the grade is as follows:

Marks	*Grade*
>=90	A
<90 and >=80	B
<80 and >=65	C
<65 and >=40	D
<40	E

Figure 1: Grade