Note: For the following questions, Please use comments on your code or create a brief documentation on each answers explaining your code.

Language: Python

1. Write a program which accepts a sequence of comma separated 4 digit binary numbers as its input and then check whether they are divisible by 5 or not. The numbers that are divisible by 5 are to be printed in a comma separated sequence.

Example:

0100,0011,1010,1001

Then the output should be:

1010

2. A website requires the users to input username and password to register. Write a program to check the validity of password input by users.

Following are the criteria for checking the password:

1.   At least 1 letter between [a-z]

2.   At least 1 number between [0-9]

1.   At least 1 letter between [A-Z]

3.   At least 1 character from [$#@]

4.   Minimum length of transaction password: 6

5.   Maximum length of transaction password: 12

Your program should accept a sequence of comma separated passwords and will check them according to the above criteria. Passwords that match the criteria are to be printed, each separated by a comma.

3. You are required to write a program to sort the (name, age, height) tuples by ascending order where name is string, age and height are numbers. The tuples are input by console. The sort criteria is:

1.   Sort based on name;

2.   Then sort based on age;

3.   Then sort by score.

The priority is that name > age > score.

If the following tuples are given as input to the program:

Tom,19,80

John,20,90

Jony,17,91

Jony,17,93

Json,21,85

Then, the output of the program should be:

[('John', '20', '90'), ('Jony', '17', '91'), ('Jony', '17', '93'), ('Json', '21', '85'), ('Tom', '19', '80')]

4. Using "Test_Data.csv", please do the following:

      1.   Extract columns 'A','B','C','G','R','X6' and 'X8' for different classes using dictionary and save as a csv for each class.

      2.   Do a complete EDA on each class file.

      3.   Create a documentation file explaining what you understood after applying EDA.

      4.   Build a classification model by use dimensionality reduction and feature selection techniques. Explain why you used whichever model you selected for classification.

      5.   Create a ROC curve of the model.