CS 6103D Software Systems Lab
Python Programming

Evaluation#2 : 13.12.2021 **Time: 45 Mins** **Maximum Marks: 6**

Q. The covid_data.csv file contains information regarding the country-wise covid cases. It contains the columns: Country/Region, Confirmed (confirmed number of cases), Deaths, Recovered, Active, New cases, New deaths, New recovered, Deaths / 100 Cases (Number of death on 100 cases), Total Expenditure / 1 Case (expenditure per case given in US dollars). Using this data-set perform the following operations in Python:

1. Read the data in the file into a dataframe **(0.5 Marks)**. Print the percentage of patients who has recovered from covid. **(1 Marks)**

2. Print the total number of countries having zero 'New deaths' but non-zero 'New recovered'. **(1 Marks)**

3. One can assume that the death ratio is an indirect indicator of a country's covid-spread status, i.e. countries in which there are more Deaths/ 100 Cases are having high covid spread when compared to the country that has low Deaths/ 100 Cases ratio. WHO wants to categorize the countries in 3 different riskStatus (High, Medium or Low) classes. Write a Python function that takes the argument 'Deaths / 100 Cases' and returns the riskStatus of the country.

riskStatus	Deaths / 100 Cases
High	>4
Medium	>2 and <=4
Low	<=2

   Now add a new column to the dataframe titled 'riskStatus, which contains the risk level of the country(High, Medium or Low) that you have just calculated. Use map function to accomplish this. Print the first five rows of the dataframe to illustrate the results.
   (2 Marks)

4. The 'TotalExpenditure / 1 Case' is the total expenditure (Given in US dollars) to the government per Covid case. Taking into account that the US dollar is 74.98 INR, create a new column in the dataframe named 'ExpenditureInINR' which contains the 'TotalExpenditure / 1 Case' in Indian rupees. Use apply function, and perform the expenditure conversion using the lambda function. Print the first five rows of the dataframe to illustrate the results.
   (1.5 Marks)