Application of IT - Python

IAQS
Sem-4

Ques.1 Write a Program to calculate number of prime numbers between 100 to 1000.(5 Marks)

Note: Create a function named: calculate_prime_numbers for the same.

Ques.2 Write a Program to build a calculator accepting 2 numbers and operation as the input and returns out the output of that operation.(5 Marks)

Note: Create a function named: calculator for the same.

Ques. 3
Write a Pandas program to split the following dataframe by school code and get mean, min, and max value of age for each school.(5 marks)

```
student_data = pd.DataFrame({
    'school_code': ['s001','s002','s003','s001','s002','s004'],
    'class': ['V', 'V', 'VI', 'VI', 'V', 'VI'],
    'name': ['Alberto Franco','Gino Mcneill','Ryan Parkes', 'Eesha Hinton', 'Gino Mcneill', 'David Parkes'],
    'date_Of_Birth ': ['15/05/2002','17/05/2002','16/02/1999','25/09/1998','11/05/2002','15/09/1997'],
    'age': [12, 12, 13, 13, 14, 12],
    'height': [173, 192, 186, 167, 151, 159],
    'weight': [35, 32, 33, 30, 31, 32],
    'address': ['street1', 'street2', 'street3', 'street1', 'street2', 'street4']},
    index=['S1', 'S2', 'S3', 'S4', 'S5', 'S6'])
```

Ques.4 Write a function “perfect()” that determines if parameter number is a perfect number. Use this function in a program that determines and prints all the perfect numbers between 1 and 1000.(5 Marks)

[Note: An integer number is said to be “perfect number” if its factors, including 1(but not the number itself), sum to the number. E.g., 6 is a perfect number because 6=1+2+3].

Ques.5 Write a program to print the multiplication of each number in list.(5 Marks)

input_list=[1,9,11,20,12,18,15]

Ques. 6 Write a program to print the maximum number present in the list.(5 Marks)

input_list=[1,9,11,20,12,18,15]

Ques. 7A:

1. Predict “Sales” of the given data (company_data.csv) using Linear Regression and extract the output file to .csv file.(7)
2. Calculate the RMSE.(3)
3. Find the insightful summarised data from the above data.(3)
4. Also draw a graph on the basis of above insights.(2). (30 Marks)

Note: Perform preparation, cleansing and encoding wherever required.

OR

Ques. 7B:

1. Predict “outcome” of the given data (diabetes.csv) using Logistic Regression and extract the output file to .csv file.(7)
2. Calculate the accuracy, precision and Recall score.(3)
3. Find the insightful summarised data from the above data.(3)
4. Also draw a graph on the basis of above insights.(2). (30 Marks)

Note: Perform preparation, cleansing and encoding wherever required.