**S.G.T.B.I.M.I.T**

**BCA - BCAP - 212 - DATA SCIENCE**

**PRACTICAL FILE QUESTIONS**

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| S. No. | Detailed Statement |
| 1 | Create 2 numpy arrays with 5 elements using arange() and linspace() and display the implement the concept of slicing on them. |
| 2 | Create two 2-d arrays and perform addition, subtraction and multiplication on these arrays. Print the value of bordered elements of both matrices. |
| 3 | Create two pandas series from a dictionary of values and an ndarray and display the values from 2nd to 5th index. Print the index, minimum and maximum values in the first series. |
| 4 | Create a Series and print all the elements that are above 75th percentile. Print minimum, maximum, and sum of series using aggregate() |
| 5 | Series objects Temp1, temp2, temp3, temp 4 stores the temperature of  days of week 1, week 2, week 3, week 4. Write a script to:-  a. Print average temperature per week  b. Print the average temperature of the entire month |
| 6 | Create a series containing 2 NaN values. Perform check for null values and then replace the null values with 0. Perform any 5 statistical functions on the series. |
| 7 | Two Series object, Population stores the details of four metro cities of  India and another object AvgIncome store the total average income  reported in four years in these cities. Calculate income per capita for each  of these metro cities. |
| 8 | Given two series S1 and S2.  S1 S2  A 39 A 10  B 41 B 10  C 42 D 10  D 44 F 10  Find the output for following python pandas statements?  a. S1[ : 2]\*100  b. S1 \* S2  c. S2[ : : -1]\*10 |
| 9 | Write a program to create a Series having 10 random numbers in the range of 10 and 20 |
| 10 | Consider a series object s10 that stores the number of students in each section of class 12 as shown below. First two sections have been given task for selling tickets @ Rs.100/- per ticket as a part of social experiment. Write code to create the series and display how much section A and B have collected. A-39, B- 31, C- 32, D- 34, E- 35 |
| 11 | Write a program to create a DataFrame to store weight, age and name of  three people. Print the DataFrame and its transpose. Add 5 rows in the dataframe through code. Rename the Weight column as Wgt. And then print the index names, column names and total amount of data. Sort the dataframe on the basis of age. |
| 12 | Create a DataFrame having age, name, weight of five students. Print the dataframe using head(). Modify the weight of student in first and 4th row. Display only the weight of first and fourth rows before and after modification. |
| 13 | Create a DataFrame based on E-Commerce data and generate mean, mode, median. |
| 14 | Write a Program to create a CSV file with student data containing 10 rows. create its DataFrame and use describe() to display its statistics. Write all the steps and definition of all the statistical functions displayed. |
| 15 | Consider the DataFrame QtrSales where each row contains the item category, item name and expenditure and group the rows by category, and print the average expenditure per category |
| 16 | Write a program to implement pivot() and pivot-table() on a DataFrame |
| 17 | Write a program to find mean absolute deviation on a DataFrame. |
| 18 | Create a DataFrame based on employee data and generate quartile and variance. |
| 19 | Program to implement Skewness on Random data. |
| 20 | Create a DateFrame on any Data and compute statistical function of  Kurtosis. |
| 21 | CASE STUDY ON :CRIME\_BY\_STATE\_RT.CSV  [crime\_by\_state\_rt.zip](file:///C:\Users\hp\Downloads\crime_by_state_rt.zip)  21.1: Find the 75% percentile for data  21.2: Apply aggregate function to find count, min , max and sum .  21.3: Perform group by on State and Year  21.4: Calculate the number of entries year wise  21.5: Create a pie chart for all states  21.6: Plot the no. of murders state-wise  21.7: Check the data type of all column  21.8: Check the robbery column for NULL values.  if exist replace with 0  21.9: Select the data set where robbery greater than 10 and year= 2001  21.10: describe () the dataset  21.11: Perform sorting on Arson and Robbery  21.12: Perform renaming on two columns |
| 22 | CASE STUDY ON: investigating clinical data  [investigating clinical data.csv](investigating%20clinical%20data.csv)  22.1: describe () the dataset  22.2: Perform renaming on two columns  22.3: Is there any relation between the age of the patient and having a delay on the date of appointment.  22.4:  Is there any relation between gender and delaying appointments? (Show by plotting bar graph)  22.5: Do people delay their appointments when they have no scholarship? (Show by plotting)  22.6: Is there any relationship between gender having scholarships and delaying the appointment? (show by plotting)  22.7: Which gender has more appointments in which illness? (Show by plotting)  22.8: Does a person suffering from alcoholism tend to delay appointments? (Show by plotting)  22.9: Perform group by and count on neighborhood  22.10: Perform agg() function on dataset. |
| 23 | CASE STUDY ON: Credit card transaction  [Credit card transactions - India - Simple.csv](Credit%20card%20transactions%20-%20India%20-%20Simple.csv)  23.1: Show the head and visualize the basic stats for all columns.  23.2: Display pivot table to create a summary for the total amount spent  a) month b) city  23.3: Analyze the impact of gender to study consumer behavior  23.4: Check for NULL values in columns.If they exist replace them with appropriate values.  23.5: Analyze the relationship type between expense type and amount.  23.6: Analyze the spending habits by city and gender.  23.7: Implement Skewness and kurtosis on data  Draw plots along with an appropriate question |
| 24 | CASE STUDY ON PROJECT TOPIC |
| 25 | RESEARCH PAPER |