**HOLIDAY HOMEWORK**

**INFORMATICES PRACTICES**

**Q.1** What is Pandas Library of Python? What is its significance?

**Q.2** What do you understand by axes in a NumPy array? Define axes for a 2D ndarray?

**Q.3** How is Series data structure different from a dataframe data structure?

**Q.4** Write code to create a Series object using the Python sequence [1, 3, 5, 7, 9]. Assume that Pandas is imported as alias name pd.

**Q.5** Write a program to create a Series object using individual character ‘p’, ‘y’, ‘t’, ‘h’, ‘o’, and ‘n’. Assume that Pandas is imported as alias name pd.

**Q.6** Write a program to create a Series object using six different words : ‘I’, ‘am’, ‘student’, ‘of’, ‘Takshila’. Assume that Pandas is imported as alias name pd.

**Q.7** Write a program to create a Series object using an ndarray that has 5 elements in the range 35 to 70.

**Q.8** Write a program to create a Series object using an ndarray that is created by tilling a list [7, 5] twice.

**.9** Write a program to create a Series object using a dictionary that stores the number of students in each section (A, B, C, D, E) of class XII in your school

**Q. 10** Write a program to create a Series object that stores the initial budget allocated (75000/- each) for the 4 quarters of the year : Qtr1, Qtr2, Qtr3 and Qtr4.

Q11 What is a Series and how is it different from a 1-D array, a list, and a dictionary?

Q12 What is a DataFrame and how is it different from a 2-D array?

Q13 How are DataFrames related to Series?

Q14 What do you understand by the size of (i) a Series, (ii) a DataFrame?

Q15 Create the following Series and do the specified operations:

EngAlph, having 26 elements with the alphabets as values and default index values.

Q16 Create the following DataFrame Sales containing year-wise sales figures for five salespersons in INR. Use the years as column labels, and salesperson names as row labels.

|  | 2014 | 2015 | 2016 | 2017 |
| --- | --- | --- | --- | --- |
| Madhu | 100.5 | 12000 | 20000 | 50000 |
| Kusum | 150.8 | 18000 | 50000 | 60000 |
| Kinshuk | 200.9 | 22000 | 70000 | 70000 |
| Ankit | 30000 | 30000 | 10000 | 80000 |
| Shruti | 40000 | 45000 | 125000 | 90000 |

Q17 Use the DataFrame created in Question 9 above to do the following:  
a) Display the row labels of Sales

b) Display the column labels of Sales.

c) Display the last two rows of Sales.

d) Display the first two columns of Sales.

e) Create a dictionary using the following data. Use this dictionary to create a DataFrame Sales2.

|  | 2018 |
| --- | --- |
| Madhu | 160000 |
| Kusum | 110000 |
| Kinshuk | 500000 |
| Ankit | 340000 |
| Shruti | 900000 |

Q18 [Write a program to create Pandas series from dictionary of values and nd array.](https://technocrash.online/pandas-example-create-pandas-series-from-dictionary-of-values-and-nd-array/)

Q19 [Write a program to perform mathematical operation on two Pandas series object.](https://technocrash.online/pandas-program-to-perform-mathematical-operation-on-two-series-object/)