INDIAN SCHOOL MUSCAT
SENIOR SECTION
INFORMATICS PRACTICES
CLASS XII (2020-2021)
Topic : Python Pandas – Series Objects
Lab Work Sheet : 5

1.	Create a pandas series D from the dictionary day = {'Sun':4500, 'Mon':3200, 'Tue':4700, 'Wed':4600, 'Thu':4000, 'Fri':3800, 'Sat':4200} Display the series D and display the labels and last 4 rows.
2.	Write a Python Program to create a Series G from a numpy array with values in the range 10 to 100 (both values inclusive) in steps of 5 and print all the elements that are above the 75th percentile in it.
3.	Write Python code to create the following series X 1 101 2 201 3 301 4 401 5 501 Display the first two rows and display the sum of the values of X and 12.
4.	Write python code to create the following series Student which has the roll numbers and marks secured by 5 students. 1 96.5 2 58.0 3 77.5 4 81.0 5 67.5 Display the roll number and marks of the students whose marks are above 80.
5.	Write a Python Program to create two Series objects J and K and find the difference between K and J. J K A 20 B 12 B 10 C 5 C 30 D 8

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Topic : Python Pandas – Data Frames
Lab Work Sheet : 6

1.	Write a Python program to create the following Data Frame A

Write a Python program to create the following Data Frame A

```
        Eno        Name
Q       12         Sanjay
R       23         Arun
S       11         Veena
T       14         Joshua
```

and perform the following operations in it.
(a) Display the data frame A
(b) Display the values of Eno column.
(c) Change the column names as 'Empno' and 'EmpName'
(d) Add a column 'Dept' with values 'Sales', 'HR', 'IT', 'Sales' and display the result.

2.	Write a Python Program to perform the following operations on the Data Frame A given in Qno. 1.

(a) Change Arun's Eno to 25 and display the changed data frame.
(b) Add a row 'M' with Eno 56 and Name 'Ajmal' and display the resultant data frame..
(c) Display the last two rows.
(d) Delete the row 'S' and display the resultant data frame A.

3.	Create the following dataframe Student from dictionary of series and display the details of each student. (row wise).

```
   Name     Subject   Marks
1  Anjan    English   78
2  Shreya   Science   87
3  Meena    Science   81
4  Karan    Maths     91
```

4.	Create the following dataframe student from list of dictionaries and display the details of each column. (column wise).

```
   Name     Subject   Marks
1  Anjan    English   78
2  Shreya   Science   87
3  Meena    Science   81
4  Karan    Maths     91
```

5.	Display the row labels, column labels, data types of each column and the dimensions of the Data frame A given in Qno.1

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Topic : Python Pandas – Data Frames
Lab Work Sheet : 7

1.	Create a Data Frame Sales with five rows, where each row contains the item category, item name and expenditure. Group the rows by the category and print the total expenditure per category.
2.	Write a Python Program to create the following Data Frames X and Y X Y A B A C 1 10 20 1 3 4 2 22 14 2 7 5 and perform the following operations on them. (a) Display the difference between Y and X (b) Display the result when X is raised to the power 2
3.	Write a Python program to create the following Data Frame S and display the duplicate rows. Rno Name Marks 1 12 Usman 78 2 23 Karan 69 3 11 Raghav 82 4 14 David 59 5 23 Karan 69
4.	Write a Python program to display the details of the students whose marks are below 80 based on the following data frame Student. Rno Name Marks 1 12 Usman 78 2 23 Karan 69 3 11 Raghav 82 4 14 David 59
5.	Write a Python Program to accept roll number of a student from the user and display his details based on the data frame Student given in Question 4.

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Topic : Python Pandas – Transferring data between csv files and Data Frames
Lab Work Sheet : 8

1.	Create a CSV file Emp.csv with the following data
	Eno Name 12 Sanjay 23 Arun 11 Veena 14 Joshua and write a Python program to read the file and store the data in a data frame Emp and display the data frame.
2.	Write a Python Program to create the following data frame Student and store it in a csv file Student.csv Subject Marks 1 Science 67 2 English 78 3 Science 91
3.	Create a student.csv file in Notepad with the following fields – RollNo, Name, Mark1, Mark2, Mark3. Store the data for 10 students using the delimiter tab. Write a Python Program to read the details of the first six students from the file and store it in a data frame stud. Display the data frame and the total marks of each student.