List of Programs for Practical File - XII

I Python Pandas: Data Handling

1. Create a pandas series from a dictionary of values and an ndarray.
2. Write a Pandas program to perform arithmetic operations on two Pandas Series.
3. Write a Pandas program to add some data to an existing Series.
4. Write a Pandas program to select the rows where the percentage greater than 70.
5. Write a Pandas program to select the rows the percentage is between 70 and 90 (inclusive)
6. Write a Pandas program to change the percentage in given row by user.
7. Write a Pandas program to join the two given dataframes along rows and assign all data.
8. Write a Pandas program to join the two given dataframes along columns and assign all data.
9. Write a Pandas program to append a list of dictioneries or series to a existing DataFrame and display the combined data.
10. Program to select or filter rows from a DataFrame based on values in columns in pandas (Use of Relational and Logical Operators)
11. Filter out rows based on different criteria such as duplicate rows.
12. Importing and exporting data between pandas and CSV file.
    - To create and open a data frame using 'Student_result.csv' file using Pandas.
    - To display row labels, column labels data types of each column and the dimensions

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- To display the shape (number of rows and columns) of the CSV file.

13. Read the 'Student_result.csv' to create data frame and do the following operation:

- To display Adm_No, Gender and Percentage from 'Student_result.csv' file.
- To display first 5 and last 5 records from 'student_result.csv' file.

14. Read the 'Student_result.csv' to create data frame and do the following operation:

- To display Student_result file with new column names.
- To modify the Percentage of student below 40 with NaN value in dataframe.

15. Read the 'Student_result.csv' to create data frame and do the following operation:

- To create a duplicate file for 'student_result.csv' containing Adm_No, Name and Percentage.
- Write the statement in Pandas to find the highest percentage and also print the student's name and percentage.

16. Importing and exporting data between pandas and MySQL database.

17. Find the sum of each column, or find the column with the lowest mean.

18. Locate the 3 largest values in a data frame.

19. Subtract the mean of a row from each element of the row in a Data Frame.

20. Replace all negative values in a data frame with a 0.

21. Replace all missing values in a data frame with a 999.

22. Given a Series, print all the elements that are above the 75th percentile.

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23. Create a Data Frame quarterly sale where each row contains the item category, item name, and expenditure. Group the rows by the category, and print the total expenditure per category.

24. Create a data frame based on ecommerce data and generate descriptive statistics (mean, median, mode, quartile, and variance)

II. Visualization

25. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.

26. Write a program to plot a bar chart in python to display the result of a school for five consecutive years.

27. For the Data frames created above, analyze, and plot appropriate charts with title and legend.

- Number of Students against Scores in all the 7 subjects
- Show the Highest score of each subject

28. For the Data frames created above, analyze, and plot appropriate charts with title and legend.

- Show the Average score of each subject

29. For the Data frames created above, analyze, and plot appropriate charts with title and legend.

- Number of Females and Males
- Average Percentage of Females and Males

30. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.