| **9. Pandas**  WAP to print following data as per the questions: (Consider above question's dataframe to do operations)  1. Print marks of odd roll no of all subjects.  2. Print marks of first 5 roll no of all subject except IOT.  3. Create a new column which shows total of all subjects for each roll no.  4. Delete row no. 110 and 109 from the dataframe permanently.  5. Delete 'Total' column from the dataframe.  6. Show True for whose marks are greater than 75.  7. Show only marks <75 of IOT.  8. Set index name as 'Roll No' for roll no.  9. Set any one subject name as index temporary.  10. reset the index permanently. |
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| **10.** | **Pandas**  1.Use an excel file named "studentdata.xlsx" to do groupby operations in Pandas: (This excel file data will be provided by faculty)  1) Print mean value of SPI, print(df.groupby('University').groups)f SPI, minimum SPI and maximum SPI.  2) Print University group using groupby.  3) Print "University" and "Branch" groups using groupby.  4) Print name of "University" group by using for loop.  5) print group of "University" group by using for loop.  6) Print name of "University" above Sr. No. column using for loop.  7) Print mean, sum, minimum, maximum values of "University" group using for loop.  8) Print mean value of "University" and "Branch" group using for loop.  9) Print mean value of "University", "Branch" and "Semester" group using for loop.  2. Use 3 csv files to do concatenation operation in Pandas (This csv file data will be provided by faculty)  File name is: dcx\_marks.csv, dcy\_marks.csv & dcz\_marks.csv  1) Print concatenated data column wise.  2) Print concatenated data row wise.  3.Use 2 csv files to do concatenation operation in Pandas (This csv file data will be provided by faculty)  File name is: new\_joining\_data1.csv & new\_joining\_data2.csv  1) Print concatenated data row wise and column wise.  2) Use row wise data to print for 'left' join, 'right' join.  3) Use row wise data to print for 'inner' join, 'outer' joi |
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| **11.** | **Data Visualization**  1. WAP to display line chart for the following data:  x = range(1,11)  y = [1,5,9,7,5,6,3,2,4,9]  2. WAP to display two lines in a line chart for the following data:  x = [1,2,3,4,5,6,7,8,9,10]  dcx\_marks = [5,8,9,6,3,2,4,8,8,9]  dcy\_marks = [8,9,6,3,5,7,4,1,2,6]  1) display data using line.  2) display data for one line using '--' and second line using ':'.  3) display data using one line using '-.' and color pink for one line and green for second line.  4) display data of one line's width is 2 and second line's width is 5.  5) display data of one line using 'o' marker and secone line using 'v' marker.  6) display label, annonate, legend on gra |
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| **12.** | **Data Visualization**  1. WAP to display pie chart for the following data:  x = [100,200,360,40,120,280]  y = ['Games','Food','Shopping','Entry\_fee','Movie\_ticket','misc']  1) display 'Food' wedge 0.2 away from the center of the pie using explode.  2) display different colors to all wedges rather than current colors in pie chart.  3) display %ge of all data on pie chart.  4) display %ge of all data on pie chart upto 2 decimal points, 3 decimal points and without decimal points.  5) display shadow to all wedges.  2.WAP to display bar chart for the following data:  y = [98,75,88,65,32]  x = ["Advance Python",'IOT','UI/UX','Android','Project']  1) display different colors for all subjects.  2) display title as "Result" for the bar chart.  3) display width of all the bars as 0.5.  4) diplay different widths for all bars.  5) display horizontal bar chart. |
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| **13.** | **Data Visualization**  1. WAP to display histogram for the following data: x = 100 random integer numbers between 0 to 10.  2. WAP to display boxplot for the following data: timetaken=[120, 110, 130, 125, 112, 0, 142, 162, 203, 350, 325, 200, 153, 250, 120, 153, 168, 198, 185, 400, 262].  3. WAP to display scatterplot from csv file: (This csv file data will be provided by faculty) File name is: insurance.csv.  1) display scatterplot which shows age on x axis and charges on y axis.  2) display scatterplot which shows bmi on x axis and charges on y axis.  3) display scatterplot grouped by 'smoker' field and age on x axis and charges on y axis.  4) display scatterplot grouped by 'sex' field and age on x axis and charges on y axis. |
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| **14.** | **Object Oriented Programming & Exception Handling in Python**  1. Write a Program to demonstrate use of:  1)simple inheritance  2)multiple inheritance  2. Write a Program to demonstrate use of:  1)method overloading  2)method overriding  3. Write a Exception Handling Program Using try...except. |
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| **15.** | **Object Oriented Programming & Exception Handling in Python**  1. Write a Exception Handling Program Using exception handling exceptions.  2. Write a Program to handle user defined exception.  3. Write a Exception Handling Program for handling multiple exceptions.    4. Write a Exception Handling Program Assert Statement with Error Message. |