Suryadatta National School

Class 12 CBSE Informatics Practices Practicals List

1. Write a program that create Series from ndArray. Print all values in the Series using loop and also print the sliced values from the Series.

2. Write a program that create reads marks in Series and prints the finds average of marks.

3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category. (Read 3 values for each category. Total category should be 4).

4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions.

5. Create a DataFrame as shown below and perform following operations on it.

|  |  |  |  |
| --- | --- | --- | --- |
| Product | Company | Quantity | Price |
| CPU | Compaq | 40 | 9000 |
| Mouse | Dell | 20 | 500 |
| Keyboard | HP | 15 | 500 |
| Printer | Epson | 5 | 5700 |
| Hard Disk | Toshiba | 10 | 2000 |
| Plotter | Sony | 5 | 8000 |

a) Add a new column Total Price that contains Total Price of Product (Total Price

= Quantity \* Price)

b) Add a new row to the DataFrame with Data – (Scanner, HP, 2, 9500)

c) Display the Product and Total Price of the DataFrame.

6. Create a DataFrame that reads Employee Data (Employee No, Name, Address, Date of

Joining, Salary) from CSV File and displays the details.

7. Create a DataFrame with details BookID, Book Description, Author, Publisher,

Quantity and Price. Store the data into a CSV File with name “Employee\_Data”.

8. Consider DataFrame df as shown below :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **name** | **Age** | **weight** | **height** | **runsscored** |
| 0 | mayur | 15 | 51 | 5.1 | 55 |
| 1 | anil | 16 | 48 | 5.2 | 25 |
| 2 | viraj | 17 | 49 | 5.1 | 71 |
| 3 | viraj | 17 | 51 | 5.3 | 53 |
| 4 | mahesh | 16 | 48 | 5.1 | 51 |
| 5 | viraj | 17 | 59 | 5.3 | 50 |

Write commands to :

a) Write command to calculate minimum value for each of the row from subset of dataframe that contains age, weight, height, runsscored

b) Write command to calculate mean for last 3 rows.

9. Write a code to create following dataframe.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Booking Code | Customer Name | No of Ticket | Ticket Rate | Booking Clerk |
| B001 | Veer | 4 | 100 | Manish |
| B002 | Umesh | 2 | 200 | Kishor |
| B003 | Lavanya | 6 | 150 | Manish |
| B004 | Shobhana | 5 | 250 | John |
| B005 | Piyush | 3 | 100 | Kishor |

Do the following:

a) Add column "Total Amount" that calculates total amount of tickets and assign that to new column.

b) Add a new row with values ( B006 , Vijay, 7, 150, John). Calculate the total amount of tickets and assign it to Total Amount column.

10. Read the subjects and marks/grades for different subject of Class 12 and plot column chart on that. Also display title, x-axis and y-axis labels.

11. Read data from open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

12. Draw the histogram based on the Production of Corn in different Years

'Year':2003,2005,2007,2009,2011,2013,2015,2017,2019,2021

'Production': 7,4,9,19,23,4,16,8,6,25

13. Observe the given data for Football Players and their goals scored in the matches. Plot them on the bar chart.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | | | | |
|  | Ronaldo |  |  | Pele |  |  | Messi |  |  | Gerd Muller |  |  | Eusebio |  |  | Maravilla |  |
|  | 783 |  |  | 767 |  |  | 755 |  |  | 735 |  |  | 623 |  |  | 575 |  |

14. Consider the data given below for creating bar and line chart

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Zones | June | July | Aug | Sept | Oct | Nov |
| North | 140 | 130 | 130 | 190 | 160 | 200 |
| South | 160 | 200 | 130 | 200 | 170 | 190 |
| East | 140 | 180 | 130 | 170 | 190 | 180 |
| West | 180 | 190 | 200 | 120 | 180 | 190 |
| Central | 110 | 160 | 130 | 110 | 170 | 130 |

a) Create a bar chart to distribution of rainfall from June to Nov for all zones. b) Create line chart to observe any trends from June to Nov.

15. Write a program in Python Pandas to create the following DataFrame ‘Library’.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Bid | Name | Author | Price | Mem\_Name | Issue\_Date | Status |
| B01 | Wings of | A.P.J Abdul | 450 | Pranjal | 2021-04-11 | Not |
| Fire | Kalam | Returned |
| B02 | The Monk | Robin | 370 | Kunal | 2021-03-15 | Returned |
| who sold | Sharma |
| his Ferrari |  |
| B03 | You Can | Shiv Khera | 350 | Rajat | 2021-04-18 | Not |
| Win | Returned |
| B05 | Who | Spenser | 450 | Roma | 2021-02-27 | Returned |
| moved my | Jhonson |
| cheese |  |
| B06 | Real | Pattrick | 250 | Sia | 2021-04-23 | Not |
| Success | Mather | Returned |
|  | Pike |  |

a) Display DataFrame ‘Library’.

b) Display the Book names having price above 350.