INDIAN SCHOOL AL WADI AL KABIR

Worksheet, 2023-24

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| **Class: XII** | **SUB: INFORMATICS PRACTICES** | **Date of Completion:** |
| **Worksheet No:3** | **TOPIC : Python Data Structure – Data Frame** |  |

1. Create the following data frame **DF**

a. Using Dictionary of Series

b. Using Dictionary of Lists.

|  |  |  |  |
| --- | --- | --- | --- |
|  | ICode | IName | Rate |
| A | B001 | Tea Cake | 275 |
| B | B002 | Biscuits | 75 |
| C | B003 | Chocolate Cake | 350 |
| D | B004 | Bread | 40 |
| E | B005 | Bun | 30 |

 c. \_\_\_\_\_\_\_\_ statement is used to check whether DF is empty of not.

 d. \_\_\_\_\_\_\_\_ tatement is used to fetch the row index names from DF.

 e. \_\_\_\_\_\_\_\_\_ statement is used to fetch the size of DF.

 f. \_\_\_\_\_\_\_\_\_ statement is used to fetch the dimension of the DF.

2. Create the following data frame **Exam**

* 1. Using Dictionary of Series
	2. Using Dictionary of Lists.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Name | Eng | Maths | IP |  |
| 0 | Anisha | 66 | 85 | 95 |
| 1 | Bharat | 68 | 82 | 82 |
| 2 | Chandru | 75 | 84 | 63 |
| 3 | Dharmik | 74 | 80 | 84 |
| 4 | Esther | 70 | 75 | 90 |
| 5 | Meera | 76 | 80 | 84 |

c. \_\_\_\_\_\_\_\_\_\_ statement is used to fetch the column names from Exam.

 d. \_\_\_\_\_\_\_\_\_\_ statement is used to fetch the data type values of the items in Exam.

e. \_\_\_\_\_\_\_\_\_\_ statement gives the size of Exam. i.e., No. rows and columns.

 f. \_\_\_\_\_\_\_\_\_\_ statement helps to transpose Exam. i.e., rows become columns and

 columns become rows.

3. Consider the following series **Customer.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | CustomerName | City | BillAmt |
| **C1** | Kamlesh | Pune | 7500 |
| **C2** | Vinitha | Meerat | 3400 |
| **C3** | Jeeva | Kanpur | 4000 |
| **C4** | Shreya | Vizag | 2800 |
| **C5** | Jimson | Shimla | 5500 |

1. Write a statement to display the first 3 rows from Customer.
2. Write a statement to display the last 4 rows from Customer.
3. Write a statement to display the last 5 rows from Customer.
4. Write a statement to display the last 2 rows from Customer.
5. Write the difference between loc and iloc method in Data frame.
6. Write a statement to display all the values under City column.
7. Write a statement to display the values CustomerName from row index C2 to C4.
8. Write a statement to display the values CustomerName of rows C1 and C5.
9. Write a statement to display all the row values of Customer Name and BillAmt columns.
10. Write a statement to display all the row values of CustomerName to City columns.
11. Write a statement to display the values of row indexes C1 and C3 and column names Customer Name and BillAmt.

4. Create a data frame called RSDF using dictionary of series.

 Arnab Ramit Samridhi Riya Mallika

Maths 90 92 89 81 94

Science 91 81 91 71 95

Hindi 97 96 88 67 99

Write the statement for the following:

i) Add a new column called Raj with the marks as 90,91,92

ii) Add a record with subject as Info and marks are 95,96,97,98,99,100

iii) Increase the marks of Arnab by 2

iv) Drop the column Raj permanently.

v) Drop the row of Hindi subject temporarily.

vi) Rename the Arnab and Riya as stud1 and stud2

vii) Change the subject name to Sub1 and sub2 for Maths and Science

viii) Use loc to display the all subject marks of Ramit ,Samridhi and Riya .

ix) Display Ramit and Mallika’s marks in Science and Info using loc and iloc

x) Transpose the dataframe.

xi) Display the column names and index names

xii) Show the total number of elements in the dataframe.

xiii) Display number of rows and columns

xiv) Display top 2 records and last 5 records

xv) Show the datatype of each column and dimension of the dataframe rsdf