EX.NO: PANDAS - DATAFRAME- BASICS

## DATE : 02/03/2024

Aim:

To install pandas package and do the basic DataFrame operations

Description:

I. Declaring empty DataFrame

1. Declare and print the DataFrame series
2. Do the basic functions such as extracting one column and one row, adding one row

Programs:

1. Declaring and printing the DataFrame series

import pandas as pd emp = pd. , 'John' , 'Smith• "William" D

fraræ {'EMP' :emp, • ID' :Id} result = pd. DataFrame(frame) print( Series to Data Frame\n') print (result)

OUTPUT :

Series to Data Frame

Parker 102  John 104

-2 203

3 William 501

2. Performing Basic Functions

i) EXTRACTING ONE COLUMN

\*EXTRACTING ONE COLUBW

print ( "An Extracting one Column: o ) print(  J)

OUTPUT:

Extracting one Column:



Name: EMP, dtype: object ii) ADDING NEW COLUMN

"ADDING NEW COL 1.4%

result( 'AGE ' print( ' ,result)

OUTPUT:

EMP

 Parker 102



AGE

|  |  |  |  |
| --- | --- | --- | --- |
|  | John | 104 | 24 |
| 2 | Smith | 2Ø3 | 40 |
|  | William | søl | 38 |

1. EXTRACTING THE THIRD ROW

"EXTRACTI,w THE THIRD ROW , result.10c[21)

OUTPUT:

EMP Smith

203

2, dtype: Obj

1. SLICING THE ROWS

THE Rows

Slave the rows: 

OUTPUT:

Slice the rows ;

EMP ID AGE

* 1. John 1ø4 24
  2. småth 2B

1. ADDING AND DELETING ROWS

\*ADDING AND DELETING ROWS

112 = EMP', 1)

Adding new row values : result. append(d2)) Deleting particular result. drop(l))

OUTPUT:

Adding new row values :

EMP ID AGE

|  |  |  |  |
| --- | --- | --- | --- |
|  | Parker | le2 | 35.0 |
|  | John | 104 | 24. o |
| 2 |  | 203 |  |
|  | William | sel | 38.0 |
| e | Dale | 123 | NaN |
| 1 | Mark | 143 | NaN |

Deleting particular row:



AGE

EX.NO: PANDAS - DATAFRAME - FUNCTIONS

## DATE: 02/03/2024

Aim:

To perform Pandas DataFrame Functions

Description:

1. Apply sum and square root functions through Numpy
2. Perform min and max operations through aggregation functions
3. Add new column using assign function
4. Do sort and merge functions

Programs:

i) FINDING SQUARE-ROOT OF A DATAFRAME

invort pandas as pd import nunwy as np

print ( "DATAFRAmE APPLY FUNCTION:

info columns—I

Original

Square root of OataFrame:An", info. apply(np .sqrt))

OUTPUT:

DATAFRAME APPLY FUNCTION:

Original DataFrame:

 Square root of DataFrame:

ø 1.414214 2.645751 1 1.414214 2.645751

1.414214 2.645751

1. DATAFRAME ASSIGN FUCNTIONS

\*DATA FRAME ASSIGN 

[ •mark' '10 1)



Function:

\n")

,d2)

OUTPUT:

DataFÉame Assign Function:

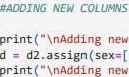
Original DataFrame:

EMP ID

Dale 123

1 Mark 143

1. ADDING NEW COLUMNS

new column:

'hale' , •Male' l) new column:

OUTPUT:

Adding new column:

EMP ID AGE ø Dale 123 Al mark 143 4e

Adding new colurnn:

Emp ID AGE sex

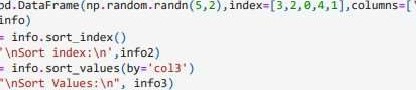
 Dale 123 35 hale

1 mark 143 4e hale

iv) DATAFRAME SORT FUNCTIONS

 SORT FUNcrro.•vs

 print ("NnDataFrame sort functions: in") infoz coly' c014' J) print ( info) inf02 z info.



print(

inf03 z print(

OUTPUT:

DataFrame sort functions:

Col 4 3 -e.e23617 -ø. 118871 2 e. 842B75 -o. 148991 ø •1.479ø72 e. 316568 4 -e. 987557 1.52e186 1 ø.336717 B. 389722

Sort index c013 c 014 ø -1.479072 e. 316568 1 e. 336717 e. 389722

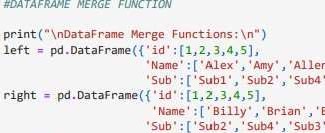
1. 0.842ø75 -e-148991
2. -e.e23617 0.118871 4 -e. 987557 1. s2e186

Sort Values: c013 c 014

-1.479ø72 o. 316568 4 -0.987557 1.52e186 e.e23617 -0.118871

0.336717 e. 389722

2 e.842ø75 -e.14B991

v) DATAFRAME MERGE FUNCTION

• Name' : [•AIex', 'Amy • , 'Allen • , 'Alice % 'Ayoung' , •sub6', •Sub5• 1})

'Billy • , 'Brian', 'Bran' , 'dryce• , 'Betty •

, , •sub6', print (left ) print( , right) print( • , pd 'id

OUTPUT:

Alice sub6

Ayp ung subs

id Name Sub 1 Billy sub 2

Brian Suba

Bran sub3 Bryce sub 6 5 Betty sub 5

I

2

3

4

5

4 DataFrame Merge Functions:

Sub

Ale X subl 2

1sub2

2sub4 4

Name x Sub x Name\_y Sub\_y

Ale x subl Billy sub2

Amy sub2 Brian sub4 Allen sub4 Bran sub3 Alice sub6 Bryce sub6 Aye ung subs Bet ty subs

EX.NO: PANDAS SERIES

## DATE: 02/03/2024

Aim:

To perform Pandas Series

Description:

I. Create Series from array

1. Create Series from dictionary
2. Create Series using scalar value
3. Create Series using index
4. Know the size, dimension, shape and index of Series

Programs:

i) CREATING SERIES FROM ARRAY

import pandas as pd import numpy as np #Creating Series from Array



a-pd . Series (arr) print(a) OUTPUT:

# e p

# 1

# 2

# d

4 5 dtype: object

CREATING SERIES FROM DICTIONARY

#Series from dictionary



b=pd. Series (arr) from dictionary: \n 'i ) print(b)

OUTPUT:

Series from dictionary:

1.0 z 2.0 dtype : float64

iii) CREATING SERIES USING SCALAR

#Series using scalar x=pd. Series (4, index— [e, 1, 2, 3) ) print("\nSeries using scalar\n") print (x)

OUTPUT:

Series using scalar

[e 4](#_Toc20941)

[1 4](#_Toc20942)

[2 4](#_Toc20943)

[3 4](#_Toc20944)

dtype: int64

## RESULT

This program was executed successfully.