1. Write a Pandas program to compare the elements of the two Pandas Series.

Sample Series: [2, 4, 6, 8, 10], [1, 3, 5, 7, 10]]

**import** pandas **as** pd

ds1 **=** pd**.**Series([2, 4, 6, 8, 10])

ds2 **=** pd**.**Series([1, 3, 5, 7, 10])

print("Series1:")

print(ds1)

print("Series2:")

print(ds2)

print("Compare the elements of the said Series:")

print("Equals:")

print(ds1 **==** ds2)

print("Greater than:")

print(ds1 **>** ds2)

print("Less than:")

print(ds1 **<** ds2)

Series1:

0 2

1 4

2 6

3 8

4 10

dtype: int64

Series2:

0 1

1 3

2 5

3 7

4 10

dtype: int64

Compare the elements of the said Series:

Equals:

0 False

1 False

2 False

3 False

4 True

dtype: bool

Greater than:

0 True

1 True

2 True

3 True

4 False

dtype: bool

Less than:

0 False

1 False

2 False

3 False

4 False

dtype: bool

1. Write a Pandas program to convert a Panda module Series to Python list and it's type.

**import** pandas **as** pd

ds **=** pd**.**Series([2, 4, 6, 8, 10])

print("Pandas Series and type")

print(ds)

print(type(ds))

print("Convert Pandas Series to Python list")

print(ds**.**tolist())

print(type(ds**.**tolist()))

Pandas Series and type

0 2

1 4

2 6

3 8

4 10

dtype: int64

<class 'pandas.core.series.Series'>

Convert Pandas Series to Python list

[2, 4, 6, 8, 10]

<class 'list'>

1. Write a Pandas program to convert a given Series to an array.    
   Sample Output:  
   Original Data Series:  
   0 100  
   1 200  
   2 python  
   3 300.12  
   4 400  
   dtype: object  
   Series to an array  
   ['100' '200' 'python' '300.12' '400']

**import** pandas **as** pd

**import** numpy **as** np

s1 **=** pd**.**Series(['100', '200', 'python', '300.12', '400'])

print("Original Data Series:")

print(s1)

print("Series to an array")

a **=** np**.**array(s1**.**values**.**tolist())

print (a)

Original Data Series:

0 100

1 200

2 python

3 300.12

4 400

dtype: object

Series to an array

['100' '200' 'python' '300.12' '400']

1. How to create a series from a list, numpy array and dict?

**import** pandas **as** pd

**import** numpy **as** np

lst **=** ['G','E','E','K','S','F',

'O','R','G','E','E','K','S']

s **=** pd**.**Series(lst)

print(s)

dct **=** {'G':2,'E':4,'K':2,'S':2,

'F':1,'O':1,'R':1}

s1 **=** pd**.**Series(dct)

print(s1)

arr **=** np**.**array(['G','E','E','K','S','F',

'O','R','G','E','E','K','S'])

s2 **=** pd**.**Series(arr)

print(s2)

0 G

1 E

2 E

3 K

4 S

5 F

6 O

7 R

8 G

9 E

10 E

11 K

12 S

dtype: object

G 2

E 4

K 2

S 2

F 1

O 1

R 1

dtype: int64

0 G

1 E

2 E

3 K

4 S

5 F

6 O

7 R

8 G

9 E

10 E

11 K

12 S

dtype: object

1. How to combine many series to form a dataframe?

df1**=**pd**.**Series([1,2,5])

df2**=**pd**.**Series([2,4,7])

df3**=**pd**.**Series([3,6,9])

df**=**pd**.**DataFrame([df1,df2,df3],index**=**['num','even','odd'])

print(df)

0 1 2

num 1 2 5

even 2 4 7

odd 3 6 9

1. How to get frequency counts of unique items of a series?

**import** pandas **as** pd

s **=** pd**.**Series(data **=** [2, 3, 4, 5, 5, 6,

7, 8, 9, 5, 3])

print(s)

print(s**.**value\_counts())

0 2

1 3

2 4

3 5

4 5

5 6

6 7

7 8

8 9

9 5

10 3

dtype: int64

5 3

3 2

2 1

4 1

6 1

7 1

8 1

9 1

dtype: int64

1. How to convert a numpy array to a dataframe of given shape?

arr1**=**[1,2,3,4]

arr2**=**[6,7,8,9]

arr**=**np**.**array([arr1,arr2])

df**=**pd**.**DataFrame(arr,columns**=**['c1','c2','c3','c4'])

print(df)

c1 c2 c3 c4

0 1 2 3 4

1 6 7 8 9

1. How to import only specified columns from a csv file?

**import** pandas **as** pd

df **=** pd**.**read\_csv("C:\\Users\\exam2\\Desktop\\student\_scores.csv", usecols **=** ['Hours'])

print(df)

Hours

0 2.3

1 5.0

2 3.2

3 8.5

4 3.5

5 1.5

6 9.2

7 5.5

8 8.3

9 2.7

10 7.7

11 5.9

12 4.5

13 3.4

14 1.1

15 8.9

16 2.5

17 1.9

18 6.1

19 7.4

20 2.7

21 4.8

22 3.7

23 6.8

24 7.4

1. How to change the order of columns of a dataframe?

**import** pandas **as** pd

**import** numpy **as** np

my\_data **=** {'Sr.no': [1, 2, 3, 4, 5],

'Name': ['Ram', 'Sham', 'Sonu',

'Tinu', 'Monu'],

'Maths Score': [45, 67, 89, 74, 56]}

df **=** pd**.**DataFrame(data **=** my\_data)

print("My Original DataFrame")

display(df)

print("My new DataFrame")

df**.**loc[:,['Maths Score','Name','Sr.no']]

My Original DataFrame

|  | **Sr.no** | **Name** | **Maths Score** |
| --- | --- | --- | --- |
| **0** | 1 | Ram | 45 |
| **1** | 2 | Sham | 67 |
| **2** | 3 | Sonu | 89 |
| **3** | 4 | Tinu | 74 |
| **4** | 5 | Monu | 56 |

My new DataFrame

|  | **Maths Score** | **Name** | **Sr.no** |
| --- | --- | --- | --- |
| **0** | 45 | Ram | 1 |
| **1** | 67 | Sham | 2 |
| **2** | 89 | Sonu | 3 |
| **3** | 74 | Tinu | 4 |
| **4** | 56 | Monu | 5 |

1. How to reverse the rows of a dataframe?

df[::**-**1]

|  | **Sr.no** | **Name** | **Maths Score** |
| --- | --- | --- | --- |
| **4** | 5 | Monu | 56 |
| **3** | 4 | Tinu | 74 |
| **2** | 3 | Sonu | 89 |
| **1** | 2 | Sham | 67 |
| **0** | 1 | Ram | 45 |