**Pandas Examples**

**Write a Pandas program to create and display a one-dimensional array using series containing even numbers upto 10**

import pandas as pd

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

print(ds)

**Write a Pandas program to convert a Panda module Series to Python list and its 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()))

**Write a Pandas program to add, subtract, multiple and divide two Pandas Series.  
Sample Series: [2, 4, 6, 8, 10], [1, 3, 5, 7, 9]**

import pandas as pd

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

ds2 = pd.Series([1, 3, 5, 7, 9])

ds = ds1 + ds2

print("Add two Series:")

print(ds)

print("Subtract two Series:")

ds = ds1 - ds2

print(ds)

print("Multiply two Series:")

ds = ds1 \* ds2

print(ds)

print("Divide Series1 by Series2:")

ds = ds1 / ds2

print(ds)

**#Write a Pandas program to compare the elements of the two Pandas Series.  
#Sample Series: [2, 4, 6, 8, 10], [1, 3, 5, 7, 9]**

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)

**#Write a Pandas program to convert a dictionary to a Pandas series.**

**#Sample dictionary: d1 = {'a': 100, 'b': 200, 'c':300, 'd':400, 'e':800}**

import pandas as pd

d1 = {'a': 100, 'b': 200, 'c':300, 'd':400, 'e':800}

print("Original dictionary:")

print(d1)

new\_series = pd.Series(d1)

print("Converted series:")

print(new\_series)

**#Write a Pandas program to convert a NumPy array to a Pandas series.**

**#Sample NumPy array: d1 = [10, 20, 30, 40, 50]**

**import numpy as np**

import pandas as pd

np\_array = np.array([10, 20, 30, 40, 50])

print("NumPy array:")

print(np\_array)

new\_series = pd.Series(np\_array)

print("Converted Pandas series:")

print(new\_series)

**#Write a Pandas program to change the data type of the given Series into numeric**

**#['100', '200', 'python', '300.12', '400']**

import pandas as pd

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

print("Original Data Series:")

print(s1)

print("Change the said data type to numeric:")

s2 = pd.to\_numeric(s1, errors='coerce')

print(s2)

**# Write a Pandas program to convert a given Series to an array.**

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)

**#Write a Pandas program to sort a given Series.**

import pandas as pd,

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

print("Original Data Series:")

print(s)

new\_s = pd.Series(s).sort\_values()

print(new\_s)

**#Write a Pandas program to add some data to an existing Series.**

import pandas as pd

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

print("Original Data Series:")

print(s)

print("\nData Series after adding some data:")

new\_s = s.append(pd.Series(['500', 'php']))

print(new\_s)

**#Write a Pandas program to create a subset of a given series based on value and condition.**

import pandas as pd

s = pd.Series([0, 1,2,3,4,5,6,7,8,9,10])

print("Original Data Series:")

print(s)

print("\nSubset of the above Data Series:")

n = 6

new\_s = s[s >n]

print(new\_s)

**#Write a Pandas program to change the order of index of a given series.**

import pandas as pd

s = pd.Series(data = [1,2,3,4,5], index = ['A', 'B', 'C','D','E'])

print("Original Data Series:")

print(s)

s = s.reindex(index = ['B','A','C','D','E'])

print("Data Series after changing the order of index:")

print(s)

**#Write a Pandas program to create the mean and standard deviation, maximum and minimum of the data of a given Series.**

import pandas as pd

s = pd.Series(data = [1,2,3,4,5,6,7,8,9,5,3])

print("Original Data Series:")

print(s)

print("Mean of the said Data Series:")

print(s.mean())

print("Standard deviation of the said Data Series:")

print(s.std())

**#Write a Pandas program to get the elements of an array values into column-wise.  
#Sample data: {‘X’:[78,85,96,80,86], 'Y':[84,94,89,83,86],'Z':[86,97,96,72,83]}**

**import pandas as pd**

df = pd.DataFrame({'X':[78,85,96,80,86], 'Y':[84,94,89,83,86],'Z':[86,97,96,72,83]});

print(df)

**#Write a Pandas program to get the columns of the DataFrame (movies\_metadata.csv file).**

import pandas as pd

import numpy as np

df = pd.read\_csv('movies\_metadata.csv')

print("Columns of the DataFrame:")

print(df.columns)

**#Write a Pandas program to sort the DataFrame based on country from dataset of**

**# movie\_metadata.csv**

import pandas as pd

import numpy as np

df = pd.read\_csv('/home/cyborg/Desktop/Data analytics/programs/movie\_metadata.csv')

print("sorted by country")

small\_df = df[['num\_user\_for\_reviews','language','country','content\_rating','budget','title\_year']]

result = small\_df.sort\_values('country')

print("DataFrame based on release date.")

print(result)

**#Write a Pandas program to get the details of the thrid movie of the DataFrame #(movie\_metadata.csv file).**

import pandas as pd

df = pd.read\_csv('movies\_metadata.csv')

third\_movie = df.iloc[2]

print("Details of the third moviee:")

print(third\_movie)

**#Write a Pandas program to display the first 10 rows of the DataFrame.**

import pandas as pd

df = pd.read\_csv('/home/cyborg/Desktop/Data analytics/programs/movie\_metadata.csv')

#Display the first 10 rows

result = df.head(10)

print("First 10 rows of the DataFrame:")

print(result)

**Numpy Examples**

**#Write a NumPy program to generate five random numbers from the normal distribution.**

import numpy as np

x = np.random.normal(size=5)

print(x)

**#Write a NumPy program to generate six random integers between 10 and 30**

import numpy as np

x = np.random.randint(low=10, high=30, size=6)

print(x)

**#Write a NumPy program to create a 3x3x3 array with random values.**

import numpy as np

x = np.random.random((3,3,3))

print(x)

**#Write a NumPy program to create a 5x5 array with random values and find the minimum #and maximum values.**

import numpy as np

x = np.random.random((5,5))

print("Original Array:")

print(x)

xmin, xmax = x.min(), x.max()

print("Minimum and Maximum Values:")

print(xmin, xmax)

**#Write a NumPy program to create a random 10x4 array and extract the first five rows of the # array and store them into a variable.**

import numpy as np

x = np.random.rand(10, 4)

print("Original array: ")

print(x)

y= x[:5, :]

print("First 5 rows of the above array:")

y= x[:5, :]

print(y)

z= x[:, :4]

print("First 3 columns of the above array:")

print(z)

**#Write a NumPy program to shuffle numbers and find permutation between 0 and 10 #(inclusive).**

import numpy as np

x = np.arange(10)

np.random.shuffle(x)

print(x)

print("Same result using permutation():")

print(np.random.permutation(10))

**#Write a NumPy program to create a random integer nos of size 10 and sort it.**

Import numpy as np

x=np.arange(10)

np.random.randint(x)

print (x)

**#Write a NumPy program to create a random integer nos of size 10 and sort it.**

import numpy as np

x=np.arange(10)

np.random.shuffle(x)

print(x)

x.sort()

print(x)