import numpy as np

import pandas as pd

1. **Write a Pandas program to create and display a one-dimensional array-like object containing an array of data using Pandas module.**

data = pd.Series([1,2,3,4,5])

**Output:**

data

0 1

1 2

2 3

3 4

4 5

dtype: int64

1. **Write a pandas program to convert a pandas module series to python list.**

data.tolist()

**Output:**

[1, 2, 3, 4, 5]

1. **Write a pandas program to add, subtract, multiple and divide two pandas series.**

a = pd.Series([1,2,3,4])

b = pd.Series([5,6,7,8])

print(a+b)

print(a-b)

print(a\*b)

print(a/b)

**Output:**

0 6

1 8

2 10

3 12

dtype: int64

0 -4

1 -4

2 -4

3 -4

dtype: int64

0 5

1 12

2 21

3 32

dtype: int64

0 0.200000

1 0.333333

2 0.428571

3 0.500000

dtype: float64

1. **Write a Pandas program to convert all the string values to upper, lower cases in a given pandas series. Also find the length of the string values.**

arr = pd.Series(['apple','ball','cat'])

print(arr.str.upper())

print(arr.str.lower())

print(arr.str.len())

**Output:**

0 APPLE

1 BALL

2 CAT

dtype: object

0 apple

1 ball

2 cat

dtype: object

0 5

1 4

2 3

dtype: int64

1. **Write a Pandas program to remove whitespaces, left sided whitespaces and right sided whitespaces of the string values of a given pandas series**

arr = pd.Index([' apple ',' ball ',' cat '])

arr.str.strip()

**Output:**

Index(['apple', 'ball', 'cat'], dtype='object')

1. **Write a Pandas program to create and display a DataFrame consist of student name, father name , mobile number as columns and register number as index.**

data = {'Name':['Shoheb','Ali','Akram'],'Father':['Karimulla','Shabbeer','Karimulla'],'No.':[123,786,420]}

label = ['y20cs167','y20cs164','y20cs162']

**Write a Pandas program to get list from DataFrame column headers.**

df=pd.DataFrame(data,index=label)

print(df)

**Output:**

Name Father No.

y20cs167 Shoheb Karimulla 123

y20cs164 Ali Shabbeer 786

y20cs162 Akram Karimulla 420

1. **Write a Pandas program to change the name of the student.**

df['Name'] = df['Name'].replace('Ali','Uday')

df

1. **Output:**

Name Father No.

y20cs167 Shoheb Karimulla 123

y20cs164 Uday Shabbeer 786

y20cs162 Akram Karimulla 420

1. **Write a Pandas program to insert a new column “grade” in existing DataFrame.**

df['Grade'] = [9.4,9.5,9.2]

df

**Output:**

|  | **Name** | **Father** | **No.** | **Grade** |
| --- | --- | --- | --- | --- |
| **y20cs167** | Shoheb | Karimulla | 123 | 9.4 |
| **y20cs164** | Ali | Shabbeer | 786 | 9.5 |
| **y20cs162** | Akram | Karimulla | 420 | 9.2 |
|  |  |  |  |  |

**10. Write a pandas program to create and display a dataframe from a specified dictionary data which has the index labels.**

data = {'Name':['Shoheb','Ali','Akram'],'Father':['Karimulla','Shabbeer','Karimulla'],'No.':[123,786,420]}

label = ['y20cs167','y20cs164','y20cs162']

df=pd.DataFrame(data,index=label)

print(df)

**Output:**

Name Father No.

y20cs167 Shoheb Karimulla 123

y20cs164 Ali Shabbeer 786

y20cs162 Akram Karimulla 420