**Basic Python**

**1. Split this string**

s = "Hi there Sam!"

x=s.split()

print(x)

**output**

['Hi', 'there', 'Sam!']

**2. Use .format() to print the following string.**

planet = "Earth"

diameter = 12742

txt = "The diameter of {} is {} kilometer."

print(txt)

**output**

The diameter of Earth is 12742 kilometer.

**3. In this nest dictionary grab the word "hello"**

d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}

print(d['k1'][3]["tricky"][3]['target'][3])

**output**

hello

**Numpy**

import numpy as np

**4.1 Create an array of 10 zeros?**

**4.2 Create an array of 10 fives?**

array1 = np.zeros(10)

print(array1)

array2 = np.ones(10)\*5

print(array2)

**output**

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]

**5. Create an array of all the even integers from 20 to 35**

import numpy as np

array = np.arange(20,35,2)

print(" The even integers from 20 to 30 are:")

print(array)

**output**

The even integers from 20 to 30 are:

[20 22 24 26 28 30 32 34]

**6. Create a 3x3 matrix with values ranging from 0 to 8**

import numpy as np

x = np.arange(0,9).reshape(3,3)

print(x)

**output**

[[0 1 2]

[3 4 5]

[6 7 8]]

**7. Concatenate a and b**

**a = np.array([1, 2, 3]), b = np.array([4, 5, 6])**

import numpy as np

a = np.array ([1,2,3])

b = np.array([4,5,6])

np.concatenate((a,b), axis = 0)

**output**

array([1, 2, 3, 4, 5, 6])

**Pandas**

**8. Create a dataframe with 3 rows and 2 columns**

import pandas as pd

data = [['akash',25], ['sweta',23], ['shivam',26]]

df = pd.DataFrame(data, columns=['Name', 'Age'])

df

**output**

Name Age

0 akash 25

1 sweta 23

2 shivam 26

**9. Generate the series of dates from 1st Jan, 2023 to 10th Feb, 2023**

import pandas as pd

#creating range sequence of dates

dates = pd.date\_range('01-01-2023', periods=10,)

#creating pandas series with date index

s = pd.Series(dates)

print (s)

**output**

0 2023-01-01

1 2023-01-02

2 2023-01-03

3 2023-01-04

4 2023-01-05

5 2023-01-06

6 2023-01-07

7 2023-01-08

8 2023-01-09

9 2023-01-10

dtype: datetime64[ns]

**10. Create 2D list to DataFrame**

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

lists = [[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]

import pandas as pd

#creating df object with columns specified

df = pd.DataFrame(lists, columns =['Serial', 'Name','Age'])

print(df)

**output**

Serial Name Age

0 1 aaa 22

1 2 bbb 25

2 3 ccc 24