Basic Python

1. Split this string

s = "Hi there Sam!"

s.split(" ")

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

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

Output should be: The diameter of Earth is 12742 kilometers.

planet = "Earth"

diameter = 12742

print("The diameter of {} is {} kilometers.".format(planet, diameter))

The diameter of Earth is 12742 kilometers.

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

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

d['k1'][3]['tricky'][3]['target'][3]

'hello'

Numpy

import numpy as np

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

array = np.zeros(10)

array

array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

array = np.ones(10)\*5

array

array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])

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

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

array

array([20, 22, 24, 26, 28, 30, 32, 34])

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

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

array

array([[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])

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

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

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

array

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

import pandas as pd

list1 = [['John', 21], ['Jane', 25], ['Mary', 21]]

pd.DataFrame(list1)

0 1

0 John 21

1 Jane 25

2 Mary 21

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

pd.date\_range(start='2023-01-01', end='2023-02-10')

DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',

'2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',

'2023-01-09', '2023-01-10', '2023-01-11', '2023-01-12',

'2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',

'2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',

'2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',

'2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',

'2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',

'2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',

'2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',

'2023-02-10'],

dtype='datetime64[ns]', freq='D')

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]]

pd.DataFrame(lists)

0 1 2

0 1 aaa 22

1 2 bbb 25

2 3 ccc 24