**Basic Python**

**1. Split this string**

In [ ]:

s **=** "Hi there Sam!"

a **=** s**.**split()

a

Out[ ]:

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

In [ ]:

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

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

In [ ]:

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"**

In [ ]:

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

Out[ ]:

'hello'

**Numpy**

In [ ]:

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

array**=**np**.**zeros(10)

print("An array of 10 zeros:")

print(array)

An array of 10 zeros:

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

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

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

In [ ]:

array**=**np**.**ones(10)**\***5

print("An array of 10 fives:")

print(array)

An array of 10 fives:

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

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

In [ ]:

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

array**=**np**.**arange(20,36,2)

array

Out[ ]:

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

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

In [ ]:

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

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

print(x)

[[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])**

In [ ]:

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

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

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

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

print(s)

[1 2 3 4 5 6]

**Pandas**

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

In [ ]:

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

data **=** {'Name' :['Ragavan','smith','vikram'], 'Qualification' : ['Military','Agent','police']}

s **=** pd**.**DataFrame(data)

s

Out[ ]:

|  | **Name** | **Qualification** |
| --- | --- | --- |
| **0** | Ragavan | Military |
| **1** | smith | Agent |
| **2** | vikram | police |

In [ ]:

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

In [40]:

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

s **=** pd**.**date\_range(start **=** '1-1-2023', end **=** '10-2-2023')

print(s)

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',

...

'2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',

'2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',

'2023-10-01', '2023-10-02'],

dtype='datetime64[ns]', length=275, freq='D')

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

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

In [ ]:

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

In [41]:

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

s **=** pd**.**DataFrame(lists)

s

Out[41]:

|  | **0** | **1** | **2** |
| --- | --- | --- | --- |
| **0** | 1 | aaa | 22 |
| **1** | 2 | bbb | 25 |
| **2** | 3 | ccc | 24 |