**Basic Python**

**1. Split this string**

In [ ]:

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

In [ ]:

print(s**.**split())

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

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

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

In [ ]:

planet **=** "Earth"

diameter **=** 12742

In [ ]:

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 [1]:

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

In [3]:

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

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

Out[3]:

'hello'

**Numpy**

In [ ]:

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

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

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

In [ ]:

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

print(a)

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

In [ ]:

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

print(b)

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

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

In [ ]:

a**=**np**.**arange(20,35,2)

print(a)

[20 22 24 26 28 30 32 34]

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

In [ ]:

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])

arr**=**np**.**concatenate((a,b))

print(arr)

[1 2 3 4 5 6]

**Pandas**

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

In [ ]:

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

In [ ]:

row**=**[['john',100],['nick',200],['ram',300]]

df**=**pd**.**DataFrame(row,columns**=**['Name','Serial number'])

print(df)

Name Serial number

0 john 100

1 nick 200

2 ram 300

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

In [ ]:

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

print(d)

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 [ ]:

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

print(d)

0 1 2

0 1 aaa 22

1 2 bbb 25

2 3 ccc 24