**Basic Python**

**1. Split this string**

In [1]:

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

In [2]:

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 [3]:

planet **=** "Earth"

diameter **=** 12742

In [4]:

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 [5]:

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

In [6]:

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

Out[6]:

'hello'

**Numpy**

In [7]:

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

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

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

In [8]:

a0**=**[0]**\***10

In [9]:

print(a0)

[0, 0, 0, 0, 0, 0, 0, 0, 0, 0]

In [10]:

a5**=**[5]**\***10

In [11]:

print(a5)

[5, 5, 5, 5, 5, 5, 5, 5, 5, 5]

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

In [12]:

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

In [13]:

print(arr)

[20 22 24 26 28 30 32 34]

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

In [14]:

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

In [15]:

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 [16]:

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

In [17]:

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

In [18]:

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

Out[18]:

array([[1, 2, 3],

[4, 5, 6]])

**Pandas**

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

In [19]:

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

In [20]:

data **=** [['tom', 10], ['nick', 15], ['juli', 14]]

In [21]:

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

In [22]:

df

Out[22]:

|  | **Name** | **Age** |
| --- | --- | --- |
| **0** | tom | 10 |
| **1** | nick | 15 |
| **2** | juli | 14 |

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

In [23]:

date **=** pd**.**date\_range(start **=**'1-1-2023',

end **=**'02-10-2023')

In [24]:

**for** val **in** date:

print(val)

2023-01-01 00:00:00

2023-01-02 00:00:00

2023-01-03 00:00:00

2023-01-04 00:00:00

2023-01-05 00:00:00

2023-01-06 00:00:00

2023-01-07 00:00:00

2023-01-08 00:00:00

2023-01-09 00:00:00

2023-01-10 00:00:00

2023-01-11 00:00:00

2023-01-12 00:00:00

2023-01-13 00:00:00

2023-01-14 00:00:00

2023-01-15 00:00:00

2023-01-16 00:00:00

2023-01-17 00:00:00

2023-01-18 00:00:00

2023-01-19 00:00:00

2023-01-20 00:00:00

2023-01-21 00:00:00

2023-01-22 00:00:00

2023-01-23 00:00:00

2023-01-24 00:00:00

2023-01-25 00:00:00

2023-01-26 00:00:00

2023-01-27 00:00:00

2023-01-28 00:00:00

2023-01-29 00:00:00

2023-01-30 00:00:00

2023-01-31 00:00:00

2023-02-01 00:00:00

2023-02-02 00:00:00

2023-02-03 00:00:00

2023-02-04 00:00:00

2023-02-05 00:00:00

2023-02-06 00:00:00

2023-02-07 00:00:00

2023-02-08 00:00:00

2023-02-09 00:00:00

2023-02-10 00:00:00

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

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

In [25]:

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

In [26]:

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

In [27]:

print(df)

Rollno Name Age

0 1 aaa 22

1 2 bbb 25

2 3 ccc 24

In [ ]: