**Basic Python**

**1. Split this string**

In[1]: s **=** "Hi there Sam!"

In[2]: s**.**split()

Out[2]: ['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 [5]: 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 [6]:

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

In [8]:

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

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

hello

**Numpy**

In [9]: **import** numpy **as** np

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

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

In [11]: array**=**np**.**zeros(10)

array

Out[11]: array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

In [12]: array**=**np**.**ones(10)**\***5

array

Out[12]: array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])

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

In [13]: array**=**np**.**arange(20,35,2)

array

Out[13]: array([20, 22, 24, 26, 28, 30, 32, 34])

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

In [21]: matrix**=**np**.**arange(0,9)**.**reshape(3,3)

matrix

Out[21]: 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])**

In [24]: a **=** np**.**array([1, 2, 3])

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

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

ab

Out[24]: array([1, 2, 3, 4, 5, 6])

**Pandas**

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

In [25]: **import** pandas **as** pd

In [27]: data **=** [['vb', 10], ['hari', 15], ['prasath', 14]]

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

df

Out[27]:

|  | **Name** | **Age** |
| --- | --- | --- |
| **0** | vb | 10 |
| **1** | hari | 15 |
| **2** | prasath | 14 |

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

In [51]: per1 **=** pd**.**date\_range(start **=**'01-01-2023',

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

**for** val **in** per1:

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

2023-01-24 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

2023-01-21 00:00:00

2023-01-22 00:00:00

2023-01-23 00:00:00

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

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

In [35]: lists **=** [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

In [58]: lists **=** [[1,'aaa', 22], [2,'bbb', 25], [3,'ccc', 24]]

*# Create the pandas DataFrame*

df **=** pd**.**DataFrame(lists, columns **=** ['s.no','name','Age'])

*# print dataframe.*

print(df )

s.no name Age

0 1 aaa 22

1 2 bbb 25

2 3 ccc 24