Basic Python

1.Split the string

In [2]:
```
s = "Hi there Sam!"
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
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']}]}]}
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?

In [14]:
```
arr = np.zeros(10)
print(arr, "lenght = {}".format(len(arr)))
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.] lenght = 10
```

4.2 Create an array of 10 fives?

In [13]:
```
arr = np.ones(10) * 5
print(arr, "lenght = {}".format(len(arr)))
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.] lenght = 10
```

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

In [16]:
```
arr = np.arange(20, 35, 2)
print(arr)
```

```
[20 22 24 26 28 30 32 34]
```

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

In [17]:
```
matrix = np.arange(0, 9).reshape(3, 3)
print(matrix)
```

```
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

7. Concatinate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

In [23]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
np.concatenate((a, b), axis = None)
```

Out[23]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [24]:
```
import pandas as pd
```

In [25]:
```
data = {"Names" : ['Chandru', 'Suresh', 'Harish'], 'department' : ["IT", "IT", "IT"
dataframe = pd.DataFrame(data)
dataframe
```

Out[25]:

	Names	department
0	Chandru	IT
1	suresh	IT
2	harish	IT

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

In [29]:
```
date = pd.date_range(start='01-01-2023', end='10-02-2023')
print(date)
```

```
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 [31]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
dataframe = pd.DataFrame(lists)
dataframe
```

Out[31]:

	0	1	2
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24