Basic Python

1. Split this string

In [2]:
```python
s = "Hi there Sam!"
```

In [3]:
```python
b=s.split()
print(b)
```
['Hi', 'there', 'Sam!']

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

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

In [4]:
```python
planet = "Earth"
diameter = 12742
```

In [5]:
```python
print("The diameter of {0} is {1} kilometers".format(planet,diameter))
```
The diameter of Earth is 12742 kilometers

3. In this nest dictionary grab the word "hello"

In [6]:
```python
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [12]:
```python
print(d['k1'][3]['tricky'][3]['target'][3])
```
hello

Numpy

```python
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```python
array=np.zeros(10)
print(array)
```

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

```python
array=np.ones(10)*5
print(array)
```

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

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

```python
array=np.arange(20,36,2)
print(array)
```

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

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

```python
array=np.arange(0,9).reshape(3,3)
print(array)
```

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

```
array=np.arange(20,36,2)
print(array)
```

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

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

```
array=np.arange(0,9).reshape(3,3)
print(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])

```
a=np.array([1,2,3])
b=np.array([4,5,6])
np.concatenate((a,b),axis=0)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
df = pd.DataFrame(np.random.randint(0,10, size=(1,8)))
```

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

```
p=pd.date_range(start='1-01-2023',end='2-10-2023')
print(p)
```

```
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', '2023-01-11', '2023-01-12',
               '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
               '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
               '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
               '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
               '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
               '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
               '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
               '2023-02-10'],
              dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

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

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

```
lists = [[1,'aaa',22], [2,'bbb',25], [3,'ccc',24]]
df = pd.DataFrame(lists,columns=['5.no','Name','Age'])
print(df)
```

```
   5.no Name  Age
0     1  aaa   22
1     2  bbb   25
2     3  ccc   24
```