Basic Python

1. Split this string

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

In [4]:
```
1 s.split()
```

Out[4]:
```
['Hi', 'there', 'Sam!']
```

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

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

In [6]:
```
1 planet = "Earth"
2 diameter = 12742
```

In [10]:
```
1 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 [12]:
```
1 d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [24]:
```
1 hlo = d['k1'][3]['tricky'][3]['target'][3]
2 print(hlo)
```

```
hello
```

Numpy

In [26]:
```
1 import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [28]:
```
1 np.zeros(10)
```

Out[28]:
```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [31]:
```
1 np.ones(10)*5
```

Out[31]:
```
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 [33]:
```
1 array = np.arange(20,35,2)
2 array
```

Out[33]:
```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

In [39]:
```
1 a = np.arange(0,9).reshape(3,3)
2 a
```

Out[39]:
```
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 [43]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
np.concatenate((a,b))
```

Out[43]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [45]:
```
import pandas as pd
```

In [59]:
```
a = pd.DataFrame([['a','b'],['c','d'],['e','f']])
a
```

Out[59]:

	0	1
0	a	b
1	c	d
2	e	f

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

In [62]:
```
print(pd.date_range("01-01-2023","02-10-2023")) #"MM-DD-YYYY"
```

```
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]]

In [64]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [65]:
```
df = pd.DataFrame(lists)
df
```

Out[65]:

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