Basic Python

1. Split this string

In [3]:
```
s = "Hi there Sam!"
```

In [4]:
```
a=s.split()
a
```

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

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

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

In [5]:
```
planet = "Earth"
diameter = 12742
```

In [7]:
```
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 [8]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [9]:
```
print(d['k1'][3]["tricky"][3]["target"][3])
```

```
hello
```

Numpy

In [11]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [12]:
```
array=np.zeros(10)
print("An array of 10 zeros",array)
```

```
An array of 10 zeros [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

In [13]:
```
array=np.ones(10)*5
```

```
print("An array of 10 fives",array)
```

```
An array of 10 fives [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

In [15]:
```
print(np.arange(20,35,2))
```

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

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

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

Out[17]:
```
array([[0, 1, 2],
       [3, 4, 5],
       [6, 7, 8]])
```

In [ ]:
```

```

7. Concatenate a and b

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

In [19]:
```
a=np.array([1,2,3])
b=np.array([4,5,6])
print(np.concatenate((a,b)))
```

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [20]:
```
import pandas as pd
```

In [21]:
```
pd.DataFrame(index=np.arange(3),columns=np.arange(2))
```

Out[21]:

	0	1
0	NaN	NaN
1	NaN	NaN
2	NaN	NaN

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

10th Feb, 2023

In [22]:
```
pd.date_range('1-jan-2023','10-feb-2023')
```

Out[22]:
```
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 [23]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [24]:
```
df=pd.DataFrame(lists,columns=['col_1','col_2','col_3'])
print(df)
```

```
   col_1 col_2  col_3
0      1   aaa     22
1      2   bbb     25
2      3   ccc     24
```