Basic Python

1. Split this string

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

In [8]:
```
s.split()
```

Out[8]:
```
['Hi', 'there', 'Sam!']
```

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

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

In [9]:
```
planet = "Earth"
diameter = 12742
```

In [16]:
```
text="The diameter of {} is {} kilometers".format(planet,diameter)
print(text)
```

```
The diameter of Earth is 12742 kilometers
```

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

In [18]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [20]:
```
d.target.index(3)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
C:\Users\JAGADE~1\AppData\Local\Temp/ipykernel_10372/2978707764.py in <module>
----> 1 d.target.index(3)

AttributeError: 'dict' object has no attribute 'target'
```

Numpy

In [21]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

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

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 [34]:
```
even=np.arange(20,35,2)
even
```

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

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

In [42]:
```
matrix=np.arange(0, 9).reshape(3,3)
matrix
```

Out[42]:
```
array([[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 [47]:
```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
np.concatenate((a, b))
```

Out[47]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [48]:
```
import pandas as pd
```

In [49]:
```
data = [['tom', 10], ['nick', 15], ['juli', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
df
```

Out[49]:

	Name	Age
0	tom	10
1	nick	15
2	juli	14

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

In [59]:
```
dates = pd.date_range('2023-01-1','2023-02-10', freq='D')
dates
```

Out[59]:
```
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 [50]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [57]:
```
df = pd.DataFrame(lists)
print(df )
```

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