Basic Python

1. Split this string

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

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

```
['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 [10]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [11]:
```
array=np.zeros(10)
print(array)
```

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

In [12]:
```
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

In [14]:
```
import numpy as np
array=np.arange(20,35,2)
print(array)
```

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

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

In [15]:
```
import numpy as np
x=np.arange(0,9).reshape(3,3)
print(x)
```

```
[[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 [16]:
```
import numpy as np
a=np.array([1,2,3])
b=np.array([4,5,6])
c=np.stack((a,b),axis=1)
print(c)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [17]:
```
import pandas as pd
```

In [19]:
```
import numpy as np
A=np.random.randint(6,size=(3,2))
df=pd.DataFrame(A)
print(df)
```

```
   0  1
0  5  3
1  1  5
2  5  3
```

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

In [20]:
```
import pandas as pd
pd.date_range("01-01-2023","10-02-2023")
```

Out[20]:
```
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 [21]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [22]:
```
import pandas as pd
pd.DataFrame(lists)
```

Out[22]:

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