Basic Python

1. Split this string

In [6]:
```
s = "Hi there Sam!"
```

In [7]:
```
s="Hi there Sam!"
s=s.split()
print(s);
```

```
['Hi', 'there', 'Sam!']
```

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

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

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

In [8]:
```
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 [10]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [11]:
```
print(d['k1'][3]["tricky"][3]['target'][3])
```

```
hello
```

Numpy

In [13]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [14]:
```
np.zeros(10)
```

Out[14]:
```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [15]:
```
np.ones(10) * 5
```

Out[15]:
```
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 [17]:
```
np.arange(20,35,2)
```

Out[17]:
```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

In [18]:
```
np.arange(9).reshape(3,3)
```

Out[18]:
```
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 [23]:
```
a=np.array([1,2,3])
```

```
b=np.array([4,5,6])
np.concatenate([a,b])
```

Out[23]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [24]:
```
import pandas as pd
```

In [25]:
```
pd.DataFrame(index=np.arange(3), columns=np.arange(2))
```

Out[25]:

	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 [26]:
```
pd.date_range(start = '1-1-2023', end = '10-2-2023')
```

Out[26]:
```
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 [27]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [28]:
```
pd.DataFrame.from_records(lists)
```

Out[28]:

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

In [ ]:
```

```