Basic Python

1. Split this string

In [18]:
```
s = "Hi there Sam!"
```

In [19]:
```
s.split()
```

Out[19]:
```
['Hi', 'there', 'Sam!']
```

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

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

In [20]:
```
planet = "Earth"
diameter = 12742
```

In [21]:
```
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 [22]:
```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

In [23]:
```
d['k1'][3]['tricky'][3]['target'][3]
```

Out[23]:
```
'hello'
```

Numpy

In [24]:
```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [25]:
```
np.zeros(10)
```

Out[25]:
```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [26]:
```
np.ones(10)*5
```

Out[26]:
```
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 [27]:
```
ArrE = np.arange(20,35,2)
print('The Array of Even Integers (20-35): ', ArrE)
```

```
The Array of Even Integers (20-35):  [20 22 24 26 28 30 32 34]
```

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

In [28]:
```
Mat = np.arange(0,9).reshape(3,3)
print('3x3 Matrix:\n'); print(Mat)
```

```
3x3 Matrix:

[[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 [29]:
```
a = np.array([1, 2, 3]); b = np.array([4, 5, 6])
np.concatenate([a, b])
```

Out[29]:
```
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [30]:
```
import pandas as pd
```

In [31]:
```
Data = {"Name": ['Mano', 'Prithivi', 'Ram'], "Age": [15,20,40]}
pd.DataFrame(Data)
```

Out[31]:

	Name	Age
0	Mano	15
1	Prithivi	20
2	Ram	40

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

In [32]:
```
Dates = pd.date_range('1-1-2023', '2-10-2023')
print('The Dates: ')
for i in Dates:
    print(i)
```

```
The Dates:
2023-01-01 00:00:00
2023-01-02 00:00:00
```

```
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
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2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

10. Create 2D list to DataFrame

lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]

In [33]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [34]:
```
pd.DataFrame(lists, columns = ['Si.No.', 'String', 'Number'])
```

Out[34]:

	Si.No.	String	Number
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24