Basic Python

1. Split this string

In [1]:

```
s = "Hi there Sam!"
```

In [2]:

```
s.split()
```

Out[2]:

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

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

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

In [3]:

```
planet = "Earth"
diameter = 12742
```

In [5]:

```
planet = "Earth"
diameter = 12742
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 [6]:

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

In [8]:

```
d =
{'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]
}
print(d['k1'][3]["tricky"][3]['target'][3])
```

```
hello
```

Numpy

In [9]:

```
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)
array
```

Out[11]:

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

In [12]:

```
array=np.ones(10)*5
array
```

Out[12]:

```
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 [13]:

```
array=np.arange(20,35,2)
array
```

Out[13]:

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

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

In [21]:

```
matrix=np.arange(0,9).reshape(3,3)
matrix
```

Out[21]:

```
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 [24]:

```
a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
ab=np.concatenate((a,b),axis=0)
ab
```

Out[24]:

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [25]:

```
import pandas as pd
```

In [27]:

```
data = [['vb', 10], ['hari', 15], ['prasath', 14]]
df = pd.DataFrame(data, columns=['Name', 'Age'])
df
```

Out[27]:

	Name	Age
0	vb	10
1	hari	15
2	prasath	14

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

In [51]:

```
per1 = pd.date_range(start ='01-01-2023',
          end ='02-10-2023' )

for val in per1:
  print(val)
```

```
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
2023-01-23 00:00:00
```

```
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
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 [35]:

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

In [58]:

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

# Create the pandas DataFrame
df = pd.DataFrame(lists, columns = ['s.no','name','Age'])

# print dataframe.
print(df )
```

```
   s.no name  Age
0     1  aaa   22
1     2  bbb   25
2     3  ccc   24
```