PYTHON BASICS

In [14]:

```
s = "Hi there Sri!"
s.split()
['Hi', 'there', 'Sri!']
```

Out[14]:

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

Use .format() to print the following string.

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

In [15]:

```
planet = "Neptune"
diameter = 49244
```

In [16]:

```
print('The diameter of {} is {} kilometers.'.format(planet,diameter))
```

```
The diameter of Neptune is 49244 kilometers.
```

In this nest dictionary grab the word "hello"

In [17]:

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

Out[17]:

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

In [18]:

```
d['k1']
```

Out[18]:

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

In [19]:

```
d['k1'][3]
```

Out[19]:

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

In [20]:

```
d['k1'][3]['tricky']
```

Out[20]:

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

In [21]:

```
d['k1'][3]['tricky'][3]
```

Out[21]:

```
{'target': [1, 2, 3, 'hello']}
```

In [22]:

```
d['k1'][3]['tricky'][3]['target']
```

Out[22]:

```
[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?

In [25]:

```
np.zeros(10)
```

Out[25]:

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

4.2 Create an array of 10 fives?

In [26]:

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

Out[26]:

```
array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])
```

1. **Create an array of all the even integers from 20 to 35**

In [27]:

```
np.arange(20,36,2)
```

Out[27]:

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

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

In [28]:

```
np.arange(9).reshape(3,3)
```

Out[28]:

```
array([[0, 1, 2],
       [3, 4, 5],
```

```
       [6, 7, 8]])
```

1. **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

1. **Create a dataframe with 3 rows and 2 columns**

In [30]:

```
import pandas as pd
record = {
  "Name": ["Mahesh", "Nathan", "Vamsi"],

   "Marks": [9, 19, 20]}
```

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

In [31]:

```
from datetime import datetime, timedelta

def date_range(start, end):
    delta = end - start  # as timedelta
    days = [start + timedelta(days=i) for i in range(delta.days + 1)]
    return days

start_date = datetime(2023, 1, 1)
end_date = datetime(2023, 2, 10)

print(date_range(start_date, end_date))
```

```
[datetime.datetime(2023, 1, 1, 0, 0), datetime.datetime(2023, 1, 2, 0, 0), datetime.datet
ime(2023, 1, 3, 0, 0), datetime.datetime(2023, 1, 4, 0, 0), datetime.datetime(2023, 1, 5,
0, 0), datetime.datetime(2023, 1, 6, 0, 0), datetime.datetime(2023, 1, 7, 0, 0), datetime
.datetime(2023, 1, 8, 0, 0), datetime.datetime(2023, 1, 9, 0, 0), datetime.datetime(2023,
1, 10, 0, 0), datetime.datetime(2023, 1, 11, 0, 0), datetime.datetime(2023, 1, 12, 0, 0),
datetime.datetime(2023, 1, 13, 0, 0), datetime.datetime(2023, 1, 14, 0, 0), datetime.date
time(2023, 1, 15, 0, 0), datetime.datetime(2023, 1, 16, 0, 0), datetime.datetime(2023, 1,
17, 0, 0), datetime.datetime(2023, 1, 18, 0, 0), datetime.datetime(2023, 1, 19, 0, 0), dat
etime.datetime(2023, 1, 20, 0, 0), datetime.datetime(2023, 1, 21, 0, 0), datetime.datetim
e(2023, 1, 22, 0, 0), datetime.datetime(2023, 1, 23, 0, 0), datetime.datetime(2023, 1, 24
, 0, 0), datetime.datetime(2023, 1, 25, 0, 0), datetime.datetime(2023, 1, 26, 0, 0), date
time.datetime(2023, 1, 27, 0, 0), datetime.datetime(2023, 1, 28, 0, 0), datetime.datetime
(2023, 1, 29, 0, 0), datetime.datetime(2023, 1, 30, 0, 0), datetime.datetime(2023, 1, 31,
0, 0), datetime.datetime(2023, 2, 1, 0, 0), datetime.datetime(2023, 2, 2, 0, 0), datetime
.datetime(2023, 2, 3, 0, 0), datetime.datetime(2023, 2, 4, 0, 0), datetime.datetime(2023,
2, 5, 0, 0), datetime.datetime(2023, 2, 6, 0, 0), datetime.datetime(2023, 2, 7, 0, 0), dat
etime.datetime(2023, 2, 8, 0, 0), datetime.datetime(2023, 2, 9, 0, 0), datetime.datetime(
2023, 2, 10, 0, 0)]
```

1. **Create 2D list to DataFrame lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]**

In [32]:

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

```
df = pd.DataFrame(lists, columns =['S.No', 'Name', 'Age'])
print(df )
```

```
   S.No Name  Age
0     1  aaa   22
1     2  bbb   25
2     3  ccc   24
```