Basic Python

1. Split this string

```
[2]: s = "Hi there Surya!"
     s.split()
```

```
[2]: ['Hi', 'there', 'Surya!']
```

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

```
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"

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

```
[4]: 'hello'
```

Numpy

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

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
var=np.zeros(10)
var
```

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

```
6]: var=np.ones(10)*5
    var
```

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

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

```
[7]: var2=np.arange(20,35,2)
     var2
```

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

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

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

```
[8]: array([[0, 1, 2],
            [3, 4, 5],
            [6, 7, 8]])
```

7. Concatinate a and b

a = np.array([1, 2, 3]), b = np.array([4, 5, 6])

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
[11]: import pandas as pd
      lst = {'Heroes':['Homelander', 'Stormfront', 'Deep'], 'Weakness':['milk','anti-racists', 'octopus']}
      df = pd.DataFrame(lst)
      print(df)
```

```
       Heroes      Weakness
0  Homelander          milk
1  Stormfront  anti-racists
2        Deep       octopus
```

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

[13]:
```
time_series = pd.date_range('1/1/2023', periods = 41, freq='1D')
print("Time series using three months frequency: \n{}".format(time_series))
```

```
Time series using three months frequency:
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', '2023-01-11', '2023-01-12',
               '2023-01-13', '2023-01-14', '2023-01-15', '2023-01-16',
               '2023-01-17', '2023-01-18', '2023-01-19', '2023-01-20',
               '2023-01-21', '2023-01-22', '2023-01-23', '2023-01-24',
               '2023-01-25', '2023-01-26', '2023-01-27', '2023-01-28',
               '2023-01-29', '2023-01-30', '2023-01-31', '2023-02-01',
               '2023-02-02', '2023-02-03', '2023-02-04', '2023-02-05',
               '2023-02-06', '2023-02-07', '2023-02-08', '2023-02-09',
               '2023-02-10'],
              dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

[12]:
```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
df=pd.DataFrame(lists)
df
```

[12]:

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