Basic Python

1. Split this string

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

```
1 print(s.split())
```

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

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

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

```
1 planet = "Earth"
2 diameter = 12742
```

```
1 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"

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

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

```
'hello'
```

Numpy

```
1 import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

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

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

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

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

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

```
1 print(np.arange(20,35,2))
```

```
[20 22 24 26 28 30 32 34]
```

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

```
1 np.arange(0,9).reshape((3,3))
```

```
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])

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

```

```
import numpy as np

df = pd.DataFrame({
    'col_1': [0, 1, 2 ],
    'col_2': [3, 4, 5]
})
df
```

	col_1	col_2
0	0	3
1	1	4
2	2	5

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

```


sdate = date(2023,1,1)
edate = date(2023,2,10)
pd.date_range(sdate,edate-timedelta(days=1),freq='d')
```

```
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'],
              dtype='datetime64[ns]', freq='D')
```

10. Create 2D list to DataFrame

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

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

```
1
2 pd.DataFrame(lists)
```

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

✓ 0s completed at 10:35 AM