Basic Python

1. Split this string

```
In [25]: s = "Hi there Sam!"
```

```
In [26]: s.split(' ')
```

```
Out[26]: ['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]: print("The diameter of {a} is {b} kilometers".format(a=planet,b = 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'][3]['tricky'][3]['target'][3]
```

```
Out[8]: '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 [10]: array=np.zeros(10)
```

```
In [11]: array=np.ones(10)*5
```

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

```
In [12]: array=np.arange(20,36,2)
```

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

```
In [13]: x =  np.arange(0, 9).reshape(3,3)
```

7. Concatenate a and b

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

```
In [14]: a = np.array([1, 2, 3])
         b = np.array([4, 5, 6])
         np.concatenate((a, b))
```

```
Out[14]: array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
In [17]: import pandas as pd
```

```
In [18]:  data = [['Jayasheelan R', '19IT037'],['Anandhalakshmi', '19IT007'], ['Cathe',
          '19IT017'], ['Reshmekaa', '19IT078']]
          df = pd.DataFrame(data, columns=['Name', 'ROll No'])
          df
```

Out[18]:

	Name	ROll No
0	Jayasheelan R	19IT037
1	Anandhalakshmi	19IT007
2	Cathe	19IT017
3	Reshmekaa	19IT078

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

```
In [18]:  data = [['Jayasheelan R', '19IT037'],['Anandhalakshmi', '19IT007'], ['Cathe',
          '19IT017'], ['Reshmekaa', '19IT078']]
```

In [19]:
```python
date = pd.date_range(start ='1-1-2023', end ='10-02-2023', freq ='24H')
for d in date:
    print(d)
```

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```

10. Create 2D list to DataFrame

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

```
In [20]:  lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
```

In [21]: ```python
df = pd.DataFrame.from_records(lists)
```

In [22]: ```python
df
```

Out[22]:

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