Basic Python

1. Split this string

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

```python
r = s.split()
print(r)
```

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

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

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

```python
planet = "Earth"
diameter = 12742
out = "The diameter of {} is {} kilometers."
print(out.format(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers.
```

3. In this nest dictionary grab the word "hello"

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

```python
print(d['k1'][3]['tricky'][3]['target'][3])
```

```
hello
```

Numpy

```python
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
array = np.zeros(10)
print(array)
```

```
    [0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

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

```
    [5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

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

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

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

```
array = np.arange(0,9).reshape(3,3)
print(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])

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

```
    [1 2 3 4 5 6]
```

▾ Pandas

▾ 8. Create a dataframe with 3 rows and 2 columns

```python
import pandas as pd
```

```python
data = [['apple', 100], ['orange',150], ['grapes', 140]]
df = pd.DataFrame(data, columns=['Fruit', 'Amount'])
print(df)
```

```
    Fruit  Amount
0   apple     100
1  orange     150
2  grapes     140
```

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

```python
date = pd.date_range(start='01-01-2023',end='02-10-2023')
s = pd.Series(date)
print(s)
```

```
0     2023-01-01
1     2023-01-02
2     2023-01-03
3     2023-01-04
4     2023-01-05
5     2023-01-06
6     2023-01-07
7     2023-01-08
8     2023-01-09
9     2023-01-10
10    2023-01-11
11    2023-01-12
12    2023-01-13
13    2023-01-14
14    2023-01-15
15    2023-01-16
16    2023-01-17
17    2023-01-18
18    2023-01-19
19    2023-01-20
20    2023-01-21
21    2023-01-22
22    2023-01-23
23    2023-01-24
24    2023-01-25
25    2023-01-26
26    2023-01-27
27    2023-01-28
```

```
28     2023-01-29
29     2023-01-30
30     2023-01-31
31     2023-02-01
32     2023-02-02
33     2023-02-03
34     2023-02-04
35     2023-02-05
36     2023-02-06
37     2023-02-07
38     2023-02-08
39     2023-02-09
40     2023-02-10
dtype: datetime64[ns]
```

▾ 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]]
```

```
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
```

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