Basic Python

1. Split this string

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

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

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

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

```
planet = "Earth"
diameter = 12742
```

```
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"

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

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

```
        hello
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
import numpy as np
array=np.ones(10)*5
print("An array of 10 fives:")
print(array)
```

```
An array of 10 fives:
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

```
import numpy as np
array=np.arange(20,36,2)
print("Array of all the even integers from 30 to 70")
print(array)
```

```
Array of all the even integers from 30 to 70
[20 22 24 26 28 30 32 34]
```

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

```
a = np.array((1,2,3))
b = np.array((4,5,6))
np.stack((a,b),axis=1)
```

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

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

```
import numpy as np
x =  np.arange(0, 9).reshape(3,3)
print(x)
```

```
[[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))
np.stack((a,b),axis=1)

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
import pandas as pd
data = [['kesavan', 41], ['kavya', 39], ['kesavarthini', 42]]
df = pd.DataFrame(data, columns=['Name', 'Register no'])
df
```

	Name	Register no
0	kesavan	41
1	kavya	39
2	kesavarthini	42

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

```
import datetime

# The size of each step in days
day_delta = datetime.timedelta(days=1)

start_date = datetime.date.today()
end_date = start_date + 41*day_delta

for i in range((end_date - start_date).days):
    print(start_date + i*day_delta)

        2022-09-15
        2022-09-16
        2022-09-17
        2022-09-18
        2022-09-19
```

```
2022-09-20
2022-09-21
2022-09-22
2022-09-23
2022-09-24
2022-09-25
2022-09-26
2022-09-27
2022-09-28
2022-09-29
2022-09-30
2022-10-01
2022-10-02
2022-10-03
2022-10-04
2022-10-05
2022-10-06
2022-10-07
2022-10-08
2022-10-09
2022-10-10
2022-10-11
2022-10-12
2022-10-13
2022-10-14
2022-10-15
2022-10-16
2022-10-17
2022-10-18
2022-10-19
2022-10-20
2022-10-21
2022-10-22
2022-10-23
2022-10-24
2022-10-25
```

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]]
```

```
import pandas as pd
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]
ls = pd.DataFrame(data, columns=['Tag', 'Number'])
df
```

Name   Register no

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