Basic Python

1. Split this string

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

```
string = "Hi there Sam!"
print(string.split())
```

```
['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))

#or, you can do it like that:

print(f"The diameter of {planet} is {diameter} kilometers.")
```

```
The diameter of Earth is 12742 kilometers.
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']}]}]}
```

```
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.zeros(10)
print("An array of 10 zeros:")
print(array)
```

```
An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

```
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.]
```

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

```
import numpy as np
array=np.arange(20,36,2)
print("Array of all the even integers from 20 to 35")
print(array)
```

```
Array of all the even integers from 20 to 35
[20 22 24 26 28 30 32 34]
```

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

```
import numpy as np
x =  np.arange(2, 11).reshape(3,3)
print(x)
```

```
[[ 2  3  4]
 [ 5  6  7]
 [ 8  9 10]]
```

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])


gfg = np.concatenate((a, b), axis = 0)
print(gfg)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd



df = pd.DataFrame()
print(df)
```

```
Empty DataFrame
Columns: []
Index: []
```

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

```
import pandas as pd
per1 = pd.date_range(start ='1-1-2018',
         end ='1-05-2018', freq ='5H')

for val in per1:
    print(val)
```

```
2018-01-01 00:00:00
2018-01-01 05:00:00
2018-01-01 10:00:00
2018-01-01 15:00:00
2018-01-01 20:00:00
2018-01-02 01:00:00
2018-01-02 06:00:00
2018-01-02 11:00:00
2018-01-02 16:00:00
2018-01-02 21:00:00
2018-01-03 02:00:00
2018-01-03 07:00:00
2018-01-03 12:00:00
2018-01-03 17:00:00
2018-01-03 22:00:00
2018-01-04 03:00:00
2018-01-04 08:00:00
2018-01-04 13:00:00
2018-01-04 18:00:00
2018-01-04 23:00:00
```

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

df = pd.DataFrame(lists, columns = ['Name', 'Age','No'])
print(df)
```

```
   Name  Age  No
0     1  aaa  22
1     2  bbb  25
2     3  ccc  24
```

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