Basic Python

1. Split this string

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

```
X=s.split()
print(X)
```

```
['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
```

```
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'][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?

```
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

```
import numpy as np
array=np.arange(20,35,2)
array
```

```
array([20, 22, 24, 26, 28, 30, 32, 34])
```

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

```
import numpy as np
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])

```
import numpy as np
arr1=np.array([1,2,3])
arr2=np.array([4,5,6])
```

```
arr3=np.concatenate((arr1,arr2),axis=0)
print(arr3)
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
data = [['tom',10],['nick',15],['mon',20]]
df = pd.DataFrame(data,columns=['Name','Age'])
df
```

	Name	Age
0	tom	10
1	nick	15
2	mon	20

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

```
from datetime import timedelta,date

def daterange(date1,date2):
  for n in range(int ((date2 - date1).days)+1):
    yield date1+timedelta(n)

start_dt = date(2023,1,1)
end_dt = date(2023,2,10)
for dt in daterange(start_dt,end_dt):
  print(dt.strftime("%d-%m-%y"))
```

```
01-01-23
02-01-23
03-01-23
04-01-23
05-01-23
06-01-23
07-01-23
```

```
08-01-23
09-01-23
10-01-23
11-01-23
12-01-23
13-01-23
14-01-23
15-01-23
16-01-23
17-01-23
18-01-23
19-01-23
20-01-23
21-01-23
22-01-23
23-01-23
24-01-23
25-01-23
26-01-23
27-01-23
28-01-23
29-01-23
30-01-23
31-01-23
01-02-23
02-02-23
03-02-23
04-02-23
05-02-23
06-02-23
07-02-23
08-02-23
09-02-23
10-02-23
```

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)
df
```

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

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