Basic Python

1. Split this string

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

```
s = "Hi there Sam!"
g=s.split()
g
```

```
['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
"The diamter of the {} is {} kilometers.".format(planet,diameter)
```

```
'The diamter of the 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']}]}]}
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
np.zeros(10)
([0.,0.,0.,0.,0.,0.,0.,0.,0.,0.,])
```

```
[0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0]
```

```
np.ones(10)*5
([5.,5.,5.,5.,5.,5.,5.,5.,5.,5.,])
```

```
[5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0, 5.0]
```

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

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

```
Array of all the even integers from 20 to 35
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
np.arange(0,9).reshape(3,3)
```

```
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
a=np.array([1,2,3])
b=np.array([4,5,6])
array=np.concatenate((a,b),axis=0)
array
```

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
import pandas as pd
A=['a','b','c']
DataFrame=pd.DataFrame(A,columns=['alphabets'])
DataFrame
```

	alphabets
0	a
1	b
2	c

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.datetime.strptime("01-1-2023", "%d-%m-%Y")

end_date = start_date + 41*day_delta

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

```
2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
```

```
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

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
lists = [[1,'aaa',22], [2,'bbb',25], [3,'ccc',24]]
d_list=pd.DataFrame(lists,columns=['A','B','C'])
d_list
```

	A	B	C
0	1	aaa	22
1	2	bbb	25
2	3	ccc	24

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