Basic Python

1. Split this string

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

```
s.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
```

```
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']}]}]}
```

```
display = d['k1'][3]['tricky'][3]['target'][3]
display
```

```
'hello'
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
np.zeros(10)
```

```
array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])
```

```
np.ones(5)*5
```

```
array([5., 5., 5., 5., 5.])
```

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

```
np.arange(20,35,2)
```

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

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

```
x=np.arange(0,9,1)
x.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])

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

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

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
d={"Name":['abc','efg','hij'],"Age":['20','21','22']}
d1=pd.DataFrame(d)
d1
```

	Name	Age
0	abc	20
1	efg	21
2	hij	22

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

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 datetime
start=datetime.datetime.strptime("01-01-2023","%d-%m-%Y")
end=datetime.datetime.strptime("01-01-2023","%d-%m-%Y")
x=pd.date_range(start,end)
x
```

```
DatetimeIndex(['2023-01-01'], dtype='datetime64[ns]', freq='D')
```

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