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 {planet} is {diameter} kilometers.'.format(planet=planet,diameter=dian
```

```
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?

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

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

```
5*np.ones(10)
```

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

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

```
a = []
for i in range(20,35):
  if(i%2==0):
    a.append(i)
a
```

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

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

```
a = [i for i in range(0,9)]
np.random.choice(a, size=(3, 3))
```

```
array([[2, 6, 2],
       [1, 3, 7],
       [7, 6, 6]])
```

7. Concatenate a and b

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

[ ] ↳ *1 cell hidden*

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
```

```
df = pd.DataFrame([[1, 'aaa'], [2, 'bbb'], [3, 'ccc']])
df
```

	0	1
0	1	aaa
1	2	bbb
2	3	ccc

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

```
pd.date_range(start ='1-1-2023',
        end ='10-02-2023', freq ='1D')
```

```
DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
               '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
               '2023-01-09', '2023-01-10',
               ...
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

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]]
```

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

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