Basic Python

1. Split this string

```
s = "Hi there Sam!"

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

['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']}]}]}

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?

```
arr=np.zeros(10)
print(arr)
```

[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

```
ar=np.array([5,5,5,5,5,5,5,5,5,5])
print(ar)
```

[5 5 5 5 5 5 5 5 5 5]

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

```
a=np.arange(20,35,2)
print(a)
```

[20 22 24 26 28 30 32 34]

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

```
a=np.arange(9)
a=a.reshape(3,3)
print(a)
```

[[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])
c=np.concatenate((a,b))
print(c)
```

[1 2 3 4 5 6]

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd

data = {
  "calories": [420, 380, 390],
  "duration": [50, 40, 45]
}
df = pd.DataFrame(data)
print(df)
```

   calories duration
0   420   50
1   380   40

2 390 45

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

```
per1 = pd.date_range(start ='1-1-2023',
       end ='10-02-2023')
print(per1)
```

```
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]]
```

I

```
lists = [[1, 'aaa', 22], [2, 'bbb', 25], [3, 'ccc', 24]]


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

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