Basic Python

1. Split this string

```
s = "Hi there Sam!"

(s.split())
['Hi','there','Sam!']

['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

('The diameter of earth is {} is{}kilometers.' .format(planet,
diameter)) ;
```

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]

{"type":"string"}
```

Numpy

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
a=np.zeros(10)
a

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

a1=np.ones(10)*5
a1

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(20,36,2)
```

```
print("Array of all the even integers from 20 to 35")
print(array)
```

```
Array of all the even integers from 20 to 35
[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
a=np.array([1,2,3])
b=np.array([4,5,6])
np.concatenate((a,b),axis=0)
```

```
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
import numpy as np
array1=['s','y']
array2=['a','u']
array3=['m','k']
```

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

```
calender = pd.date_range(start='1-1-2023',end ='2-10-2023')
```

10. Create 2D list to DataFrame

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

```
import pandas as pd
import numpy as np
lists=[[1,'aaa',22],[2 ,'bbb',25],[3,'ccc',24]]
arr=np.array(lists)
df=pd.DataFrame(arr)
print(df)
```

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