Basic Python

1. Split this string

```
s = "Hi there Sam!"
print(s.split())
['hello','sandy']
```

```
['Hi', 'there', 'Sam!']
['hello', 'sandy']
```

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?

```
import numpy as np
array=np.zeros(10)
```

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 30 to 70")
print(array)
```

```
Array of all the even integers from 30 to 70
[20 22 24 26 28 30 32 34]
```

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

```
import numpy as np
x = np.arange(0,9).reshape(3,3)
print(x)
```

```
[[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]])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
import pandas as pd
data = [{'a':1, 'b':20},
        {'a':10, 'b':20},
        {'a':100,'b':200}]
```

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

```
from IPython.lib.pretty import datetime
import datetime

pd.date_range(start='01/10/2023',end='02/10/2023')
```

```
DatetimeIndex(['2023-01-10', '2023-01-11', '2023-01-12', '2023-01-13',
               '2023-01-14', '2023-01-15', '2023-01-16', '2023-01-17',
               '2023-01-18', '2023-01-19', '2023-01-20', '2023-01-21',
               '2023-01-22', '2023-01-23', '2023-01-24', '2023-01-25',
               '2023-01-26', '2023-01-27', '2023-01-28', '2023-01-29',
               '2023-01-30', '2023-01-31', '2023-02-01', '2023-02-02',
               '2023-02-03', '2023-02-04', '2023-02-05', '2023-02-06',
               '2023-02-07', '2023-02-08', '2023-02-09', '2023-02-10'],
              dtype='datetime64[ns]', 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]]
import pandas as pd
list = [[1,'aaa',22],[2,'bbb',25],[3,'ccc',24]]
```

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