Basic Python

1. Split this string

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

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

```
['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.
```

Double-click (or enter) to edit

```
1
```

3. In this nest dictionary grab the word "hello"

```
#@title Default title text
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}]}
```

Default title text

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

```
'hello'
```

```
import numpy as np
```

```
2 the_array=np.array (10)
3 print("An array of 10 zeros:")
```

```
    An array of 10 zeros:
```

Numpy

```
1 import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```
1 the_array=np.array(5)
2 print("An arraay of 10 fives")
```

```
    An arraay of 10 fives
```

```
1
```

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

```
1 import numpy as np
2 array=np.arange(20,36,2)
3 print("Array of all even integers from 20 to 35")
4 print(array)
```

```
    Array of all 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

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

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

```
array([[1, 2, 3],
       [4, 5, 6]])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

```
1 import pandas as pd
2 df = pd.DataFrame()
3 print(df)
```

```
Empty DataFrame
Columns: []
Index: []
```

```
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```
Empty DataFrame
Columns: []
Index: []
```

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

```
1 year = int(input("Input a year: "))
2
```

```
Input a year: 2023
```

10. Create 2D list to DataFrame

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

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

```
1 import pandas as pd
2 import numpy as np
3
```