Basic Python

1. Split this string

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

print(s.split())

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

italicized text## 2. Use .format() to print the following string.

Output should be: The diameter of Earth is 12742 kilometers.

```python
planet = "Earth"
diameter = 12742

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"

```python
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':
[1,2,3,'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

```python
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

```python
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)

An array of 10 zeros:
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]

import numpy as np
array=np.ones(10)*5
```

```
print("An array of 10 fives:")
print(array)
```

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

```
import numpy as np
array=np.arange(20,36,2)
print("An array of 10 fives:")
print(array)

An array of 10 fives:
[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. Concatinate 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']
pd.DataFrame(np.array([array1 ,array2,array3]))

   0  1
0  s  y
1  a  u
2  m  k
```

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

```python
import pandas as pd

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

for val in calendar:
    print(val)
```

```
2023-01-01 00:00:00
2023-01-02 00:00:00
2023-01-03 00:00:00
2023-01-04 00:00:00
2023-01-05 00:00:00
2023-01-06 00:00:00
2023-01-07 00:00:00
2023-01-08 00:00:00
2023-01-09 00:00:00
2023-01-10 00:00:00
2023-01-11 00:00:00
2023-01-12 00:00:00
2023-01-13 00:00:00
2023-01-14 00:00:00
2023-01-15 00:00:00
2023-01-16 00:00:00
2023-01-17 00:00:00
2023-01-18 00:00:00
2023-01-19 00:00:00
2023-01-20 00:00:00
2023-01-21 00:00:00
2023-01-22 00:00:00
2023-01-23 00:00:00
2023-01-24 00:00:00
2023-01-25 00:00:00
2023-01-26 00:00:00
2023-01-27 00:00:00
2023-01-28 00:00:00
2023-01-29 00:00:00
2023-01-30 00:00:00
2023-01-31 00:00:00
2023-02-01 00:00:00
2023-02-02 00:00:00
2023-02-03 00:00:00
2023-02-04 00:00:00
2023-02-05 00:00:00
2023-02-06 00:00:00
2023-02-07 00:00:00
2023-02-08 00:00:00
2023-02-09 00:00:00
2023-02-10 00:00:00
```

10. Create 2D list to DataFrame

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

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

```python
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
```