Basic Python

1. Split this string

In [ ]:

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

In [ ]:

```
string = "Hi there Sam!"
print(string.split())
```

2. Use .format() to print the following string.

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

In [ ]:

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

In [3]:

```
planet = "Earth"
diameter = 12742
print( 'The diameter of {} is {} kilometers.' .format(planet,diameter));
```

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

In [ ]:

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

In [ ]:

```
d = {'k1':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]}
]}
print(d['k1'][3]["tricky"][3]['target'][3])
```

Numpy

In [ ]:

```
import numpy as np
```

```
import numpy as np

#define array
x = np.array([1, 12, 14, 9, 5])

#display array
print(x)
```

[1 12 14 9 5]

#display number of elements in array
x.size

5

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [4.1]:
```
import numpy as np
array=np.zeros(10)
print("An array of 10 zeros:")
print(array)
print(array)
print(array)
```

In [4.2]:
```
import numpy as np
print(array)
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

In [5]:

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

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

In [6]:

```
import numpy as np
x =  np.arange(2, 11).reshape(3,3)
print(x)
```

7. Concatenate a and b

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

In [7]:

```
a = np.array([[1, 2], [3, 4]])
>>> b = np.array([[5, 6]])
>>> np.concatenate((a, b), axis=0)
array([[1, 2],
       [3, 4],
       [5, 6]])
>>> np.concatenate((a, b.T), axis=1)
array([[1, 2, 5],
       [3, 4, 6]])
>>> np.concatenate((a, b), axis=None)
array([1, 2, 3, 4, 5, 6])
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [ ]:

```
import pandas as pd
```

In [8]:

```
import pandas as pd
import numpy as np

df = pd.DataFrame(np.random.randint(0,10, size=(1,8)))
```

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

In [9]:

```
import pandas as pd
per1 = pd.date range(stsrt = “1-1-2023”, end  = “10-02-2023”, freq = “5H”)
for val in per1:
print(val)
```

10.Create 2D list to DataFrame

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

In [ ]:

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

In [10]:

```
# import pandas as pd
import pandas as pd

# List1
lst = [['Gook', 25], ['is', 30],
     ['for', 26], ['Gookforgoos', 22]]

# creating df object with columns specified
df = pd.DataFrame(lst, columns =['Tag', 'number'])
print(df )
```