Basic Python

1. Split this string

In [1]:

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

In [2]:

```
print(s.split())
```

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

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

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

In [3]:

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

In [4]:

```
print("The diameter of %s is %d kilometers" %(planet,diameter))
```

```
The diameter of Earth is 12742 kilometers
```

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

In [5]:

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

In [7]:

```
print(d['k1'][3]['tricky'][3]['target'][3])
```

```
hello
```

Numpy

In [8]:

```
import numpy as np
```

4.1 Create an array of 10 zeros?

4.2 Create an array of 10 fives?

In [9]:

```
print(np.zeros(10))
```

```
[0. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
```

In [11]:

```
print(np.ones(10)*5)
```

```
[5. 5. 5. 5. 5. 5. 5. 5. 5. 5.]
```

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

In [13]:

```
print(np.arange(20,35,2))
```

```
[20 22 24 26 28 30 32 34]
```

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

In [15]:

```
print(np.arange(0,9).reshape(3,3))
```

```
[[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])

In [20]:

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

```
[1 2 3 4 5 6]
```

Pandas

8. Create a dataframe with 3 rows and 2 columns

In [22]:

```
import pandas as pd
```

In [23]:

```
df=pd.DataFrame()
```

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

In [25]:

```
print(pd.date_range('1-1-2023','10-2-2023'))
```

```
DatetimeIndex(['2023-01-01', '2023-01-02', '2023-01-03', '2023-01-04',
               '2023-01-05', '2023-01-06', '2023-01-07', '2023-01-08',
               '2023-01-09', '2023-01-10',
               ...
               '2023-09-23', '2023-09-24', '2023-09-25', '2023-09-26',
               '2023-09-27', '2023-09-28', '2023-09-29', '2023-09-30',
               '2023-10-01', '2023-10-02'],
              dtype='datetime64[ns]', length=275, freq='D')
```

10. Create 2D list to DataFrame

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

In [26]:

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

In [27]:

```
print(pd.DataFrame(lists))
```

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