Basic Python¶

1. Split this string¶

In [2]:

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

In [3]:

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

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

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

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

In [4]:

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

In [5]:

```
print(f'The diameter of {planet} is {diameter} kilometers')
```

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

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

In [7]:

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

In [8]:

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

```
hello
```

Numpy¶

In [9]:

```
import numpy as np
```

4.1 Create an array of 10 zeros?¶

4.2 Create an array of 10 fives¶

In [10]:

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

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

In [11]:

```
print(np.full(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 [12]:

```
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 [13]:

```
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 [14]:

```
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 [16]:

```
import pandas as pd
```

In [17]:

```
print(pd.DataFrame(np.random.randint(6, size=(3,2))))
```

```
   0  1
0  4  0
1  5  1
2  4  1
```

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

In [18]:

```
dates = pd.date_range('20230101','20230210')
dates.format(formatter=lambda x: x.strftime('%Y-%m-%d'))
print(dates)
```

```
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', '2023-01-11', '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]]¶

In [19]:

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

In [20]:

```
print(pd.DataFrame(lists, columns =['0', '1', '2']))
```

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