# Basic Python

## 1. Split this string

In [1]:

s **=** "Hi there Sam!"

In [2]:

s**.**split()

Out[2]:

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

*italicized text*## 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('The diameter of {} is {} kilometers.' **.** format(planet,diameter));

The diameter of Earth is 12742 kilometers.

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

In [6]:

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

In [7]:

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

Out[7]:

'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]:

a **=** np**.**zeros(10)

In [10]:

a

Out[10]:

array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0.])

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

In [11]:

b **=** np**.**ones(10)**\***5  
b

Out[11]:

array([5., 5., 5., 5., 5., 5., 5., 5., 5., 5.])

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

In [12]:

c **=** np**.**arange(0,9)**.**reshape(3,3)  
c

Out[12]:

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])

In [13]:

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

In [14]:

**import** pandas **as** pd

In [15]:

d **=** {"fruits":["mango","orange","apple"],"color":["yellow","orange","red"]}  
df **=** pd**.**DataFrame(d)  
df

Out[15]:

|  |  |  |
| --- | --- | --- |
|  | **fruits** | **color** |
| **0** | mango | yellow |
| **1** | orange | orange |
| **2** | apple | red |

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

In [16]:

P **=** pd**.**date\_range(start**=**'1-1-2023',end**=**'10-2-2023')  
for val **in** P:  
 print(val);

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## 10. Create 2D list to DataFrame

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

In [17]:

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

In [18]:

df **=** pd**.**DataFrame(lists)  
df

Out[18]:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **0** | **1** | **2** |
| **0** | 1 | aaa | 22 |
| **1** | 2 | bbb | 25 |
| **2** | 3 | ccc | 24 |