# Basic Python

## Split this string

s = "Hi there Sam!"

x = s.split() print(x)

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

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

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

planet = "Earth" diameter = 12742

x="The diameter of {} is {} kilometers" print(x.format(planet,diameter))

The diameter of Earth is 12742 kilometers

## In this nest dictionary grab the word "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

import numpy as np

## Create an array of 10 zeros?

* 1. Create an array of 10 fives?

zeros=np.zeros(10) print(zeros)

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

fives=np.ones(10)\*5 print(fives)

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

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

array=np.arange(20,36,2) print(array)

[20 22 24 26 28 30 32 34]

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

matrix=np.arange(0,9).reshape(3,3) print(matrix)

|  |  |  |
| --- | --- | --- |
| [[0 | 1 | 2] |
| [3 | 4 | 5] |
| [6 | 7 | 8]] |

## Concatenate a and b

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

a = np.array([1, 2, 3])

b = np.array([4, 5, 6])

c = np.concatenate((a,b)) print(c)

[1 2 3 4 5 6]

# Pandas

## Create a dataframe with 3 rows and 2 columns

import pandas as pd

data = {'Name': ['Tom', 'John', 'Krish'], 'Age': [21, 20, 19]} df=pd.DataFrame(data,index=[1,2,3])

df

|  |  |
| --- | --- |
| **Name** | **Age** |
| **1** Tom | 21 |
| **2** John | 20 |
| **3** Krish | 19 |

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

period = pd.date\_range(start ='01-01-2023', end ='02-10-2023') for val in period:

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 |

## Create 2D list to DataFrame

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

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

df = pd.DataFrame(lists, columns =['1-digits', 'letters','2-digits']) print(df)

1-digits letters 2-digits 0 1 aaa 22

1 2 bbb 25

2 3 ccc 24

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