**Assignment -1**

Basic Python Programming in ipynb

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| Team ID | PNT2022TMID20581 |
| Maximum Marks | 2 Marks |

# Basic Python

## Split this string

s = "Hi there Sam!"

s="Hi there Sam!" print(s) x=s.split(' ') print(x)

Hi there Sam!

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

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

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

planet = "Earth" diameter = 12742

planet= "Earth" diameter=12742

print( 'The diameter of {} is {} kilometers.'.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']}]

}]}

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?**

import numpy as np array=np.zeros(10)

print("An array of 10 zeros:") print(array)

An array of 10 zeros:

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

import numpy as np array=np.ones(10) array=np.ones(10)\*5

print("An array of 10 fives:") print(array)

An array of 10 fives:

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

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

import numpy as np array=np.arange(20,35,2)

print("Array of all the even integers from 20 to 35") print(array)

Array of all the even integers from 20 to 35 [20 22 24 26 28 30 32 34]

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

import numpy as np x=np.arange(0,9).reshape(3,3) print(x)

|  |  |  |
| --- | --- | --- |
| [[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])**

import numpy as np 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=[['ammu',40],['ravi',53],['sankar',70]] df=pd.DataFrame(data,columns=['Name','Age']) df

Name Age

1. ammu 40
2. ravi 53
3. sankar 70

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

import pandas as pd

from datetime import datetime

pd.date\_range(start="2023-01-01",end="2023-02-01").to\_pydatetime().tolist(

)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [datetime.datetime(2023, | 1, | 1, | 0, | 0), |
| datetime.datetime(2023, | 1, | 2, | 0, | 0), |
| datetime.datetime(2023, | 1, | 3, | 0, | 0), |
| datetime.datetime(2023, | 1, | 4, | 0, | 0), |
| datetime.datetime(2023, | 1, | 5, | 0, | 0), |
| datetime.datetime(2023, | 1, | 6, | 0, | 0), |
| datetime.datetime(2023, | 1, | 7, | 0, | 0), |
| datetime.datetime(2023, | 1, | 8, | 0, | 0), |
| datetime.datetime(2023, | 1, | 9, | 0, | 0), |
| datetime.datetime(2023, | 1, | 10, | 0, | 0), |
| datetime.datetime(2023, | 1, | 11, | 0, | 0), |
| datetime.datetime(2023, | 1, | 12, | 0, | 0), |
| datetime.datetime(2023, | 1, | 13, | 0, | 0), |
| datetime.datetime(2023, | 1, | 14, | 0, | 0), |
| datetime.datetime(2023, | 1, | 15, | 0, | 0), |
| datetime.datetime(2023, | 1, | 16, | 0, | 0), |
| datetime.datetime(2023, | 1, | 17, | 0, | 0), |
| datetime.datetime(2023, | 1, | 18, | 0, | 0), |
| datetime.datetime(2023, | 1, | 19, | 0, | 0), |
| datetime.datetime(2023, | 1, | 20, | 0, | 0), |
| datetime.datetime(2023, | 1, | 21, | 0, | 0), |
| datetime.datetime(2023, | 1, | 22, | 0, | 0), |
| datetime.datetime(2023, | 1, | 23, | 0, | 0), |
| datetime.datetime(2023, | 1, | 24, | 0, | 0), |
| datetime.datetime(2023, | 1, | 25, | 0, | 0), |
| datetime.datetime(2023, | 1, | 26, | 0, | 0), |
| datetime.datetime(2023, | 1, | 27, | 0, | 0), |
| datetime.datetime(2023, | 1, | 28, | 0, | 0), |
| datetime.datetime(2023, | 1, | 29, | 0, | 0), |
| datetime.datetime(2023, | 1, | 30, | 0, | 0), |
| datetime.datetime(2023, | 1, | 31, | 0, | 0), |
| datetime.datetime(2023, | 2, | 1, | 0, | 0)] |

## 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]]

lists=[[1, 'aaa', 22],[2, 'bbb', 25],[3, 'ccc', 24]] df=pd.DataFrame(lists, columns=['s.no', 'alphabet', 'number']) print(df)

s.no alphabet number 0 1 aaa 22

1 2 bbb 25

2 3 ccc 24