National Forensic Sciences University Knowledge | Wisdom | Fulfilment



School of Cyber Security & Digital Forensics

“Artificial intelligence”

“Practical”

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***Basic python***

Program 1

v1 = [1,2,3,4]

v2 = [2,3,4,5]

v3 = v1 + v2

print(v3)

print(type(v3))

Program 2

import numpy as np

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

print(a)

print(type(a))

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

print(b)

print(type(b))

print(a+b)

print(a-b)

print(a\*b)

print(a/b)

Program 2.1

import numpy as np

a = np.array([1,"a",1.5])

print(a)

print(type(a))

b = np.array([2,"b",2.4])

print(b)

print(type(b))

# print(a+b)

print(a-b)

print(a\*b)

print(a/b)

Program 3

import numpy as np

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

print(type(a))

print(a)

print(a.shape)

Program 4

import numpy as np

a = np.array([[1,2,3],[4,5,6],[7,8,9]])

print(type(a))

print(a)

print(a.shape)

Program 5

import numpy as np

a = np.array ([[1,2,3],[4,5,6],[7,8,9]])

print(type(a))

print(a)

print(a.shape)

b = np.mat(a)

#b = np.matrix ([[1,2,3],[4,5,6],[7,8,9]])

print(type(b))

print(b)

print(b.shape)

Program 6

import numpy as np

a = np.matrix([[1,2,3],[4,5,6],[7,8,9]])

print(type(a))

print(a)

Program 7

import numpy as np

a=np.array([1,2,3,4,5,6,7,8,9,0])

print(a)

print("after slicing:")

b=a[0:7:3]

print(b)

b=a[1:3:1]

print(b)

Program 8

import numpy as np

a=np.array([[1,2,3],[4,5,6],[7,8,9]])

print(a)

print("After Slicing:")

print("everything")

b=a[:]

print(b)

print("everything till 1st row")

b=a[:1]

print(b)

print("everything execpt 1st row")

b=a[1:]

print(b)

print("[row,column] all row till 1st column")

b=a[:,:1]

print(b)

print("all row except 1st column")

b=a[:,1:]

print(b)

print("all row & last column")

b=a[:,-1:]

print(b)

Program 9

import numpy as np

a = np.arange(6).reshape((3, 2))

print(a)

print(a.shape)

Program 10

import numpy as np

a=np.zeros(3)

print(a)

a=np.ones(3)

print(a)

a=np.random.rand(3)

print(a)

a=np.eye(3)

print(a)

Program 11

import numpy as np

a = np.matrix([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

b = np.matrix([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

print(a+b)

print(a-b)

print(a/b)

print(a\*b)

Program 12

import numpy as np

a = np.matrix([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

print(a.max())

print(a.min())

print(a.prod())

print(a.mean())

print(a.std())

print(a.var())

print(a.transpose())

Program 13

import pandas as pd

import numpy as np

a=pd.Series([1,2,3,4])

print(a)

b=pd.Series([1,2.5,3,4])

print(b)

c=pd.date\_range("20230801",periods=8)

print(c)

Program 14

import numpy as np

import pandas as pd

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

b=pd.Series(a)

print(b)

Program 15

import numpy as np

import pandas as pd

v1 = np.matrix([[1,2,3],[4,5,6]])

a=pd.DataFrame(v1,columns=list("ABC"))

print(a)

***Unit-1***

Program 1

d = {'x': 10 , 'y': 2.5, 'z' : 'test'}

print(d)

print(d['x'])

print(d.values())

Program 2

a = int ( input("Enter a number:"))

if a>0:

    print("Postive")

elif a==o:

    print("zero")

else:

    print("negative")

Program 3

for i in range (1,11):

    print(i)

Program 4

for x in 'NFSU':

    print(x)

Program 5

for x in range(1,10):

    if x%2 == 0:

        continue

    print(x)

Program 6

for x in range (1,20):

    if x ==15:

        break

    print(x)

Program 7

def my\_print():

    print("hello from function")

print("this is before fuction call")

my\_print()

print("this is after function call")

Program 8

def my\_funtion(nm):

    print("hello + nm")

my\_funtion("NFSU")

Program 9

def my\_funtion(nm="MTCS"):

    print("Hello" + nm)

my\_funtion("NFSU")

my\_funtion()

Program 10

def my\_funtion(\*nm):

    for i in range(0,len(nm)):

        print("Hello "+ nm[i])

my\_funtion("NFSU", "Gandhinagar", "MTCS")

Program 11

def my\_cities(c):

    for item in c:

        print(item)

cities = ["ahmedabad", "delhi", "mumbai"]

my\_cities(cities)

Program 12

def my\_square(n):

    return n\*n

ans = my\_square(10)

print(ans)