Programs on Module

1. Math Module

import math # math module, contain all mathematical functions

a=int(input(“enter a number”))

st=math.sqrt(a) # sqrt is a function available in math module

print(st)

1. User Defined Module

Calc.py

def add(x,y):

return(x+y)

def sub(x,y):

return(x-y)

def mul(x,y):

return(x\*y)

def div(x,y):

return(x/y)

>>>import calc

>>>calc.add(2,3)

1. Command Line Argument

import sys

count=len(sys.argv)

print ("The number of arguments is:",count)

for i in range(count):

print ("The argument is",sys.argv[i],"length is”, len(sys.argv[i]))

Command Prompt: python one.py hai come here

Array

Example 1:

import numpy as np

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

print (a) #Output: [1,2,3]

Eg 2:

# more than one dimensions

import numpy as np

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

print( a) #Output: [[1 2]

[3 4]]

Eg 3:

# minimum dimensions

import numpy as np

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

print (a) #Output: [[1 2 3 4 5]]

Eg 4:

# dtype parameter

import numpy as np

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

print (a) #Output: [1.+0.j 2.+0.j 3.+0.j]

Eg 5:

import numpy as np

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

print( a.shape)

Eg 6:

# this resizes the ndarray

import numpy as np

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

a.shape = (3,2)

print (a)

Eg 7:

# an array of evenly spaced numbers

import numpy as np

a = np.arange(24)

print (a)

print(a.ndim)

Eg 8:

# dtype of array is int8 (1 byte)

import numpy as np

x = np.array([1,2,3,4,5], dtype = np.int8)

print (x.itemsize)

Eg 9:

# dtype of array is now float32 (4 bytes)

import numpy as np

x = np.array([1,2,3,4,5], dtype = np.float32)

print (x.itemsize)

Eg 10: pyplot – plot()

import numpy as np

from matplotlib import pyplot as plt

x = np.arange(1,11)

y = 2 \* x + 5

plt.title("Matplotlib demo")

plt.xlabel("x axis caption")

plt.ylabel("y axis caption")

plt.plot(x,y)

plt.show()

Eg 11: sine curve

import numpy as np

import matplotlib.pyplot as plt

# Compute the x and y coordinates for points on a sine curve

x = np.arange(0, 3 \* np.pi, 0.1)

y = np.sin(x)

plt.title("sine wave form")

# Plot the points using matplotlib

plt.plot(x, y)

plt.show()

Eg 12: subplot()

import numpy as np

import matplotlib.pyplot as plt

# Compute the x and y coordinates for points on sine and cosine curves

x = np.arange(0, 3 \* np.pi, 0.1)

y\_sin = np.sin(x)

y\_cos = np.cos(x)

# Set up a subplot grid that has height 2 and width 1,

# and set the first such subplot as active.

plt.subplot(2, 1, 1)

# Make the first plot

plt.plot(x, y\_sin)

plt.title('Sine')

# Set the second subplot as active, and make the second plot.

plt.subplot(2, 1, 2)

plt.plot(x, y\_cos)

plt.title('Cosine')

# Show the figure.

plt.show()

Eg 13: Bar Chart

from matplotlib import pyplot as plt

x = [5,8,10]

y = [12,16,6]

x2 = [6,9,11]

y2 = [6,15,7]

plt.bar(x, y, align = 'center')

plt.bar(x2, y2, color = 'g', align = 'center')

plt.title('Bar graph')

plt.ylabel('Y axis')

plt.xlabel('X axis')

plt.show()