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CTEC 298

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Matplotlib tutorial

**Curve plot**

Import math

Import matplotlib.pylot as plt

#Generate a sinusoid

nbSamples = 256

xRange = (=math.pi, math.pi)

x, y = [], []

for n in xrange(nbSamples):

k = (n + 0.5) / nbSamples

x.append(xRange[0] + (xRange[1] – xRange[0]) \*k

y.append(math.sin(x[-1]))

#Plot the sinusoid

Plt.plot(x, y)

Plt.show()

**Scatter plot**

Import numpy

Import numpy.random

Import matplotlib.pyplot as plt

#Generate a 2d normal distribution

nbPoints = 100

x = numpy.random.standard\_normal(nbPoints)

y = numpy.random.standard\_normal(nbPoints)

#Plot the points

Plt.scatter(x, y)

Plt.show()

**Boxplots**

Import numpy

Import numpy.random

Import matplotlib.pyplot as plt

#Generate normal distribution data

X = numpy.random.standard\_normal (256)

#show a boxplot of the data

Plt.boxplot(x)

Plt.show()

**Histogram**

Import numpy

Import numpy.random

Import matplotlib.pyplot as plt

#some data

Data = numpy.abs(numpy.random.standard\_normal(30))

#show an histogram

Plt.barh(range(len(data)), data, color = ‘#4682B4’)

Plt.show()

**Bar graph**

Import matplotlib.pyplot as plt

Plt.bar([1,3,5,7,9],[5,2,7,8,2], label = “Example one”)

Plt.bar([2,4,6,8,10],[8,6,2,5,6], label = “Example two”, color = ‘g’)

Plt.legend()

Plt.xlabel(“bar number”)

Plt.ylabel(“bar height”)

Plt.title(‘My plot yo!’)

Plt.show()

**Stack plot**

Import matplotlib.pyplot as plt

Days = [1,2,3,4,5]

Sleeping = [7,8,6,11,7]

Eating = [2,3,4,3,2]

Working = [7,8,7,2,2]

Playing = [8,5,7,8,13]

Plt.plot([],[], color= ‘m’, label = ‘sleeping’, linewidth = 5)

Plt.plot([],[], color= ‘m’, label = ‘eating’, linewidth = 5)

Plt.plot([],[], color= ‘m’, label = ‘working’, linewidth = 5)

Plt.plot([],[], color= ‘m’, label = ‘playing’, linewidth = 5)

Plt.stackplot(days,sleeping,eating,working,playing,colors=[‘m’,’c’,’r’,’k’])

Plt.xlabel(‘x’)

Plt.ylabel(‘y’)

Plt.title(‘Stck Plot’)

Plt.legend()

Plt.show()

**Pie chart**

Import matplotlib.pyplot as plt

Slices = [7,2,2,13]

Activities = [‘sleeping’, ‘eating’, ‘working’, ‘playing’]

Cols = [‘c’,’m’,’r’,’b’]

Plt.pie(slices, labels=activies, colors = cols, startangle = 90, shadow = True, explode = (0,0.1,0,0), autopct = ‘%1.1f%%’)

Plt.title(‘Pie Plot’)

Plt.show()