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10/21/2021

STAT 1129

HOMEWORK #5

GITHUB LINK:

**QUESTION 1**

In [1]:

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np

x1 **=** np**.**array([0,1,2,3,4])

y1 **=** np**.**array([9,10,11,12,13])

x2 **=** np**.**array([0,1,2,3,4])

y2 **=** np**.**array([5,6,7,8,9])

x3 **=** np**.**array([0,1,2,3,4])

y3 **=** np**.**array([1,2,3,4,5])

plt**.**plot(x1,y1,x2,y2,x3,y3, linewidth**=** "10")

plt**.**title("Multiple Line Figure")

plt**.**xlabel("X Label")

plt**.**ylabel("Y Label")

plt**.**show()

Chart, line chart

Description automatically generated

**QUESTION 2**

In [2]:

**import numpy as np**

**x=np.random.normal(0,0.2,800)**

**print(x)**

**import matplotlib.pyplot as plt**

**import numpy as np**

**x=np.random.normal(0,0.2,800)**

**plt.hist(x)**

**plt.show()**

Chart, histogram

Description automatically generated

**QUESTION 3**

In [3]:

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np

fruits**=**['Apples','Bananas','Cherries','Dates',45,25,15,20]

print(fruits)

y **=** np**.**array([45, 25, 15, 20])

mylabels **=** ["Apples", "Bananas", "Cherries", "Dates"]

plt**.**pie(y, labels **=** mylabels)

plt**.**legend(title **=** "Four Fruits:")

plt**.**show()

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np

x **=** np**.**array(["Aples", "Bananas", "Cherries", "Dates"])

y **=** np**.**array([45,25,15,20])

plt**.**bar(x,y)

plt**.**show()

Chart, pie chart

Description automatically generated

**QUESTION 4**

In [4]:

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np

x **=** np**.**array([10, 20, 30, 40, 50, 60, 70, 80, 90, 100])

y **=** np**.**array([88, 92, 80, 89, 90, 80, 60, 88, 80, 84])

plt**.**scatter(x, y, color **=** "hotpink", label **=** "Math Marks")

x **=** np**.**array([10, 20, 30, 40, 50, 60, 70, 80, 90, 100])

y **=** np**.**array([75, 59, 69, 48, 65, 56, 32, 45, 20, 30])

plt**.**scatter(x, y, color **=** 'green', label **=** "Science Marks")

plt**.**title("Scatter Plot")

plt**.**xlabel("Marks Range")

plt**.**ylabel("Marks Scored")

leg**=**plt**.**legend()

plt**.**show()

Chart, scatter chart

Description automatically generated

**QUESTION 5**

In [5]:

**import** matplotlib.pyplot **as** plt

**import** numpy **as** np

x **=** np**.**array([5, 10, 15, 8,7,14,5,7,9,5,12,13])

y **=** np**.**array([82,93,100,86,96,108,82,81,78,80,83,99])

plt**.**subplot(1, 4, 1)

plt**.**scatter(x, y)

plt**.**title("Chart #1")

x1 **=** np**.**array([0, 1, 2, 3])

y1 **=** np**.**array([1, 9, 1, 8])

x2 **=** np**.**array([0, 1, 2, 3])

y2 **=** np**.**array([5, 2, 6, 11])

plt**.**subplot(1, 4, 2)

plt**.**plot(x1,y1,x2,y2)

plt**.**title("Chart #2")

x **=** np**.**array(["A", "B", "C", "D"])

y **=** np**.**array([3, 7, 5, 9])

plt**.**subplot(1, 4, 3)

plt**.**bar(x, y, color **=** "green")

plt**.**title("Chart #3")

y **=** np**.**array([40, 25, 15, 30])

mylabels **=** ["Bunnies", "Dogs", "Cats", "None"]

plt**.**subplot(1, 4, 4)

plt**.**pie(y, labels **=** mylabels)

plt**.**title("Chart #4")

plt**.**show()

Chart, histogram

Description automatically generated