Data Science : Assignment 2-2

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Project : MatPlotLib Exercise

import numpy as np

import matplotlib.pyplot as plt

import math

# Make BMI data.

#-------------------------------------------------------

wt=40+50\*np.random.random(100) # Fill the weight. random float numbers between 40.0 and 90.0.

ht=np.floor(140+60\*np.random.random(100)) # fill the height. random integers between 140 and 200(centimeters).

ht=ht/100

X=zip(wt,ht)

BMI={}

i=0

for w,h in (tuple(X)):

    BMI[i]=w/(h\*h)

    i+=1

#---------------------------------------------------------

#Draw Bar chart, Histogram, Pie chart, Scatter plot

data=[0,0,0,0]

for j in range(0,100):

    #print(BMI[j])

    if(18.5>float(BMI[j])):

       data[0]+=1

    elif(18.5<=float(BMI[j])<=24.9):

        data[1]+=1

    elif(25.0<=float(BMI[j])<=29.9):

        data[2]+=1

    else:

        data[3]+=1

print(data)

Weight\_status = ['Underweight\n(Below 18.5)','Healthy\n(18.5-24.9)','Overweight\n(25.0-29.9)','Obese\n(30.0 and above)']

plt.title("Bar chart of result")

plt.bar(Weight\_status,data)

Bar=plt

Bar.show()

#plt.show()

#---------------------------------------------------------

# Draw Histogram

#print(BMI.values())

val=BMI.values()

print(val)

plt.title("Histogram of result")

plt.hist(BMI.values(),bins=[0.0,18.5,25.0,30.0,60.0])

plt.xticks([0.0,18.5,25.0,30.0,60.0])

Histo=plt

Histo.show()

#plt.show()

#---------------------------------------------------------

# Draw Pie Chart

plt.title("Pie Chart of result")

plt.pie(data,labels=Weight\_status,autopct='%1.2f%%')

Chart=plt

Chart.show()

#plt.show()

#---------------------------------------------------------

# Draw Scatter Plot

plt.title("Scatter Plot of result")

plt.scatter(ht\*100,wt)

plt.xlabel('Height(centimeters)')

plt.ylabel('Weight(kg)')

Scatt=plt

Scatt.show()

#plt.show()

#---------------------------------------------------------

Result

차트이(가) 표시된 사진

자동 생성된 설명

차트이(가) 표시된 사진

자동 생성된 설명

차트, 파이 차트이(가) 표시된 사진

자동 생성된 설명

차트이(가) 표시된 사진

자동 생성된 설명