import xlrd

import xlwt

import numpy as np

import matplotlib.pyplot as plt

import matplotlib.pyplot as plt2

from matplotlib.font\_manager import FontProperties

import random

from xlutils.copy import copy

# 设置字体，避免乱码

font\_set = FontProperties(fname=r"c:\windows\fonts\simsun.ttc", size=12) #设置字体

plt.title('中心极限定理', fontproperties=font\_set) #对应上述命名，可同时修改例如plt1

plt2.title('中心极限定理2', fontproperties=font\_set)

# 设置精度，只留一个小数位

np.set\_printoptions(precision=0)

# 读取EXCEL 表格

data = xlrd.open\_workbook('test.xlsx')

table = data.sheet\_by\_name('miR-21')

tRows = table.nrows

tCols = table.ncols

TotalNumber = 50000 #可修改

ChooseNumber = 50 #每次选取多少数据求平均

#从原始数据中选取 m 个，生成n组数据

raw\_data\_duration =table.col\_values(5)

raw\_data\_amplitude =table.col\_values(6)

samples\_mean\_duration = []

samples\_mean\_amplitude = []

for i in range(0,TotalNumber):

samples\_duration = []

samples\_amplitude = []

samples\_duration = random.sample(raw\_data\_duration, ChooseNumber) #从list中随机获取50个元素，作为一个片断返回

samples\_amplitude = random.sample(raw\_data\_amplitude, ChooseNumber) #从list中随机获取50个元素，作为一个片断返回

samples\_mean\_duration.append(sum(samples\_duration)/ChooseNumber)

samples\_mean\_amplitude.append(sum(samples\_amplitude)/ChooseNumber)

#写入数据

new\_workbook = copy(data)

new\_worksheet = new\_workbook.get\_sheet(0)

for j in range(0,TotalNumber):

new\_worksheet.write(j,7, samples\_mean\_duration[j])

new\_worksheet.write(j,8, samples\_mean\_amplitude[j])

new\_workbook.save('tmp.xls')

# 转换下格式

samples\_mean\_np = np.array(samples\_mean\_duration)

samples\_mean\_np2 = np.array(samples\_mean\_amplitude)

# 画图

print(samples\_mean\_np)

plt.hist(samples\_mean\_np, bins=100)

plt.show()

# 画图

print(samples\_mean\_np2)

plt2.hist(samples\_mean\_np2, bins=100)

plt2.show()