#Sean MacBride and Mo Hayat

#Producing the graphs required for "Le Grand Pendulum" Project

import numpy as np

import matplotlib.pyplot as plt

#Extracting the data

ip="ClassicalProj2Sean+Mo.csv"

tlist = np.genfromtxt(ip, usecols=(0), delimiter=",", skip\_header=1)

xposlist = np.genfromtxt(ip, usecols=(1), delimiter=",", skip\_header=1)

yposlist = np.genfromtxt(ip, usecols=(2), delimiter=",", skip\_header=1)

xvellist = np.genfromtxt(ip, usecols=(3), delimiter=",", skip\_header=1)

yvellist = np.genfromtxt(ip, usecols=(4), delimiter=",", skip\_header=1)

def xygraph():

plt.plot(xposlist,yposlist)

plt.xlabel("X Position (Pixels)")

plt.ylabel("Y Position (Pixels)")

plt.show()

input("Press <enter> to continue")

plt.close()

def xtimegraph():

plt.plot(tlist, xposlist)

plt.xlabel("Time (seconds)")

plt.ylabel("X Position (Pixels)")

plt.show()

input("Press <enter> to continue")

plt.close()

def ytimegraph():

plt.plot(tlist, yposlist)

plt.xlabel("Time (seconds)")

plt.ylabel("Y Position (Pixels)")

plt.show()

input("Press <enter> to continue")

plt.close()

def main():

xygraph()

xtimegraph()

ytimegraph()

main()

#We need to do d, f, and g of the questions on the homework handout.

#d x=177 y=562

#e x=182 y=362

#f y=-40x+7642

#g theta(t) = cos^-1 [((x(t)-177)^2 + (y(t) - 562)^2)/(79202)]

