import matplotlib.pyplot as plt

import numpy as np

def quadratic\_model(time):

  #User Input coefficients for the equation

  a = float(input('Enter the value for a:'))

  b = float(input('Enter the value for b:'))

  c = float(input('Enter the value for c:'))

  #quadratic eq representing temp change

  temperature = a\*(time\*\*2)+b\*time+c

  return temperature

def quadratic\_mol(time):

  a = 10

  b = -0.6

  c = 45

  temperature = a\*(time\*\*2)+b\*time+c

  return temperature

def main() :

  #time values from 0 to 10

  time\_values = np.linspace(0,10,50)

  #calculate temperature using User Input variables

  temperature\_hardcoded1 = quadratic\_model(time\_values)

  #plot the results

  plt.plot(time\_values,temperature\_hardcoded1,label = 'User Input Coefficients')

  temperature\_hardcoded2 = quadratic\_mol(time\_values)

  plt.plot(time\_values,temperature\_hardcoded2,label = 'Hard-coded Coefficients')

  plt.xlabel('Time')

  plt.ylabel('Temperature')

  plt.legend()

  plt.title('Weather modelling with quadratic Equation(User Input and Hard-coded)')

  plt.show()

if \_\_name\_\_ == "\_\_main\_\_":

  main()

