Python Assignment: Mass-On-A-Spring Revisited

By now you should have a working program with two side-by-side masses on springs. Your next hand-in assignment is to use this program to answer some physics questions. The assignment is due next Tuesday, October 21, at 5:00 p.m. It consists of two parts:

I. PART I OF ASSIGNMENT

Submit to me via email the answers to the following questions. Each answer should include a short description of the computer "experiment" that you did to answer the question.

1. How does the period of a **linear** oscillator depend on the value of the spring constant?

2. How does the period of a **linear** oscillator depend on the value of the mass?

3. Does the period of a **linear** oscillator depend on the value of the amplitude of the oscillation?

4. Does the period of a **nonlinear** oscillator depend on the value of the amplitude of the oscillation?

II. PART II OF ASSIGNMENT

Submit electronically a copy of a working Python program that performs **one** of the "experiments" that you did to answer the questions above. Your program should meet the following minimum requirements:

- the program name should include your name,

- the program name should have a `.py` extension,

- the program should include explanatory "comments"; these should include introductory comments at the top of the program as well as comments at appropriate points in the body of the program,

- a brief description of the question that you are answering should be included in the comments,

- your program should show two side-by-side oscillating masses attached to springs; the characteristics of the two oscillators should be different.

If you want to get a little bit fancy, you can add labels to help identify your oscillators — look up the `label` function in the online Help.