PHYM004: Assessment 1 report (tips and hints)

1. Code description

Add in this first section a small description of your code. Explain what you have done and how. You can discuss the overall structure of your code, like for example "it is an eigenvalue-finding code, able to calculate the eigenvalues of matrices…", "it can read user input matrices form the screen or from a text file…". You can give a small description of the problem you are solving, and the method you are using to study it.

2. Results

This part needs to answer the questions in the assessment:

1) You have to explain how you validated your code. Present any analytical results used in the process (for example analytical eigenvalues of your problem) and present your results. Ideally, we would like to see comparison between expected results and numerical ones in a variety of cases. You can try some values for the masses and spring constants.

2) You must present the results of your investigation. You will investigate how the system of coupled system of harmonic oscillators behaves as a function of the mass of the particles. You should ideally present the result as a series of plots, for example oscillation frequency as a function of particle mass for equal masses, or a situation where one particle is much heavier than another. Feel free to investigate any other aspects of the problem you might consider interesting.