Assignment 3 — Period of an Oscillating Pendulum

The period of an oscillating pendulum on the surface of the earth is given by the following formula.

\[ T = 2 PI \sqrt{\frac{L}{g}} \]

where the period \( T \) is in seconds. \( L \) is the length of the pendulum in meters and \( g \) is the gravitational acceleration of the earth on the surface, 9.8 m/s/s.

Write a program that first prompts the user to input the length of the pendulum in meters and then calculates its period. The program should then display both the length and the period appropriately labeled and with their units.

Food for thought: Suppose that the length of a pendulum was carefully constructed to be 0.24824m long so that the period was one second. Suppose that the space shuttle took that pendulum into orbit around the earth. What would happen to the period of that pendulum?

You should turn in a printed copy of the source program and screen shots of the program’s output. Be prepared to demonstrate the working program to your instructor.