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// Program name: Energy
// Purpose: To compute kinetic energy given the mass and velocity
// of an object.
// Info: Required program for Chapter 3

#include <iostream.h> // necessary for cout and cin
#include <stdio.h> // necessary for getchar
#include <iomanip.h> // necessary for ios settings
#include <math.h> // necessary for squaring velocity

void main()
{
    // define variables for entry by user
    double mass, velocity, kinetic_energy;

    // set real number output as fixed
    cout << setiosflags(ios::fixed) << setprecision(4);

    cout << "Enter the mass of the object ... ";
    cin >> mass;
    cout << endl << "Enter the velocity of the object ... ";
    cin >> velocity;
    kinetic_energy = 0.5 * mass * pow(velocity,2);
    cout << endl << "The kinetic energy of the object is " << kinetic_energy << "!" << endl << endl;

    // Prompt user to hit enter to continue
    cout << "Hit enter to continue ... " << endl;
    getchar();
}

```