CS 135
Exercise #4
Point value: 30
Date due: email your source file (.cpp file) to your lab instructor by 11:59pm Fri, Feb 10

New Skills Practiced (Learning Goals)

- Problem solving and debugging.
- Interactive input.
- C++ arithmetic operators.
- C++ data types.
- Generating output to meet specifications.

The kinetic energy (k) of a moving object is given by the formula: $k = \frac{1}{2}mv^2$ where m is the mass of the object (in kilograms) and v is its velocity (or speed in meters per second).

Design and implement a complete C++ program that

- displays your name, lecture and lab section #s, and exercise #
- interactively prompts for and reads the mass of an object
- interactively prompts for and reads the velocity of an object
- compute the kinetic energy of the object
- display the inputs and calculated value with labels
- do NOT attempt to control the precision of the output values

When the program compiles and runs correctly, use the mail utility to email a copy of the program file to your lab instructor. Make sure the subject line of your email includes your name, lecture and lab section #s, and the exercise # if you wish to receive full credit.

NOTES:

- Assume that the input values may include decimals and will be greater than zero.
- If you decide to use any library functions, make sure you include the appropriate header file(s).
- It is a good idea to send a carbon copy to yourself (-c option) of all emails sent to your lab or course instructor when using the mail utility.
- A comment with your name, lecture section#, lab section#, and exercise# should be at the start of your program file.

Sample terminal session:
```
[lee@bobby keys]$ g++ ex04.cpp
[lee@bobby keys]$ ./a.out
Lee Misch Lec#10__ Lab#10__ Exercise #4
What is the mass of the object? (in kilograms)
3.5
What is the velocity of the object? (in meters per sec)
2.7
The kinetic energy of an object with
mass = 3.5 and velocity = 2.7 is 12.7575
[lee@bobby keys]$ ./a.out
Lee Misch Lec#10__ Lab#10__ Exercise #4
What is the mass of the object? (in kilograms)
6
What is the velocity of the object? (in meters per sec)
```

```
20
The kinetic energy of an object with
mass = 6 and velocity = 20 is 1200
```

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