Create a project called Daily16. Add a C source file to the project named daily16.c.

The gravitational attractive force between two bodies with masses m1 and m2 separated by a distance d is given by:

$$F = \frac{\mathrm{G}m_1 m_2}{d^2}$$

where G is the universal gravitational constant:

$$G = 6.673 \times 10^{-8} \left(\frac{cm^3}{g \times \sec^2} \right)$$

write a function definition that takes arguments for the masses of two bodies and the distance between them and that returns the gravitational force. Since you will use the preceding formula, the gravitational force will be in dynes. One dyne equals

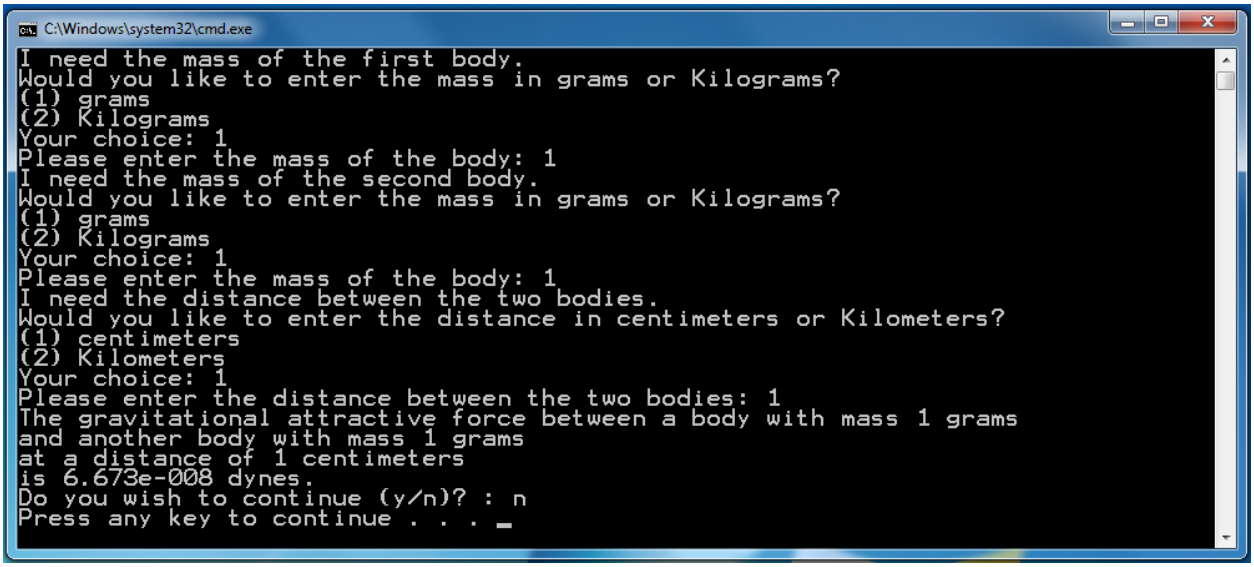
$$\left(\frac{g \times cm}{\sec^2} \right)$$

you should use a globally defined constant for the universal gravitational constant named UNIVERSAL_GRAVITATIONAL_CONSTANT (don't be afraid to use descriptive names; G is not a good name). Embed your function definition in a complete program that computes the gravitational force between two objects given suitable inputs. Your program should allow the user to repeat this calculation as often as the user wishes.

Please note that the user will have to enter the masses in grams and the distance in centimeters unless you provide some conversion for the input. If you do decide to allow the user to enter the information in some other units then please include at least one option to enter mass as grams and distance in centimeters as that is likely what the graders will use to grade. When outputting the resulting force you may want to consider using %g instead of %f since the range of numbers is so great it is hard to find settings on %f that look good for all input values.

Also note: The mass of the earth is approximately 5.972×10^{24} kilograms and the mass of the moon is $7.34767309 \times 10^{22}$ kilograms. The moon is about 384,400 kilometers from the earth. **In your comments section list the gravitational attractive force in dynes of the moon on the earth given by your program using the notation for exponents that C uses for constants (like 6.02e23).**

Your program output should look something like the following:



At the top of your program you should have a comment section that follows the below format:

```
/*********************************************
     Author: <insert your name>
     Date: 10/15/2014

     Purpose: <Insert a short description of what
          your program does here.>
     Time Spent: <Insert how much time you spent
          on the assignment here>
*********************************************/
```