Analysis of the problem

1. The program needs to prompt the user for an inputted number. Only needs one number, preferably a number with digits after the decimal for demonstration of the functions functioning.
2. The only data that is available is the one number that the user inputs.
3. The output is the one line that includes the original number, the number rounded to a whole number, the number rounded to one decimal place, the number rounded to two decimal places, and the number rounded to three decimal places.

The algorithm

The algorithm is fairly straight forward. So that the number can easily truncate decimals to the desired length, multiply the number by the appropriate number for decimal places (ie by 10 for tenths, 100 for hundredths, etc), strip the number to just the decimals, check if that number is less than 0.5, if it is don’t round, if it is equal to or greater than 0.5, then the number needs to be rounded. To easily get just the decimals, I casted the original number to a double via an int, then subtract the original number with the casted number. Round or don’t round, but before returning the number it needs to be divided by 10 to remove the multiplication done at the beginning.

Number = number \* 10

justDecimals = number – numberWithoutDecimals

If (justDecimals < 0.5)

Divide by 10

Return number

Else

Round number

Divide by 10

Return number

User Documentation.

To run the submitted project, you will first need to extract the contents of the submitted archive by right-clicking on the file, select extract all, and then select the extract button. Then you will need to open your copy of visual studio, go to file, open, and then select project/solution. Locate the folder that you just extracted, open the mod2\_2 folder and open mod2\_2.sln file. Once open go to the solution explorer, click on the triangle to the left of source files, and select mod2\_2.c. Once you see the code on the screen, hold the ctrl button down on the keyboard and press F5. This will launch the application. Follow the on screen prompts.