

Project 1. Ball drop. Square roots.

Implement the following algorithms to determine \sqrt{N} to the nearest hundredth.

1. Stepping up by 0.01 starting at 0. Check if too big or too small. If too big, stop.
2. 0 is too small, N is too big. Start by guessing, $\text{guess} = N/2$. If too big, then guess a number half way between the previous guess and the largest guess that you know is too small. If guess was too small, make a guess that is halfway between the current guess and the largest guess that you know is too big. I haven't told you how to end this program but see if you can figure it out on your own.
3. Newton's method, look up online and implement

According to ASCII code, the capital letters A B C D E correspond to the decimal numbers, 65, 66, 67, 68, and 69. So, what grade is better than an 'A'? Well, the @ of course because it corresponds to the ASCII code for 64.

For this project, the implementation of just the first algorithm is required for a 'D', the first two for an 'A', and all three for the '@'.

Style Notes for this Assignment

- Add your name, the date, and purpose of this program to the top of the file.
- All loops need a comment indicating their purpose.
- Except for loop indices, variables should have descriptive names, like guess, not x.
- Place algorithms 1, 2, and 3 in three separate functions that are called by your main function. Function names should also be meaningful.
- Indent content of all loops and functions, unless the content has only one thought.
- For this week, place a comment next to the first usage of any standard library function or class indicating the header file in which it can be found. For example, `printf()` would need such a reference.

Due Monday. Place .cpp files in D2L dropbox. If it won't compile or run, don't bother. If it runs and meets a partial task, you may submit for extra credit but you NEED to specify in a comment at the top of the file what your program does indeed do.

Handy commands `printf`, `atoi`