

Read with Timeout

This homework will require you to write an application in C or C++ that attempts to read input from the user, interrupting the blocking call if it does not complete within a specific amount of time. If the user enters text within the timeout, you should echo the text back to the user and reset the timeout.

1. Your program **shall** meet the basic requirements listed below:
 - (a) Your program **shall** terminate after encountering an unrecoverable error (after printing error information).
 - (b) You **shall** submit all source code and a makefile in a tar file.
 - i. The makefile **shall** be able to build your source in a 32 bit Ubuntu VM.
 - ii. The built program **shall** be able to run in a 32 bit x86 Ubuntu VM.
 - (c) The program **shall** perform reasonable error checking.
 - (d) The program **shall** not print excessive information.
2. The program **shall** request input from the user continually. The requirements below will indicate when the application should terminate.
3. The program **shall** print any input read from the user. Simply read standard in from the user and then print it back out to standard out. Do this continuously.
4. The program **shall** interrupt the read from standard in when 3 seconds has elapsed without input. If the user enters something, reset the timeout period (so that it will always timeout 3 seconds after the last thing was entered and not timeout if the user keeps typing input).¹
5. The program **shall** terminate after 3 timeouts have occurred.

¹For the purposes of this homework, you may define input as either the enter key being pressed or white space entered. You may *not* define it as a set number of characters.