Optional Homework 2- *Multiple Threads* *(5 bonus points)*

Due: April 22th, 11:55PM

Please provide *Makefile* for each problem and include a *README* file to describe how to compile/test the program.

You will need to submit your complete homework directory on Canvas. Create a gzipped tar ball that includes all your source code, *Makefile* and *README* files. The filename for the *tarball* must be **username-homework-2.tar.gz** where username is your NETID.

Problem

Implement a program that calculates the number summation: 1+2+3+…+99+100. Please use multiple threads to share the workload. For instance, the first thread can calculate 1+2+…+49+50, and the second thread can calculate 51+52+…+99+100. Please print out the final number summation result.

Make your code readable and robust and output standard Linux error messages if an error occurs. For example, if a thread is failed to be created, you can use *perror("Thread creation failed")* to output error messages.