Michael Ralea & Jordan Sinoway
CSC345-02
March 19, 2021

Project 2: Multithreaded Programming - Discussion

- Who Did What:

  - Jordan Sinoway:

    - Sudoku .txt file input and parsing

    - Clock integration

    - Option 3 (11 processes)

    - Debugging

    - Report

  - Michael Ralea:

    - Option 1 (11 threads)

    - Option 2 (27 threads)

    - Debugging

    - Report

- 3 Zoom calls and 4 Discord calls were held to discuss the project

- The following are our discussions via Discord while working on the project

  - Jort - Jordan Sinoway

  - Lordkibbles - Michael Ralea

Jort 03/07/2021
Yo, we should probably get started on the 2nd project for OS pretty soon (edited)
I think its due on 3/15

lordkibbles 03/07/2021
oh okay yea you right, forgot it's due, what days are best for you to meet?

Jort 03/07/2021
Are you available to go over stuff on Tuesday morning? Anytime from 9:30-1:00?

lordkibbles 03/07/2021
class ending at 10:50, free after, ima look at it a little bit tomorrow on my own

Jort 03/07/2021
Alright lets do 11:30 then

lordkibbles 03/07/2021
sounds gud

Jort 03/09/2021
https://tcnj.zoom.us/j/91057542676?pwd=dG5zSUVwdFhFQ3U2L1Q2dTVVd21mUT09

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Zoom is the leader in modern enterprise video communications, with an easy, reliable cloud platform for video and audio conferencing, chat, and webinars across mobile, desktop, and room systems. Zoom Rooms is the original software-based conference room solution used around the world in board, conference, huddle, and training rooms, as well as ex...

lordkibbles 03/09/2021
ill be there in a sec

Jort 03/09/2021
👌

Jort 03/09/2021
Got the text input working, and it reads in and populates the 2d array correctly (edited)
So if you run it does this so far

```
osc@osc-VirtualBox:~/Documents/OS_CSC345/Project2$ ./main 1
BOARD STATE IN input.txt
6 2 4 5 3 9 1 8 7
5 1 9 7 2 8 6 3 4
8 3 7 6 1 4 2 9 5
1 4 3 8 6 5 7 2 9
9 5 8 2 4 7 3 6 1
7 6 2 3 9 1 4 5 8
3 7 1 9 5 6 8 4 2
4 9 6 1 8 2 5 7 3
2 8 5 4 7 3 9 1 6
```

lordkibbles 03/09/2021
good lucks

Jort 03/09/2021
Just pushed so whatever's on git is current

lordkibbles 03/09/2021
👍

been working on it for a little bit ill lyk when its working

coming into some problems since the code im basing it on doesnt allow for options and is only 27 threads

Jort Yesterday at 9:36 PM
Okay, let me know if you need any help

If we're doing the method with having 1 function each for columns, rows, and grids

Then you can just switch the number if threads called for each function

So first one is 9 threads for rows, 1 for column, 1 for grid

Next is 9 threads rows, 9 columns, 1 grid

etc.

lordkibbles Yesterday at 9:39 PM
yea, i was just having issues with how they handled the use of global variables but i fixed it

they were updating a "valid" array with 1 everytime a thread was valid, so i changed it to track invalid which made things easier

figured it out i think, i have the 27 threads working now

Jort Yesterday at 9:44 PM
Do you have time tomorrow to go over some stuff

I'm reading over the handout again and it looks like theres some more stuff we have to do

lordkibbles Yesterday at 9:45 PM
yea fs, around noon and later around 3

and yea, you mean like the actual testing and comparing the timing of the different methods?

Jort Yesterday at 9:46 PM
yeah

the timing stuff shouldn't be too hard to add

lordkibbles Yesterday at 9:46 PM
we should just be able to adapt the one lab we did, ill see if i can do it tonight when this works

Jort Yesterday at 9:47 PM
https://www.tutorialspoint.com/c_standard_library/c_function_clock.htm

C library function - clock() - Tutorialspoint

C library function - clock() - The C library function clock_t clock(void) returns the number of clock ticks elapsed since the program was launched. To get the number of seconds used by the CP

I think this will do the trick

lordkibbles Yesterday at 9:47 PM
okay word thx

Jort Yesterday at 10:03 PM
Wait actually, I think we need to do something different for the 3rd option

We have to use processes instead of threads

lordkibbles Yesterday at 10:03 PM
oh bruh

Jort Yesterday at 10:03 PM
- [25 pts] Implement yet another, multi-process way to validate the board. When the option "3" is used, your program should create 11 child processes and the processes will behave in a similar manner as the option "1" except that processes are used instead of threads. Repeat the statistical experiments again comparing options "1" and "3." Your null hypothesis is again "*There is no statistically significant difference between two methods.*"

11:30 PM Bc I think thats what he wants it in

Jort Yesterday at 11:42 PM

Switched it over to seconds

I do see the time disparity, but idk if its a problem

Maybe the 27 thread one is technically less efficient since its overkill for a simple task

and it takes longer to create the threads than do the process

Anyway

pushed the version with seconds to git

So pull before you do any edits

lordkibbles Yesterday at 11:56 PM
okay cool thx

lordkibbles Today at 12:58 PM
pushed to github the little if statements that check if the board was already invalid
gonna work on recording that new data now

Jort Today at 12:58 PM
cool, just started working on adding processes

lordkibbles Today at 1:01 PM
i was thinking about it, idk if there really is any value in checking the runtime when the board is invalid. cuz worst case is that it is valid and everything has to be checked
actually i guess we could compare runtimes of best case and worst case by making the first element incorrect (edited)
he doesnt really ask for that but no harm in it ig

Jort Today at 1:02 PM
Best case/worst case is probably the move

lordkibbles Today at 1:03 PM
ye ima do that rn

Jort Today at 1:03 PM
do you need to modify the code?
Just dont want git diff problems (edited)

lordkibbles Today at 1:04 PM
just the input.txt and i will change back to correct solutioon so no pushing

Jort Today at 1:04 PM
k

i did already push a little bit tho with the if statements if you havent pulled

Jort Today at 1:04 PM
yeah pulled that

lordkibbles Today at 1:21 PM
kk got the data for fastest case, which i defined as the first 2 elements of the first row being the same number, there's a relatively substantial improvement so at least we know that change in the code did something

Jort Today at 1:22 PM
aight cool

lordkibbles Today at 1:22 PM
what else you need from me if anything atm

Jort Today at 1:23 PM
can i call you on disc real quick
just had a question bout somth

lordkibbles Today at 1:23 PM
one sec

📞 **lordkibbles** started a call that lasted 9 minutes. Today at 1:23 PM