CSE 127 Week 1 Discussion
PA1: GDB

- Tuesday, Jan 17th at 11:59 pm
- Group submissions - Team size up at most 2
- Goal is to prepare you for the next assignment: Virtual machine and GDB
Virtual Machine

- Weird stack trace on startup and system doesn't start (AMD chips)
  - In advanced boot options, try booting using sysvinit or switch to an older kernel
- VirtualBox throws an error on startup
  - This varies, but on windows it is most likely because you haven't enabled Hyper-V, which there are resources to do [here](#). BIOS
- To make SSH work within WSL or other OS you can enable [port-forwarding](#).
- Use QEMU for M1 macs.
- SSH is not required, but you need a way to transfer your solution out of the VM.
GDB

- GNU Debugger
- Allows you to "see" inside your program
  - See registers, memory access, instructions
  - Breakpoints allow you to pause execution at any point
GDB Demo
GDB

- Layout next
- b main
- info frame
- info registers
- x/[count][format][unit]
- x/10x $ebp+4
- x/10i $eip
- x/5c name
- More uses of x [here](#)

→ shows the code. To quit ctrl x + a
→ add breakpoint
→ print info about the current stack frame
→ registers in both hex and natural format
→ defaults: count = 1, format = x, unit = w
→ show as hex
→ show as instructions
→ show as char
GDB

- disass main → disassemble a function
- tui enable/disable → enable/disable text user interface (gdb -tui)
- layout src/asm → show source code/assembly
- tui reg general → show registers
- print i → prints variable value
- print i=10 → sets variable value
- set $ebp = 123 → set value for a register
- set {int}0xfff12345 = 123 → set value for a memory region

More resources [here](#)
Submission

- Submit hw1.txt to "PA1: gdb" on Gradescope.
- Follow the directions in the template, do not delete the square brackets
- If you remove the square brackets, the autograder won’t recognize your answers.