CSD101: Introduction to computing and programming (ICP)

GDB - The GNU Debugger

- A debugger allows one to do controlled execution by:
  - Setting/removing break points.
  - Doing step-by-step execution.
  - Inspecting/changing the value of variables at run time.
- GDB - is a debugger which works for multiple languages including **C** .
- GDB can be used to debug when a running program core dumps.

GDB - Basic commands

Compile with: `gcc -g prog.c -o exe`

```
gdb program [core]
b(reak) [ file: ] function - set breakpoint at function [ in file ]
b(reak) [file:] lineno - set breakpoint at line lineno [ in file ]
run [ arglist ] - start program [ with arglist ]
bt - backtrace: display program stack
co(ntiue) - continue running program
d(elete) [n] - delete breakpoint n.
l(ist) f,t - list source lines from f to t
p(rint) expr - display the value of an expression
q(uit) - quit/exit GDB
i(nfo) b(reak) - show defined break points
n(ext) - execute next line and stop (even if function call)
s(tep) - execute next line, step into function if function call
```

Commands can be shortened to unique prefixes - shown by
`prefix(rest)` above.