$\begin{array}{c} {\rm GDB~in~a~nutshell} \\ {\rm _{18-x13~Fall~2021}} \end{array}$

Getting









gdb (starts gdb, files to be debugged can be later loaded)

gdb <file> (starts gdb with <file> to debug)

gdb -h (lists command options)

quit (exits from gdb)

Ctrl-d (same effect as quit)

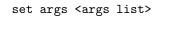
Note: Ctrl-c does not exit from gdb, but halts the current command



pro-

grams

run (start a program)





kill (kill the program)





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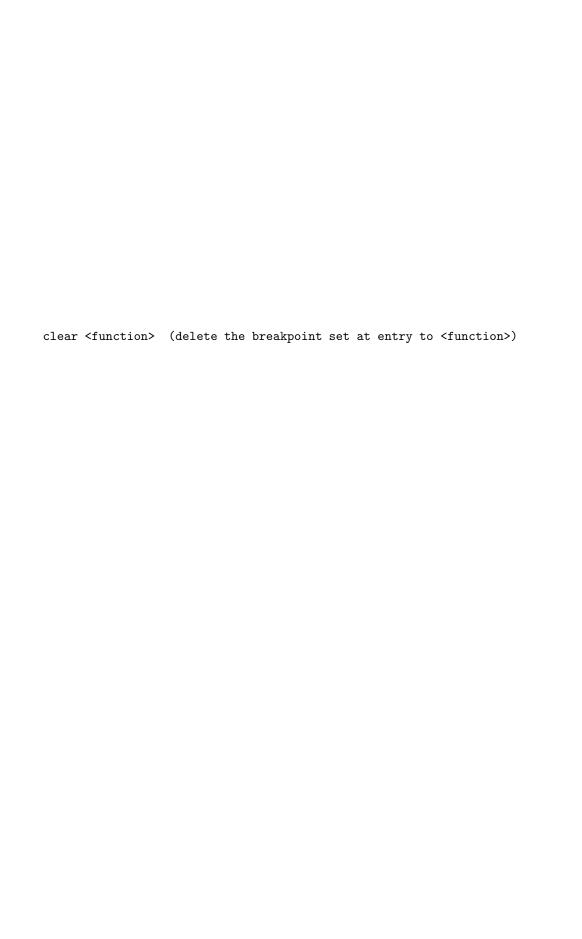
ing

Breakpoints

break <function></function>	(set a breakpoint at entry to <function>)</function>	

hmoole (line num)	(got a brooknaint ot	specified line numbe		
TIOM TIME HUMP	(300 a broampoint at	Trouting Time number	-,	

break *address (set a breakpoint at specified address)





delete <num> (delete the breakpoint with <num>)

delete (delete all breakpoints)





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stepi (execute one machine instruction)

stepi <num> (execute <num></num></num>	machine instructions)	

next (continue to the next source line in the current stack frame)

nexti (execute one machine instruction, stepping over function)

nexti	<num></num>	(execute	<num></num>	machine	instructions,	stepping o	ver function	1)

continue (resume execution)

continue	<num></num>	(continue,	ignoring	this	breakpoint	<num> o</num>	f times)	

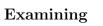
until (continue running until a source line past the current line,



until <loc></loc>	(continue	running	until t	the spec	ified loca	ation is	reached



finish (run until the current function returns)



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 stack

frame <args> (print out a stack frame)

select-frame <args> (move from one stack frame to another)

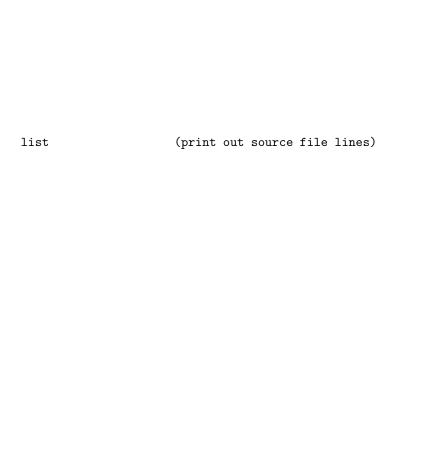
backtrace (print a backtrace of the entire stack)





source

files



disas (dumps a range of memory as machine instructions) disas <addr> (the range is around the address)

disas <addr< th=""><th>1> <addr2> (the range</addr2></th><th>e is between the two ac</th><th>ldresses)</th><th></th></addr<>	1> <addr2> (the range</addr2>	e is between the two ac	ldresses)	



data

print/f < exp> (print out the value of < exp> with format /f)





u: unit size (b, bytes, h, two bytes, w, 4 bytes)

display/f <exp> (display the value of <exp> every time program stops)

display (show the auto-displayed items)

delete display <num></num>	(stop displaying item <num< th=""><th>>)</th><th></th></num<>	>)	



print/a \$pc (print the program counter)

print/a \$eax (print the contents of %eax as an address)

 $\label{print_d} \mbox{print/d \$eax} \qquad \mbox{(print the contents of \%eax as decimal)}$

print 0x100 (print the decimal representation of a hex value)

print/x 555 (print the hex. representation of a decimal value)

x/6xw 0x12345678 (print 6 words in hex from address 0x12345678)

display \$eax (print contents of %eax whenever program stops)

display/i \$pc (print the next machine instruction to be executed)



com-





info breakpoints info display

info registers info frame

info program info functions

info variables info address <symbol>