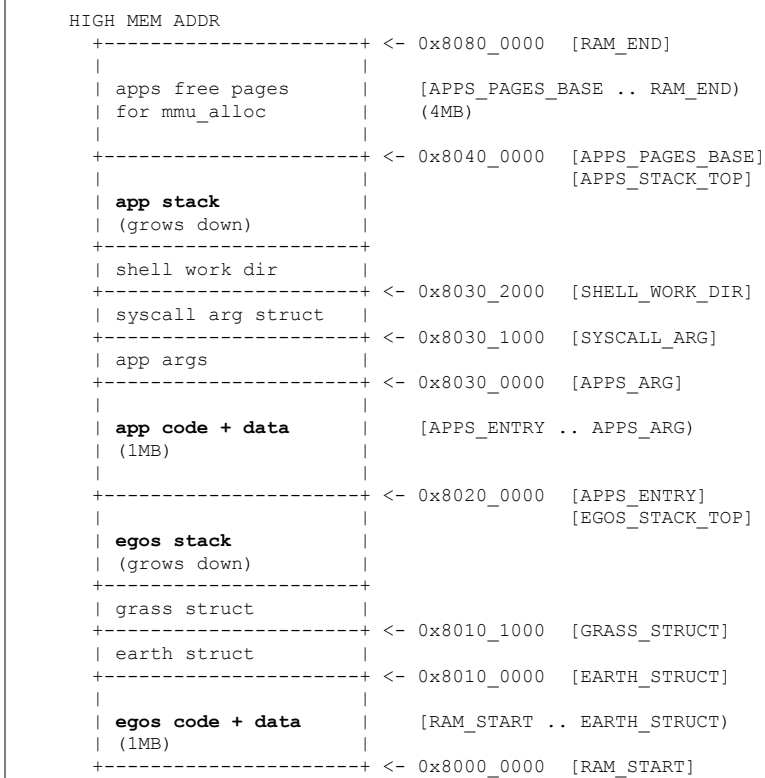
CS6640 Handout Week3.b

1. egos-2k+ memory layout I



2. gdb cheat sheet

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Multi-core support
(gdb) info threads        list all threads known to gdb
(gdb) thread <n>          switch the current context to thread <n>

Breakpoints & watchpoints
(gdb) break main          set a breakpoint on a function
(gdb) break basic.c:101   set breakpoint at file and line (or function)
(gdb) info breakpoints    show breakpoints
(gdb) delete 1            delete a breakpoint by number
(gdb) watch expression    set software watchpoint on variable
(gdb) info watchpoints    show current watchpoints

Running the program
(gdb) c               continue the program
(gdb) s               a step in C; step into functions
(gdb) si              a step in asm; step into functions
(gdb) n               a step in C; step over functions
(gdb) ni              a step in asm; but step over functions
(gdb) CTRL-C          actually SIGINT, stop execution of current program
(gdb) finish          finish current function's execution

Stack backtrace
(gdb) bt              print stack backtrace
(gdb) info locals     print automatic variables in frame
(gdb) info registers  print registers sans floats

Browsing Data
(gdb) p expr             print expression
(gdb) p/x expr           print in hex
(gdb) p/t expr           print in binary
(gdb) p/i expr           print as instructions

(gdb) x/FMT address      low-level examine command
(gdb) x/x 0x80001000     print memory in hex
(gdb) set var = expr     assign value

(gdb) display/FMT expr   display expression result at stop
(gdb) display/i $pc      print next instruction
(gdb) undisplay          delete displays

FMT (Format letters) are:
  o(octal), x(hex), d(decimal), u(unsigned decimal),
  t(binary), f(float), a(address), i(instruction), c(char), s(string)
  and z(hex, zero padded on the left).

Load a program's symbols
(gdb) add-symbol-file <elf>    load symbol table from <elf>

Quit
(gdb) quit                quit gdb
```

[borrowed and customized from
https://gist.github.com/rkubik/b96c23bd8ed58333de37f2b8cd052c30]