



Course organization

- **Course introduction (Week 1)**
 - Code editor: Emacs (Week 2)
- **Part I: Introduction to C programming language (Week 3 - 12)**
 - Chapter 1: Overall Introduction (Week 3-4)
 - Chapter 2: Types, operators and expressions (Week 5)
 - Chapter 3: Control flow (Week 6)
 - Chapter 4: Functions and program structure (Week 7)
 - Chapter 5: Pointers and arrays (Week 8)
 - Chapter 6: Structures (Week 10)
 - Chapter 7: Input and Output (Week 11)
- **Part II: Skills others than programming languages (Week 12)**
 - **Debugging tools (Week 12)**
- **Part III: Reports from the battle field (student forum) (Week 13– 16)**
 - Presentation (week 13-14)
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Chapter 8 GDB in Emacs

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8.1 Start gdb

1. Compile your `.c` file with the `-g` option
2. Start emacs
3. Open the `.c` file
4. Split the window into 2 halves
 - `C-x 2`
5. Start gdb
 - `M-x gdb`
6. Exit
 - `quit`
 - `C-c`



8.2 Breakpoints



Set a breakpoint

- **C-x [space]**
- ***b functionName***
 - *b main*
- ***b line-number***
- ***b file:function***
- ***b file:line-number***
- ***b +offset***
- ***b -offset***



Disable enable breakpoint n

- *disable [n]*
- *enable [n]*



Delete breakpoints

- Delete breakpoint n
 - *d [n]*
- Delete all breakpoints
 - *d*



8.3 running your program in gdb

- Type “run” or “r”

```
run
```

- Command line arguments can be added after run

```
run file1 file2
```



8.4 Examining data

- ⊙ **Checking variables: “print” or “p” ;
“display” or “disp”**

```
p a  
disp a
```

- ⊙ **Execute any function f with argument a
and print its return value**

```
p f(a)
```



8.5 Tracing

Next line

n [count]

Step to next line. Will step into a function

s [count]

Continue: continue running

c [count]

Conditional break points: break if expr is nonzero

break ... if expr

Watch points: set a watch point for expression expr

watch expr



References



For more detailed refcard, please check

- **<http://users.ece.utexas.edu/~adnan/gdb-refcard.pdf>**



Exercises

- **Use GDB to debug the two examples (see readme file) listed in chapt8.tarz**
 - **There is one bug in each example.**
 - **Use the readme to guide your compilation.**