

Vim 1



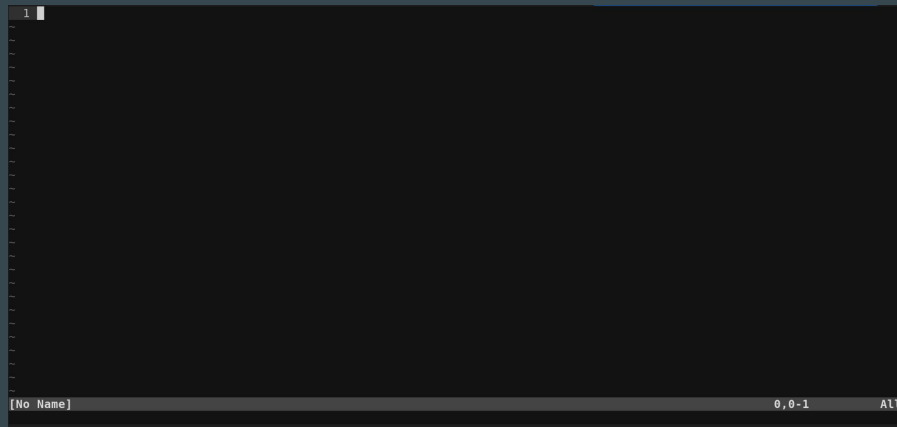
07-131 Great Practical Ideas in CS

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Course website: <https://web2.qatar.cmu.edu/cs/07131/>

What is Vim?

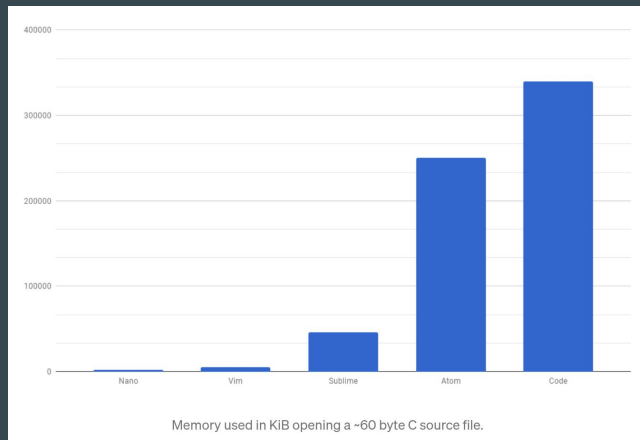
- A screen-based text editor
(Attention: Word is **not** a text editor!!!)
- There are no menus or buttons, all interaction is done via commands
- 1976: vi is implemented ("vi" stands for visual mode)
- 1991: vim is released ("vim" is vi improved)



Yes, I know it does not look particularly appealing...
But that is because developers used their time on the
important stuff ;)

Do I really need to?

- Efficiency: Move your hands as little as possible from the keyboard. **(Take time to learn once, and save time for the rest of your life.)**
- Ergonomics: stay close to home (row)
- Ubiquity: You can rely on it being available on almost all machines.
- Lightness: Vim will not slow your computer down!



How to use Vim

Vim Modes

There are 6 basic modes:

1. Normal mode
2. Visual mode
3. Select mode
4. Insert mode
5. Command-line mode
6. Ex mode

Normal mode

- How to get there?
 - It is the mode that Vim opens by default
 - Press **ESC** from any mode
- What can I do?
 - Navigate the file
 - Cut, copy, and paste
 - Switch to other modes

Normal mode: navigating

- **h j k l** (or arrow keys) : move the cursor
- **w** : go to next word
- **b** : go to previous word
- **0** : go to the beginning of the line
- **\$** : go to the end of the line
- **f<char>** : find the next occurrence of <char> in this line
- **F<char>** : find the previous occurrence of <char> in this line
- **G** : go to the end of the file
- **gg** : go to the beginning of the file



Normal mode: (simple) editing

- **y** : yank (copy) a character
- **yy** : yank (copy) a line
- **dd** : delete (cut) a line
- **p** : paste below
- **P** : paste above
- **u** : undo
- **ctrl + r** : redo

Normal mode: editing

More complex commands: **<#times><command><motion><object>**

For example:

- **d5d** deletes five lines from the cursor
- **5dd** repeats the dd command 5 times (same effect as d5d)
- **d3w** deletes three words from the cursor
- **y10y** yanks 10 lines from the cursor

Visual mode

- How to get there?
 - **v** : visual character mode
 - **V** : visual line mode
 - **ctrl + v** : visual block mode
- Indicated by -- VISUAL -- at the bottom
- What can I do?
 - Moving the cursor highlights the text
 - When a command is used, it is executed for the highlighted area only

Select mode

- How to get there?
 - `gh`
- Indicated by `-- SELECT --` at the bottom
- What can I do?
 - Moving the cursor highlights the text
 - Typing anything overwrites the highlighted text

Disclaimer: I never really used this one...

Insert mode

- How to get there?
 - **i** : start insert from cursor
 - **A** : start insert from the end of the line
 - **o** : start insert at new line below
 - **O** : start insert at new line above
- Indicated by -- INSERT -- at the bottom
- What can I do?
 - Type (finally!)

Command-line mode

- How to get there?
 - `:` : to execute ex commands (90% of the time, that's what you want)
 - `/` or `?` : to search
- What can I do?
 - So many things!
 - `:w` : save
 - `:wq` : save and quit
 - `:q` : quit
 - `:q!` : force quit (without saving changes)
 - `:<number>` : go to line <number>
 - `:+<number>` : move forward <number> lines
 - `:-<number>` : move backward <number> lines

Command-line mode: searching (and replacing)

- **/<string><enter>** : search for string forward
- **?<string><enter>** : search for string backward
- **n** : next occurrence of search
- **N** : previous occurrence of search

Find and replace: **:<range>s/find/replace/<flags>**

- **<range>** :
 - **%** : whole file or
 - **from,to** : line range (inclusive)
- **<flags>** :
 - **g** : replaces every instance in a line
 - **c** : asks for confirmation before replacing

Ex mode

- How to get there?
 - Q
- Indicated at the bottom by "Entering ex mode."
- What can I do?
 - Execute commands without leaving command mode

Disclaimer: I never really used this one...

Closing remarks

- Vim may look primitive, but it is very powerful
- It can be highly customized (.vimrc)
- Plugins can make it an IDE
- Note to self: Git and C++ examples

It's sportslab time!

Lab tips

- If you get an error message that says something like "Vundle" just press enter to continue
- If you need line numbers to display, use **:set number**
- If you really need to use your mouse, use **:set mouse=a**
- The last instruction on sliding should be (I always practice in grassy fields).
- "Written by yours truly" (no quotes) should both be directly above and below those lines
- If you screw up on a file, `git checkout <filename>` to reset