MONTANA
STATE UNIVERSITY

Writing Code

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Typing & Editors

Touch Typing

- Writing code means typing
- You need to become a good typist
- Looking for keys breaks "flow"
- Can you touch type?
    - Letter keys?
    - Punctuation?
    - Numbers & symbols?

Typing Test

- Let's find out!

- Go to http://typing.io
  - Click on 'lessons'
  - Select C Linux

- What are your stats?
  - For quiz 1, you'll need at least 20 wpm to pass
  - I'm ~38 WPM, below average

Typing Text

- The *average* typing speed for professionals is ~40WPM
- Fastest typer ever: Stella Pajunas, 1946 IBM Electric Typewriter
  - 216WPM (!?!?)
  - I can't even think 216 word per minute...

u mad?

History of Typing

- 1714: The first patent for a typing machine
- 1808: typing machine for the blind to write
- 1829: Typowriter used dial
- 1865 - 1909: Writing Ball... first commercial success
- 1867: "Type-Writer" by Remington with foot carriage return
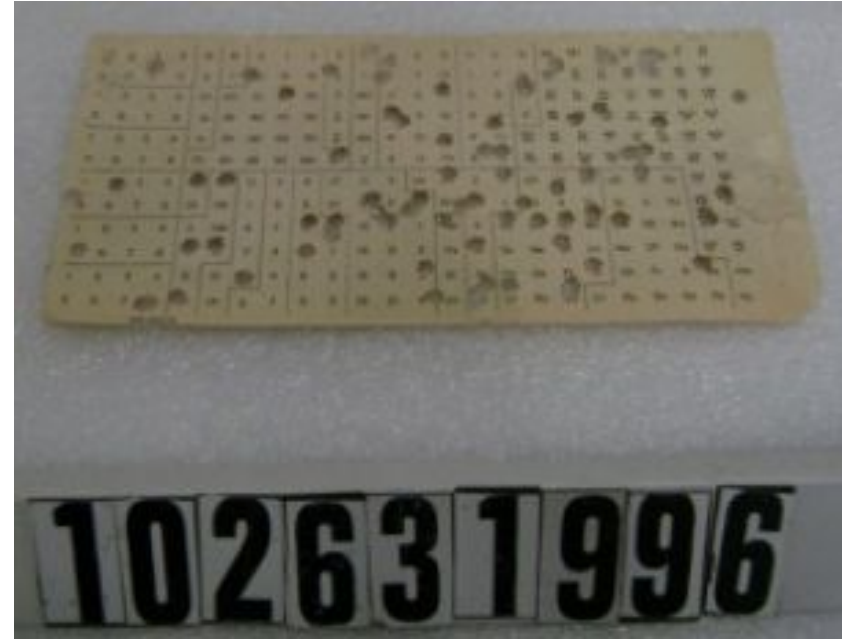 - Remember the pedal idea when we get to Vim

THE FIRST COMMERCIAL TYPEWRITER
MODEL 1 REMINGTON, SHOP NO. 1.

History of Typing

- 1894 Lowercase letters

- 1961 IBM Selectric eliminated key jams
  - seems like no big deal, but this was huge
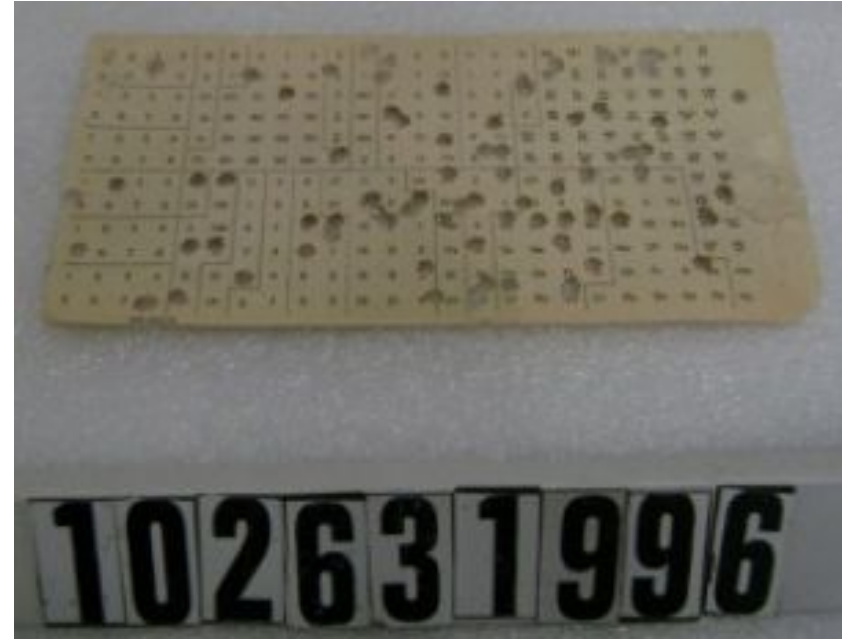
History of Typing

- 1940's ENIAC punch cards
  - Let us thank our lucky stars we weren't programming back then
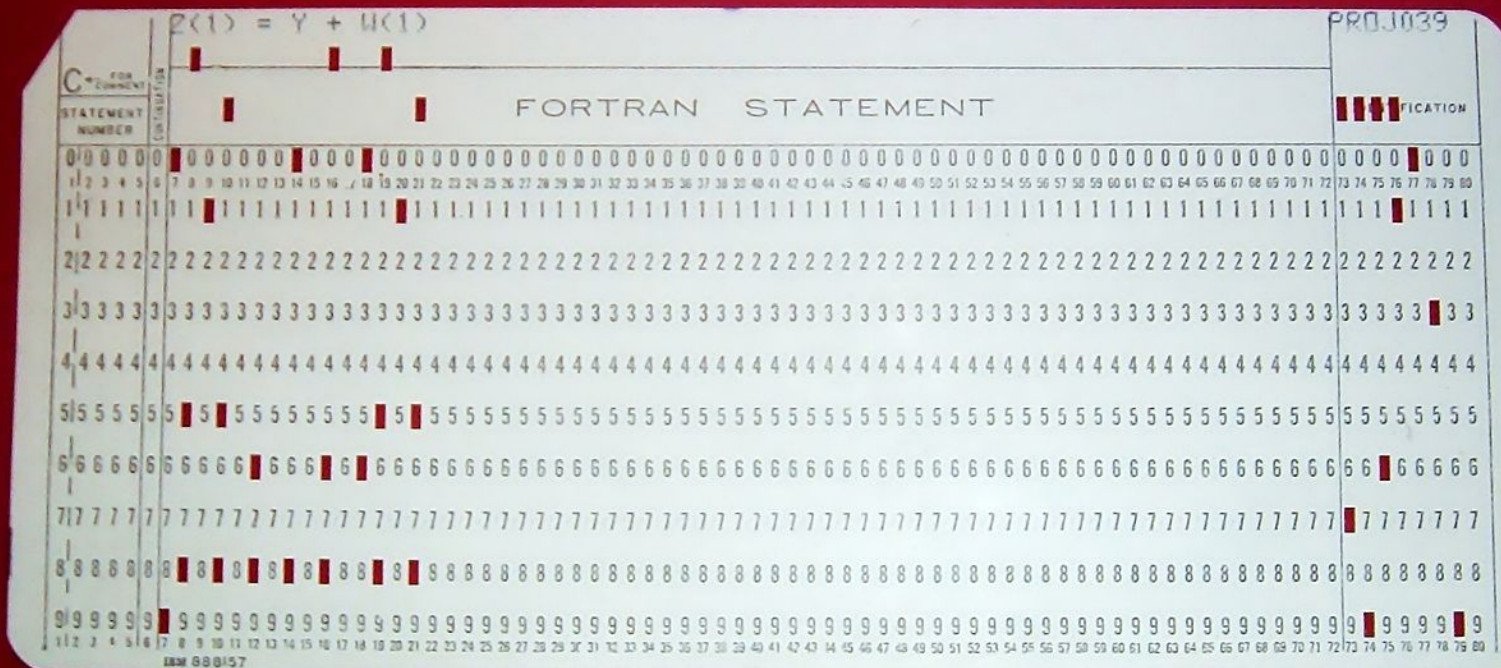 - "Typing" was literally punching holes in cards
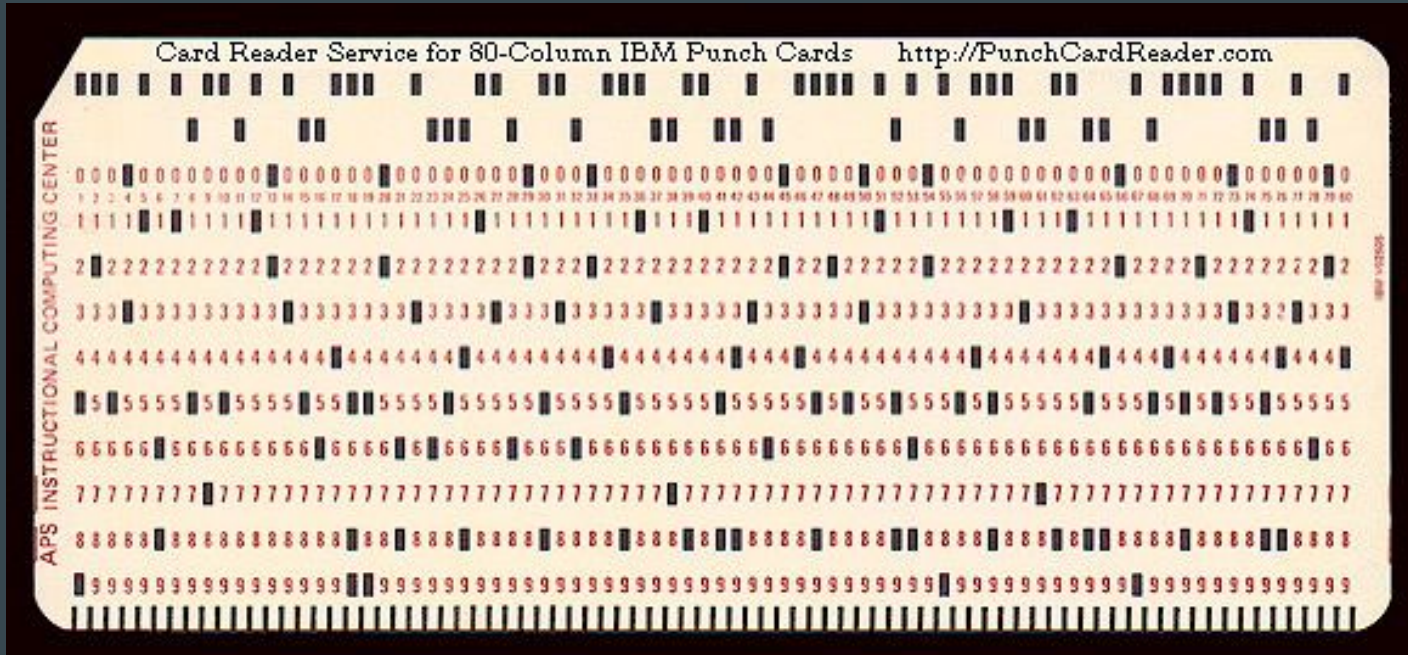
History of ~~Typing~~ Computing

- Herman Hollerith Develops punched card computers in the 1880s
- 1905 - The Tabulating Machine Company
- 1924 - International Business Machines

History of Typing

Ever Wonder Where the 80 Character Standard Came From?

History of Typing

- 1964 UNIVAC with a video display terminal (VDT)

History of Typing

- 1986 IBM Model M mechanical keyboard came standard
  - Still one of the best keyboards around
  - Still available!
    https://pckeyboard.com/
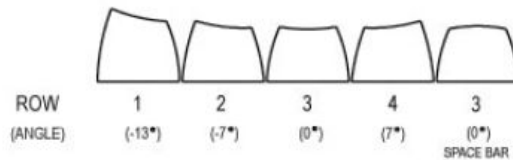
History of Typing

- Keyboards are a very personal thing
- Here is mine
  - Mechanical cherry MX clear switches
  - custom keyset from pimpmykeyboard
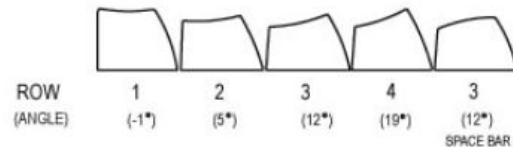 - DSA Sublimated

History of Typing

- Keycap Styles
  - there are lots
  - and lots
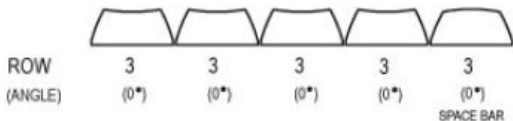- People actually fight about this stuff
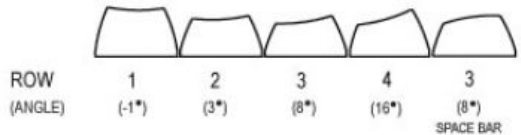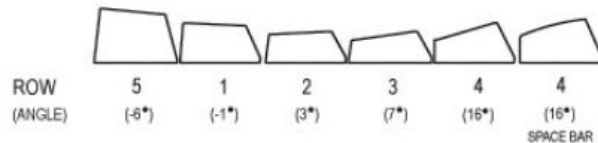
History of Typing

- And then there's Apple
  - 2017: 'butterfly' keys
    - 40% thinner!
    - Also terrible
  - 2020: quietly went back to scissor
  - Keeps trying to get us to use laptop keyboards on our desktop ¯_ (ツ) _/¯

New Apple-designed butterfly mechanism

Traditional scissor mechanism

Editors

• • •

Editors

- So, you have decided what you are going to physically type into the computer with
- Now you need to choose what software you are going to use to do it
    - Turns out, this is *also* something that people are very, very passionate about

VIM
usable in just about any environment.

does one thing, well.

EMACS
flexible, customizable, and packed with every feature known to man.

NANO
mostly used by people who do not know what they are doing; or psychopaths.

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Types Of Editors

- Text Editors
    - VIM
    - Emacs
    - Nano
- IDEs
    - Visual Studio
    - IntelliJ
    - Eclipse
- Inbetweeners
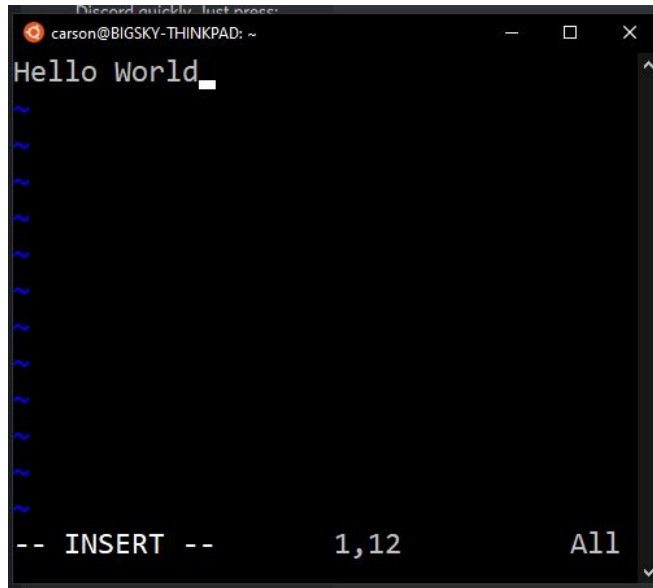   - Sublime Text
    - SlickEdit

VIM

- vim is focused on doing one thing "well"
  - That thing is editing text
- vim is a mode-ful editor, with three modes
  - command mode - navigating, entering commands
  - insert mode - entering text
  - visual mode - selecting text

VIM

- vim is based on verbs, like d for 'delete,' modifiers, like i for 'inside,' and nouns, like w for word
  - To "Delete to inside a word" you issue a sentence command: diw

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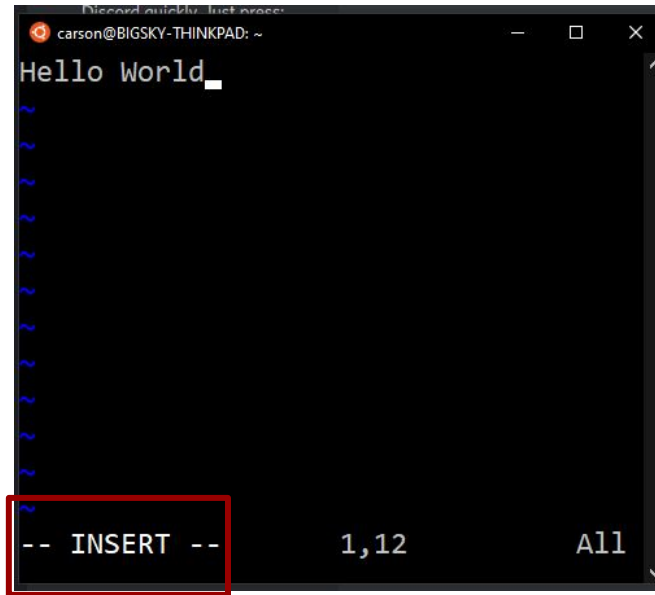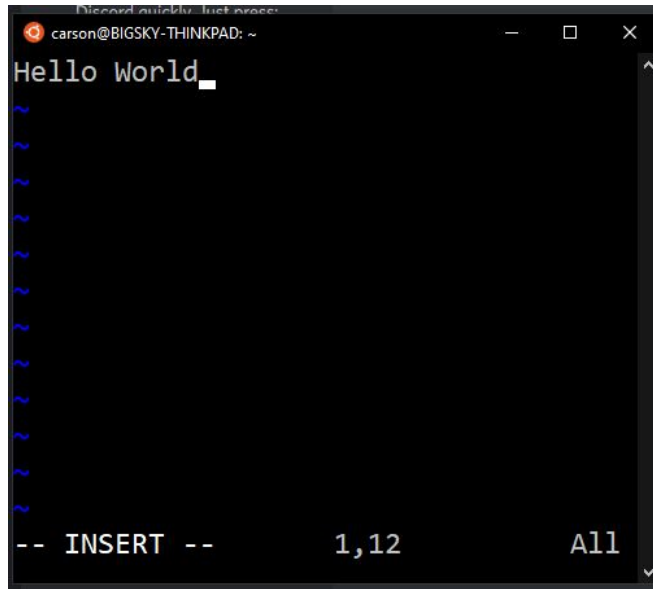
VIM

- Even if you don't use vim regularly you should know your way around it

- Great tutorial:
  https://danielmiessler.com/study/vim/

- Basic Demo...

EMACS

- vim is focused on doing one thing "well"
- emacs is focused on doing everything "well"
- "Emacs is a pretty good operating system. Too bad it doesn't have a decent editor." --reddit

EMACS

- Emacs is written in a dialect of lisp, and it gets weirder from there

- I'm not going to dive into emacs here
  - *but* if you have the right personality you might love it

EMACS vs VIM

- I have used both a lot
- I have used a vim emulator in emacs
- I have used an emacs emulator in Jetbrains IDEs
- I have used a vim emulator in Jetbrains IDEs
- I now use plain JetBrains IDEs

EMACS vs VIM

- The editors reflect their origins
- vi
  - Created by Bill Joy
  - Berkeley Unix
- emacs
  - Created (kind of) by Guy Steele
  - Spirit of Richard Stallman
  - MIT Media Lab

IDEs

- Much more common in corporate environments
- The Big Guys
  - Eclipse: https://www.eclipse.org/ide/

  - Visual Studio / VSCode: https://code.visualstudio.com/

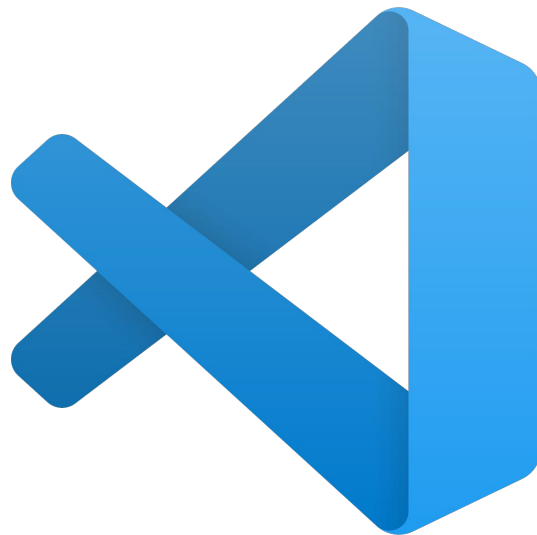 - JetBrains: https://www.jetbrains.com/

ECLIPSE

- When you don't have anything nice to say...
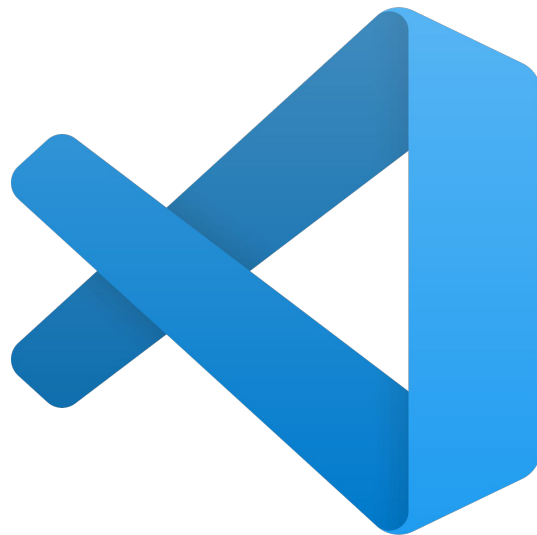- don't say anything at all

Visual Studio/ VSCode

- Microsoft has been in the ide game for a long time
  - Visual Studio nuked TurboPascal
  - A good friend worked there
- VSCode is a recent, cross platform IDE made by MS
- Has gained a lot of popularity because it's free & well done

Visual Studio/ VSCode

- I don't trust Microsoft

Jetbrains

- A small software shop out of Russia
- IDEs are written in Java (!?!?)
- Free versions of most products for students
- A lot of great developers swear by their products
  - At google JetBrains editors were a standard tool, along w/ emacs and vim

JetBrains

- I use JetBrains stuff, so you are going to as well
- JetBrains IDE for C/C++: CLion

  https://www.jetbrains.com/clion/
- Already installed on your class image
- Demo

Montana State University