Go Systems Programming

CS 240: Computing Systems and Concurrency
Lab 1
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Go Intro

"Go is a
**compiled,
concurrent,
statically typed,
garbage-collected**
language developed at Google"

- Rob Pike, 2012

Go Intro

- **Compiled** (Python Interpreted)

- **Concurrent** (Python Global Lock)

- **Statically typed** (Python Dynamically Typed)

- **Garbage-collected** (C++ Free space by hand)

Why Go? Already Know C++ Java Python…

- Why C++? Fast, Memory manipulation…
- Why Java? Framework, developing…
- Why Python? Library, Easy to write…

So **GoLang**:
- Built for Systems
- Preserves efficiency but has good abstractions
- Easy multi threading and IO communication
- Developing quickly

Go Trend

- Highly supported by Google

- Who is using go?
  https://github.com/golang/go/wiki/GoUsers

- 3rd most popular language on GitHub in terms of stars
  https://madnight.github.io/githut/#/stars/2023/2

- Best Paid Programming Language (Ranked by Octoparse)
  https://www.octoparse.com/blog/15-highest-paying-programming-languages-in-2017

Go Trend

- Why did they choose Go?

 "We built everything in Python because it was easy,
but now it's slow. So we switched to Go."

- Most companies using Go

Go Tutorials

- Best learning is from practice

- Start here: [Welcome to a tour of Go](#)

- Didn't install Go? Use the web IDE: https://play.golang.org/

- Other Resources:
  - Go for Pythonists: [Go for Pythonistas](#)
  - Go for Distributed Systems: https://talks.golang.org/2013/distsys.slide#1
  - Official Go Talks: *https://github.com/golang/go/wiki/GoTalks*

Practice

Assignments Advices - Version Control:

● Stop Saving File Versions Like this:

Assignments Advices - Version Control:

- As a CS Major - Using Git & Github!
  https://docs.github.com/en/get-started/quickstart/hello-world

- Learning from git commands in **CLI**

- Try **Github Desktop** and **IDE** integrated git support
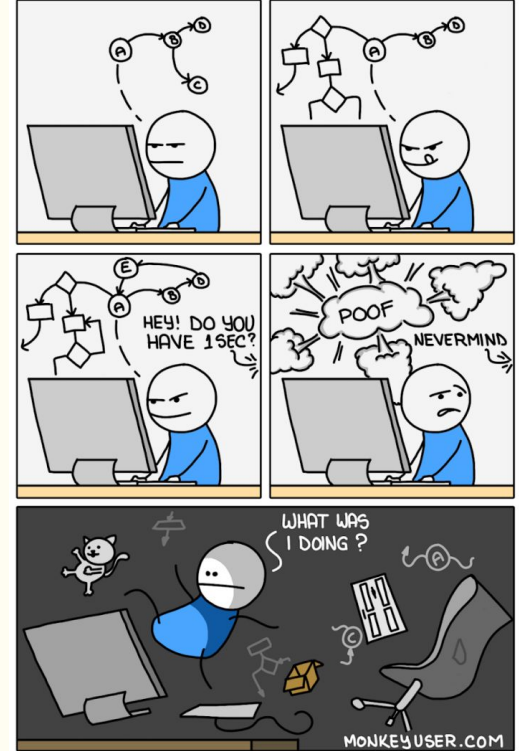
Assignments Advices - Terminal:

- Be good at using terminal

- Make it a comfortable workspace

- Plugins such as highlighting and auto suggestions

- Iterm2 + Plugins
  https://medium.com/weekly-webtips/my-terminal-setu-iterm2-zsh-powerlevel10k-f7101ffc72c2

- Warp - AI powered Terminal

Assignments Advices - Community:

- Go's official "Frequently Asked Questions (FAQ)"
  https://golang.org/doc/faq

- Ask via Github issues

Please finish "A Tour of Go" After Lab