

A Short Intro to Go

CS 240 – Fall 2019

Rec. 1

Sep. 3rd

Some Housekeeping

- Make sure you are on Piazza
- Come to OH if you can't install Go
- Start Assignment 1
- Let us know on the Piazza poll if this recitation is too basic or advanced



You're not a Business Major

Don't Save File Versions Like this:



code.py



code (solution to
part 1).py



code (solution to
part 1 & 2).py



code (solution to
part 3 broke 1).py

You're a CS Major – Use Git

COMMAND

git init

git add

git commit

git reset

git checkout a

WHAT IT DOES

Start recording changes in this directory

Include this file in the next snapshot

Take a snapshot (commit)

Go back to the last snapshot (commit)

Go to snapshot a

Resources to Learn Git:

<https://try.github.io/>

Course website (Assignments):

<http://web.kaust.edu.sa/Faculty/MarcoCanini/classes/CS240/F19/assignments.html>

DEMO?

What's this Weird Language I've Never Heard of?

“Go is a
compiled,
concurrent,
statically typed,
garbage-collected
language developed at Google”

- Rob Pike, 2012

What's this Weird Language I've Never Heard of?

compiled

Like C, C++

concurrent

Like Erlang

statically typed

Like C, C++, Java

garbage-collected

Like Java and Python

Why Not Use Python, Java, C++, etc?

Built for Systems.

Go preserves efficiency but has good abstractions.

Easy multi threading and IO communication.

Develop quickly

Do many things efficiently *and at the same time*

Seems Google Specific. Who Else Actually Uses it?

U B E R

How We Built Uber
Engineering's Highest
Query per Second Service
Using Go

By Kai Wei



Handling five billion sessions a day – in real time

By [@edsolovey](#)

Tuesday, 17 February 2015 [Twitter](#) [Facebook](#) [LinkedIn](#) [GitHub](#)



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

But How do I Use Go?

Start here:

<https://tour.golang.org/list>

Didn't install Go? Use the web IDE:

<https://play.golang.org/>

Other Resources:

Go for Pythonists

<https://talks.golang.org/2013/go4python.slide#1>

Go for Distributed Systems

<https://talks.golang.org/2013/distsys.slide#1>

Official Go Talks

<https://github.com/golang/go/wiki/GoTalks>

But How do I Use Go?

DEMO

Build Software for Any System

`go build file.go`

Compile an executable for your machine

`env GOOS=windows GOARCH=amd64 go build file.go`

Compile an executable for Windows with 64 bit processor

Format your Code

COMMAND

go fmt file.go

WHAT IT DOES

Format the file.go properly

DEMO

Wait, I Have Questions!

Go's official
“Frequently Asked Questions (FAQ)”
<https://golang.org/doc/faq>

Some Advice for the Assignments

FOCUS



- Write modular code
- Use comments (even to yourself)
- Don't forget `go fmt` (graded)
- The clearer your code is, the more we can help with bugs