

# 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?

# UBER

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    





# 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