Intro to Golang



August 2018



Topics

Hello World (9 to Noon)

Workstation Setup (go, ide), Your First App, Language Overview and Exercises.

Interfaces and Concurrency (1:30 - 3:30)

Develop a basic understanding of two of the most valuable features in golang.

Golang Challenge (3:30 - 5)

Write some code for fame and prizes.

Next Steps (30 Minutes)

References, books, blogs and getting help.



Workstation Setup

Setup Go

Install Go for your platform from https://golang.org/dl/

Setup you folder structure https://golang.org/doc/code.html

```
(Your Home Folder) / (gopath folder) /src /pkg /bin
```

This training will do all of its work under the src folder.



Setup Ide

Atom - https://atom.io

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

Goland - https://www.jetbrains.com/go/specials/go/go.html?dclid=CJzE5LDG4NwCFeVuwQodWy4Pow

Litelde - https://github.com/visualfc/liteide

VIM - https://github.com/fatih/vim-go

Emacs - https://github.com/dominikh/go-mode.el



Explore Go Command

The commands are:

bug start a bug report

build compile packages and dependencies clean remove object files and cached files

doc show documentation for package or symbol

env print Go environment information
fix update packages to use new APIs
fmt gofmt (reformat) package sources
generate Go files by processing source

get download and install packages and dependencies

install compile and install packages and dependencies

list packages or modules mod module maintenance

run compile and run Go program

test test packages

tool run specified go tool

version print Go version

vet report likely mistakes in packages



Getting the Samples Code and Slides

Commands:

cd \$GOPATH/src/

git clone https://github.com/goog-lukemc/go-train

Slide and docs are in \$GOPATH/src/assets

Source is in \$GOPATH/src/go-train/<item>



Background

History

Who:

Robert Griesemer Rob Pike Ken Thompson

Why:

Combine the easy of a dynamically type language with the safety of the statically type system.

https://golang.org/doc/fag#ls Go an object-oriented language

https://golang.org/doc/effective_go.html

https://golang.org/doc/code.html

Where are we now:

Go 1.10 - 1.11 Aug 2018

https://golang.org/dl/

More Info:

https://talks.golang.org/2012/splash.article

https://tip.golang.org/doc/go1.11

https://golang.org/doc/devel/release.html

https://talks.golang.org/2015/gophercon-goevolution.slide#8

https://golang.org/doc/fag



What's Cool about Go (Top 3)

Concurrency: (More After Lunch)

- Concurrency is not parallelism (<u>https://www.youtube.com/watch?v=cN_DpYBzKso</u>)
- Concurrency is about having the best design to maximize parallelism if it is available.

Interfaces:

Covered after lunch

Portability:

- Go is not runtime interpreted (There is nothing to install on the target to execute a go program)
- A simple build switch can build the executable for any supported platform.



Coders vs Developers

Coders

Writing code so solve the problem in front of you. Slinging Code - Having fun!

Developers Writing code to solve a problem for generic reuse. Write small - Having fun!

Idiomatic What is this anyways? - https://golang.org/doc/effective_go.html



Hello World Time



~/go-train/hello

Review - main.go (In Editor)

Build - main.go (In Editor)

Build for any platform from any platform.

Pi:

env GOOS=linux GOARCH=arm go build -v main.go -o program-arm

MAC:

env GOOS=darwin GOARCH=amd64 go build -v main.go -o program-mac-amd64

Windows:

env GOOS=windows GOARCH=amd64 go build -v main.go -o program-windows-amd64.exe



~/go-train/hello_flag

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~/go-train/hello_struct

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The Basics



errors ~/go-train/errors

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basic ~/go-train/basics

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Running the file and flow testing: go run main.go

Soogle Cloud

basic ~/go-train/asciicoolness

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basic ~/go-train/basichttpserver

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Lunch time



Concurrency



Google Cloud

concurrency ~/go-train/basichttpserver

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concurrency ~/go-train/sametime

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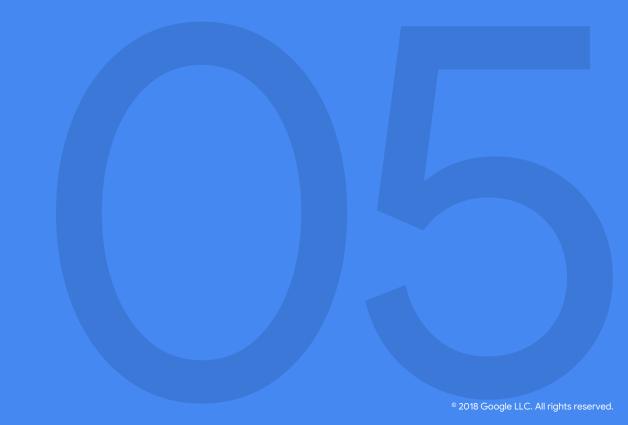
env GOOS=darwin GOARCH=amd64 go build -v main.go -o program-mac-amd64

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Testing



Let's Make Something TDD Style for prizes and fame.

Survey:

https://goo.gl/forms/tj22IIUtigE0DfHP2



We Done

