

Intermediate Go

TRAINER

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OVERVIEW

This workshop aims at equipping the participants with the necessary knowledge and skills required to build and manage applications in Go

OBJECTIVES

At the end of this training course, the participants will:

- Become proficient in building concurrent applications in Go
- Be able to build io applications in Go
- Learn to build RESTful services

SUGGESTED AUDIENCE

Software developers who want to build best-of-breed applications in Go

DURATION

2 Days

PARTICIPANT PREREQUISITES

- Should have foundational knowledge in Go
- Preferably undergone “Foundation Go”

INFRASTRUCTURE REQUIREMENTS

- Go Tools
- Chrome
- Sublime Text / Visual Studio Code / Any other editor
- Any GIT client
- Internet Connection (Mandatory)

CASE STUDY

Agenda

Day-1

- Concurrency
 - o Managed Concurrency
 - o Goroutines
 - o Channels
 - o Passing data in and out of channels
 - o Streaming Data through Channels

- o Handling race conditions
 - o Parallelism in Go
 - o sync package
 - o Synchronization constructs in “sync/atomic” packages
- Cancel Propagation using “Context”
 - o Cancellation Challenges
 - o Context Overview
 - o Timeout based Cancellation
 - o Custom Logic Based Cancellation
 - o Passing data through Context
 - o Building Context Tree
- Advanced Concurrency Patterns
 - o Fan Out
 - o Fan In
 - o Runner
 - o Worker
 - o Pools
 - o Signals
- Testing
 - o Using “testing” package
 - o Organizing test code
 - o Performing assertions
 - o Detecting unreachable code
 - o Mocking dependencies using Mockery
 - o Use of t.Parallel

Day-2

- IO in Go
 - o Readers and Writers
 - o Exploring the io package
 - o Working with files
 - o Buffered IO
 - o Encoding and Decoding Data
- JSON and XML Binding with Golang
 - o Binding JSON Data to Objects
 - o Binding XML Data to Objects Adding Database to Golang
 - o Creating Database Connection
 - o Making Database Query
 - o Adding, Deleting, Updating records with Golang
- Database Programming in Go

- o Approaches to DB programming in Go
 - o Using database/sql package
 - o Query Builders
 - o Code Generators
 - o ORMs
- Web Programming
 - o HTTP package
 - o Building a web server
 - o Handling Requests and Responses
 - o Serving static files
 - o Server JSON responses
 - o Database Programming
 - o Using Middlewares
 - Throttling Requests
 - Safe Shutdown
 - Timing out requests