

GoLang

Total Duration

4 days

Audience:

This workshop is intended for developers who need to start developing applications using GoLang.

Course Objectives

At the end of the course, participants will have knowledge of

- GoLang Basics
- GoLang Concurrency
- GoLang for Micro Services

Pre-requisites

- Basics of any programming language
- Understanding of Web applications
- Understanding of Threading Model

Course Contents

Day 1 :

GoLang Basics

Why Golang?

Simple Hello World

Go Packages

Import Statements

File Organization

Deeper into Go

Variable Declarations

Functions and Return Types

Single Return

Multiple Returns

Named Returns

Closures

Slices and For Loops

OO Approach vs Go Approach

Custom Type Declarations

Receiver Functions

Multiple Return Values

Saving Data

Reading Data

Error Handling
Testing with Go

Organizing Data with Structs
Structs in Go
Defining Structs
Declaring Structs
Updating Struct Values
Embedding Structs
Structs with Receiver Functions
Pass by Value
Structs with Pointers
Pointer Operations

Day 2

Working with
Maps
Interfaces
The HTTP Package

Channels and Go Routines
Website Status Checker
Printing Site Status
Serial Link Checking
Go Routines
Theory of Go Routines
Channel Implementation
Blocking Channels
Receiving Messages

GoLang Popular utilities
Reading Properties Files
Loggers
JSON/XML Conversions
Copies for Struct copies

GoLang Database Communication
Connecting to SQL Database
Working with ORM
Working with NoSQL (DynamoDB)

GoLang Microservices Development
Micro Services Architecture

GoLang support for Micro Services
Design Expectations

GoLang and Web Applications
Net/http packages
Editing Pages
Templates
Template Caching
Validations
Error Handling

Day 3

Introduction to Docker and Kubernetes
GoLang and Kubernetes
How to manage kubernetes Cluster with GoLang API
How to monitor cluster with GoLang
Creating a goLang controller outside cluster

Day 4

GoLang and Native Libraries
Invoking C/C++ libraries from GoLang Code

GoLang and Cloud
Deploying Golang Application on AWS
Working with s3
Writing a small REST application to work with S3 bucket
Working with EC2
Writing a small REST application to create a new instance from specific image
Working with Lambda
Writing a small REST Application to invoke lambda service

GoLang Monitoring

A small case study for microservices development in golang.

Hardware & Software Requirements

Trainer Machine - NA

Participants Machine

- Visual Studio with GoLang plugin
- AWS Account (4/6 accounts can be shared or new account needs to be created)
- Internet Connectivity