Go Language Training Program

Module 1: Introduction to Go

- ☐ **Overview of Go Language**
- ☐ **Setting up the Go Environment**
- ☐ **Introduction to Go's Syntax**
- ☐ **Writing and Running Go Programs**
- ☐ **Understanding GOPATH and GOROOT**
- ☐ **Comparison with Other Programming Languages**

Module 2: Basics of Go Programming

- ☐ **Data Types, Variables, and Constants**
- ☐ **Operators in Go**
- ☐ **Conditional Statements (if-else, switch)**
- ☐ **Loops (for, range)**
- ☐ **Working with Arrays and Slices**
- ☐ **Functions in Go (Definition, Parameters, Return Values)**

Module 3: Advanced Go Concepts

- ☐ **Pointers in Go**
- ☐ **Structs and Methods**
- ☐ **Interfaces and Polymorphism**
- ☐ **Go Routines and Channels (Concurrency in Go)**

☐ **Error Handling and Panics**

☐ **Working with Packages and Modules**

Module 4: Working with Files and Data

☐ **File Handling in Go (Read/Write Files)**

☐ **JSON and XML Parsing**

☐ **Working with Databases (MySQL/PostgreSQL Integration)**

☐ **REST API Development with Go**

Module 5: Web Development with Go

☐ **Introduction to Go Web Frameworks (Gin, Echo)**

☐ **Building Web Applications**

☐ **Handling HTTP Requests and Responses**

☐ **Middleware and Authentication in Go**

Module 6: Testing and Deployment

☐ **Writing Test Cases in Go**

☐ **Benchmarking Go Applications**

☐ **Performance Optimization Techniques**

☐ **Deploying Go Applications on Cloud Platforms**

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Module 7: Capstone Project

☐ **Developing a Full-Stack Web Application or API using Go**

☐ **Implementing Concurrency and Error Handling**

☐ **Integrating Database and File Handling Features**

☐ **Deploying the Project**

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