

# Introduction To Programming In Golang: Beginner To Intermediate - Learn Real

## *Introduction to Go Programming*

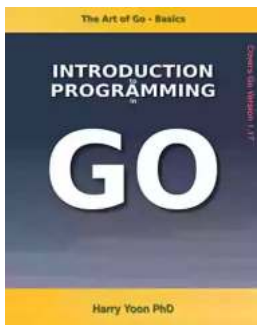


*Are you ready to become a master in Golang? If you're interested in learning this powerful programming language from scratch or want to take your Golang skills to the next level, then you're in the right place! In this article, we will provide a comprehensive guide to programming in Golang, suitable for beginners and intermediate learners. So, get ready to embark on an exciting journey into the world of Golang!*

### **Why Learn Golang?**

Golang, also known as Go, is a statically typed, compiled language developed by Google and released in 2009. It has gained immense popularity in recent years due to its simplicity, efficiency, and ease of use. With its focus on concurrent

programming and scalability, Golang is often the language of choice for building high-performance software systems and web applications.



## The Art of Go - Basics: Introduction to Programming in Golang - Beginner to Intermediate (Learn Real Programming Book 2)

by Harry Yoon(Kindle Edition)

★★★★☆ 4.1 out of 5

Language : English  
File size : 10955 KB  
Text-to-Speech : Enabled  
Screen Reader : Supported  
Enhanced typesetting : Enabled  
Print length : 661 pages  
Lending : Enabled



Some of the main reasons why you should consider learning Golang include:

- **Simplicity:** Golang has a clean and straightforward syntax, making it easy to understand and write code.
- **Concurrent Programming:** Golang provides excellent support for concurrent programming, allowing you to efficiently handle multiple operations simultaneously.
- **Scalability:** Golang is designed to scale effortlessly, making it ideal for developing large-scale applications.
- **Efficiency:** Golang's compilation process produces highly optimized binaries, resulting in fast execution times.

- **Standard Library:** Golang comes with a rich standard library that provides many useful built-in packages and functionalities.

## Getting Started with Golang

Now that you're familiar with the benefits of learning Golang, let's dive into the basics and get you started on your programming journey!

## Installing Golang

Before you can start writing Golang code, you need to install the Go programming language on your system. The official Go website ([golang.org](https://golang.org)) provides installation packages for various operating systems. Simply download the appropriate package and follow the installation instructions to set up Go on your machine.

Once the installation is complete, you can verify your Go installation by opening a terminal or command prompt and running the following command:

```
go version
```

If the command displays the installed Go version, congratulations! You're ready to start coding in Golang.

## Your First Golang Program

Let's begin by creating a simple "Hello, World!" program in Golang. Open a text editor or an Integrated Development Environment (IDE) such as Visual Studio Code or GoLand, and create a new file with the `.go` extension.

Enter the following code into your file:

```
package main import "fmt" func main(){fmt.Println("Hello, World!")}
```

Save the file and name it `hello.go` or any other name of your choice with the `.go` extension. To run the program, open a terminal/command prompt, navigate to the directory where you saved the file, and execute the following command:

```
go run hello.go
```

You should see the output `Hello, World!` displayed on the console. Congratulations! You've successfully written and executed your first Golang program.

## Learning Golang: Beginner to Intermediate

Now that you've got a taste of Golang, it's time to dive deeper into the language and explore its various features and functionalities. Whether you're a beginner or already have some knowledge of Golang, this section will provide you with a comprehensive learning path to enhance your skills.

### 1. Golang Syntax and Basics

Start by learning the fundamental syntax and basics of Golang. Familiarize yourself with concepts such as variables, data types, control structures (if-else, loops), functions, and error handling.

### 2. Object-Oriented Programming in Golang

Although Golang is not a traditional object-oriented language like Java or C++, it does support object-oriented programming (OOP) concepts. Learn about structs, methods, interfaces, and embedding to effectively utilize OOP in Golang.

### 3. Concurrency in Golang

One of the standout features of Golang is its excellent support for concurrent programming. Dive into Goroutines and Channels, which are used for creating lightweight concurrent programs and safely communicating between Goroutines, respectively.

#### **4. Working with Packages and the Standard Library**

Explore the extensive standard library that comes bundled with Golang. Utilize packages for manipulating strings, working with files, handling JSON and XML data, creating HTTP servers and clients, and much more.

#### **5. Golang Web Development**

Discover how to build robust web applications and APIs using Golang. Learn about popular web frameworks like Gin, Echo, or Revel, and understand concepts such as routing, middleware, authentication, and database integration.

#### **6. Testing and Benchmarking in Golang**

Learn how to write comprehensive unit tests and benchmark tests for your Golang code. Gain expertise in tools like the built-in `testing` package and third-party libraries to ensure the reliability and efficiency of your applications.

#### **7. Building Command-Line Tools with Golang**

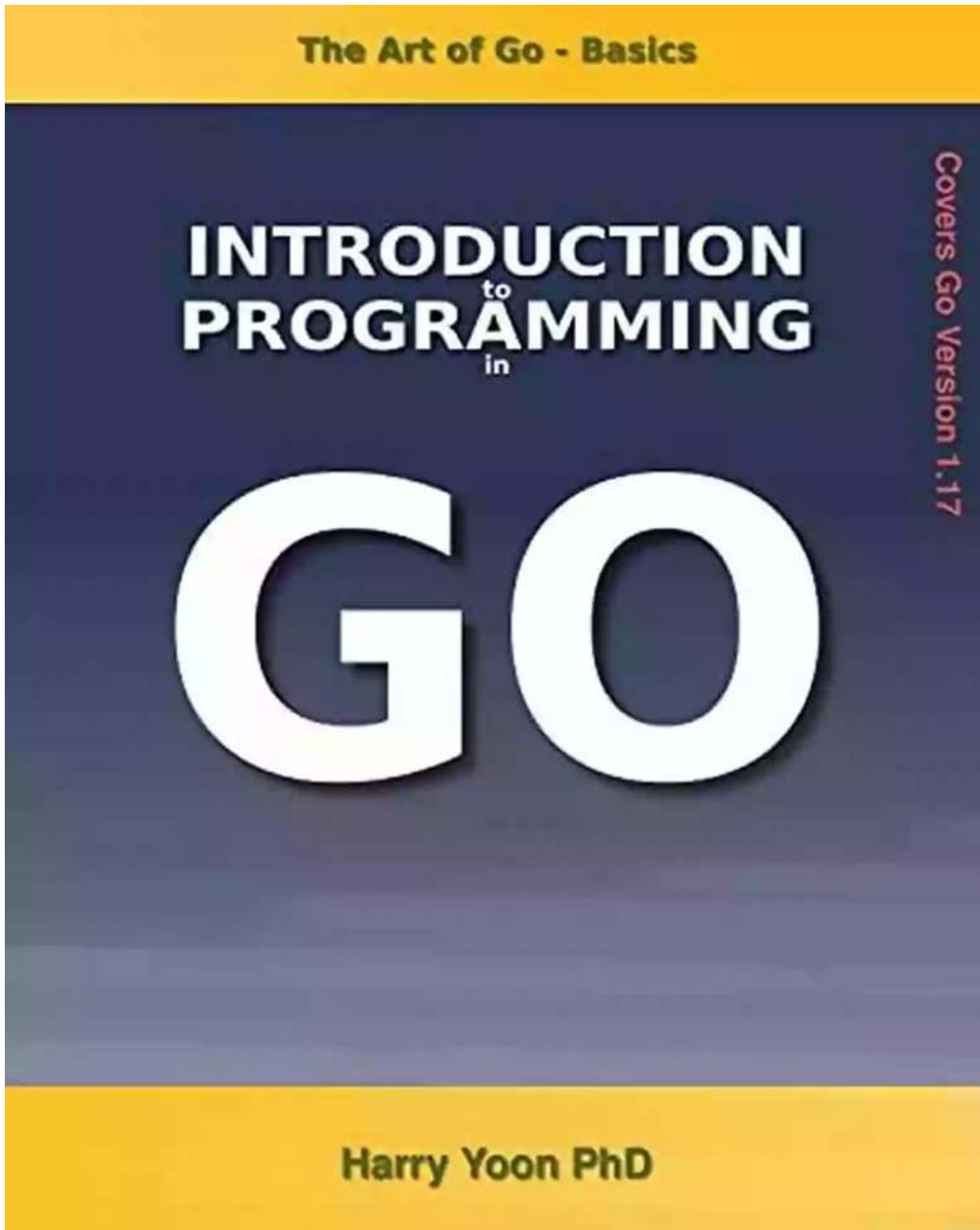
Golang is an excellent choice for creating command-line tools and utilities. Dive into the `os`, `flag`, and `exec` packages to develop robust and user-friendly command-line applications.

### **Mastering Golang: Real-World Projects**

Once you've gained a solid understanding of Golang, it's time to apply your knowledge to real-world projects. Putting theory into practice is crucial for

mastering any programming language. Here are a few project ideas to help you hone your skills:

- **Task Management System:** Build a command-line task management system that allows users to add, delete, and categorize tasks.
- **API Server:** Create a RESTful API server using Golang, enabling clients to perform CRUD operations on a database.
- **Web Scraping Tool:** Develop a web scraping tool that can fetch data from websites and save it to a database or file.
- **Chat Application:** Build a real-time chat application with features like user authentication, private messaging, and online presence indicators.

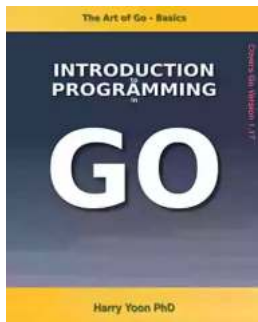


Congratulations on completing this comprehensive guide to programming in Golang! Whether you're a beginner taking your first steps or an intermediate learner looking to enhance your skills, Golang offers a world of possibilities for building efficient and scalable software systems.

Remember, practice is essential for mastering Golang. Keep coding, exploring new projects, and seeking opportunities to apply your knowledge. The more you

practice, the more confident and proficient you'll become in Golang.

So, what are you waiting for? Start your Golang journey today and unlock the doors to exciting career opportunities!



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Learn Go Programming by "Reading"! This book provides a gentle to programming in Golang for both beginners and more experienced programmers.

The Art of Go - Basics starts from the absolute basics and moves on to more advanced topics. If you are a seasoned developer, then it will provide a good to idiomatic usages of Go in broad contexts. If you are a beginner, then you will get the best high-level overview of programming in Go, without being swamped with too much low-level details.

The Art of Go - Basics is organized into a series of small lessons. Each lesson starts with simple example programs, and it emphasizes code reading rather than premature writing. You will learn basics of coding, and some intricacies of Golang,



just by reading each lesson. The book includes some (optional) exercises, and it ends with a few final projects.

The Art of Go - Basics covers the following topics (as of version Go 1.17), among other things:

- The basic structure of Go programs.
- Basic constructs of the Go programming language such as expressions and statements.
- Primitive types, slices, maps, and functions.
- Go structs, interfaces, and methods.
- Pointers. Value semantics vs reference semantics.
- Value receivers vs pointer receivers.
- Concurrent programming with Goroutines and channels.
- Simple network programming over TCP.
- Simple Web programming using the net/http standard package.
- Go build tools. Go modules.

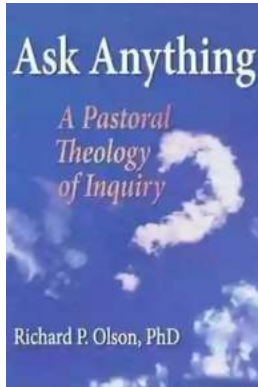
If you are just starting to learn programming, then learn Go. Learn programming with Go. The Art of Go - Basics will guide you through your first steps in the wonderful world of programming!

Get this book now and start learning Go programming today!

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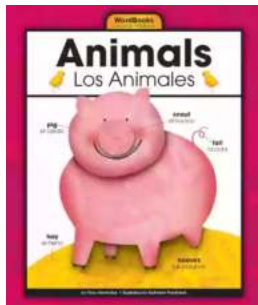
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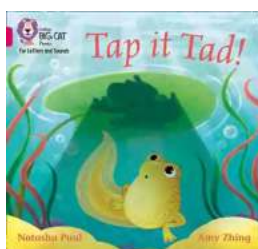
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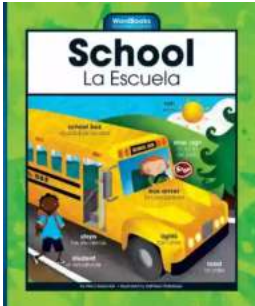
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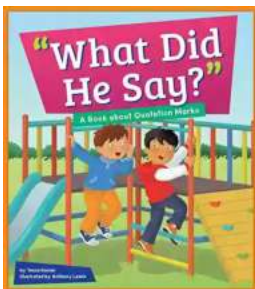
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