

Table of Content

1. OVERVIEW

- a. Features of Go Programming
- b. Features Excluded Intentionally
- c. Go Programs.
- d. Compiling and Executing Go Programs

2. ENVIRONMENT SETUP

- a. Local Environment Setup
- b. Text Editor
- c. The Go Compiler
- d. Download Go Archive
- e. Installation on UNIX/Linux/Mac OS X, and FreeBSD
- f. Installation on Windows
- g. Verifying the Installation

3. PROGRAM STRUCTURE

- a. Hello World Example
- b. Executing a Go Program

4. BASIC SYNTAX

- a. Tokens in Go
- b. Line Separator
- c. Comments
- d. Identifiers
- e. Keywords
- f. Whitespace in Go

5. DATA TYPES

- a. Integer Types
- b. Floating Types
- c. Other Numeric Types

6. VARIABLES

- a. Variable Definition in Go
- b. Static Type Declaration in Go
- c. Dynamic Type Declaration / Type Inference in Go
- d. Mixed Variable Declaration in Go
- e. The lvalues and the rvalues in Go

7. CONSTANTS

- a. Integer Literals
- b. Floating-point Literals
- c. Escape Sequence
- d. String Literals in Go
- e. The const Keyword

8. OPERATORS

- a. Arithmetic Operators
- b. Relational Operators
- c. Logical Operators
- d. Bitwise Operators
- e. Assignment Operators
- f. Miscellaneous Operators
- g. Operators Precedence in Go

9. DECISION MAKING

- a. The if Statement
- b. The if...else Statement
- c. Nested if Statement
- d. The Switch Statement
- e. The Select Statement
- f. The if...else if...else Statement

10. LOOPS

- a. for Loop
- b. Nested for Loops
- c. Loop Control Statements
- d. The continue Statement
- e. The goto Statement.
- f. The Infinite Loop

11. FUNCTIONS

- a. Defining a Function
- b. Calling a Function
- c. Returning Multiple Values from Function
- d. Function Arguments
- e. Call by Value
- f. Call by Reference
- g. Function Usage
- h. Function Closures
- i. Method

12. SCOPE RULES

- a. Local Variables
- b. Global Variables
- c. Formal Parameters
- d. Initializing Local and Global Variables

13. STRINGS

- a. Creating Strings
- b. String Length
- c. Concatenating Strings

14. ARRAYS

- a. Declaring Arrays
- b. Initializing Arrays
- c. Accessing Array Elements
- d. Go Arrays in Detail
- e. Multidimensional Arrays in Go
- f. Two-Dimensional Arrays
- g. Initializing Two-Dimensional Arrays
- h. Accessing Two-Dimensional Array Elements
- i. Passing Arrays to Functions

15. POINTERS

- a. What Are Pointers?
- b. How to Use Pointers?
- c. Nil Pointers in Go
- d. Go Pointers in Detail
- e. Go – Array of Pointers
- f. Go – Pointer to Pointer
- g. Go – Passing Pointers to Functions

16. STRUCTURES

- a. Defining a Structure
- b. Accessing Structure Members
- c. Structures as Function Arguments
- d. Pointers to Structures

17. SLICES

- a. Defining a slice
- b. len() and cap() functions
- c. Nil slice
- d. Subslicing
- e. append() and copy() Functions

18. RANGE

19. MAPS

- a. Defining a Map
- b. delete() Function

20. RECURSION

21. TYPE CASTING

22. INTERFACES

23. ERROR HANDLING

24. Packages

25. Concurrency – Goroutines & Channel