**GO PROGAMMING VIVA QUESTIONS**

1. Give few features of Go Programming.

* Open-Source. The foremost **characteristic** of **Golang programming language** is that it is open-source
* Static Typing. ...
* Concurrency Support. ...
* Powerful Standard Library and Tool Set. ...
* Testing Capabilities. ...
* Garbage Collection. ...
* Ease of Use. ...
* Cross-Platform Development Opportunities

1. Is Go Object Oriented

* The reason Go is a functional language is because while you can follow some **OOP** principles, Go does **not** allow for using all **OOP** principles so it can't really be considered on **OOP** language

1. Who developed Go Lang?

* Robert Griesemer Rob Pike Ken Thompson (short name is ken Thompson)

1. List the data types supported by Go
2. **Basic type:**Numbers, strings, and booleans come under this category.
3. **Aggregate type:**Array and structs come under this category.
4. **Reference type:**Pointers, slices, maps, functions, and channels come under this category.
5. **Interface type**

* Here, we will discuss *Basic Data Types* in the Go language. The ***Basic Data Types*** are further categorized into three subcategories which are:
* **Numbers**
* **Booleans**
* **Strings**

1. How to declare variable in Go

* **variable** names consist of letters, numbers, underscores, where the first letter cannot be numeric. This type of factoring keyword is generally written to **declare** global **variables** and is generally defined outside of func. and these **variables** are initialized in **Go**.

1. List few modules in Go

* io
* ioutil
* log
* bufio
* os

1. What is a Closure

* A **closure** is a function value that references variables from outside its body. The function may access and assign to the referenced variables; in this sense the function is "bound" to the variables. ... Each **closure** is bound to its own sum variable.

1. What is the purpose of Go Routine?

* **Goroutines** are a way of doing tasks concurrently in golang. They allow us to create and run multiple methods or functions concurrently in the same address space inexpensively.

1. Define Maps

* **Golang Maps** is a collection of unordered pairs of key-value. It is widely used because it provides fast lookups and values that can retrieve, update or delete with the help of keys. It is a reference to a hash table. ... The **map** is also known as a hash **map**, hash table, unordered **map**, **dictionary**, or associative array.

1. What is Recursion?

* it allows a function to call itself. But while using **recursion**, programmers need to be careful to define an exit condition from the function, otherwise it will **go** on to become an infinite loop.

1. In which package is Println method available?

* The fmt. **Println**() **function** in **Go** language formats using the default formats for its operands and writes to standard output.

1. What is the comment line in Go

* **Comments** in **Go** begin with a set of forward slashes ( // ) and continue to the end of the **line**. It is idiomatic to have a white space after the set of forward slashes.

1. Give the command for running a Go Program

* To **run** a **go program**, create a file with an extension .**go** and write your golang code in that file. For example, we will create a file named helloworld.**go** and write the following code in it. Now open command prompt and navigate to the location of helloworld.**go** file. **Run** the following command.

1. Mention few derived data types in Go

* They include (a) Pointer types, (b) Array types, (c) Structure types, (d) Union types and (e) Function types f) Slice types g) Interface types h) Map types i) Channel Types

1. What is rune data type?

* The **rune type** is an alias for int32 , and is used to emphasize than an integer represents a code point

1. How to declare variable without using var keyword?

* Short decleration keyword

1. Mention few Escape Sequences

|  |  |
| --- | --- |
| **Escape Sequence** | **Value** |
| \\ | the \ character |
| \' | the ' character |
| \" | the " character |
| \? | the ? character |
| \a | an alert |
| \b | backspace |
| \f | form feed |
| \n | a new line |
| \r | carriage return |
| \t | an horizontal tab |
| \xFF | hexadecimal "FF" |

1. How to declare constants in Go

* To **declare** a **constant** and give it a name, the **const** keyword is used.

1. Can a function return multiple values in Go

* **“YES” Go** has built-in support for **multiple return values**.

1. Diff Call by Value and Call by Reference

* In **Call by value**, a copy of the variable is passed whereas in **Call by reference**, a variable itself is passed.

1. What is Nil Pointer in Go

* All variables in **Go** have a zero value.

1. Define Structure. Give syntax for creating a Structure

* A **structure** is a user **defined** data type in C/C++. A **structure creates** a data type that can be used to group items of possibly different types into a single type
* '**struct**' keyword is used **to create a structure**

1. Differentiate Array and Slice

* **slices** can be resized using the built-in append function
* Array contain same data type in continuingius memory

1. What is the use of make() function?

* The **make() function**, on the other hand, is a special built-in **function** that is **used** to initialize slices, maps, and channels

1. What is a Map in Go?

* In Go language, a **map** is a powerful, ingenious, and a versatile data structure. **Golang Maps** is a collection of unordered pairs of key-value.

1. How to define an Interface in Go Lang?

* An **interface in Go** is a type **defined** using a set of method signatures.
* The **interface defines** the behavior for similar type of objects

1. Give the purpose of Defer statement

* **Defer statements** are generally used to ensure that the files are closed when your work is finished with them, or to close the channel, or to catch the panics in the program

1. What modules required for File handling?

* The **go**. mod **file** defines the **module's module** path

1. What are Channels in Go?

* **Channels** are the pipes that connect concurrent goroutines. You can send values into **channels** from one goroutine and receive those values into another goroutine

1. How to create Go Routines?

* We added the Sleep() method in our program which makes the main **Goroutine** sleeps for 1 second in between 1-second the new **Goroutine** executes, displays “welcome” on the screen, and then terminate after 1-second main **Goroutine** re-schedule and perform its operation.