Programming Language

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Agenda

- *What is Golang ?*
- *Why Golang ?*
- *Advantages and Limitations of Golang.*
- *Applications developed in Golang.*
- *Performance analysis for Golang.*
- *Golang vs Python*
- *Strength of Golang.*

What is Golang ?

Go *is a procedural programming language. It was developed in 2007 by Robert Griesemer, Rob Pike, and Ken Thompson at Google but launched in 2009 as an open-source programming language. Programs are assembled by using packages, for efficient management of dependencies.*

Why Golang ?

Because Go language is an effort to combine the ease of programming of an interpreted, dynamically typed language with the efficiency and safety of a statically typed, compiled language. It also aims to be modern, with support for networked and multicore computing.

- *Go attempts to reduce the amount of typing in both senses of the word. Throughout its design, developers tried to reduce clutter and complexity.*
- *There are no forward declarations and no header files; everything is declared exactly once.*
- *Stuttering is reduced by simple type derivation using the* **:=** *declare-and-initialise construct.*
- *There is no type hierarchy: types just are, they don't have to announce their relationships.*

Advantages of Golang

- *Flexible- It is concise, simple and easy to read.*
- *Concurrency- It allows multiple process running simultaneously and effectively.*
- *Quick Outcome- Its compilation time is very fast.*
- *Library- It provide a rich standard library.*
- *Garbage collection- It is a key feature of go. Go excels in giving a lot of control over memory allocation and has dramatically reduced latency in the most recent versions of the garbage collector.*
- *It validates for the interface and type embedding.*

Limitations of Golang

- *It has no support for generics, even if there are many discussions about it.*
- *The packages distributed with this programming language is quite useful but Go is not so object-oriented in the conventional sense.*
- *There is absence of some libraries especially a UI tool kit.*

Applications developed in Golang

OPENSHIFT

NETFLIX

docker

Performance Analysis of Golang

Language Runtimes (lower is better)
800
600
400
200
0
reverese-
fannkuch-redux
fasta
k-nucleotide
spectral-norm
mandelbrot
binary-trees
n-body
regex-redux
pidigits
Golang
Node.js
Python3
C++
Java

Go vs Python

Go was composed by Google engineers and was really created to give quick reactions and advancement, much better help for present-day processing methods, and a much clear human-unmistakable code than different frameworks languages like C or C++. In the event that you are a C or C++ developer, at that point, you will presumably discover GO much superior to any semblance of it. Java basically being influenced by C language, derives most of its syntax from C++ and C. However, Java features less low-level facilities than C or C++. C# is simply a multi-paradigm programming language.

Go is on a Trajectory to Become the Next Enterprise Programming Language

Strength of Golang

- is based on real-world experience
- focuses on large-scale engineering
- focuses on maintainability
- keeps it simple and straightforward
- makes things explicit and obvious
- is easy to learn
- provides one way to do things
- allows easy, built-in concurrency
- provides compute-oriented language primitives
- uses OO — the good parts
- has a modern standard library
- executes very fast
- requires a small memory footprint
- results in a small deployment size
- deploys completely self-contained
- vendors dependencies
- provides a compatibility guarantee
- encourages good documentation
- is built as commercially backed open source
- has an extremely fast compiler
- makes cross compilation easy