# Go

* Go is a **high-level programming lang**. and set of **toolchains** powered by GOOGLE.

## History of Go

### Why the name Go?

* It is not an abbreviation but it reflects language intended characteristics: simple, speed and easy to use.

### Reason for existsance and invention of Go despite of C, C++

* Go was created to address several shortcomings in existsing C, C++ programming language:
  1. **Concurrency**: Go provides *robust support* for *concurrent programming using* **goroutines**  and **channels** => this helps to easily write programs (multi tasked simultaneous programs).
  2. **Simple** and **Efficient:** Go avoid many complex features like multiple inheritance and templates.
  3. **Compilation Speed:** Go was developed to reduce the build time => increasing developer productivity.
  4. **Memory Management:** Go-runtime has garbage collection tools that eliminates developer overhead of managing program’s memory.
  5. **Static typing:** Go provide simpler syntax for static typing though having compilation time simpler to that of C.

### Go toolchain evolution over years

* 2007: Development of Go began at Google.
* 2009: publicly announced and released as open-source project.
* 2012: Version 1.0 of Go was released => providing stable foundation for its toolchain.
* Subsequent release involved compiler optimization, growing standard library, robust support for dependency management (go mod).

### Well known projects developed using Go

* Docker
* Kubernetes