# GOLANG

## ● Key Features of Go Language

**1. Concurrency:** Go is built with concurrency in mind and provides several features to make it easy to write concurrent code.

a. It's the idea that different tasks can be performed independently and simultaneously.
b. Each task doesn't wait for the other to finish before starting their work.

**2. Garbage collection:** Go includes a garbage collector that automatically manages memory, making it easier for developers to write code without having to worry about memory management.

**3. Static typing:** Go is a statically typed language, which means that variables are explicitly declared with a specific type and the type of a variable cannot be changed during its lifetime. This can help catch errors at compile time and improve the overall reliability of the code.

**4. Lightweight:** Goroutines take only 8 kilobytes and you can have thousands of them.

**5. Fast compilation:** Go has a fast compiler that can quickly build large programs, making it suitable for building scalable applications.

**6. Zero dependencies:** Since the language does not rely on any external libraries or frameworks, you do not need to worry about installing those dependencies on the target machine. This can simplify the deployment process and reduce the risk of issues caused by missing or incompatible dependencies. This can be particularly useful for building applications that need to be deployed in a variety of different environments.

**7. Built-in support for testing:** Go includes built-in support for writing and running tests, making it easy to test and verify code.

**8. Strong community:** Go has a strong and active community of developers who contribute to the language and its ecosystem, including libraries and tools.

a. Go is currently gaining a lot of popularity, and a lot of organizations now prefer to write their backend in Go.
b. More importantly, all Cloud Native and some Blockchain projects are written or being written in Go, some popular tools are Kubernetes, Prometheus, and Docker.
c. Overall, Go is a versatile and powerful programming language that can be used in a wide range of projects. Whether you're building a web application, a network server, or a command-line tool, Go is a good language to consider

**As more and more companies and people began to realize Go's potential, it became a mainstream language to build the following kinds of products.**

a. World-class system tools like **Docker** and **Kubernetes**
b. Advanced databases like **Cockroach DB** and **Influx DB**
c. Decentralized Blockchain platforms like **Ethereum**
d. To separate configuration into infrastructure layers like **Istio**
e. Faster continuous deployment like **Drone**.
f. More performant messaging systems like **NATS**.
g. Widely used CLI tools like **Cobra**