Golang (Go) Programming Language

SULTAN - 56189 - BS/DS-5_1

Introduction to Go

Developed by Google

Created in 2007, released 2009 by Griesemer, Pike, Thompson.

Efficiency & Simplicity

Combines C's efficiency with Python's simplicity.

Scalability & Performance

Statically typed, compiled for modern cloud, server, distributed apps.

Uses of Golang

Backend Web Development

Building robust and scalable server-side applications.

Cloud Infrastructure

Powering cloud services and platforms.

DevOps Tools

Creating efficient tools for development and operations.

Network Programming

Ideal for high-performance network applications.

Go's concurrency with goroutines and channels handles multiple tasks efficiently.

Go in Data Science

While not as dominant as Python, Go is gaining traction for:

- High-performance data processing
- Real-time analytics
- Building scalable data pipelines

Its speed and concurrency are suitable for big data and streaming microservices.

Real-Life Example: Docker & Kubernetes

Docker

Containerization platform built with Go.

Kubernetes

Orchestration system also written in Go.

These Go-powered technologies revolutionized cloud computing and container orchestration, showcasing Go's simplicity, speed, and scalability for high-performance backend systems.

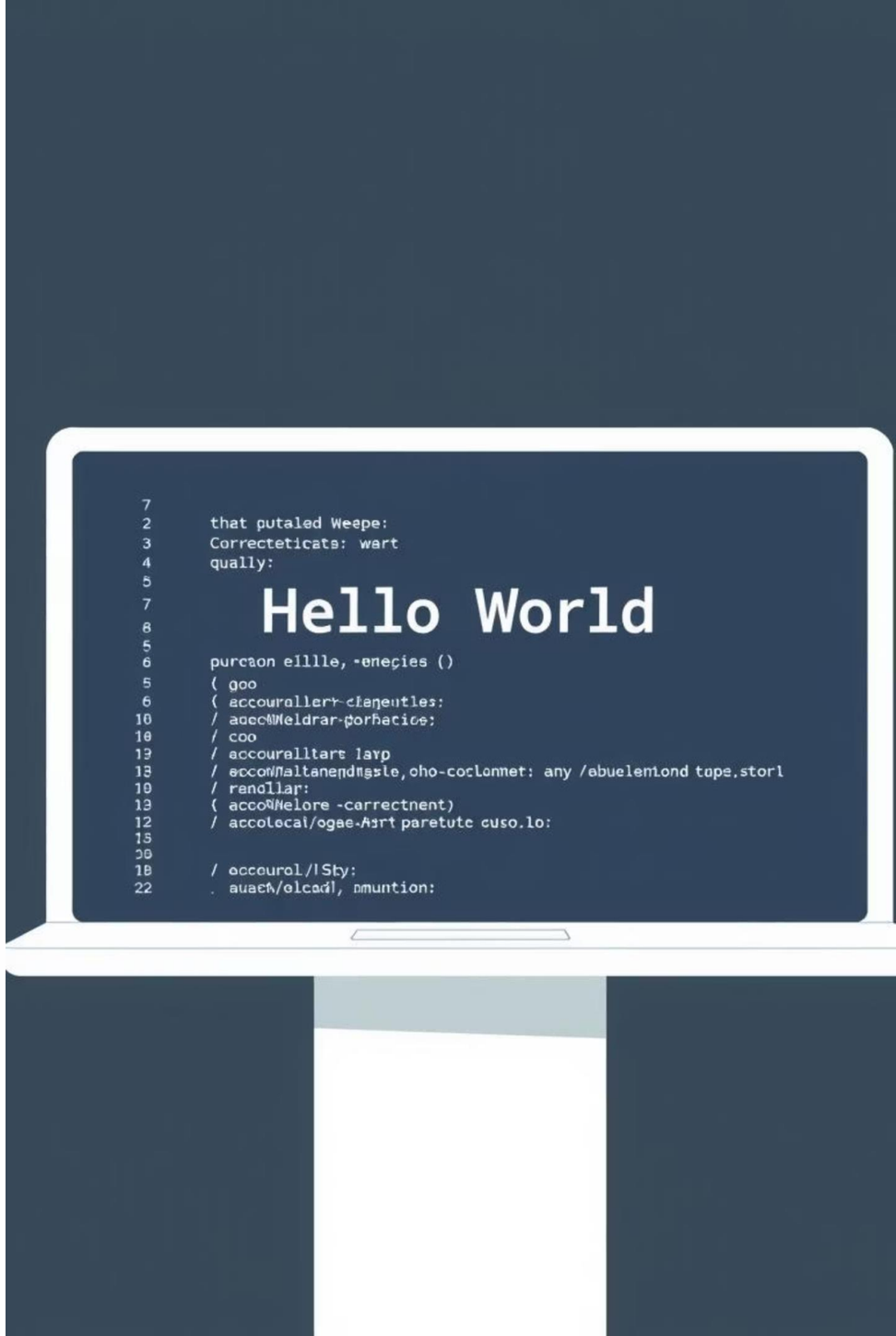
Comparison: Go vs Python vs C++

Typing	Static	Dynamic	Static
Compilation	Compiled	Interpreted	Compiled
Speed	Fast	Moderate	Very Fast
Ease of Use	Easy	Very Easy	Moderate
Concurrency	Built-in (goroutines)	Threading (limited)	Threading/Manual
Use Case	Cloud, Backend, Networking	AI, Data Science, Automation	System Software, Games

Sample Golang Syntax

```
package mainimport "fmt"func main() {
fmt.Println("Hello World")}
```

This simple "Hello World" program demonstrates Go's clean and concise syntax.



Conclusion

Powerful & Efficient

Bridges simplicity and performance.

Modern Design

Concurrency model, cross-platform capabilities.

Ideal for Scalable Apps

Cloud, networking, backend systems.

Emerging in Data Science

Immense potential in data engineering.

GITHUB LINK: https://github.com/sultanali543/INTRO-TO-GOLANG-GO-

THANK YOU

FOR YOUR TIME