02-What is Terraform?

Terraform is an open-source infrastructure as a code software tool created by **HashiCorp** that provides a consistent CLI workflow to manage hundreds of cloud services.

Terraform uses **HCL** language which stands for HashiCorp configuration language

AWS CloudFormation vs. Terraform: Which One Should You Choose?

- Cloud formation is just for AWS to specify
- Terraform is multi-cloud

Cloudformation	Terraform
Closed Source, maintained/updated by AWS	Open source, many contributors
Suitable for working on AWS Cloud	Cloud Agnostic: Suitable for working with multi-cloud workloads
GUI access for no cost	GUI access requires expensive enterprise licence
No need to Manage State	Need to Manage State yourself
Supports **YAML** and **JSON** for configuration language	Supports **JSON** and **HCL** for configuration language
Nested Stacks lets you work with multiple templates. This concept is hard to grasp for beginners and has limitations	Working with multiple tf files easier .

Terraform key featutes

1. Track your infrastructure

Terraform keeps track of your real infrastructure in a state file, which acts as a source of truth for your environment **(desire state)**. Terraform uses the state file to determine the changes to make to your infrastructure so that it will match your configuration.

2. Collaborate

Terraform allows you to collaborate on your infrastructure with its remote state backends. When you use Terraform Cloud (free for up to five users), you can securely share your state with your teammates, provide a stable environment for Terraform to run in, and prevent race conditions when multiple people make configuration changes at once.

3. State Management

State management is a key component of any long-term Terraform project. The Terraform state file keeps track of all changes in an environment. By default, the state file is stored on the **filesystem**. However, it is important to keep the state file safe, secure and backed up - which generally means keeping it in highly available object storage. By leveraging this remote storage, teams can safely share and interact with a single state that is always current.