HashiTalks

Don't Repeat Yourself: Building Reusable Terraform Modules

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Terraform

HashiCorp

Terraform

Key Takeaways

Terraform Modules

It enables you to define, package, and deploy standardized components across projects, promoting both code maintainability and environmental flexibility.

What is Module?

Modules are the main way to package and reuse resource configurations with Terraform. It contains collection of .tf and/or .tf.json files in a directory.

Module Structure

Input variables

To receive values from the calling module.

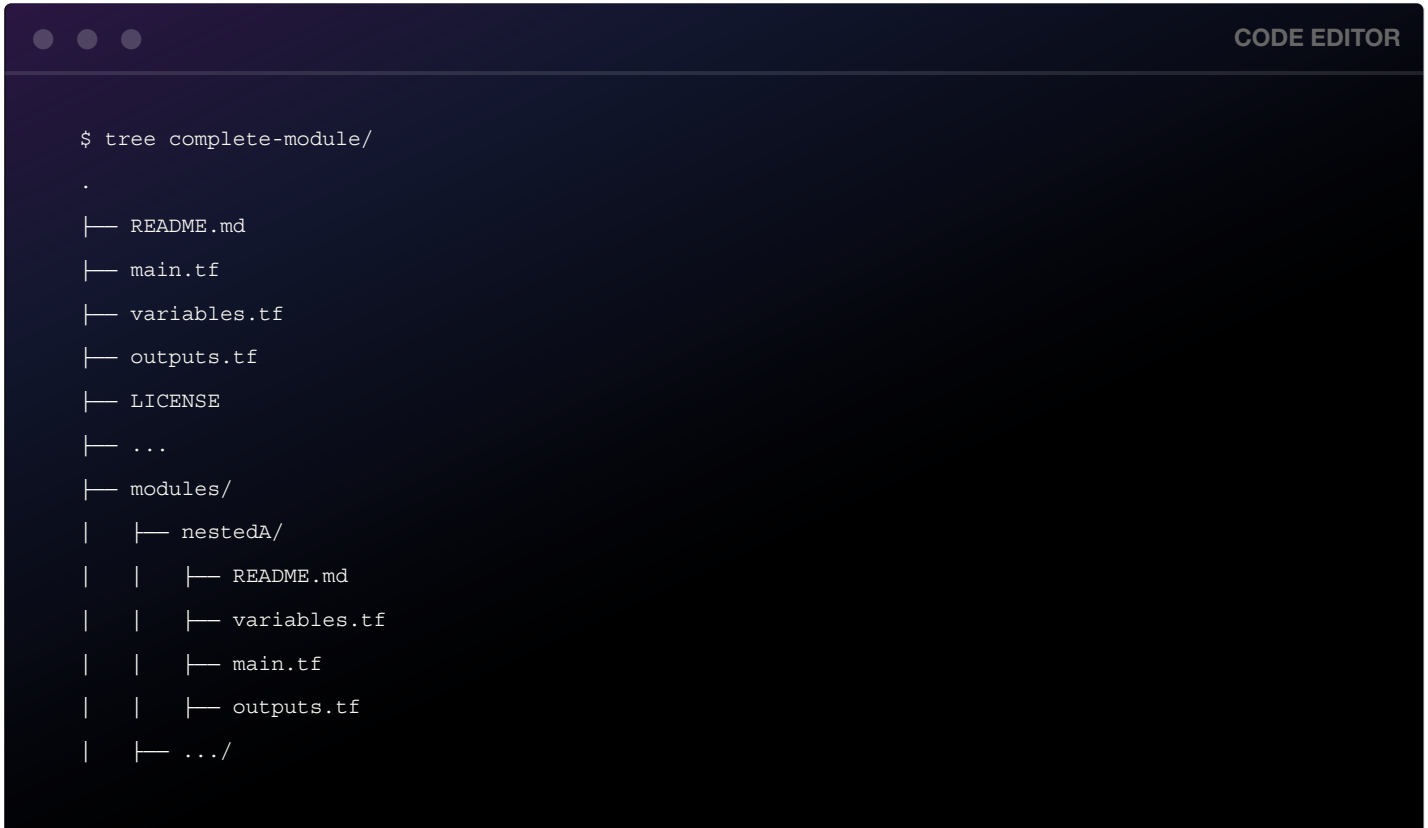
Output variables

To give results back to the calling module so it can use them to fill in arguments elsewhere.

Resources

To specify and handle one or more infrastructure objects within the module.

Module Structure (Example)

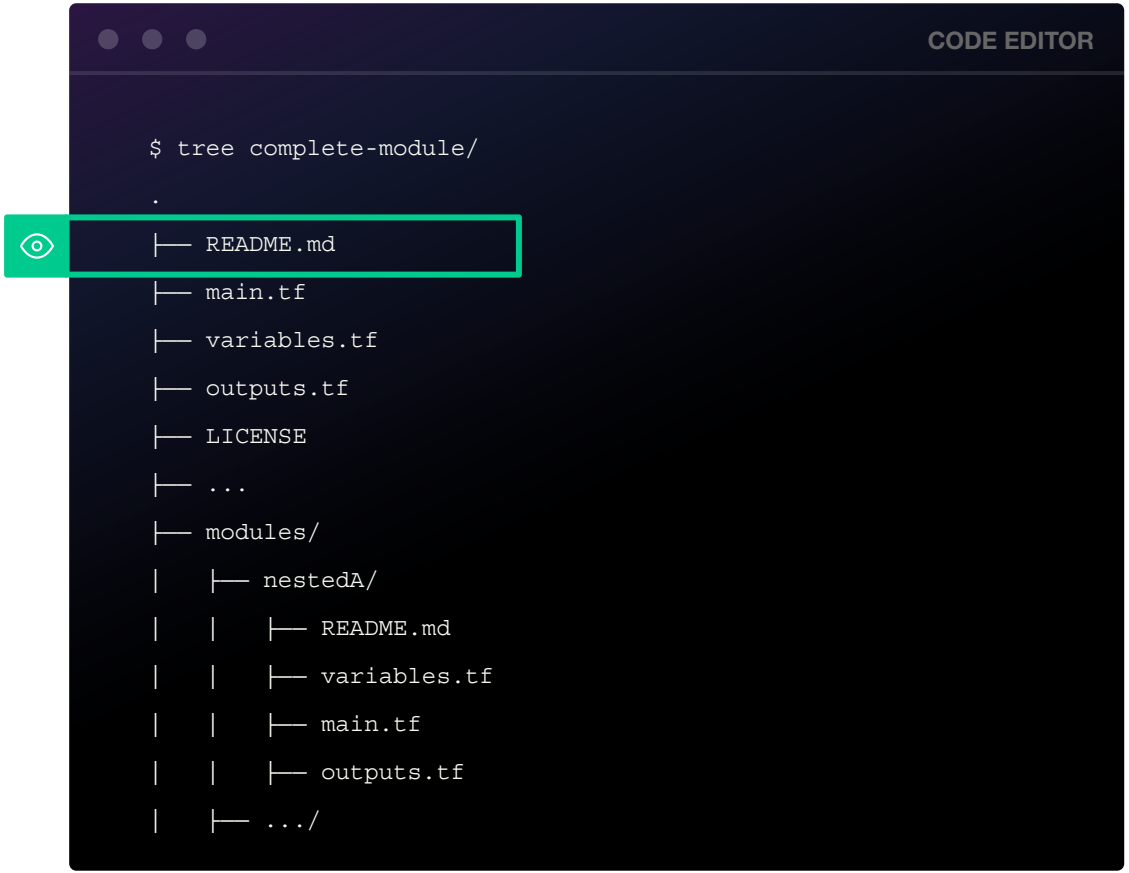


Root Modules

Only required element. This should be the main entry point for the module and contain specific configurations.

CODE EDITOR

```
$ tree complete-module/
.
├── README.md
├── main.tf
├── variables.tf
├── outputs.tf
├── LICENSE
├── ...
├── modules/
|   ├── nestedA/
|   |   ├── README.md
|   |   ├── variables.tf
|   |   ├── main.tf
|   |   ├── outputs.tf
|   ├── .../
```

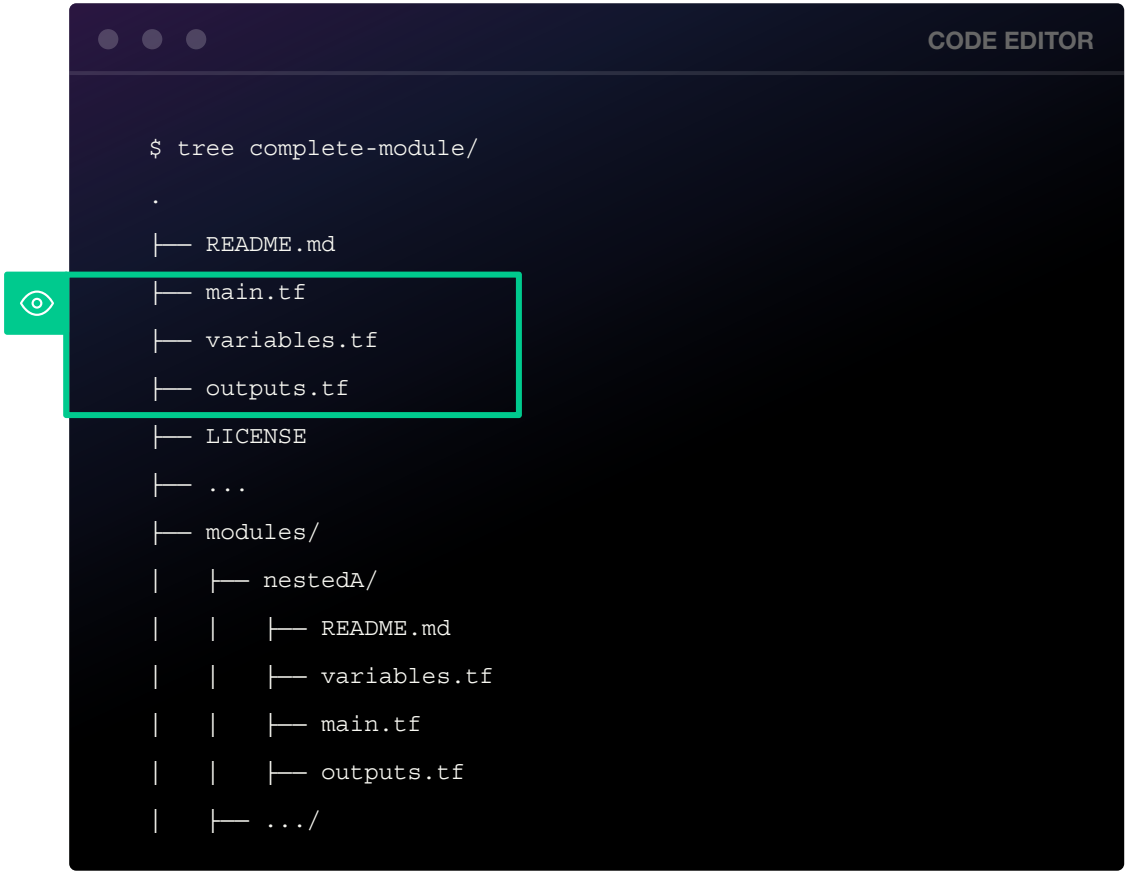


README

It contains description of the module and what it should be used for.

LICENSE

It contains the terms and conditions for using, modifying, and distributing the code (e.g Modules) in the repository.



main.tf, variables.tf, outputs.tf

The recommended filenames for a **minimal** module, even if they're empty. **main.tf** should be the primary entrypoint.

CODE EDITOR

```
variable "image_id" {
  type        = string
  description = "The id of the machine image (AMI) to use for the
server."
}

output "db_password" {
  value       = aws_db_instance.db.password
  description = "The password for logging in to the database."
  sensitive   = true
}
```

variables.tf, outputs.tf

All variables and outputs should have a short description explaining what it's for. This helps people know what each part of the code does.

Demo

https://github.com/misskecupbung/terraform-aws-vpc

References

- https://developer.hashicorp.com/terraform/language/modules/develop/structure
- https://developer.hashicorp.com/terraform/language/values/variables
- https://developer.hashicorp.com/terraform/language/values/outputs
- https://github.com/hashicorp/terraform/blob/main/website/docs/language/modules/develop/structure.mdx
- https://developer.hashicorp.com/terraform/tutorials/modules/module

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