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BATCH 2

Lab Exercise 6– Terraform Multiple tfvars Files

Objective:

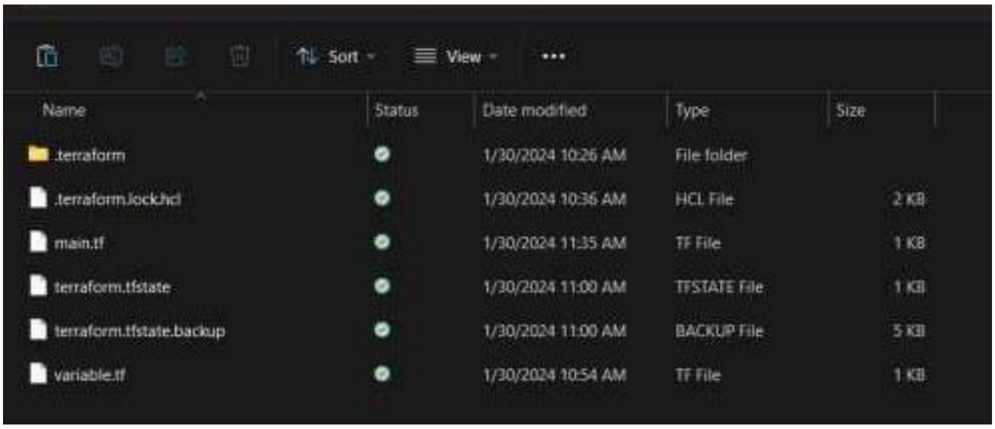
Learn how to use multiple tfvars files in Terraform for different environments.

Prerequisites:

- Terraform installed on your machine.
- Basic knowledge of Terraform configuration and variables.

Steps:

1. Create a Terraform Directory:

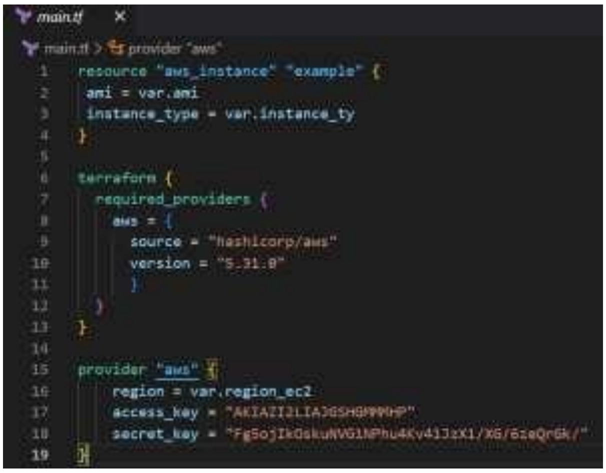


Name	Status	Date modified	Type	Size
.terraform	✓	1/30/2024 10:26 AM	File folder	
.terraform.lock.hcl	✓	1/30/2024 10:36 AM	HCL File	2 KB
main.tf	✓	1/30/2024 11:35 AM	TF File	1 KB
terraform.tfstate	✓	1/30/2024 11:00 AM	TFSTATE File	1 KB
terraform.tfstate.backup	✓	1/30/2024 11:00 AM	BACKUP File	5 KB
variable.tf	✓	1/30/2024 10:54 AM	TF File	1 KB

Create Terraform Configuration Files:

- Create a file named main.tf:

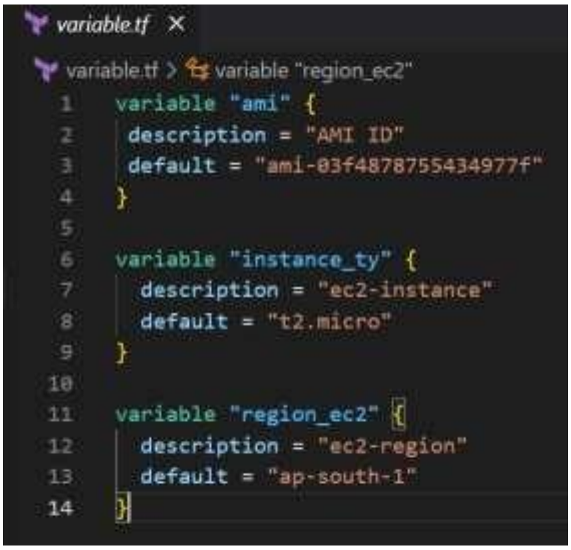
# main.tf



```
resource "aws_instance" "example" {
 ami = var.ami
 instance_type = var.instance_ty
}

terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.31.0"
      }
  }
}

provider "aws" {
    region = var.region_ec2
    access_key = "AKIAZI2LIAJGSHGMMMHP"
    secret_key = "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"
}
```

- Create a file named variables.tf:

# variables.tf

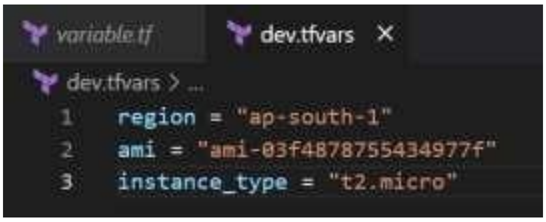


```
variable "ami" {
 description = "AMI ID"
 default = "ami-03f4878755434977f"
}

variable "instance_ty" {
  description = "ec2-instance"
  default = "t2.micro"
}

variable "region_ec2" {
  description = "ec2-region"
  default = "ap-south-1"
}
```

2. Create Multiple tfvars Files:

- Create a file named dev.tfvars: #

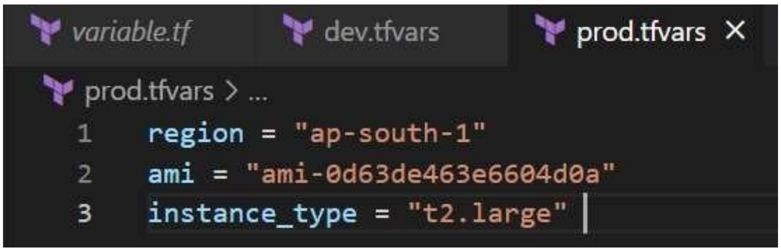
  dev.tfvars



```
region = "ap-south-1"
ami = "ami-03f4878755434977f"
instance_type = "t2.micro"
```

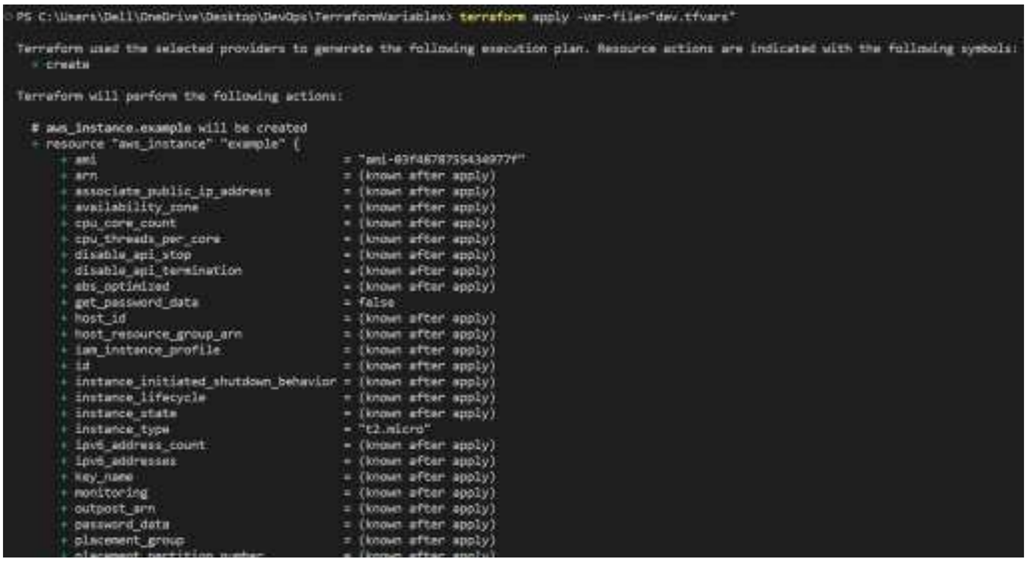
- Create a file named prod.tfvars: #

prod.tfvars

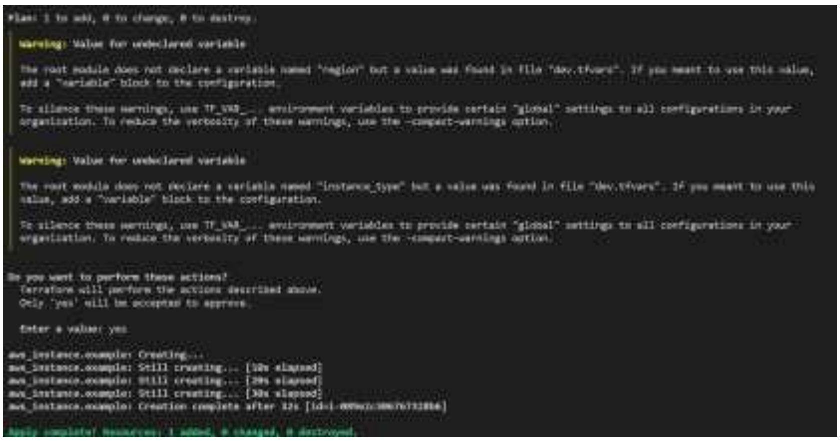


```
region = "ap-south-1"
ami = "ami-0d63de463e6604d0a"
instance_type = "t2.large"
```

3. Initialize and Apply for Dev Environment:

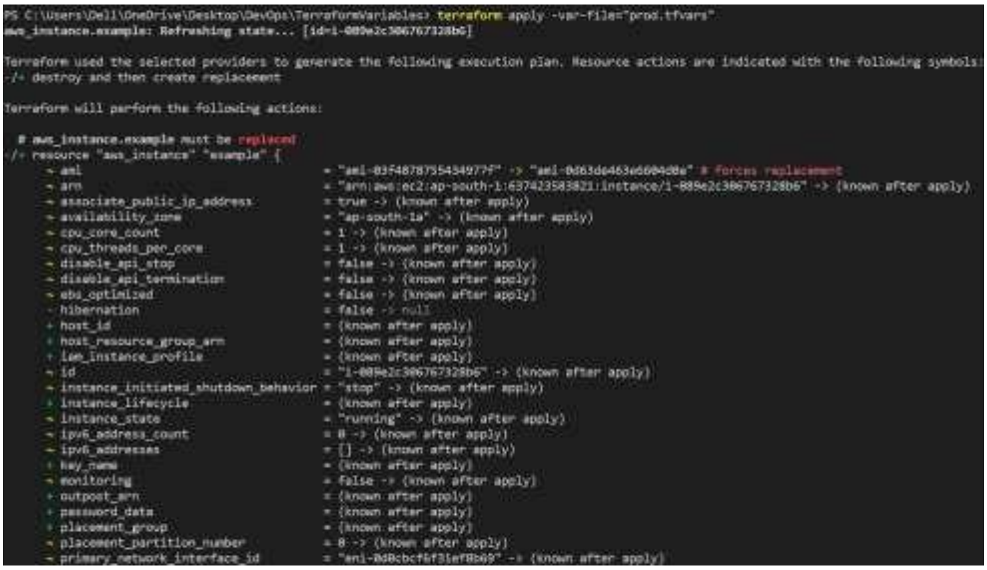


```
PS C:\Users\Dell\OneDrive\Desktop\DevOps\TerraformVariablex> terraform apply -var-file="dev.tfvars"

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_instance.example will be created
  + resource "aws_instance" "example" {
      + ami                                  = "ami-03f4878755434977f"
      + arn                                  = (known after apply)
      + associate_public_ip_address          = (known after apply)
      + availability_zone                    = (known after apply)
      + cpu_core_count                       = (known after apply)
      + cpu_threads_per_core                 = (known after apply)
      + disable_api_stop                     = (known after apply)
      + disable_api_termination              = (known after apply)
      + ebs_optimized                        = (known after apply)
      + get_password_data                    = false
      + host_id                              = (known after apply)
      + host_resource_group_arn              = (known after apply)
      + iam_instance_profile                 = (known after apply)
      + id                                   = (known after apply)
      + instance_initiated_shutdown_behavior = (known after apply)
      + instance_lifecycle                   = (known after apply)
      + instance_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = (known after apply)
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
```

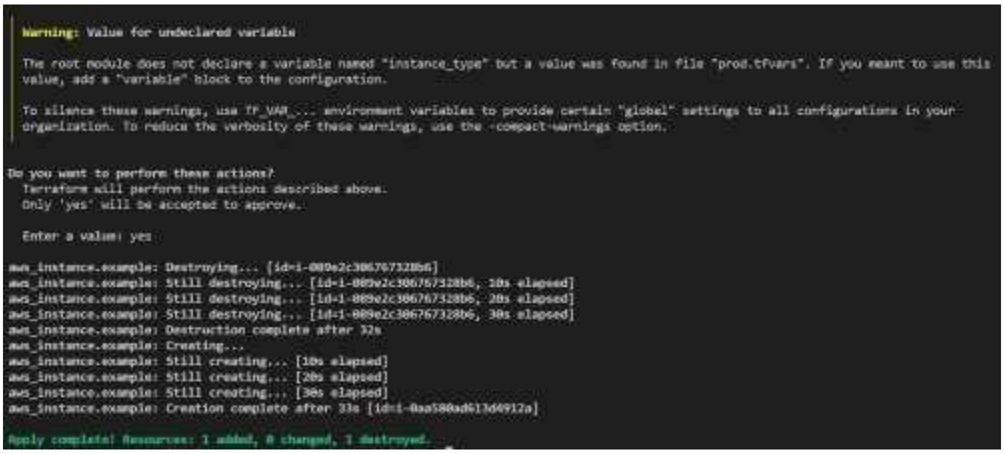


```
Plan: 1 to add, 0 to change, 0 to destroy.

  Warning: Value for undeclared variable

  The root module does not declare a variable named "region" but a value was found in file "dev.tfvars". If you meant to use this value,
  add a "variable" block to the configuration.

  To silence these warnings, use TF_VAR_... environment variables to provide certain "global" settings to all configurations in your
  organization. To reduce the verbosity of these warnings, use the -compact-warnings option.

  Warning: Value for undeclared variable

  The root module does not declare a variable named "instance_type" but a value was found in file "dev.tfvars". If you meant to use this
  value, add a "variable" block to the configuration.

  To silence these warnings, use TF_VAR_... environment variables to provide certain "global" settings to all configurations in your
  organization. To reduce the verbosity of these warnings, use the -compact-warnings option.

Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

aws_instance.example: Creating...
aws_instance.example: Still creating... [10s elapsed]
aws_instance.example: Still creating... [20s elapsed]
aws_instance.example: Still creating... [30s elapsed]
aws_instance.example: Creation complete after 32s [id=i-[illegible]]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
```

4. Initialize and Apply for Prod Environment:

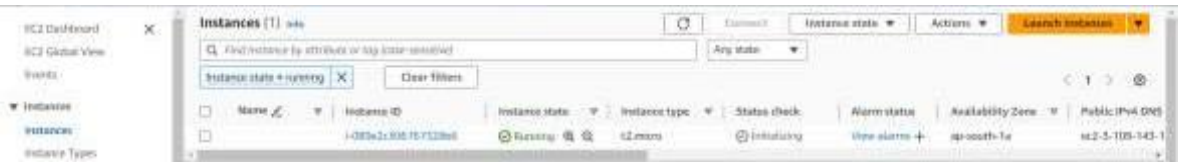


```
PS C:\Users\Dell\OneDrive\Desktop\DevOps\TerraformVariables> terraform apply -var-file="prod.tfvars"
aws_instance.example: Refreshing state... [id=i-089e2c306767328b6]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
-/+ destroy and then create replacement

Terraform will perform the following actions:

  # aws_instance.example must be replaced
-/+ resource "aws_instance" "example" {
      ~ ami                                  = "ami-03f4878755434977f" -> "ami-0d63de463e6604d0e" # forces replacement
      ~ arn                                  = "arn:aws:ec2:ap-south-1:637423583821:instance/i-089e2c306767328b6" -> (known after apply)
      ~ associate_public_ip_address          = true -> (known after apply)
      ~ availability_zone                    = "ap-south-1a" -> (known after apply)
      ~ cpu_core_count                       = 1 -> (known after apply)
      ~ cpu_threads_per_core                 = 1 -> (known after apply)
      ~ disable_api_stop                     = false -> (known after apply)
      ~ disable_api_termination              = false -> (known after apply)
      ~ ebs_optimized                        = false -> (known after apply)
      - hibernation                          = false -> null
      + host_id                              = (known after apply)
      + host_resource_group_arn              = (known after apply)
      + iam_instance_profile                 = (known after apply)
      ~ id                                   = "i-089e2c306767328b6" -> (known after apply)
      ~ instance_initiated_shutdown_behavior = "stop" -> (known after apply)
      + instance_lifecycle                   = (known after apply)
      ~ instance_state                       = "running" -> (known after apply)
      ~ ipv6_address_count                   = 0 -> (known after apply)
      ~ ipv6_addresses                       = [] -> (known after apply)
      + key_name                             = (known after apply)
      ~ monitoring                           = false -> (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      ~ placement_partition_number           = 0 -> (known after apply)
      ~ primary_network_interface_id         = "eni-0d0cbcf6f31ef8b69" -> (known after apply)
```



```
│ Warning: Value for undeclared variable
│
│ The root module does not declare a variable named "instance_type" but a value was found in file "prod.tfvars". If you meant to use this
│ value, add a "variable" block to the configuration.
│
│ To silence these warnings, use TF_VAR_... environment variables to provide certain "global" settings to all configurations in your
│ organization. To reduce the verbosity of these warnings, use the -compact-warnings option.


Do you want to perform these actions?
  Terraform will perform the actions described above.
  Only 'yes' will be accepted to approve.

  Enter a value: yes

aws_instance.example: Destroying... [id=i-089e2c306767328b6]
aws_instance.example: Still destroying... [id=i-089e2c306767328b6, 10s elapsed]
aws_instance.example: Still destroying... [id=i-089e2c306767328b6, 20s elapsed]
aws_instance.example: Still destroying... [id=i-089e2c306767328b6, 30s elapsed]
aws_instance.example: Destruction complete after 32s
aws_instance.example: Creating...
aws_instance.example: Still creating... [10s elapsed]
aws_instance.example: Still creating... [20s elapsed]
aws_instance.example: Still creating... [30s elapsed]
aws_instance.example: Creation complete after 33s [id=i-0aa580ad613d4912a]

Apply complete! Resources: 1 added, 0 changed, 1 destroyed.
```

5. Test and Verify:



EC2 Dashboard
EC2 Global View
Events
▼ Instances
Instances
Instance Types

Instances (1) Info

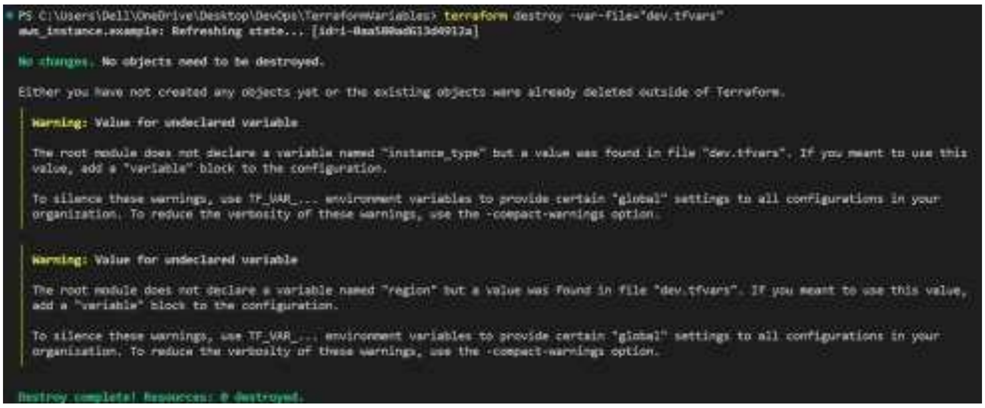
Connect | Instance state ▼ | Actions ▼ | Launch instances ▼

Find instance by attribute or tag (case-sensitive) | Any state ▼

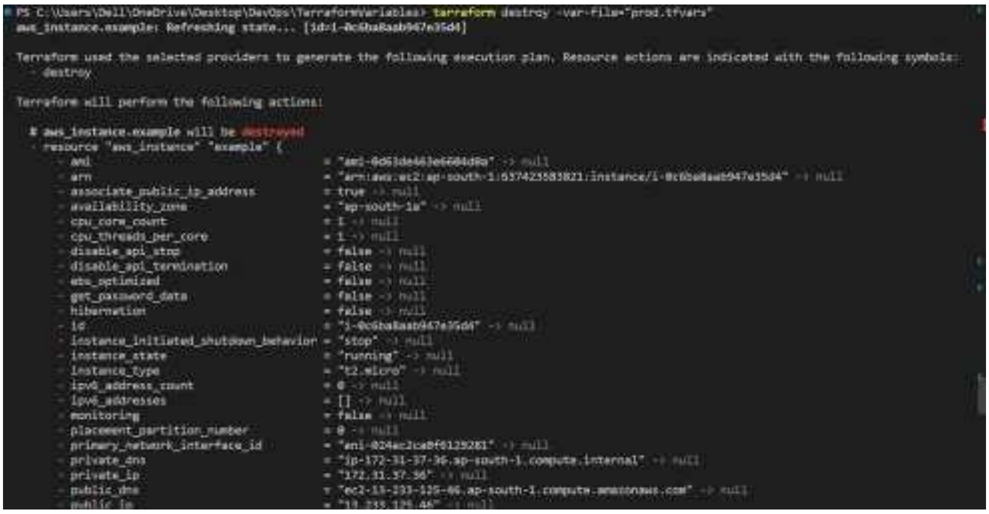
Instance state = running ✕ | Clear filters

□	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
□		i-083e2c808f5f7328e6	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-3-108-143-1

6. Clean Up:



```
PS C:\Users\Dell\OneDrive\Desktop\DevOps\TerraformVariables> terraform destroy -var-file="dev.tfvars"
aws_instance.example: Refreshing state... [id=i-0aa580ad613d0912a]

No changes. No objects need to be destroyed.

Either you have not created any objects yet or the existing objects were already deleted outside of Terraform.

│ Warning: Value for undeclared variable
│
│ The root module does not declare a variable named "instance_type" but a value was found in file "dev.tfvars". If you meant to use this
│ value, add a "variable" block to the configuration.
│
│ To silence these warnings, use TF_VAR_... environment variables to provide certain "global" settings to all configurations in your
│ organization. To reduce the verbosity of these warnings, use the -compact-warnings option.

│ Warning: Value for undeclared variable
│
│ The root module does not declare a variable named "region" but a value was found in file "dev.tfvars". If you meant to use this value,
│ add a "variable" block to the configuration.
│
│ To silence these warnings, use TF_VAR_... environment variables to provide certain "global" settings to all configurations in your
│ organization. To reduce the verbosity of these warnings, use the -compact-warnings option.

Destroy complete! Resources: 0 destroyed.
```



```
PS C:\Users\Dell\OneDrive\Desktop\DevOps\TerraformVariables> terraform destroy -var-file="prod.tfvars"
aws_instance.example: Refreshing state... [id=i-0c6ba8aab947e35d4]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_instance.example will be destroyed
  - resource "aws_instance" "example" {
      - ami                                  = "ami-0d63de463e6604d0a" -> null
      - arn                                  = "arn:aws:ec2:ap-south-1:637423583821:instance/i-0c6ba8aab947e35d4" -> null
      - associate_public_ip_address          = true -> null
      - availability_zone                    = "ap-south-1a" -> null
      - cpu_core_count                       = 1 -> null
      - cpu_threads_per_core                 = 1 -> null
      - disable_api_stop                     = false -> null
      - disable_api_termination              = false -> null
      - ebs_optimized                        = false -> null
      - get_password_data                    = false -> null
      - hibernation                          = false -> null
      - id                                   = "i-0c6ba8aab947e35d4" -> null
      - instance_initiated_shutdown_behavior = "stop" -> null
      - instance_state                       = "running" -> null
      - instance_type                        = "t2.micro" -> null
      - ipv6_address_count                   = 0 -> null
      - ipv6_addresses                       = [] -> null
      - monitoring                           = false -> null
      - placement_partition_number           = 0 -> null
      - primary_network_interface_id         = "eni-024ec2ca0f6129281" -> null
      - private_dns                          = "ip-172-31-37-36.ap-south-1.compute.internal" -> null
      - private_ip                           = "172.31.37.36" -> null
      - public_dns                           = "ec2-13-233-125-46.ap-south-1.compute.amazonaws.com" -> null
      - public_ip                            = "13.233.125.46" -> null
```