

🚀 Day 2 of Learning Terraform! 🚀

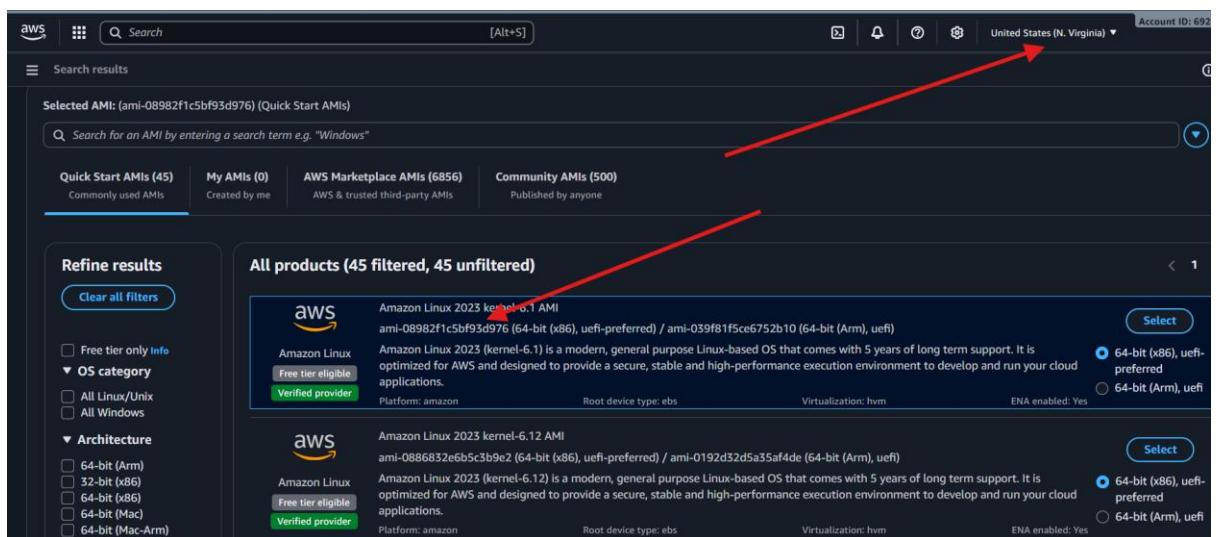
• Launching EC Instance with terraform

After all the necessary installations and configurations, lets dive into launching our first EC2 instance through terraform.

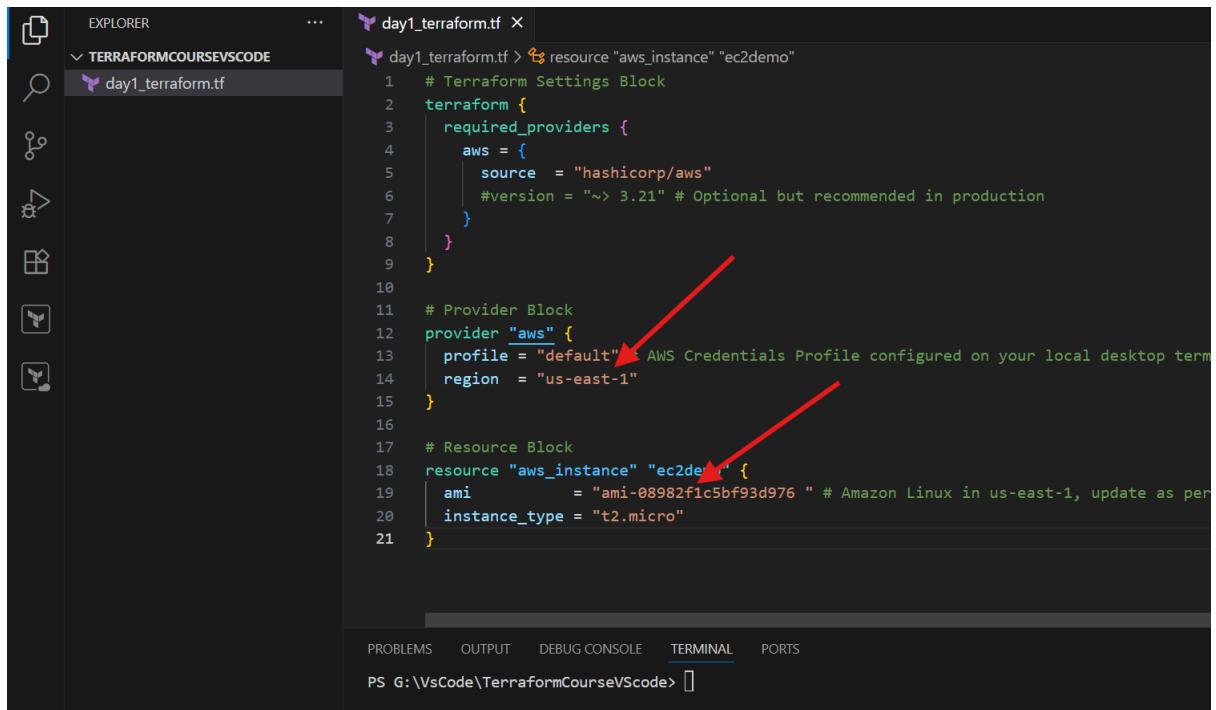
1> Let's create our first .tf file in vs code:



2> Choose IAM template and just copy the AMI id from AWS console (This will need in terraform script):



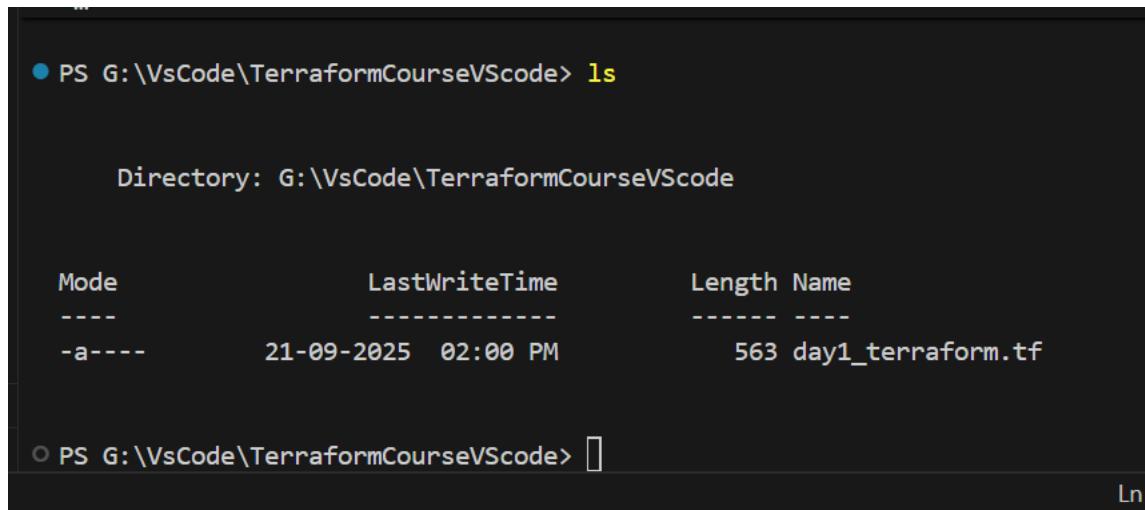
3> Now let's write a terraform script for launching an instance:



```
day1_terraform.tf
1 # Terraform Settings Block
2 terraform {
3     required_providers {
4         aws = {
5             source  = "hashicorp/aws"
6             #version = "~> 3.21" # Optional but recommended in production
7         }
8     }
9 }
10
11 # Provider Block
12 provider "aws" {
13     profile = "default" // AWS Credentials Profile configured on your local desktop terminal
14     region  = "us-east-1"
15 }
16
17 # Resource Block
18 resource "aws_instance" "ec2demo" {
19     ami           = "ami-08982f1c5bf93d976" # Amazon Linux in us-east-1, update as per
20     instance_type = "t2.micro"
21 }
```

- Make sure, you have updated your AWS region and AMI id in script. Then save the file.

4> Now go to the terminal and make sure your file is the using ls command



```
PS G:\VsCode\TerraformCourseVScodem> ls

Directory: G:\VsCode\TerraformCourseVScodem

Mode                LastWriteTime        Length Name
----                -              -          -
-a--- 21-09-2025 02:00 PM            563 day1_terraform.tf

PS G:\VsCode\TerraformCourseVScodem>
```

5 > Let's start our terraform with “terraform init” command:

```
● PS G:\VsCode\TerraformCourseVScode> terraform init
Initializing the backend...
Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v6.14.0...
- Installed hashicorp/aws v6.14.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
```

This will create the lock file. You can verify using ls command

```
● PS G:\VsCode\TerraformCourseVScode> ls

Directory: G:\VsCode\TerraformCourseVScode

Mode                LastWriteTime         Length Name
----                ------          ---- -
d----       21-09-2025 02:02 PM           0 .terraform
-a----       21-09-2025 02:02 PM        1377 .terraform.lock.hcl
-a----       21-09-2025 02:00 PM         563 day1_terraform.tf

○ PS G:\VsCode\TerraformCourseVScode>
```

5> after successfully initializing terraform we need to validate it using “terraform validate” command

```
● PS G:\VsCode\TerraformCourseVScode> terraform validate
Success! The configuration is valid.
```

6> now “terraform plan” this will ensure all the configurations:

The screenshot shows a terminal window in VS Code with the command `terraform plan` highlighted by a red arrow. The output shows Terraform's plan to create an AWS instance named `ec2demo`. A red arrow points to the `instance_state` field, which is listed as `= "known after apply"`.

```
13 | profile = "default" # AWS Credentials Profile configured on your local machine
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS G:\VsCode\TerraformCourseVScod> terraform plan ←
symbols:
+ create

Terraform will perform the following actions:

# aws_instance.ec2demo will be created
+ resource "aws_instance" "ec2demo" {
    + ami
    + arn
    + associate_public_ip_address
    + availability_zone
    + disable_api_stop
    + disable_api_termination
    + ebs_optimized
    + enable_primary_ipv6
    + force_destroy
    + get_password_data
    + host_id
    + host_resource_group_arn
    + iam_instance_profile
    + id
    + instance_initiated_shutdown_behavior
    + instance.lifecycle
    + instance_state
    + instance_type
    + ipv6_address_count
    + ipv6_addresses
    + key_name
        = "ami-08982f1c5bf93d976"
        = (known after apply)
        = false
        = false
        = (known after apply)
        = (known after apply)
```

7> Now we are ready to apply terraform “terraform apply” and enter value “yes”

The screenshot shows a terminal window with the Terraform confirmation prompt. It asks if the user wants to perform the actions, states that Terraform will perform the actions described above, and specifies that only 'yes' will be accepted to approve. The input field contains the value 'yes'.

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

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
```

```
Enter a value: yes

aws_instance.ec2demo: Creating...

| Error: creating EC2 Instance: operation error EC2: RunInstances, https response error StatusCode: 4096-8103-861cff2a8106, api error InvalidAMIID.Malformed: Invalid id: "ami-08982f1c5bf93d976 "

with aws_instance.ec2demo,
on day1_terraform.tf line 18, in resource "aws_instance" "ec2demo":
18: resource "aws_instance" "ec2demo" {
```

- This got failed because I had space in my AMI ID at end. (I have corrected this Later)

```
# Resource Block
resource "aws_instance" "ec2demo" {
  ami           = "ami-08982f1c5bf93d976" # Amazon Linux
  instance_type = "t2.micro"
}
```

8> After correcting the script, now our instance is created.

```
PS G:\VsCode\TerraformCourseVScode> terraform apply ←

+ primary_network_interface (known after apply)
+ private_dns_name_options (known after apply)
+ root_block_device (known after apply)
}

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

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.ec2demo: Creating...
aws_instance.ec2demo: Still creating... [00m10s elapsed]
aws_instance.ec2demo: Creation complete after 19s [id=i-08f309ffe338d9748] ↴

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

- Let's verify now if our instance is running in AWS console:

Instances (1/1) Info Last updated less than a minute ago Connect Instance state Actions Launch

Find Instance by attribute or tag (case-sensitive)

Running

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>	i-08f309ffe338d9748	Running	t2.micro	Initializing	View alarms +	us-east-1d

i-08f309ffe338d9748

Instance details Info

AMI ID: ami-08982f1c5bf93d976

AMI name: al2023-ami-2023.8.20250915.0-kernel-6.1-x86_64

Monitoring: disabled

Allowed image: -

Platform details: Linux/UNIX

Termination protection: Disabled

- Here, our instance is up and running .
- Now we can terminate instance using “terraform destroy” command:

```
PS G:\VsCode\TerraformCourseVScode> terraform destroy ←
  - delete_on_termination = true -> null
  - device_name           = "/dev/xvda" -> null
  - encrypted              = false -> null
  - iops                   = 3000 -> null
  - tags                   = {} -> null
  - tags_all               = {} -> null
  - throughput              = 125 -> null
  - volume_id               = "vol-0673a1cf8408f4ea0" -> null
  - volume_size              = 8 -> null
  - volume_type              = "gp3" -> null
  # (1 unchanged attribute hidden)
}

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

Do you really want to destroy all resources?
Terraform will destroy all your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes ←

aws_instance.ec2demo: Destroying... [id=i-08f309ffe338d9748]
[1]

aws_instance.ec2demo: Destruction complete after 44s

Destroy complete! Resources: 1 destroyed.
PS G:\VsCode\TerraformCourseVScode>
```

Thank you: 😊