Assignment - 1
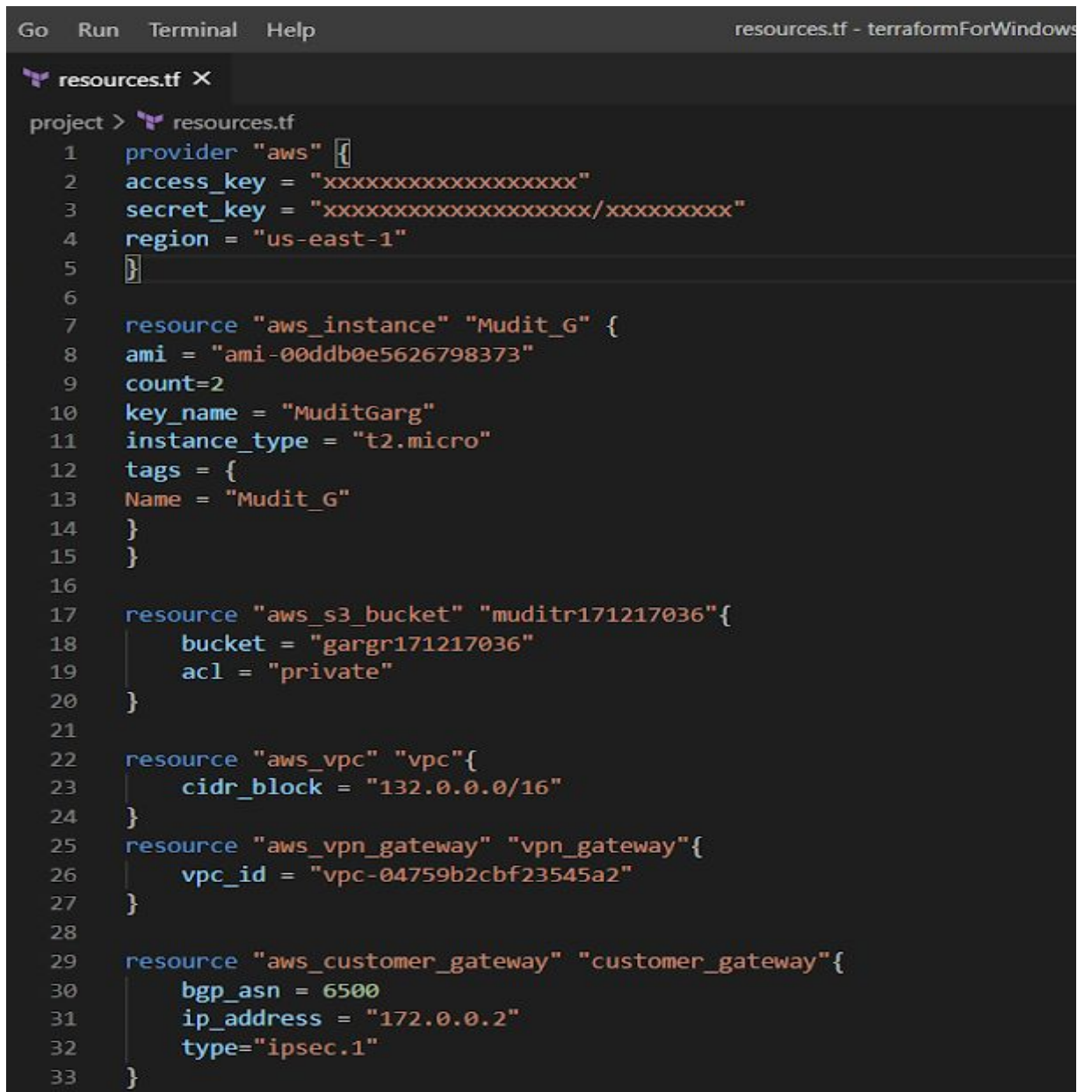SYSTEM PROVISIONING AND CONFIGURATION SYSTEM

Name: Mudit Garg
Roll No: R171217036
Sap ID: 500062539

Steps:
- Get aws security credentials i.e. access key and secret key and specify the region.
- Specify provider and these keys in provider
- Specify resources for ec2 instance, ami, instance type = t2.micro
- Specify resources for s3 bucket, follow naming convention for bucket name
- Specify resources for vpc and vpc gateway

```
resources.tf X

project > resources.tf
  1    provider "aws" {
  2    access_key = "xxxxxxxxxxxxxxxxxx"
  3    secret_key = "xxxxxxxxxxxxxxxxxxx/xxxxxxxxx"
  4    region = "us-east-1"
  5    }
  6
  7    resource "aws_instance" "Mudit_G" {
  8    ami = "ami-00ddb0e5626798373"
  9    count=2
 10    key_name = "MuditGarg"
 11    instance_type = "t2.micro"
 12    tags = {
 13    Name = "Mudit_G"
 14    }
 15    }
 16
 17    resource "aws_s3_bucket" "muditr171217036"{
 18        bucket = "gargr171217036"
 19        acl = "private"
 20    }
 21
 22    resource "aws_vpc" "vpc"{
 23        cidr_block = "132.0.0.0/16"
 24    }
 25    resource "aws_vpn_gateway" "vpn_gateway"{
 26        vpc_id = "vpc-04759b2cbf23545a2"
 27    }
 28
 29    resource "aws_customer_gateway" "customer_gateway"{
 30        bgp_asn = 6500
 31        ip_address = "172.0.0.2"
 32        type="ipsec.1"
 33    }
```

```
34
35    resource "aws_vpn_connection" "main"{
36        vpn_gateway_id=aws_vpn_gateway.vpn_gateway.id
37        customer_gateway_id = aws_customer_gateway.customer_gateway.id
38        type = "ipsec.1"
39        static_routes_only = true
40    }
41
```

Console output:

- Terraform init

```
PS C:\terraformForWindows\project> terraform init

Initializing the backend...

Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v3.16.0...
- Installed hashicorp/aws v3.16.0 (signed by HashiCorp)

The following providers do not have any version constraints in configuration,
so the latest version was installed.

To prevent automatic upgrades to new major versions that may contain breaking
changes, we recommend adding version constraints in a required_providers block
in your configuration, with the constraint strings suggested below.

* hashicorp/aws: version = "~> 3.16.0"

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.
PS C:\terraformForWindows\project>
```
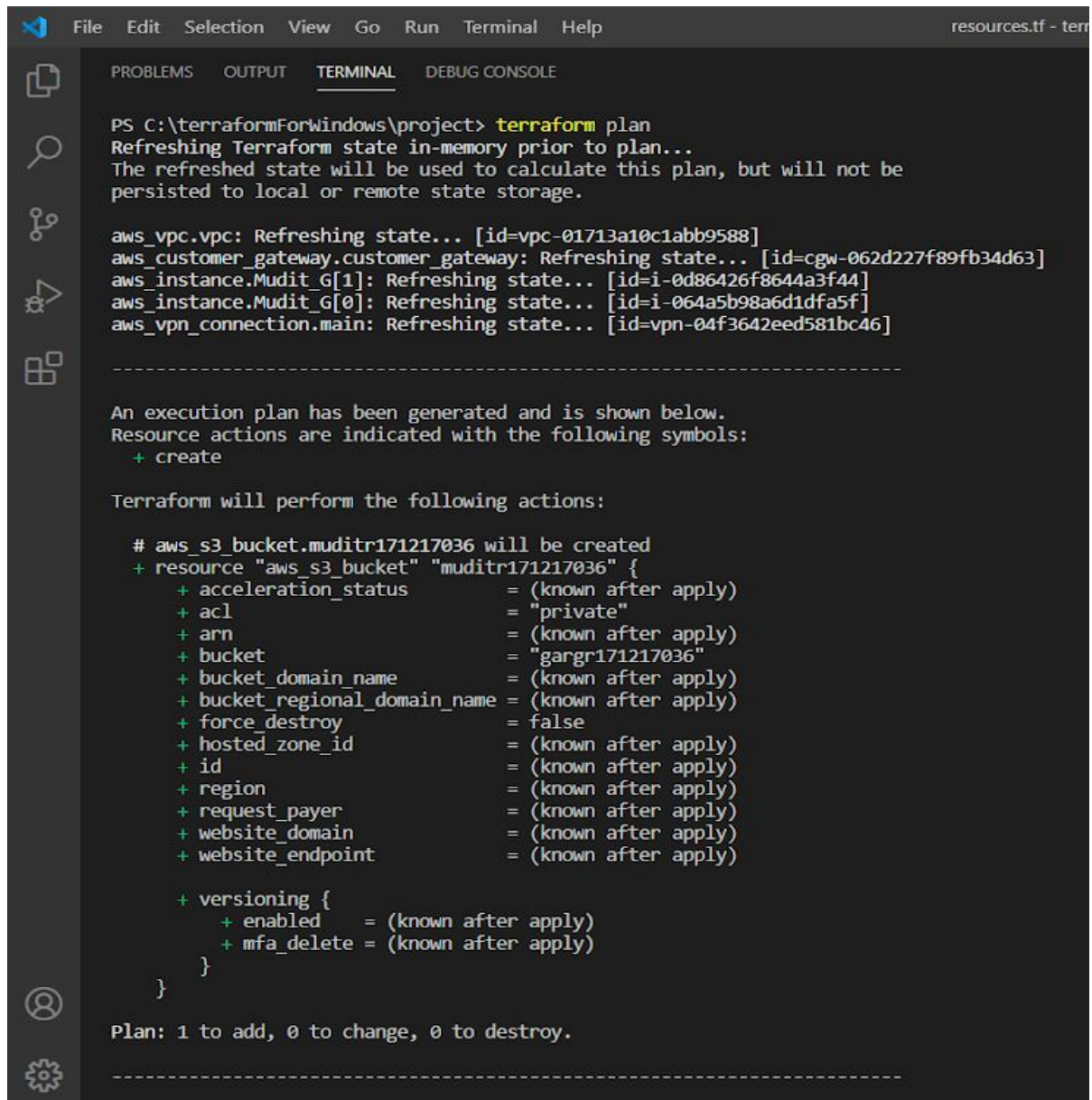
● Terraform plan


```
File   Edit   Selection   View   Go   Run   Terminal   Help                    resources.tf - ter

PROBLEMS    OUTPUT    TERMINAL    DEBUG CONSOLE

PS C:\terraformForWindows\project> terraform plan
Refreshing Terraform state in-memory prior to plan...
The refreshed state will be used to calculate this plan, but will not be
persisted to local or remote state storage.

aws_vpc.vpc: Refreshing state... [id=vpc-01713a10c1abb9588]
aws_customer_gateway.customer_gateway: Refreshing state... [id=cgw-062d227f89fb34d63]
aws_instance.Mudit_G[1]: Refreshing state... [id=i-0d86426f8644a3f44]
aws_instance.Mudit_G[0]: Refreshing state... [id=i-064a5b98a6d1dfa5f]
aws_vpn_connection.main: Refreshing state... [id=vpn-04f3642eed581bc46]

------------------------------------------------------------------------

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_s3_bucket.muditr171217036 will be created
  + resource "aws_s3_bucket" "muditr171217036" {
      + acceleration_status          = (known after apply)
      + acl                          = "private"
      + arn                          = (known after apply)
      + bucket                       = "gargr171217036"
      + bucket_domain_name           = (known after apply)
      + bucket_regional_domain_name = (known after apply)
      + force_destroy                = false
      + hosted_zone_id               = (known after apply)
      + id                           = (known after apply)
      + region                       = (known after apply)
      + request_payer                = (known after apply)
      + website_domain               = (known after apply)
      + website_endpoint             = (known after apply)

      + versioning {
          + enabled    = (known after apply)
          + mfa_delete = (known after apply)
        }
    }

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

------------------------------------------------------------------------
```

- Terraform apply


```
File  Edit  Selection  View  Go  Run  Terminal  Help          resources.tf - terraformForWindows - Visual Studio Code          —      ☐      ✕

PROBLEMS   OUTPUT   TERMINAL   DEBUG CONSOLE                              1: powershell        ∨    +  ⊡  🗑  ∨  ✕

PS C:\terraformForWindows\project> terraform apply
aws_vpc.vpc: Refreshing state... [id=vpc-01713a10c1abb9588]
aws_customer_gateway.customer_gateway: Refreshing state... [id=cgw-062d227f89fb34d63]
aws_instance.Mudit_G[0]: Refreshing state... [id=i-064a5b98a6d1dfa5f]
aws_instance.Mudit_G[1]: Refreshing state... [id=i-0d86426f8644a3f44]
aws_vpn_gateway.vpn_gateway: Refreshing state... [id=vgw-093bc57499a71e30c]
aws_vpn_connection.main: Refreshing state... [id=vpn-04f3642eed581bc46]

An execution plan has been generated and is shown below.
Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_s3_bucket.muditr171217036 will be created
  + resource "aws_s3_bucket" "muditr171217036" {
      + acceleration_status          = (known after apply)
      + acl                          = "private"
      + arn                          = (known after apply)
      + bucket                       = "gargr171217036"
      + bucket_domain_name           = (known after apply)
      + bucket_regional_domain_name  = (known after apply)
      + force_destroy                = false
      + hosted_zone_id               = (known after apply)
      + id                           = (known after apply)
      + region                       = (known after apply)
      + request_payer                = (known after apply)
      + website_domain               = (known after apply)
      + website_endpoint             = (known after apply)

      + versioning {
          + enabled    = (known after apply)
          + mfa_delete = (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
```
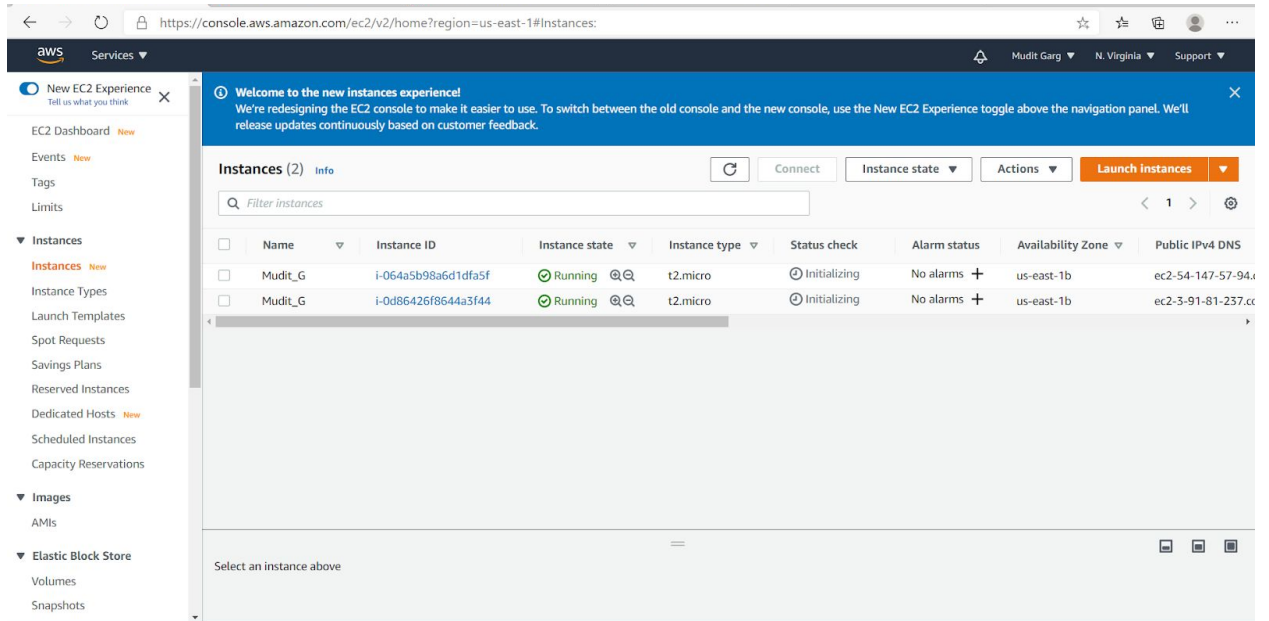
-


```
Enter a value: yes

aws_s3_bucket.muditr171217036: Creating...
aws_s3_bucket.muditr171217036: Still creating... [10s elapsed]
aws_s3_bucket.muditr171217036: Creation complete after 17s [id=gargr171217036]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
PS C:\terraformForWindows\project>
```
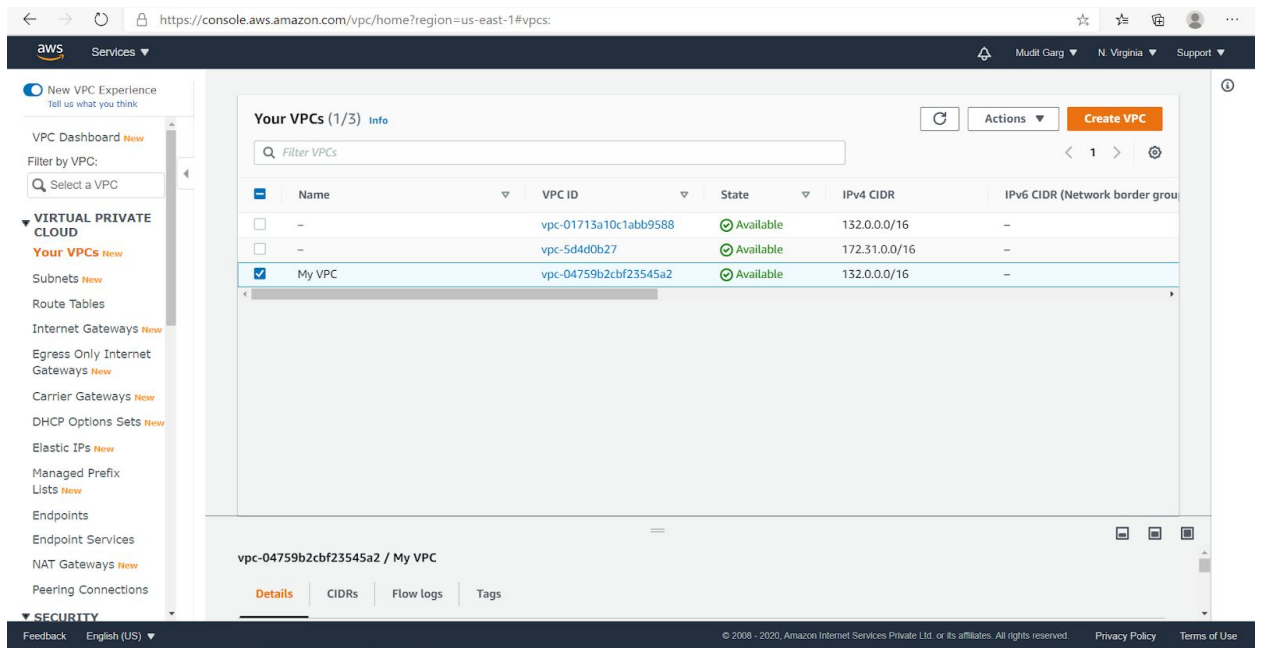
AWS output:

Ec2 instance

VPC

S3 bucket