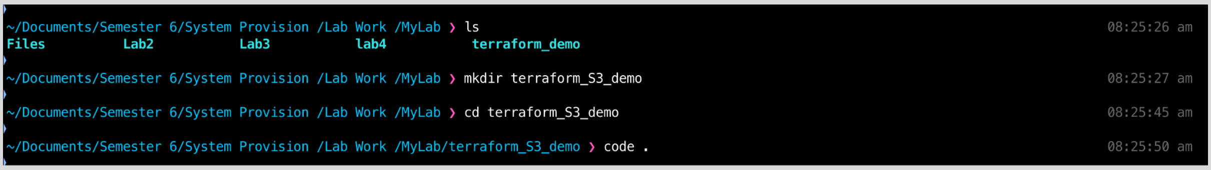
Lab Exercise 5–Provisioning an S3 Bucket on AWS

Exercise Steps:

Step 1: Create a New Directory:

Create a new directory to store your Terraform configuration:

```
mkdir Terraform-S3-Demo
cd Terraform-S3-Demo
```

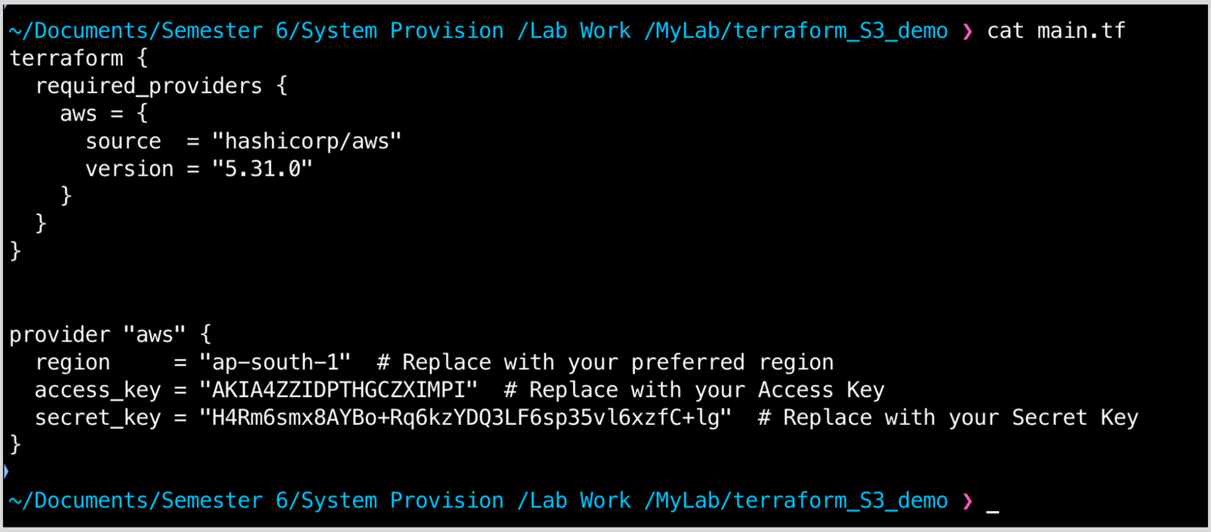


```
~/Documents/Semester 6/System Provision /Lab Work /MyLab ❯ ls                                  08:25:26 am
Files          Lab2           Lab3           lab4           terraform_demo

~/Documents/Semester 6/System Provision /Lab Work /MyLab ❯ mkdir terraform_S3_demo             08:25:27 am

~/Documents/Semester 6/System Provision /Lab Work /MyLab ❯ cd terraform_S3_demo                08:25:45 am

~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ code .            08:25:50 am
```

Step 2: Create the Terraform Configuration File (main.tf):

Create a file named main.tf with the following content:

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


provider "aws" {
  region     = "us-east-1"  # Replace with your preferred region
  access_key = "your IAM access key"  # Replace with your Access Key
  secret_key = "your secret access key"  # Replace with your Secret Key
}
```



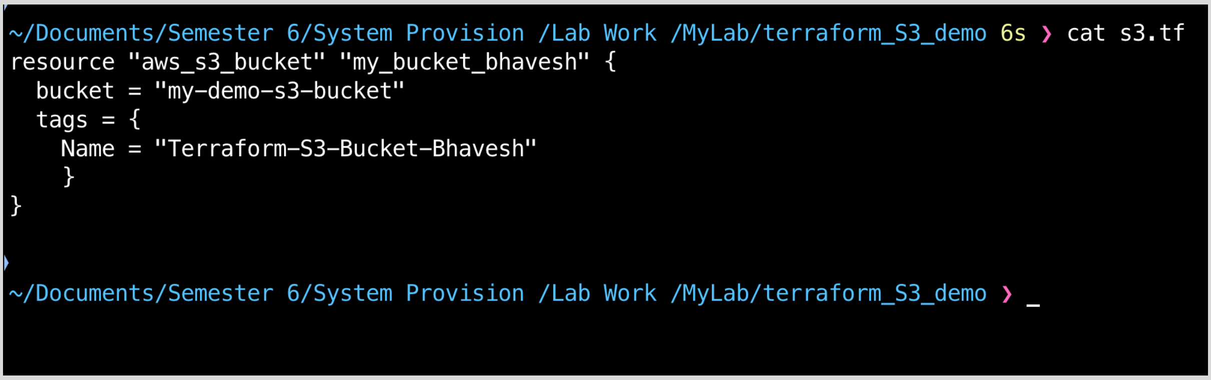
```
~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ cat main.tf
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = "5.31.0"
    }
  }
}


provider "aws" {
  region     = "ap-south-1"  # Replace with your preferred region
  access_key = "AKIA4ZZIDPTHGCZXIMPI"  # Replace with your Access Key
  secret_key = "H4Rm6smx8AYBo+Rq6kzYDQ3LF6sp35vl6xzfC+lg"  # Replace with your Secret Key
}

~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ _
```

This file sets up the Terraform AWS provider.

Step 3: Create a Terraform Configuration File for the S3 Bucket (s3.tf):

Create another file named s3.tf with the following content:

```
resource "aws_s3_bucket" "my_bucket" {
  bucket = "my-demo-s3-bucket"
  tags = {
    Name       = "Terraform-S3-Bucket"
    }
}
```



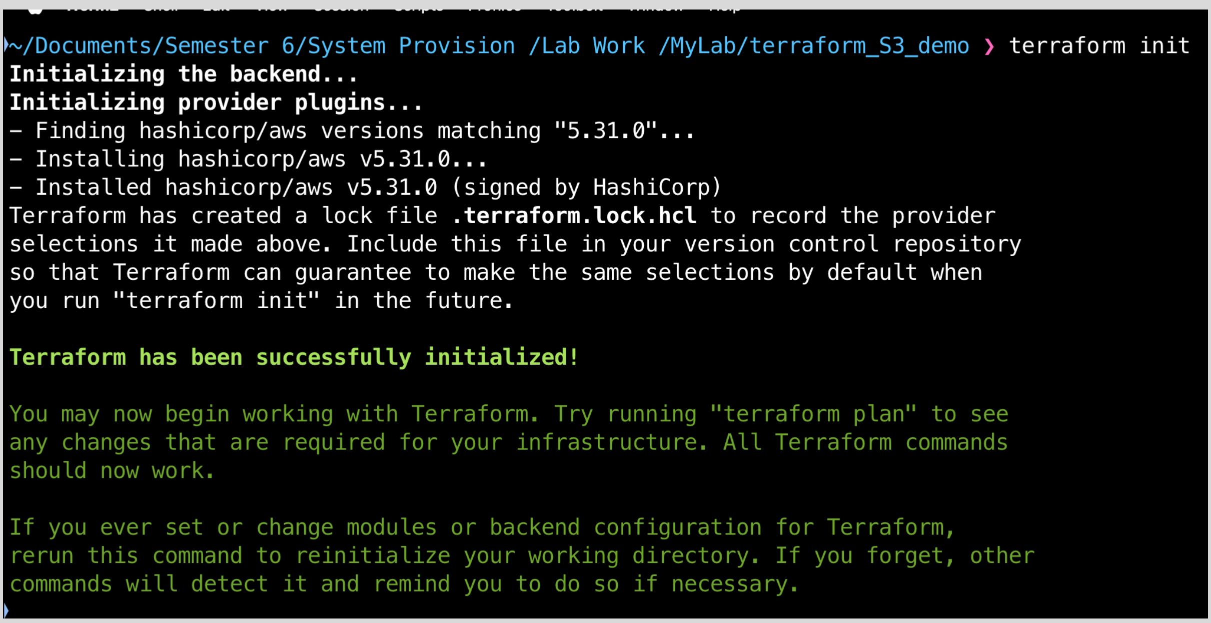
```
~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo 6s ❯ cat s3.tf
resource "aws_s3_bucket" "my_bucket_bhavesh" {
  bucket = "my-demo-s3-bucket"
  tags = {
    Name = "Terraform-S3-Bucket-Bhavesh"
    }
}


~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ _
```

This file provisions an S3 bucket with a unique name using a random string suffix.

Step 4: Initialize Terraform:

Run the following command to initialize your Terraform working directory:

```
terraform init
```

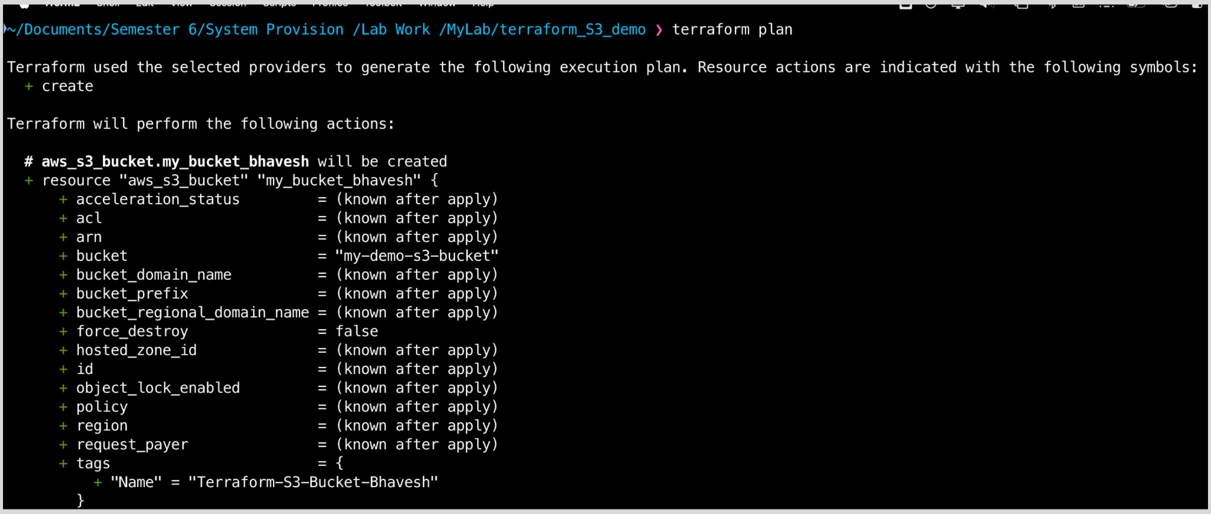


```
~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (signed by HashiCorp)
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.
```

Step 5: Review the Plan:

Preview the changes Terraform will make:

```
terraform plan
```



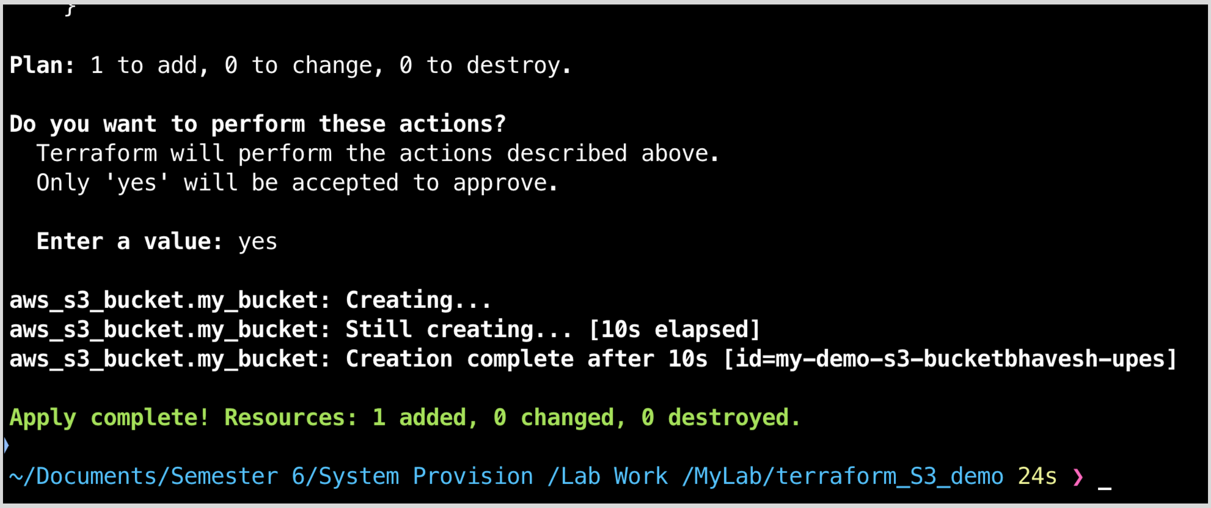
```
~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo ❯ terraform plan

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_s3_bucket.my_bucket_bhavesh will be created
  + resource "aws_s3_bucket" "my_bucket_bhavesh" {
      + acceleration_status         = (known after apply)
      + acl                         = (known after apply)
      + arn                         = (known after apply)
      + bucket                      = "my-demo-s3-bucket"
      + bucket_domain_name          = (known after apply)
      + bucket_prefix               = (known after apply)
      + bucket_regional_domain_name = (known after apply)
      + force_destroy               = false
      + hosted_zone_id              = (known after apply)
      + id                          = (known after apply)
      + object_lock_enabled         = (known after apply)
      + policy                      = (known after apply)
      + region                      = (known after apply)
      + request_payer               = (known after apply)
      + tags                        = {
          + "Name" = "Terraform-S3-Bucket-Bhavesh"
        }
```

Review the output to ensure it meets your expectations.

Step 6: Apply the Changes:

Create the resources:

```
terraform apply
```

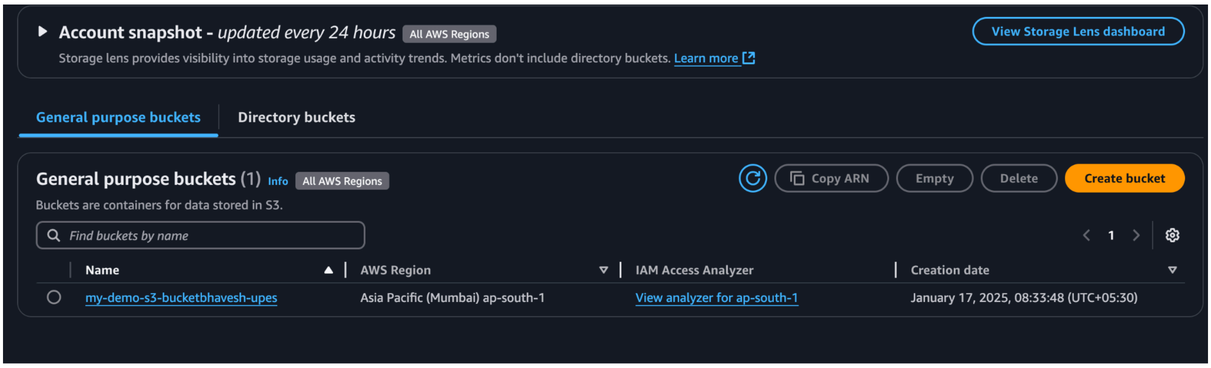


```
      }

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_s3_bucket.my_bucket: Creating...
aws_s3_bucket.my_bucket: Still creating... [10s elapsed]
aws_s3_bucket.my_bucket: Creation complete after 10s [id=my-demo-s3-bucketbhavesh-upes]

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

~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo 24s ❯ _
```

When prompted, type yes to confirm.

Step 7: Verify Resources:

1. Log in to your AWS Management Console.
2. Navigate to the **S3** dashboard.
3. Verify that the S3 bucket has been created with the specified configuration.



Account snapshot - *updated every 24 hours* All AWS Regions

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. Learn more

General purpose buckets (1)

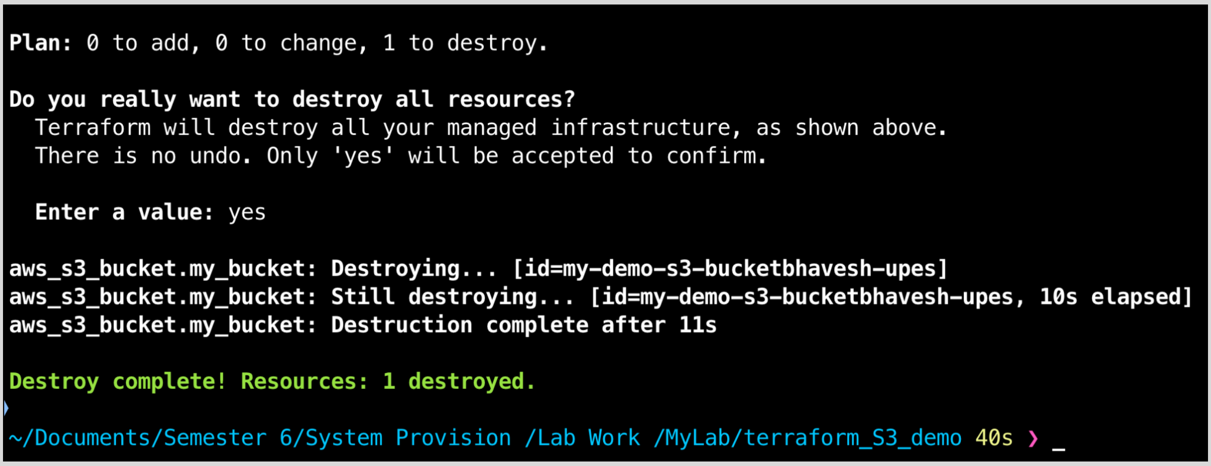
Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
my-demo-s3-bucketbhavesh-upes	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	January 17, 2025, 08:33:48 (UTC+05:30)

Step 8: Cleanup Resources:

To remove the resources created, run the following command:

```
terraform destroy
```



```
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_s3_bucket.my_bucket: Destroying... [id=my-demo-s3-bucketbhavesh-upes]
aws_s3_bucket.my_bucket: Still destroying... [id=my-demo-s3-bucketbhavesh-upes, 10s elapsed]
aws_s3_bucket.my_bucket: Destruction complete after 11s

Destroy complete! Resources: 1 destroyed.

~/Documents/Semester 6/System Provision /Lab Work /MyLab/terraform_S3_demo 40s ❯ _
```

When prompted, type yes to confirm.