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ASSIGNMENT 5.5 A

Prepare a simple configuration to create an AWS S3 bucket with id set to "name-surname-bucket", and output this id to a screen.
Provide commands to create and erase this resource

SOLUTION:

STEP 1 :

First of all we will do configuration for creating s3 bucket and its output to be showed to screen as :

Main.tf file:

Open

```
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = ">= 3.20.0"
    }
  }
}

provider "aws" {

  region  = var.region
}


resource "aws_s3_bucket" "data_bucket" {
  bucket = var.bucket_name

}

output "data_bucket_id" {
  value = aws_s3_bucket.data_bucket.id

}
```

Variable.tf file :

```
variable "bucket_name" {
  description = "Name of the S3 bucket"
  type        = string
  default     = "muhammad-hussam-bucket"
}

variable "region" {
  description = "AWS Region"
  default = "us-east-1"
}
```

STEP 2:

Initializing the Terraform configuration:

```
(base) muhammadhussam@all-MS-7D35:~/Desktop/New Folder 7/data_engineering_bootcamp_2303/tasks/5_data_pipelines/day_5_IaC/assignment_5.5a$ terraform init

Initializing the backend...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v4.67.0

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.
```

STEP 3:

Creating the S3 bucket :

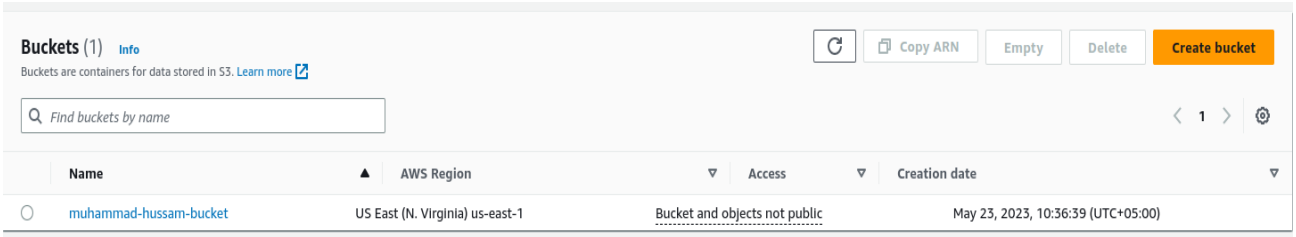
```
(base) muhammadhussam@all-MS-7D35:~/Desktop/New Folder 7/data_engineering_bootcamp_2303/tasks/5_data_pipelines/day_5_IaC/assignment_5.5a$ terraform apply

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.data_bucket will be created
  + resource "aws_s3_bucket" "data_bucket" {
      + acceleration_status         = (known after apply)
      + acl                         = (known after apply)
      + arn                         = (known after apply)
      + bucket                      = "muhammad-hussam-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_all                    = (known after apply)
      + website_domain              = (known after apply)
      + website_endpoint            = (known after apply)
    }

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

Changes to Outputs:
  + data_bucket_id = (known after apply)
```

After the bucket is created, Terraform will display the name of bucket that was just created.

```
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.data_bucket: Creating...
aws_s3_bucket.data_bucket: Creation complete after 4s [id=muhammad-hussam-bucket]

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

Outputs:

data_bucket_id = "muhammad-hussam-bucket"
```

As shown in image above its showing as : data_bucket_id = “muhammad-hussam-bucket"

Also in aws account its showing the bucket is created with same name as above:

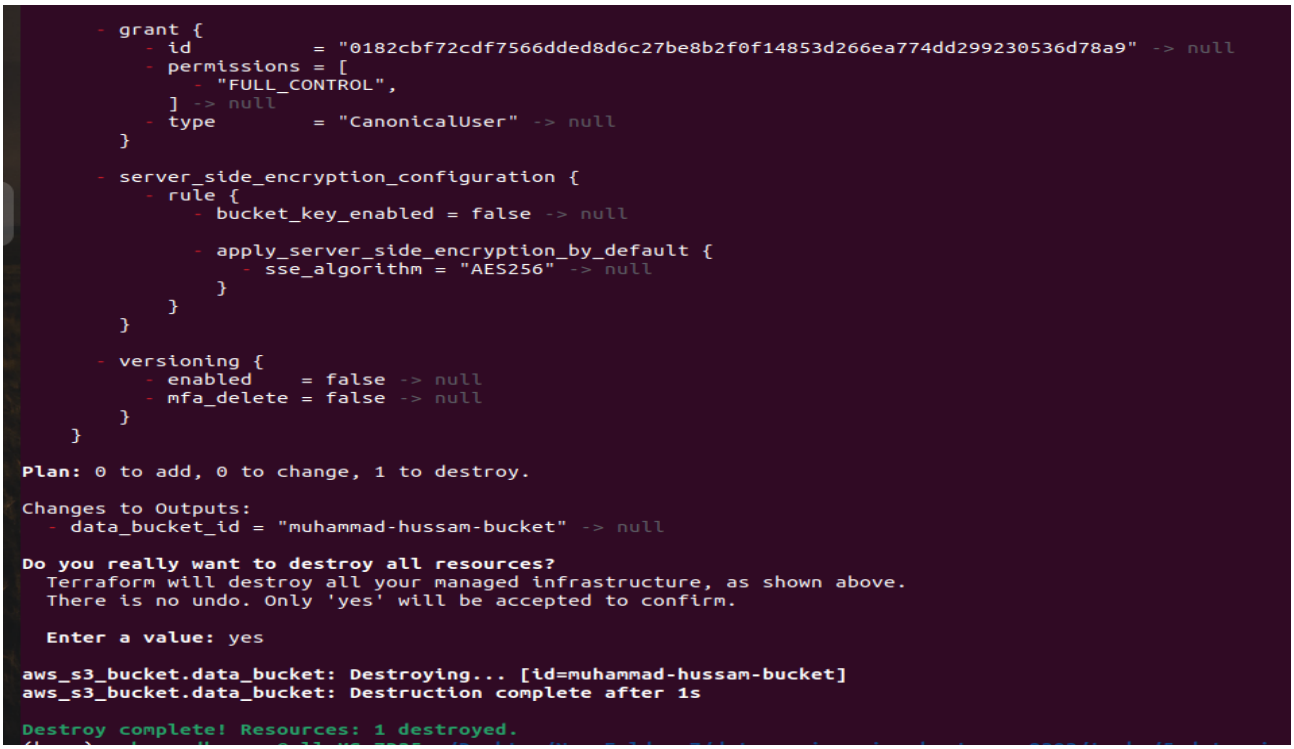


STEP 4:

Terraform init is the command for creating as we have just done above in previous step.

Now for erase the resource we use terraform destroy command as:

```
(base) muhammadhussam@all-MS-7D35:~/Desktop/New Folder 7/data_engineering_bootcamp_2303/tasks/5_data_pipelines/day_5_IaC/assignment_5.5a$ terraform destroy
aws_s3_bucket.data_bucket: Refreshing state... [id=muhammad-hussam-bucket]

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_s3_bucket.data_bucket will be destroyed
  - resource "aws_s3_bucket" "data_bucket" {
      - arn                         = "arn:aws:s3:::muhammad-hussam-bucket" -> null
      - bucket                      = "muhammad-hussam-bucket" -> null
      - bucket_domain_name          = "muhammad-hussam-bucket.s3.amazonaws.com" -> null
      - bucket_regional_domain_name = "muhammad-hussam-bucket.s3.amazonaws.com" -> null
      - force_destroy               = false -> null
      - hosted_zone_id              = "Z3AQBSTGFYJSTF" -> null
      - id                          = "muhammad-hussam-bucket" -> null
      - object_lock_enabled         = false -> null
      - region                      = "us-east-1" -> null
      - request_payer               = "BucketOwner" -> null
      - tags                        = {} -> null
      - tags_all                    = {} -> null

      - grant {
          - id          = "0182cbf72cdf7566dded8d6c27be8b2f0f14853d266ea774dd299230536d78a9" -> null
          - permissions = [
              - "FULL_CONTROL",
            ] -> null
          - type        = "CanonicalUser" -> null
        }

      - server_side_encryption_configuration {
          - rule {
              - bucket_key_enabled = false -> null

              - apply_server_side_encryption_by_default {
                  - sse_algorithm = "AES256" -> null
                }
            }
        }

      - versioning {
          - enabled    = false -> null
          - mfa_delete = false -> null
        }
```



Hence its destroyed .