# Migration of GCP Bucket from 1 project to another

24 April 2024 20:54

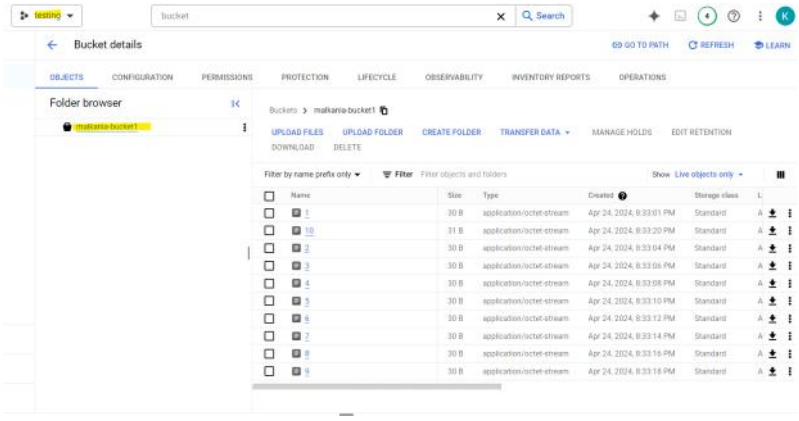
Agenda:: There are 2 GCP project testing and testing 2 ….. There are 4 GCP buckets in testing project that needs to be migrated to test2 project .

STEP 1::
Use below mentioned terraform code to create 4 GCP buckets in 1st project

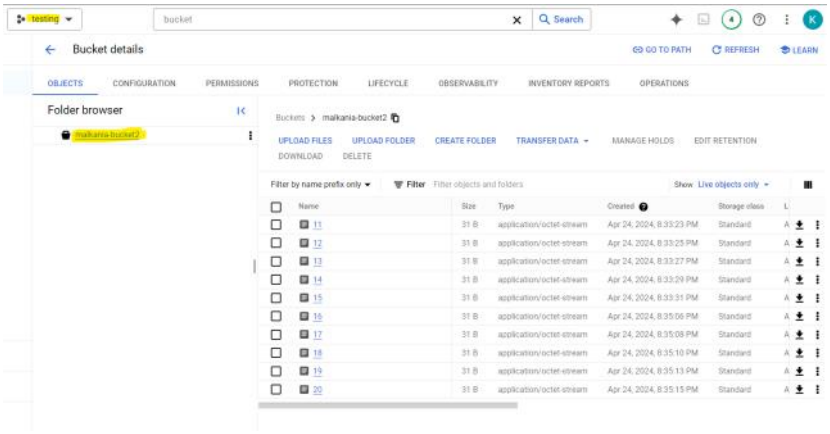
```
# Define the names of the buckets
variable "bucket_names" {
  default = ["bucket1", "bucket2", "bucket3", "bucket4"]
}
# Create GCS buckets
resource "google_storage_bucket" "buckets" {
  count         = length(var.bucket_names)
  name          = "malkania-${var.bucket_names[count.index]}"
  location      = "US"
  force_destroy = true
}
# Output the URLs of the created buckets
output "bucket_urls" {
  value = [for bucket_name in var.bucket_names : google_storage_bucket.buckets[bucket_name].url]
}
terraform {
  required_providers {
    google = {
      source = "hashicorp/google"
      version = "5.26.0"
    }
  }
}

provider "google" {
  project     = "testing-417202"
  region      = "eu-west1"
}
```

After the bucket creation created temporary 40 test files to be uploaded in 4 buckets 10 files each attaching screenshot for the same.

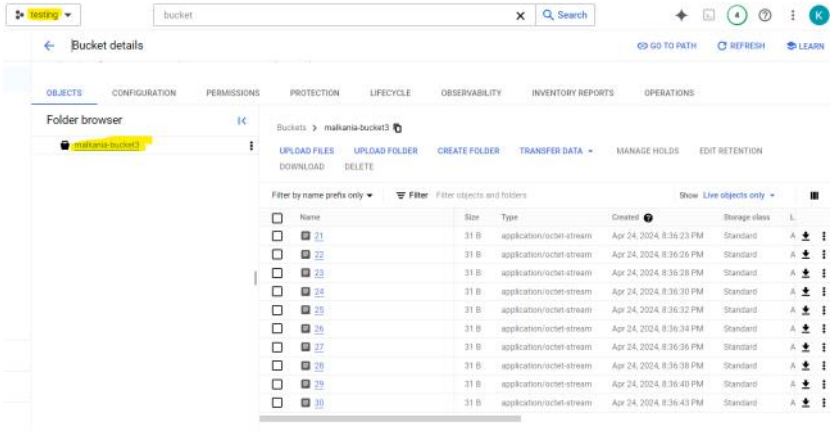
Bucket:: -1



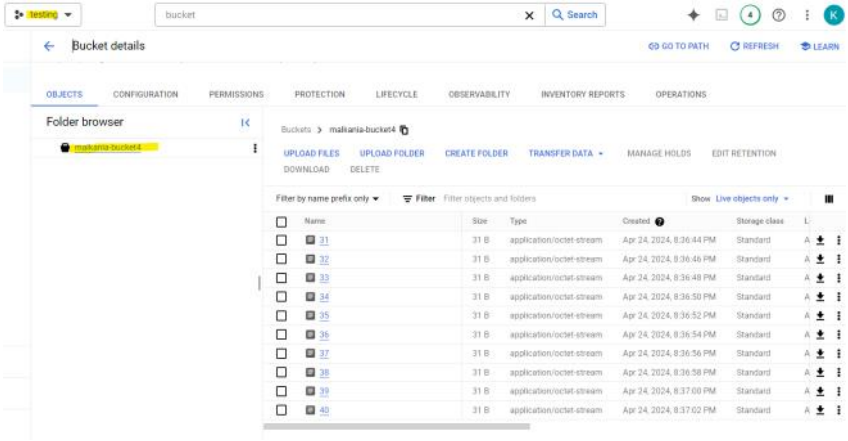

Bucket:: -2




Bucket:: -3



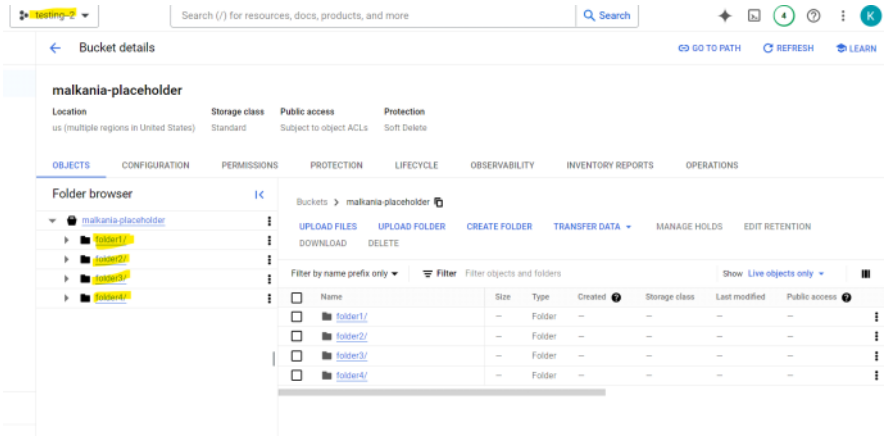

Bucket:: -4




Step 2::-
Create a gcp bucket in project 2 i.e testing-2 with 4 empty folders in it where data from 1st project bucket will be copied individually

```
# Create a GCS bucket
resource "google_storage_bucket" "my_bucket" {
  name          = "malkania-placeholder"
  location      = "US"
  force_destroy = true
}
# Create empty objects to mimic folders
resource "google_storage_bucket_object" "folder1" {
```

```
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder1/"
  content = " "
}
resource "google_storage_bucket_object" "folder2" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder2/"
  content = " "
}
resource "google_storage_bucket_object" "folder3" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder3/"
  content = " "
}
resource "google_storage_bucket_object" "folder4" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder4/"
  content = " "
}

terraform {
  required_providers {
    google = {
      source = "hashicorp/google"
      version = "5.26.0"
    }
  }
}
provider "google" {
  project     = "testing-2-421314"
  region      = "eu-west1"
}
```

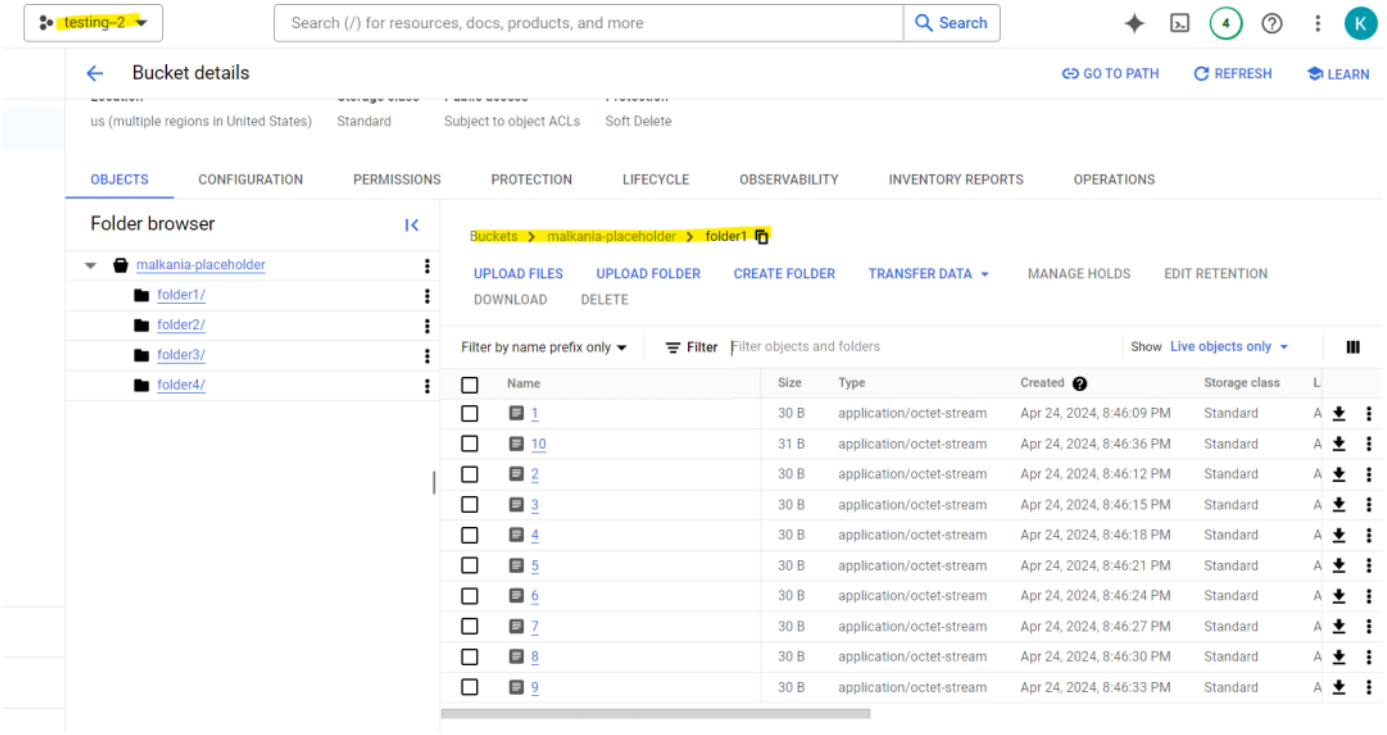



Step::-3 Copy files from project 1 bucket to project -2/bucket/folder

gsutil cp  gs://malkania-bucket1/8 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/9 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/10 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket2/11 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket3/29 gs://malkania-placeholder/folder3
gsutil cp  gs://malkania-bucket3/30 gs://malkania-placeholder/folder3
gsutil cp  gs://malkania-bucket4/31 gs://malkania-placeholder/folder4
gsutil cp  gs://malkania-bucket4/32 gs://malkania-placeholder/folder4

```
kumarkartikmk51@cloudshell:~/moving_buckets/test_1_project/files (testing-417202
#!/bin/bash
gsutil cp  gs://malkania-bucket1/1 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/2 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/3 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/4 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/5 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/6 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/7 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/8 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/9 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket1/10 gs://malkania-placeholder/folder1
gsutil cp  gs://malkania-bucket2/11 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/12 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/13 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/14 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/15 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/16 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/17 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/18 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/19 gs://malkania-placeholder/folder2
gsutil cp  gs://malkania-bucket2/20 gs://malkania-placeholder/folder2
```

It should be visible on the console of second project once copy is complete




Similar for all the other folders as well

Step::4  Comment the terraform code which is mentioned in step 1 it will destroy the buckets in original project i.e. test project

```
Plan: 0 to add, 0 to change, 4 to destroy.
google_storage_bucket.buckets[2]: Destroying... [id=malkania-bucket3]
google_storage_bucket.buckets[1]: Destroying... [id=malkania-bucket2]
google_storage_bucket.buckets[0]: Destroying... [id=malkania-bucket1]
google_storage_bucket.buckets[3]: Destroying... [id=malkania-bucket4]
google_storage_bucket.buckets[3]: Destruction complete after 6s
google_storage_bucket.buckets[1]: Destruction complete after 6s
google_storage_bucket.buckets[2]: Destruction complete after 6s
google_storage_bucket.buckets[0]: Destruction complete after 6s

Apply complete! Resources: 0 added, 0 changed, 4 destroyed.
kumarkartikmk51@cloudshell:~/moving_buckets/test_1_project (testing-417202)$
```

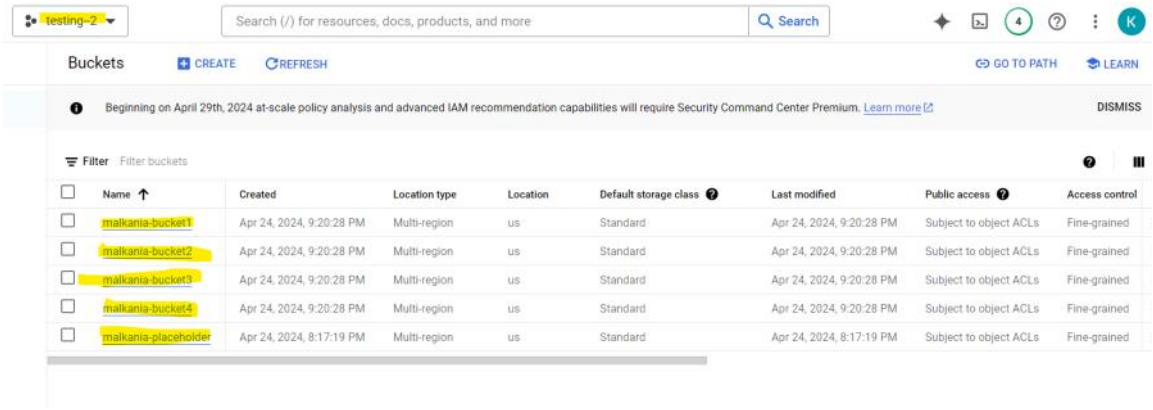
Step::5 append the code of step1 under step2 code it should look like below mentioned code::

```
# Create a GCS bucket
resource "google_storage_bucket" "my_bucket" {
  name          = "malkania-placeholder"
  location      = "US"
  force_destroy = true
}

# Create empty objects to mimic folders
resource "google_storage_bucket_object" "folder1" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder1/"
  content = " "
}

resource "google_storage_bucket_object" "folder2" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder2/"
  content = " "
}

resource "google_storage_bucket_object" "folder3" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder3/"
  content = " "
}

resource "google_storage_bucket_object" "folder4" {
  bucket = google_storage_bucket.my_bucket.name
  name   = "folder4/"
  content = " "
}
# Define the names of the buckets
variable "bucket_names" {
  default = ["bucket1", "bucket2", "bucket3", "bucket4"]
}

# Create GCS buckets
resource "google_storage_bucket" "buckets" {
  count         = length(var.bucket_names)
  name          = "malkania-${var.bucket_names[count.index]}"
  location      = "US"
  force_destroy = true
}
```

**Note::**Please make sure that it is not destroying the folders inside the placeholder bucket as data was copied manually and not via terraform (Usually it is not the case as it matched the infrastructure not the directory structure under it )
Try running terraform plan and make sure it does not destroy anything if so please use terraform import command mentioned below to update the state file

terraform import google_storage_bucket_object.folder1 gs://your-bucket-name/folder1/your-file-name

Once code is completed buckets should be visible in second project



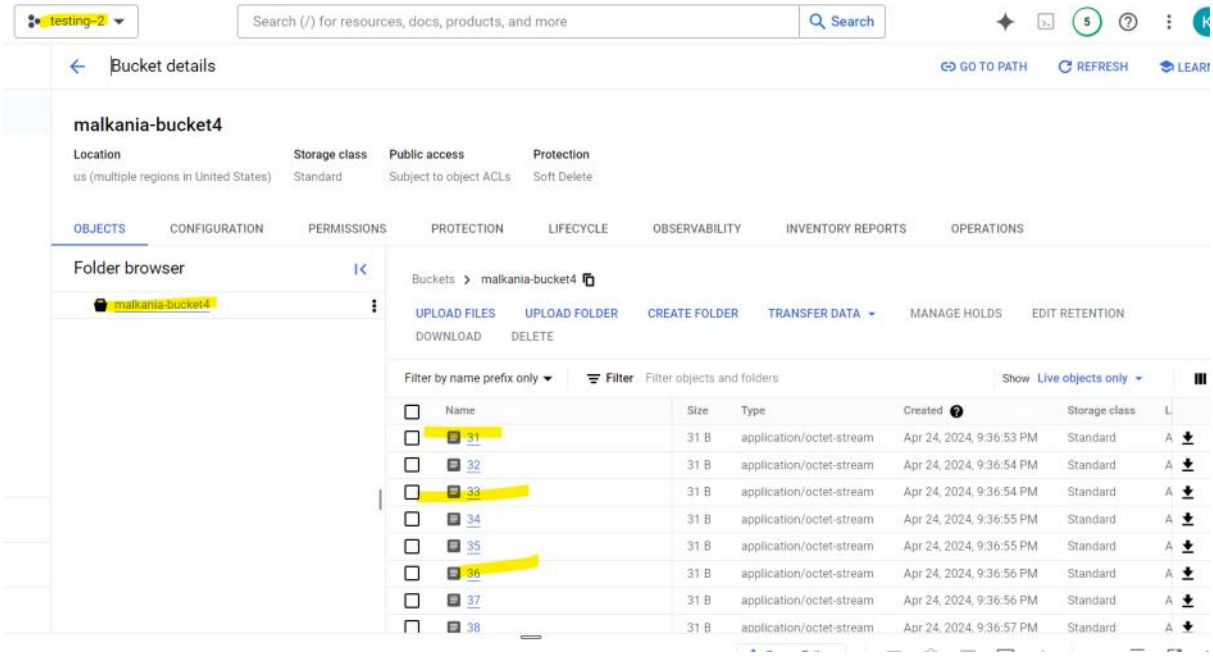

Step:: 6 Run below mentioned command to copy content from placeholder bucket to original buckets

gsutil cp gs://malkania-placeholder/folder1/* gs://malkania-bucket1/
gsutil cp gs://malkania-placeholder/folder2/* gs://malkania-bucket2/
gsutil cp gs://malkania-placeholder/folder3/* gs://malkania-bucket3/
gsutil cp gs://malkania-placeholder/folder4/* gs://malkania-bucket4/

```
Copying gs://malkania-placeholder/folder1/1 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/10 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/2 [Content-Type=application/octet-stream]...
- [3 files][   91.0 B/   91.0 B]
==> NOTE: You are performing a sequence of gsutil operations that may
run significantly faster if you instead use gsutil -m cp ... Please
see the -m section under "gsutil help options" for further information
about when gsutil -m can be advantageous.

Copying gs://malkania-placeholder/folder1/3 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/4 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/5 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/6 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/7 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/8 [Content-Type=application/octet-stream]...
Copying gs://malkania-placeholder/folder1/9 [Content-Type=application/octet-stream]...
- [10 files][  301.0 B/  301.0 B]
Operation completed over 10 objects/301.0 B.
```

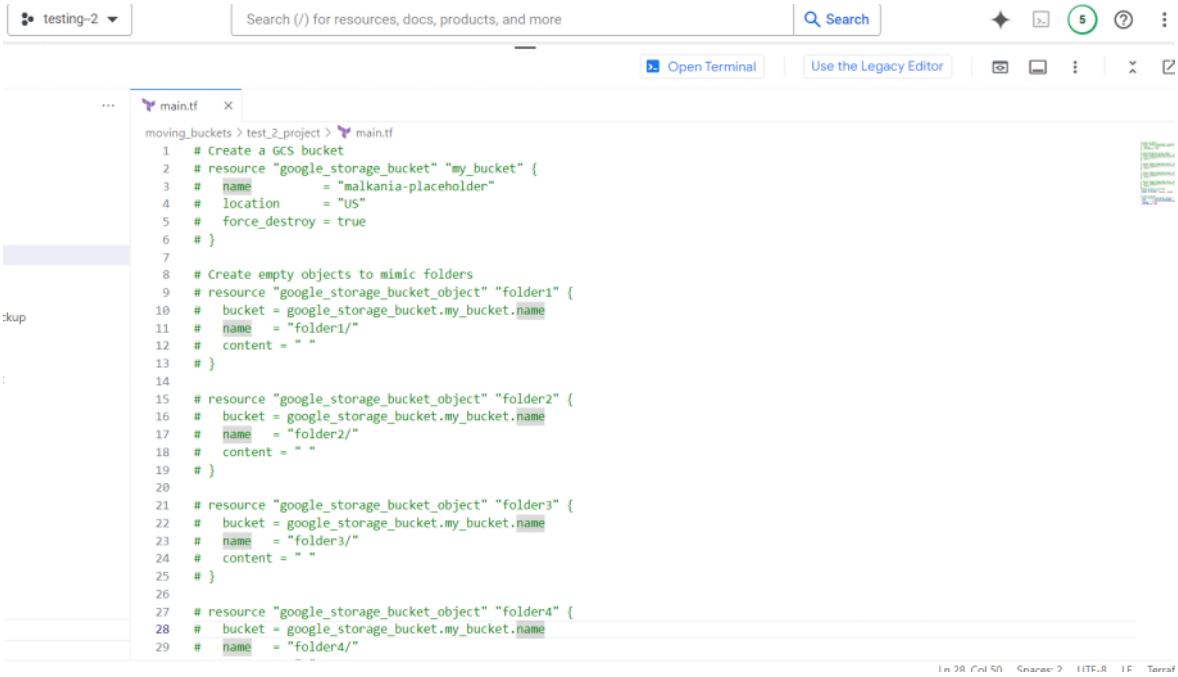
Verify::-

```
kumarkartikmk51@cloudshell:~ (testing-2-421314)$ gsutil ls gs://malkania-bucket1/|wc -l
10
kumarkartikmk51@cloudshell:~ (testing-2-421314)$ gsutil ls gs://malkania-bucket2/|wc -l
10
kumarkartikmk51@cloudshell:~ (testing-2-421314)$ gsutil ls gs://malkania-bucket3/|wc -l
10
kumarkartikmk51@cloudshell:~ (testing-2-421314)$ gsutil ls gs://malkania-bucket4/|wc -l
10
kumarkartikmk51@cloudshell:~ (testing-2-421314)$
```

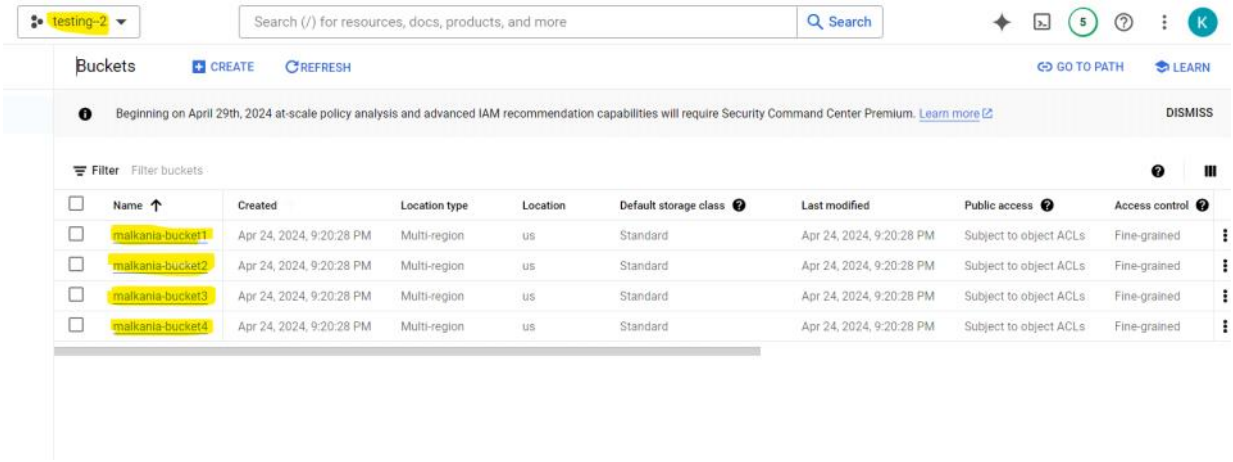



Step::6 Clean UP

Comment the code of steps 2 so that placeholder bucket and folders are removed




COMPLETED::-


testing-2
Search (/) for resources, docs, products, and more
Search
Buckets
CREATE
REFRESH
GO TO PATH
LEARN
Beginning on April 29th, 2024 at-scale policy analysis and advanced IAM recommendation capabilities will require Security Command Center Premium. Learn more
DISMISS
Filter
Filter buckets
Name
Created
Location type
Location
Default storage class
Last modified
Public access
Access control
malkania-bucket1
malkania-bucket2
malkania-bucket3
malkania-bucket4
Apr 24, 2024, 9:20:28 PM
Multi-region
us
Standard
Subject to object ACLs
Fine-grained