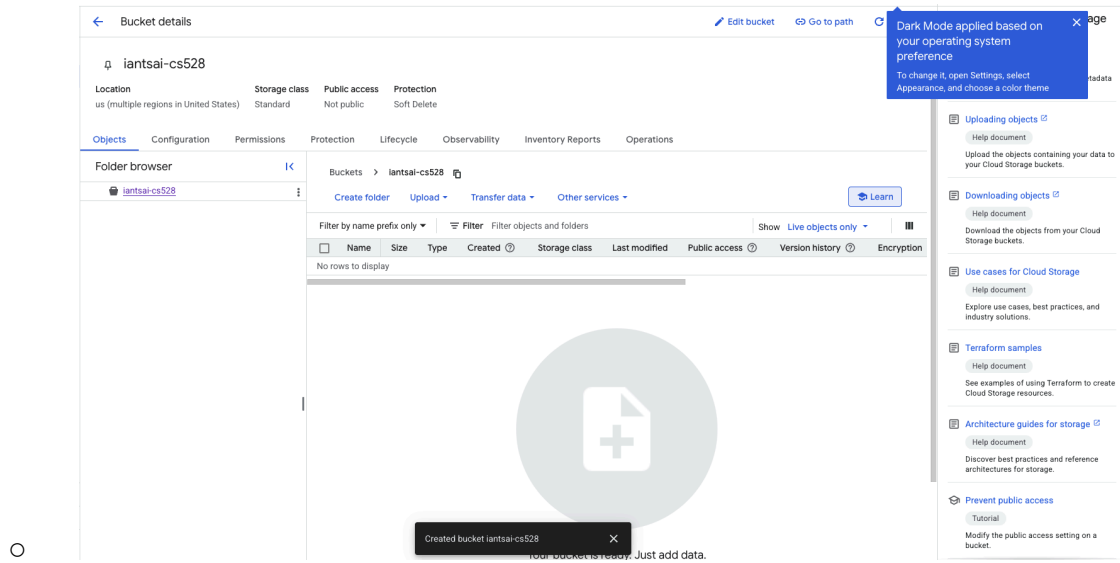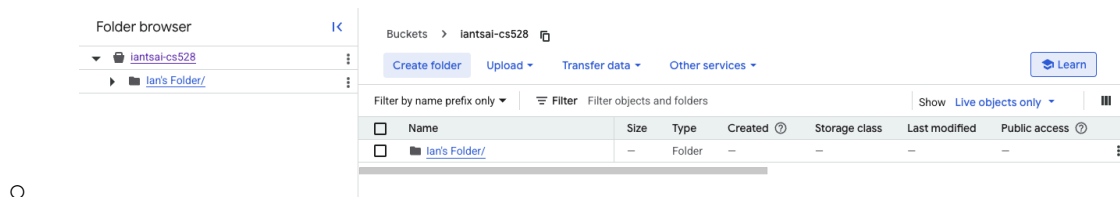# Cloud Console

1. Make a storage bucket
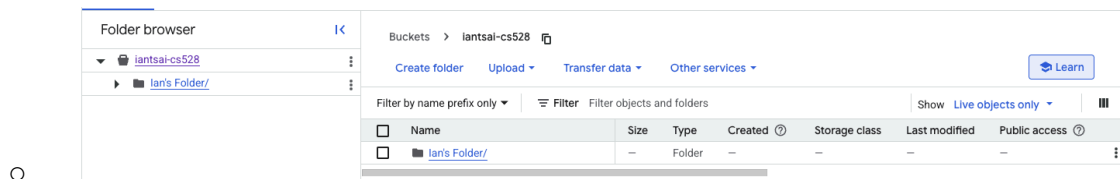

   ○
   ○ I created a bucket named 'iantsai-cs528'
2. Make a directory inside your bucket

   ○
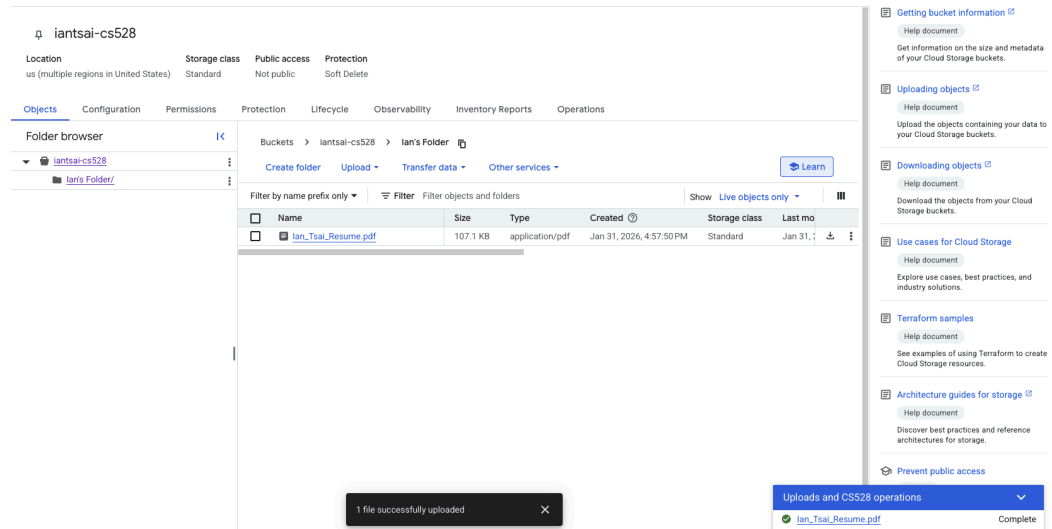   ○ I made a directory named 'Ian's Folder'
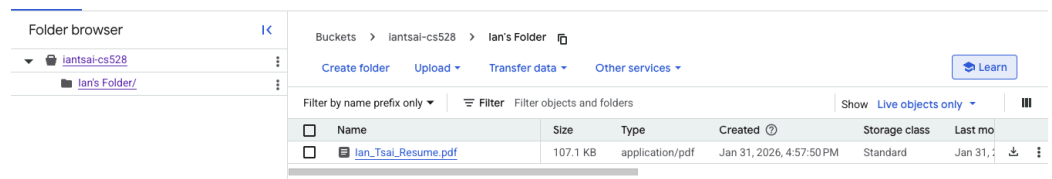3. List the directory inside your bucket

   ○
   ○ It's already shown in the console
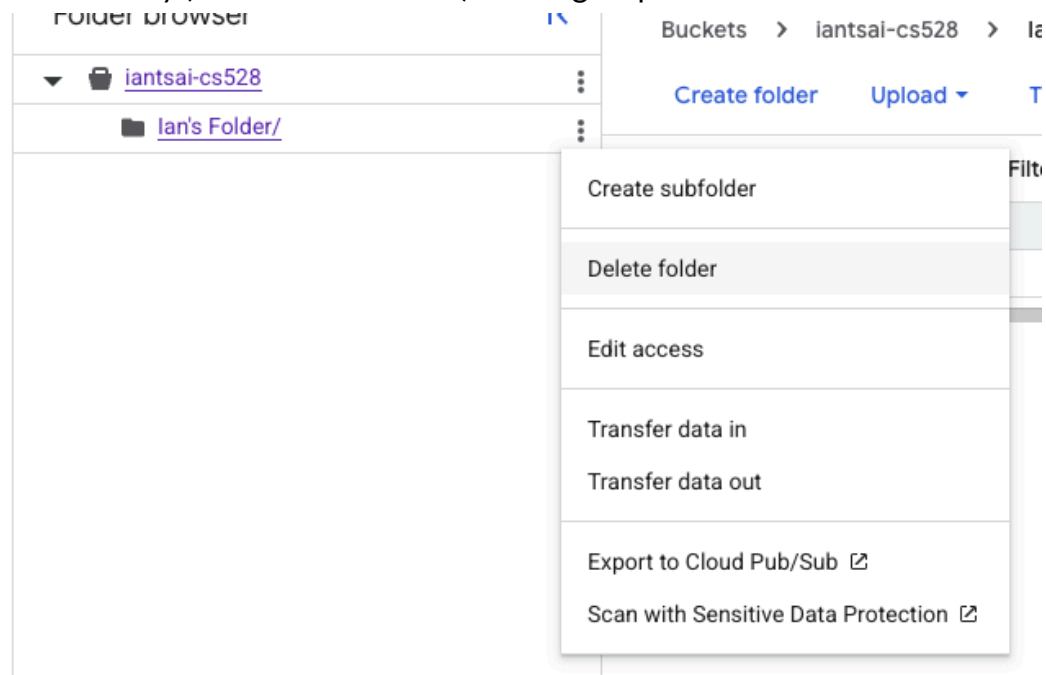4. Copy a file into your directory
   ○ I used the upload button to upload a file

5. List the file inside your directory

- ○
  - It's already shown in the console if I click in the directory I created 'Ian's Folder' (in this case)

6. Delete the directory (and the file inside it) in a single operation

- ○

iantsai-cs528/Ian's Folder/ deleted ✕
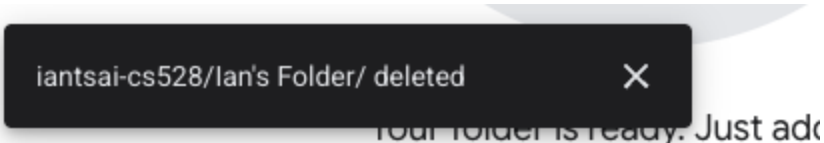
- ○
- ○ Clicked 'delete folder' which also deletes the file inside

7. Make a VM

- ○
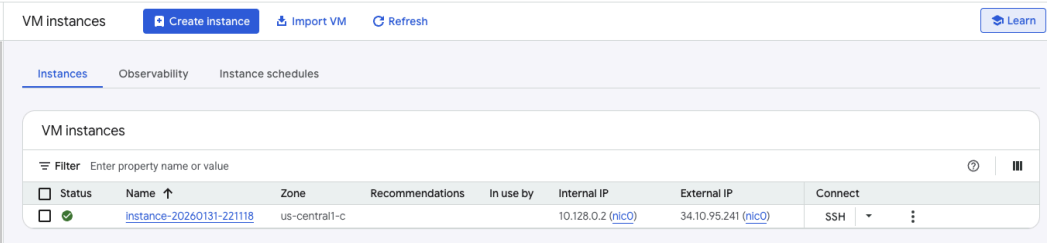
8. Suspend the VM

- ○
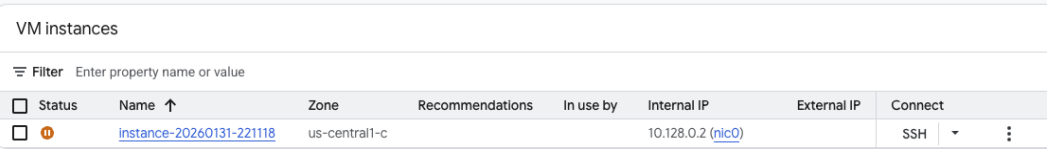
9. Stop the VM

- ○
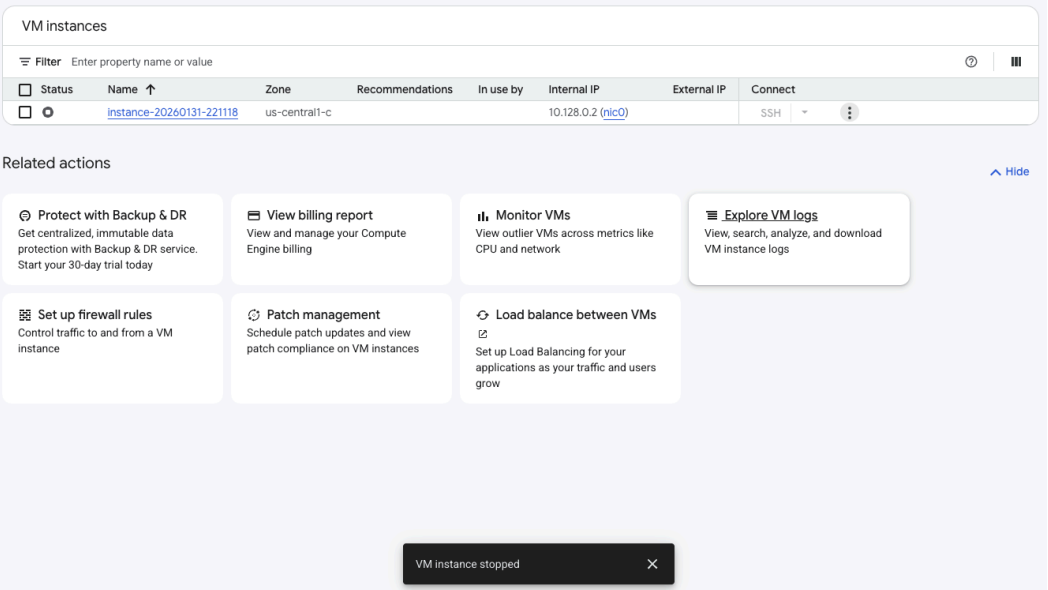
10. List all your VMs
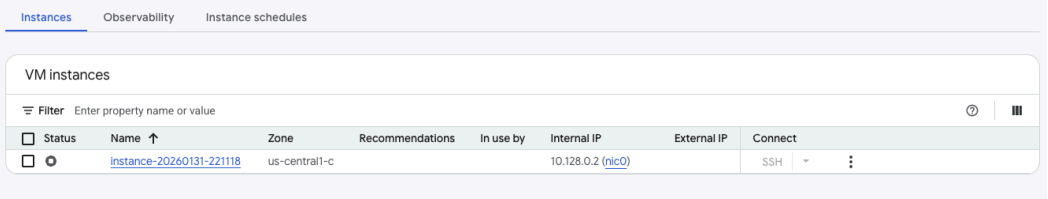
- ○
- ○ Directly shown on console without any click in buttons

11. Delete the VM
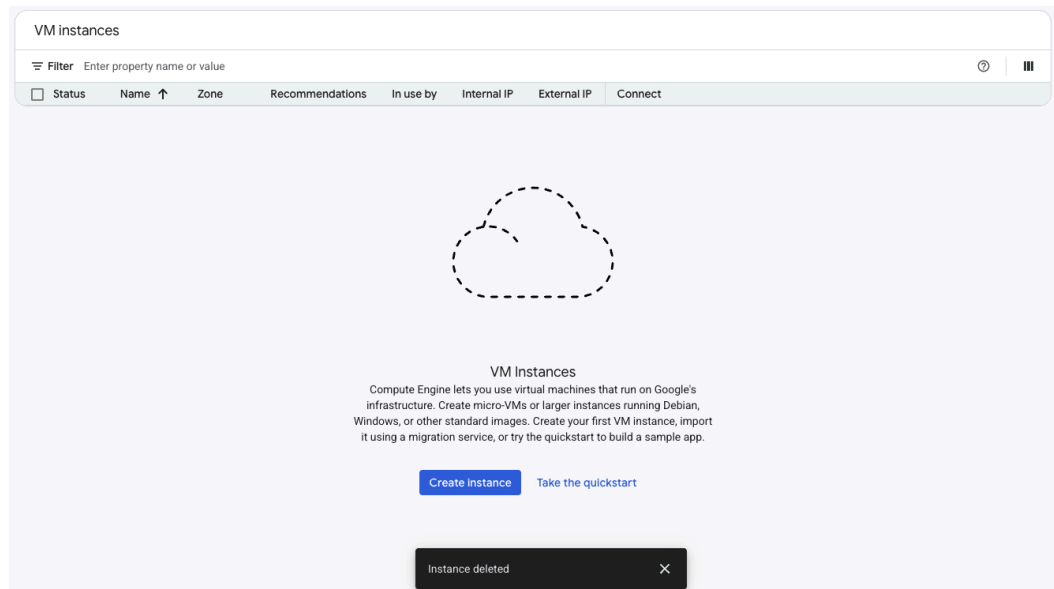
12. Make a service account and give it permissions to access your storage bucket
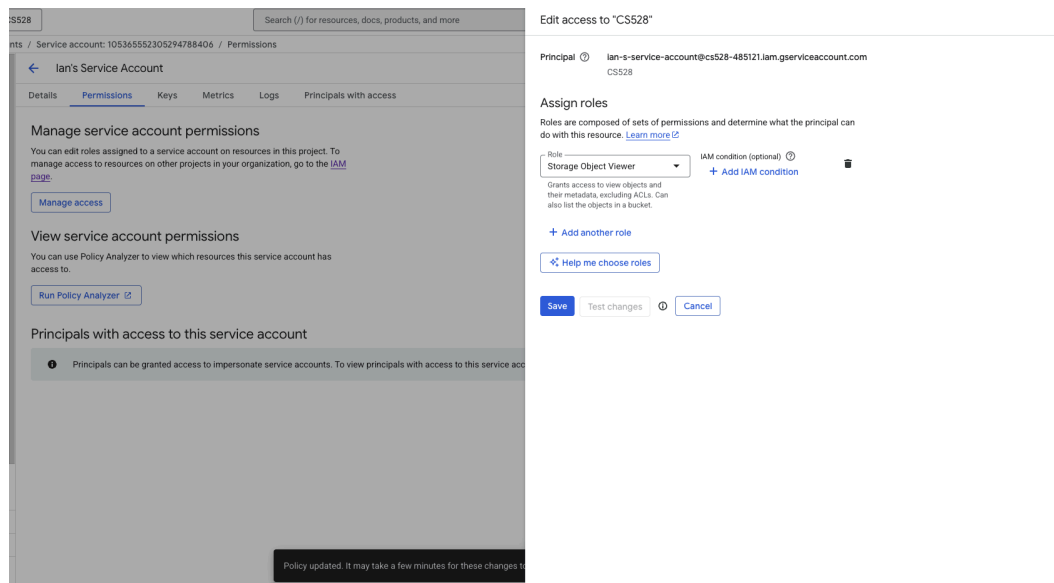
- ○
- ○ Created a service account named 'Ian's Service Account' that has access to storage buckets

13. List all your service accounts

- ○

14. Delete the service account

+ Create service account   🗑 Delete   👥 Manage access   🔄 Refresh

Service accounts for project "CS528"

A service account represents a Google Cloud service identity, such as code running on Compute Engine VMs, App Engine apps, or systems running outside Google. Learn more about service accounts. ↗

Organization policies can be used to secure service accounts and block risky service account features, such as automatic IAM Grants, key creation/upload, or the creation of service accounts entirely. Learn more about service account organization pol

	Email	Status	Name ↑	Description	Key ID	Key creation date	OAuth 2 Client ID ⓘ	Actions
☐	📧 156436261849-compute@developer.gserviceaccount.com	✅ Enabled	Compute Engine default service account		No keys		103803879824030529465	⋮

Account Ian's Service Account has been deleted.   ✕

15. Delete the storage bucket

Buckets   ➕ Create   🔄 Refresh   🔗 Go to path   🎓 Learn

Filter Filter buckets   ⓘ View options ▥

☐	Name ↑	Created	Location type	Location	Default storage class ⓘ	Last modified	Public access ⓘ	Access control ⓘ	P
No rows to display

Store and retrieve your data

Get started by creating a bucket — a container where you can organize and
control access to your data and files in Cloud Storage.

Create bucket   Take quickstart

Deleted 1 bucket   ✕

GCloud

Note:

- 'gcloud config set project cs528-485121' is how I enter my project

1. Make a storage bucket
   a.
   ```
   gcloud storage buckets create gs://iantsai-cs528 --location=us-central1

   Creating gs://iantsai-cs528/...
   ```
   b. Don't need to specify location too; if we don't specify, a location will be assigned
2. Make a directory inside your bucket
   a. Echo is needed to provide some form of input in this case empty content
   b. A placeholder '.keep' is needed as a destination object name needed when source is stdin
   c.
   ```
   echo "" | gcloud storage cp - gs://iantsai-cs528/Ian-Folder/.keep
   Copying file://- to gs://iantsai-cs528/Ian-Folder/.keep

   ..
   ```
3. List the directory inside your bucket
   a.
   ```
   gcloud storage ls gs://iantsai-cs528/
   gs://iantsai-cs528/Ian-Folder/
   ```
4. Copy a file into your directory
   a.
   ```
   echo "hello world" > hello.txt


   gcloud storage cp hello.txt gs://iantsai-cs528/Ian-Folder/hello.txt

   Copying file://hello.txt to gs://iantsai-cs528/Ian-Folder/hello.txt
     Completed files 1/1 | 12.0B/12.0B
   ```
5. List the file inside your directory
   a.
   ```
   gcloud storage ls gs://iantsai-cs528/Ian-Folder
   gs://iantsai-cs528/Ian-Folder/hello.txt
   ```
6. Delete the directory (and the file inside it) in a single operation

a.
```
 > @ ~  gcloud storage rm --recursive gs://iantsai-cs528/Ian-Folder
Removing objects:
Removing gs://iantsai-cs528/Ian-Folder/hello.txt#1769962477543588...
  Completed 1/1
```

b. '--recursive' is needed to remove all files inside

7. Make a VM

a.
```
 > @ ~  gcloud compute instances create ian-lab-vm --zone=us-central1-a

Created [https://www.googleapis.com/compute/v1/projects/cs528-485121/zones/us-central1-a/instances/ian-lab-vm].
WARNING: Some requests generated warnings:
 - You are creating a global DNS VM. VM instances using global DNS are vulnerable to cross-regional outages. To reduce the ri
sk of widespread service disruption, use zonal DNS instead. Learn more at https://cloud.google.com/compute/docs/networking/zo
nal-dns

NAME        ZONE          MACHINE_TYPE   PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP   STATUS
ian-lab-vm  us-central1-a  n1-standard-1              10.128.0.3   34.134.78.40  RUNNING
```

8. Suspend the VM

a.
```
 > @ ~  gcloud compute instances suspend ian-lab-vm
No zone specified. Using zone [us-central1-a] for instance: [ian-lab-vm].
Suspending instance(s) ian-lab-vm...done.
Updated [https://compute.googleapis.com/compute/v1/projects/cs528-485121/zones/us-central1-a/instances/ian-lab-vm].
 > @ ~
```

9. Stop the VM

a.
```
 > @ ~  gcloud compute instances stop ian-lab-vm
No zone specified. Using zone [us-central1-a] for instance: [ian-lab-vm].
Stopping instance(s) ian-lab-vm...done.
Updated [https://compute.googleapis.com/compute/v1/projects/cs528-485121/zones/us-central1-a/instances/ian-lab-vm].
```

10. List all your VMs

a.
```
 > @ ~  gcloud compute instances list
NAME        ZONE          MACHINE_TYPE   PREEMPTIBLE  INTERNAL_IP  EXTERNAL_IP  STATUS
ian-lab-vm  us-central1-a  n1-standard-1              10.128.0.3                TERMINATED
```

11. Delete the VM

a.
```
 > @ ~  gcloud compute instances delete ian-lab-vm
No zone specified. Using zone [us-central1-a] for instance: [ian-lab-vm].
The following instances will be deleted. Any attached disks configured to be auto-deleted will be deleted unless they are
attached to any other instances or the `--keep-disks` flag is given and specifies them for keeping. Deleting a disk is
irreversible and any data on the disk will be lost.
 - [ian-lab-vm] in [us-central1-a]

Do you want to continue (Y/n)?  y

Deleted [https://www.googleapis.com/compute/v1/projects/cs528-485121/zones/us-central1-a/instances/ian-lab-vm].
```

12. Make a service account and give it permissions to access your storage bucket

a.
```
 > @ ~    gcloud iam service-accounts create ian-sa
Created service account [ian-sa].
```

b.
```
gcloud storage buckets add-iam-policy-binding gs://iantsai-cs528 \
--member="serviceAccount:ian-sa@cs528-485121.iam.gserviceaccount.com" \
--role="roles/storage.objectAdmin"

bindings:
- members:
  - projectEditor:cs528-485121
  - projectOwner:cs528-485121
  role: roles/storage.legacyBucketOwner
- members:
  - projectViewer:cs528-485121
  role: roles/storage.legacyBucketReader
- members:
  - serviceAccount:ian-sa@cs528-485121.iam.gserviceaccount.com
  role: roles/storage.objectAdmin
etag: CAI=
kind: storage#policy
resourceId: projects/_/buckets/iantsai-cs528
version: 1
```

13. List all your service accounts

a.
```
gcloud iam service-accounts list

DISPLAY NAME                              EMAIL                                                      DISABLED
Compute Engine default service account   156436261849-compute@developer.gserviceaccount.com         False
                                         ian-sa@cs528-485121.iam.gserviceaccount.com                False
```

14. Delete the service account

a.
```
gcloud iam service-accounts delete ian-sa@cs528-485121.iam.gserviceaccount.com
You are about to delete service account [ian-sa@cs528-485121.iam.gserviceaccount.com]

Do you want to continue (Y/n)?  y

deleted service account [ian-sa@cs528-485121.iam.gserviceaccount.com]
```

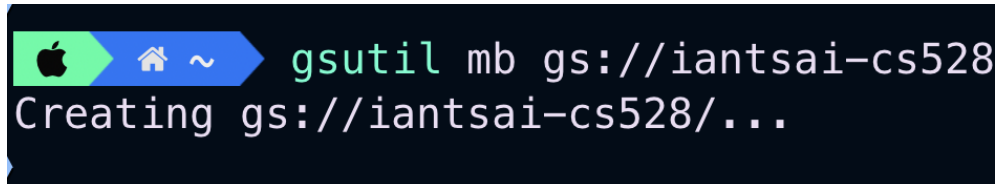15. Delete the storage bucket

a.
```
gcloud storage buckets delete gs://iantsai-cs528
Removing gs://iantsai-cs528/...
  Completed 1/1
```
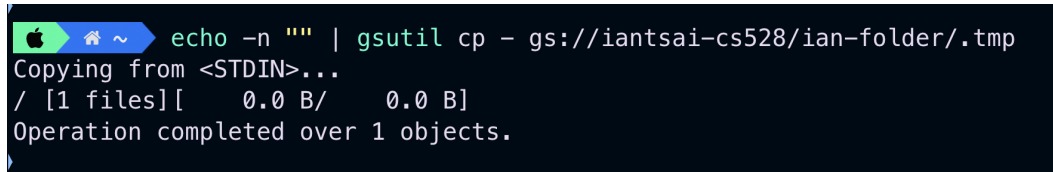
gsutil

1. Make a storage bucket
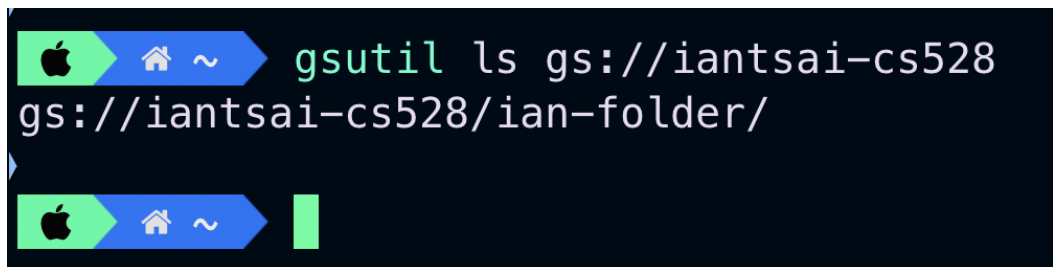
   - ```
     gsutil mb gs://iantsai-cs528
     Creating gs://iantsai-cs528/...
     ```

2. Make a directory inside your bucket

   - ```
     echo -n "" | gsutil cp - gs://iantsai-cs528/ian-folder/.tmp
     Copying from <STDIN>...
     / [1 files][    0.0 B/    0.0 B]
     Operation completed over 1 objects.
     ```
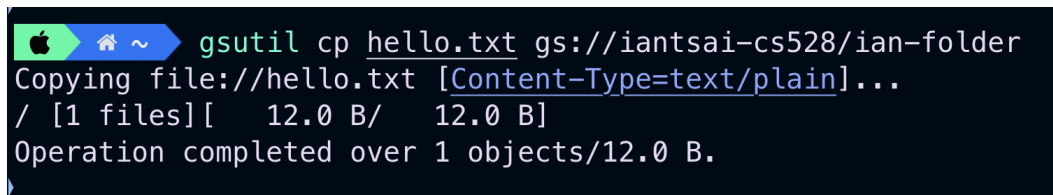
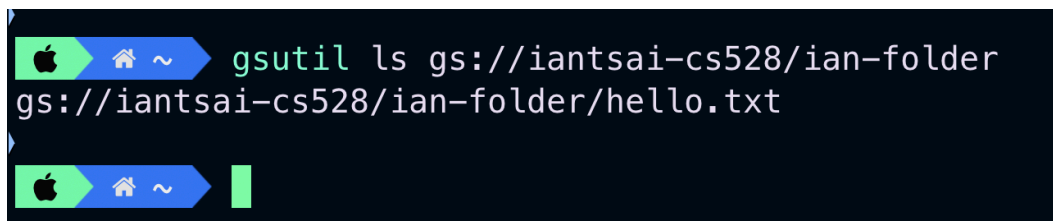3. List the directory inside your bucket

   - ```
     gsutil ls gs://iantsai-cs528
     gs://iantsai-cs528/ian-folder/
     ```

4. Copy a file into your directory

   - ```
     gsutil cp hello.txt gs://iantsai-cs528/ian-folder
     Copying file://hello.txt [Content-Type=text/plain]...
     / [1 files][   12.0 B/   12.0 B]
     Operation completed over 1 objects/12.0 B.
     ```
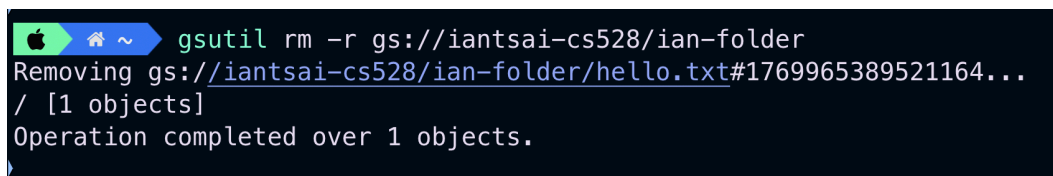
5. List the file inside your directory

   - ```
     gsutil ls gs://iantsai-cs528/ian-folder
     gs://iantsai-cs528/ian-folder/hello.txt
     ```

6. Delete the directory (and the file inside it) in a single operation

   - ```
     gsutil rm -r gs://iantsai-cs528/ian-folder
     Removing gs://iantsai-cs528/ian-folder/hello.txt#1769965389521164...
     / [1 objects]
     Operation completed over 1 objects.
     ```

   - '-r' = recursive

7. Make a VM

   - Does not apply

8. Suspend the VM
    ○ Does not apply
9. Stop the VM
    ○ Does not apply
10. List all your VMs
    ○ Does not apply
11. Delete the VM
    ○ Does not apply
12. Make a service account and give it permissions to access your storage bucket
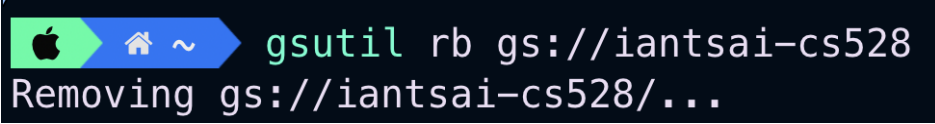   ○ Does not apply
13. List all your service accounts
    ○ Does not apply
14. Delete the service account
    ○ Does not apply
15. Delete the storage bucket

```
  ~   gsutil rb gs://iantsai-cs528
Removing gs://iantsai-cs528/...
```

    ○
    ○ 'Rb' = remove bucket