

Placement Empowerment Program

Cloud Computing and DevOps Centre

Use Cloud Storage

“Create a storage bucket on your cloud platform and upload/download files. Configure access permissions for the bucket.”

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Introduction

Cloud storage is a scalable and reliable solution for storing and managing data in the cloud. It enables users to store, retrieve, and share files efficiently without the need for on-premises hardware. Cloud storage services offer features like versioning, encryption, access control, and lifecycle management, making them ideal for various applications, from backups to data analytics

Overview

This Proof of Concept (POC) demonstrates how to create a cloud storage bucket, upload/download files, and configure access permissions. The POC will utilize **Amazon S3 (Simple Storage Service)** as the cloud storage platform, allowing users to securely manage their data. The same principles can be applied to other cloud providers like Google Cloud Storage or Azure Blob Storage.

Objective

The primary objectives of this POC are:

- **Create a storage bucket** in AWS S3.
- **Upload and download files** to/from the bucket.
- **Configure access permissions** to manage who can read, write, or delete objects in the bucket.
- **Test access control** by restricting or granting permissions to specific users or groups.

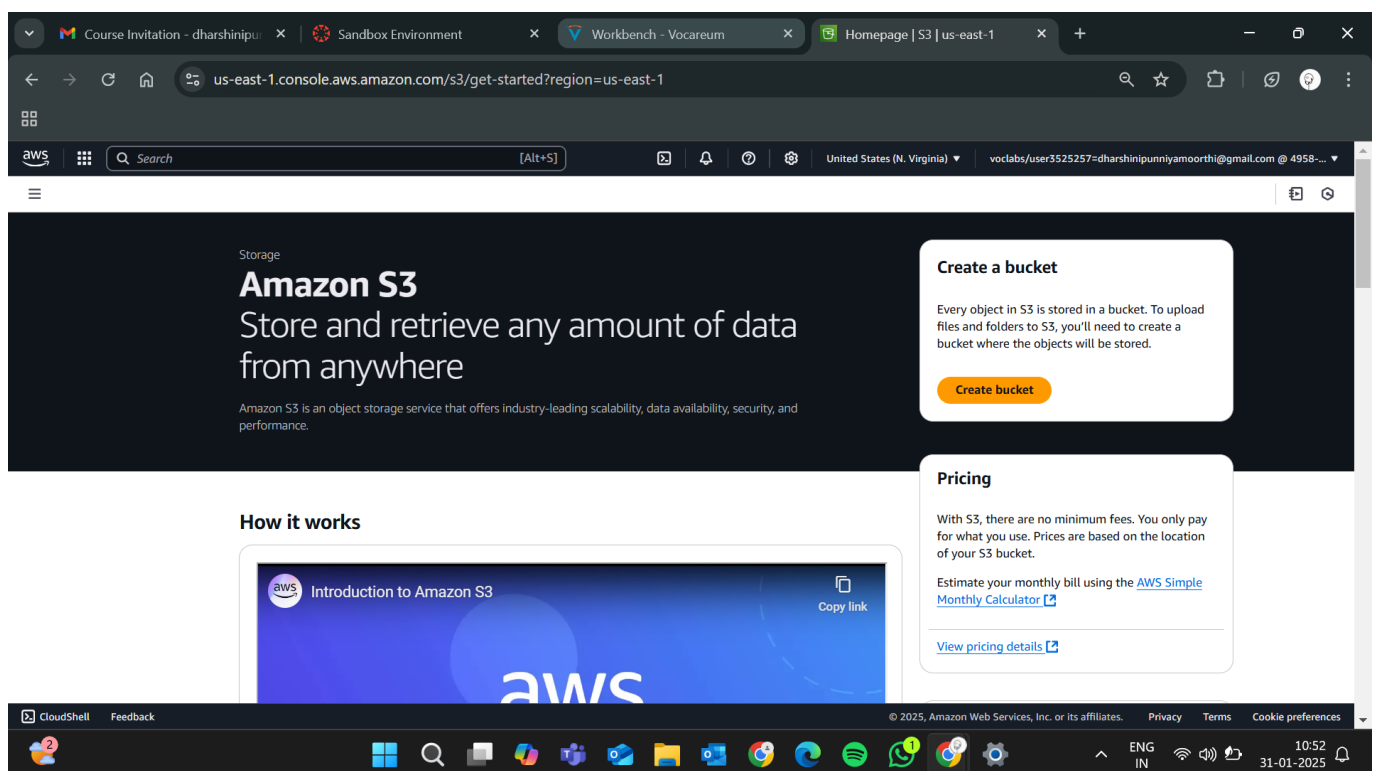
Important Concepts

- **Scalability:** Cloud storage grows with demand, eliminating the need for additional infrastructure.
- **Security:** Configurable access control and encryption protect sensitive data.
- **Durability & Reliability:** AWS S3 provides high availability and data redundancy.
- **Cost-Effectiveness:** Pay only for the storage used, reducing overall costs.
- **Easy Integration:** Cloud storage can be integrated with other cloud services like AWS Lambda, CloudFront, and RDS for advanced applications.

Step-by-Step Overview

Step1:

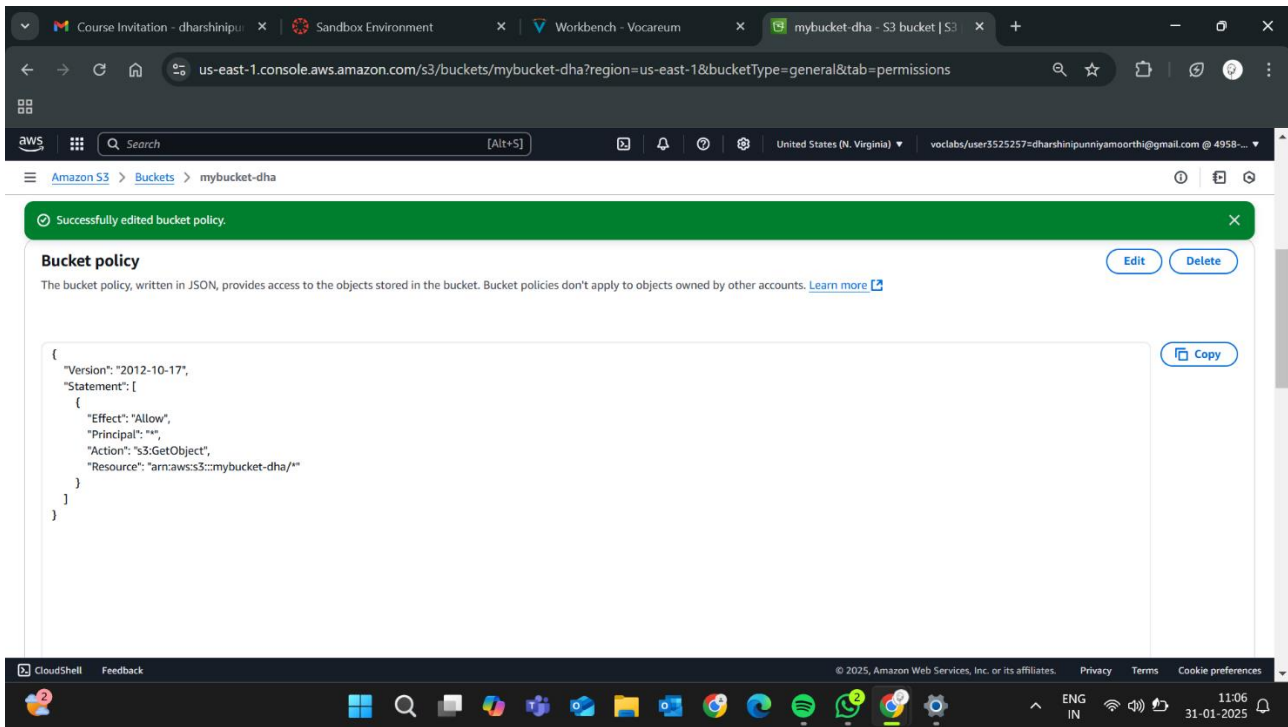
Go to the AWS Management Console, Search for and click on S3



Step 2 :

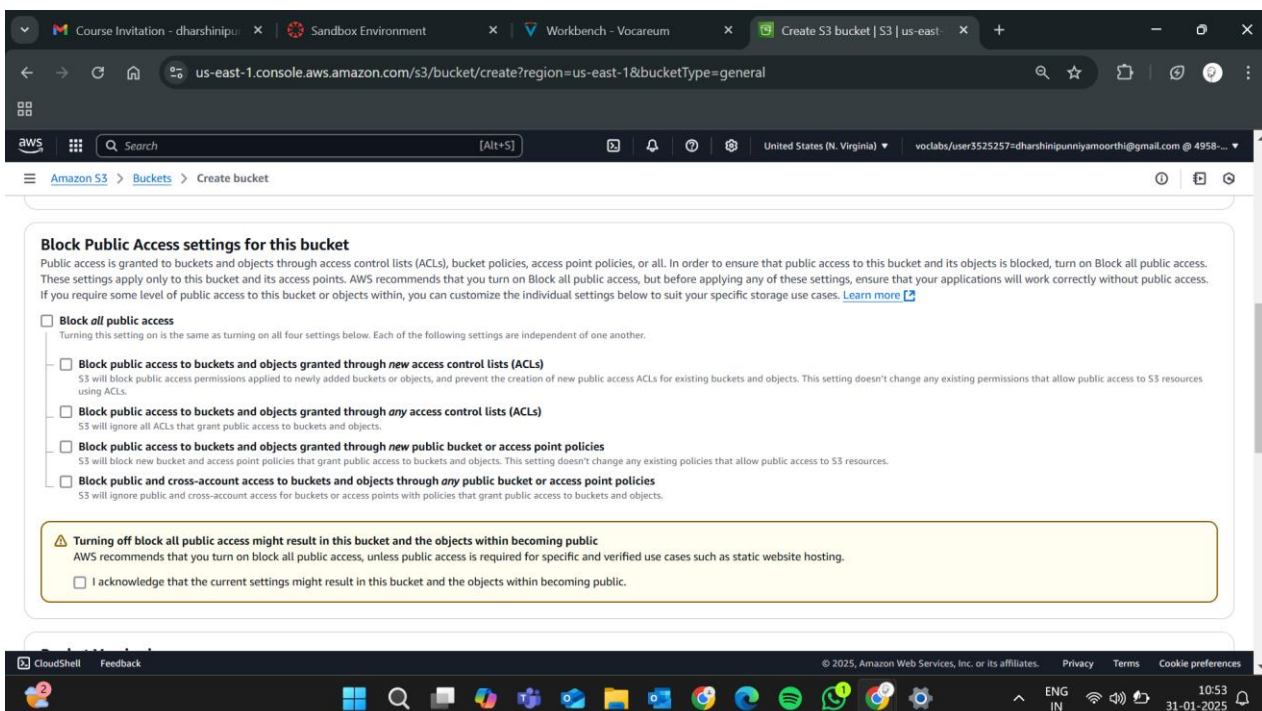
Create an S3 Storage Bucket

1. Navigate to **Amazon S3** service.
2. Click on **"Create bucket"** and provide a unique bucket name



Step 3:

Leave **"Block all public access"** enabled for now (you can modify it later).



Step 4:

Click "Create bucket".

The screenshot shows the AWS S3 console interface. The browser address bar displays `us-east-1.console.aws.amazon.com/s3/buckets?region=us-east-1&bucketType=general`. The page header includes the AWS logo, a search bar, and navigation links for 'Amazon S3' and 'Buckets'. A banner at the top indicates an 'Account snapshot - updated every 24 hours' with a 'View Storage Lens dashboard' link. Below this, there are tabs for 'General purpose buckets' (selected) and 'Directory buckets'. The 'General purpose buckets' section shows a list of buckets with columns for Name, AWS Region, IAM Access Analyzer, and Creation date. A single bucket named 'mybucket-dha' is listed in the US East (N. Virginia) region, created on January 31, 2025. To the right of the bucket list, there are buttons for 'Copy ARN', 'Empty', 'Delete', and a prominent orange 'Create bucket' button.

This screenshot shows the bottom of the screen, including the Windows taskbar and system tray. The taskbar contains icons for various applications like CloudShell, Feedback, and several utility icons. The system tray on the right shows the date and time as 10:58 on 31-01-2025, along with network and volume icons.

Step 5:

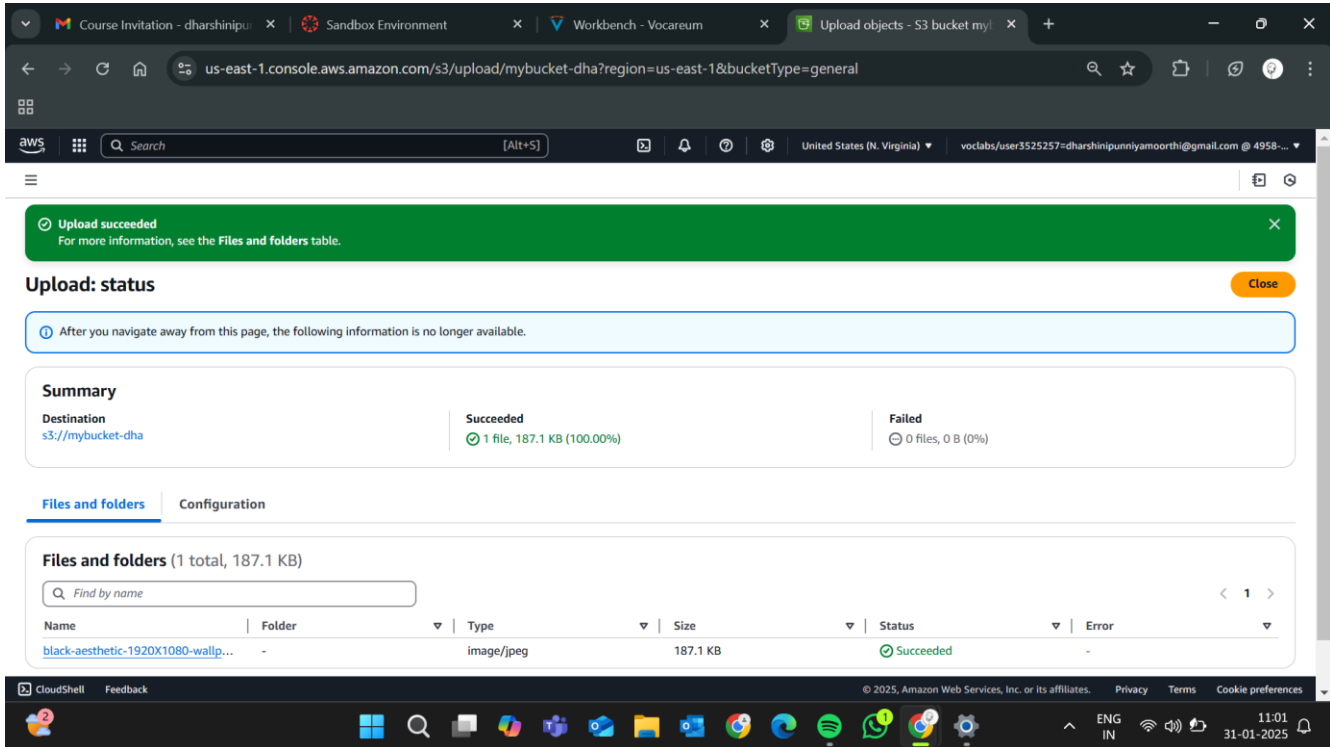
Open your newly created bucket from the S3 console.

The screenshot shows the AWS S3 console interface for the 'mybucket-dha' bucket. The browser address bar displays `us-east-1.console.aws.amazon.com/s3/buckets/mybucket-dha?region=us-east-1&bucketType=general&tab=objects`. The page header includes the AWS logo, a search bar, and navigation links for 'Amazon S3' and 'Buckets'. Below this, there are tabs for 'Objects' (selected), 'Metadata', 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. The 'Objects' section shows a list of objects with columns for Name, Type, Last modified, Size, and Storage class. A message states 'No objects' and 'You don't have any objects in this bucket.' with an 'Upload' button. To the right of the object list, there are buttons for 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', 'Create folder', and 'Upload'.

Step 6:

Click "Upload" and then,

Drag and drop your file(s) or use the Add files button. Click Upload to complete.

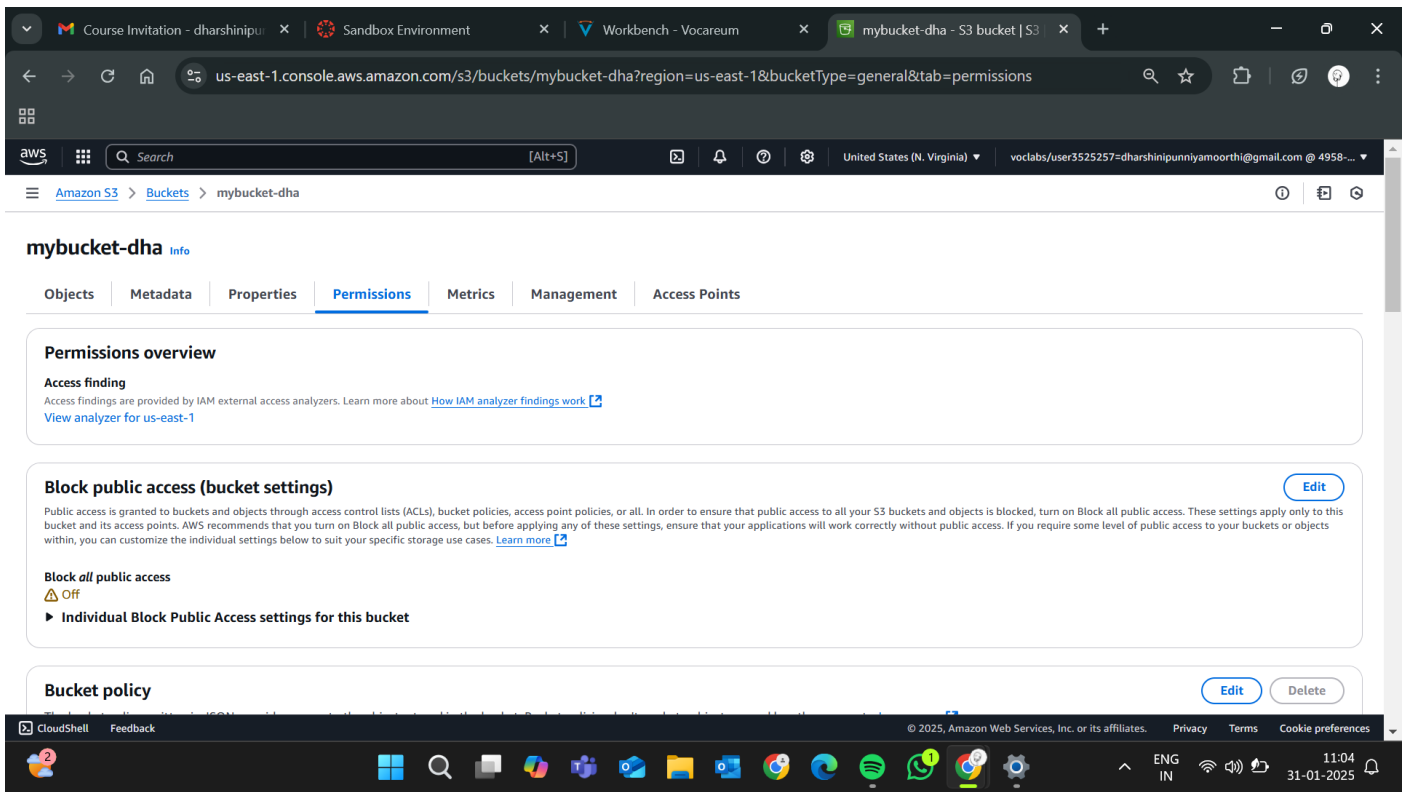


Step 7:

Go to the uploaded file in your bucket. Click the file name to open its details. Select Download to save the file locally.

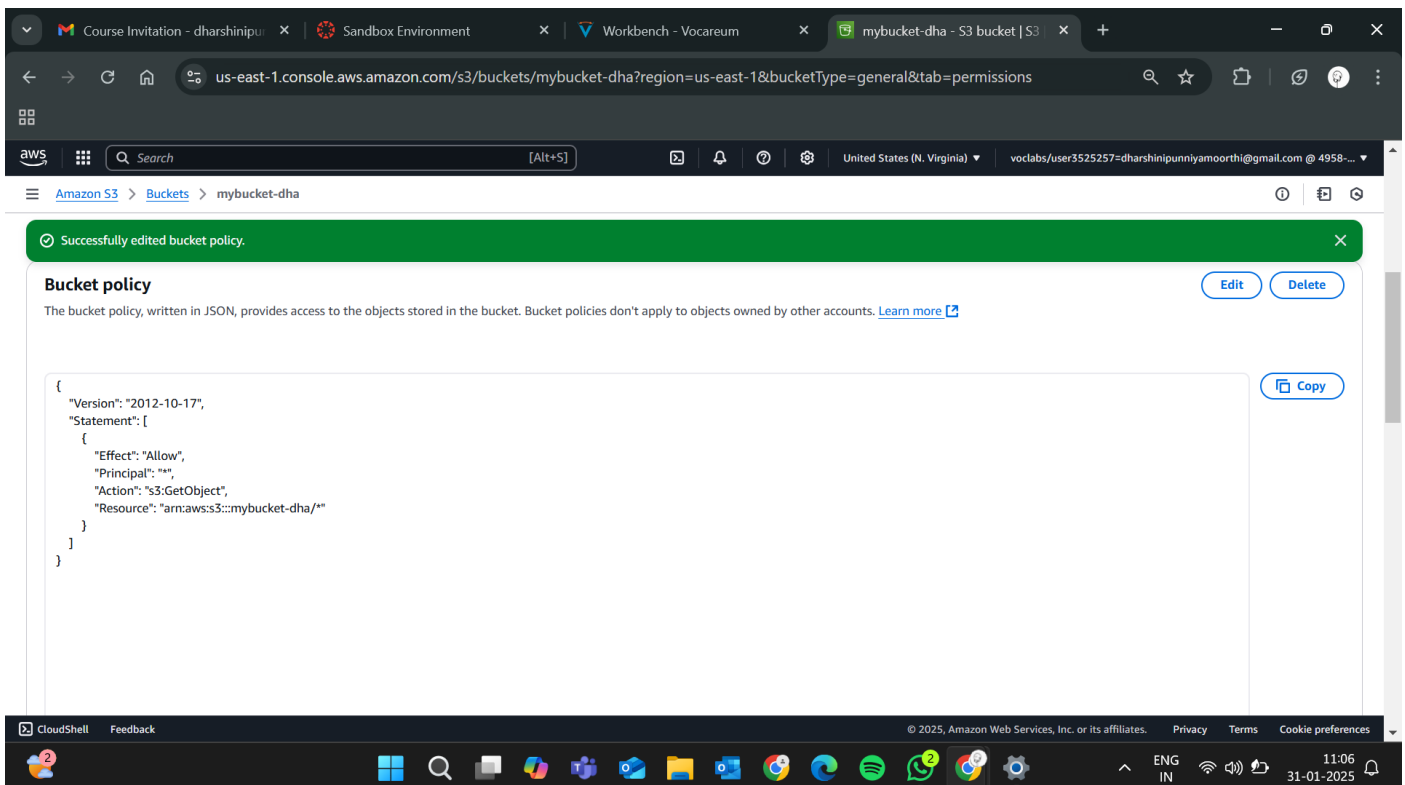
Step 8:

- Open your bucket and navigate to the "**Permissions**" tab.
- Under Block public access, click Edit and uncheck "**Block all public access**". Confirm by typing "**confirm**" and save.



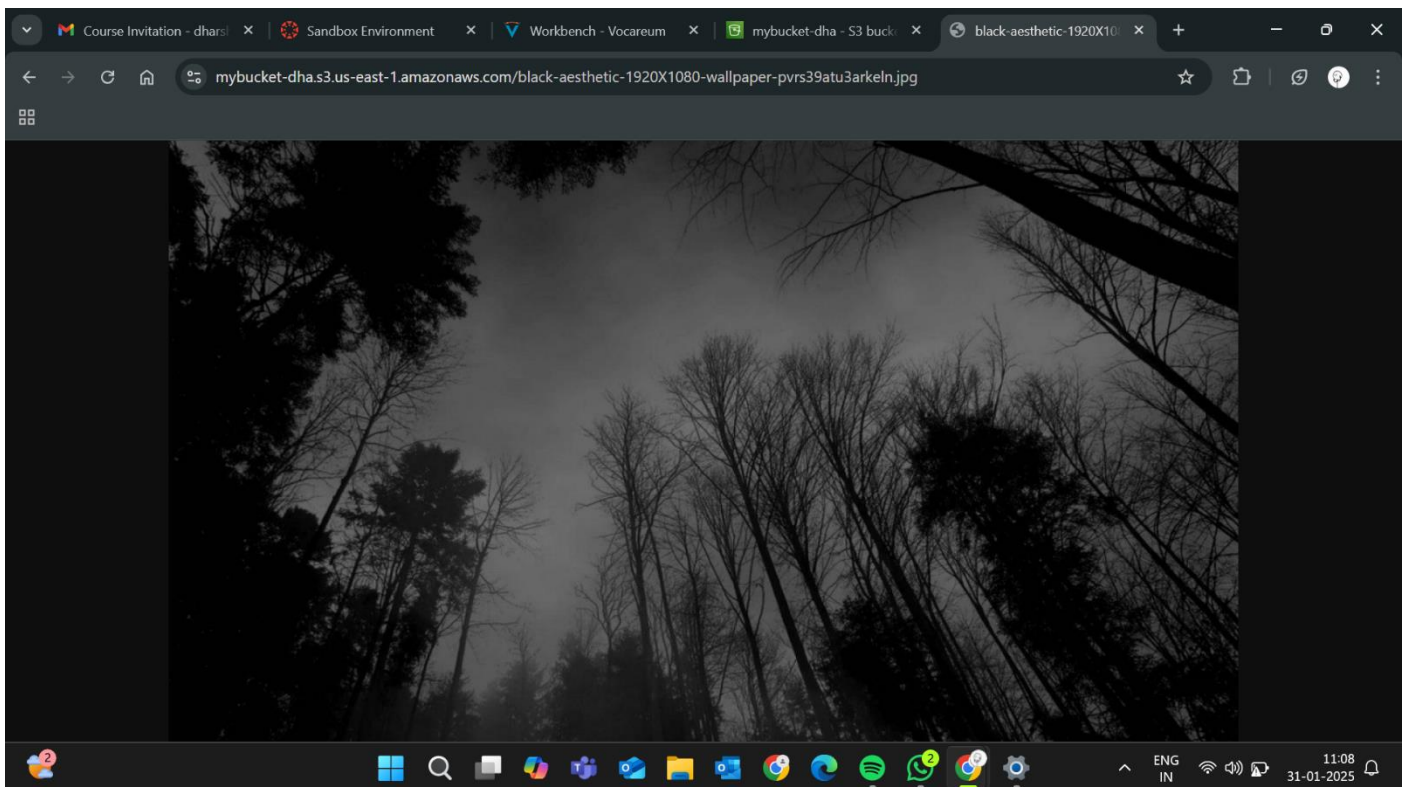
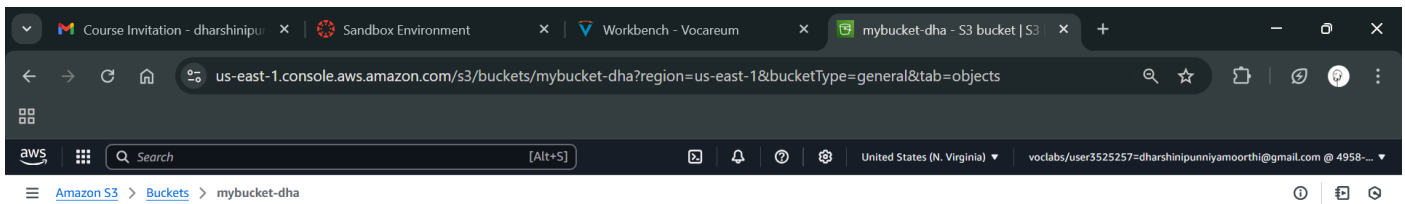
Step 9 :

In the "**Permissions**" tab, scroll to Bucket Policy and click Edit. Replace your-bucket-name with your actual bucket name. Save changes.



Step10:

Use the S3 bucket URL or public file URL to test access permissions.



Expected Outcome:

By completing this POC, you will:

1. Successfully create an AWS S3 bucket and perform file upload/download operations.
2. Configure and validate access permissions, ensuring secure or public access as needed.

Gain a solid understanding of S3's functionality, enabling its use in real-world cloud-based applications