Serverless File Sharing Applications

A Project Report Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Bachelor of Science (Honors) in Computer Science with Specialization in Cloud Computing and Big data

Submitted by
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(R21DB012)

Under the guidance of

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External Guide
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SCHOOL OF COMPUTER SCIENCE AND APPLICATIONS

Kattigenahalli, Yelahanka, Bengaluru-560 064
www.reva.edu.in

December 2023

CERTIFICATE

This is to certify that the Minor project work entitled "SERVERLESS FILE SHARING APPLICATIONS" submitted to the School of Computer Science and Applications, REVA University in partial fulfilment of the requirements for the award of the Degree of Bachelor of Science (Research) in Computer Science with specialization in Cloud Computing and Big data in the academic year 2023-2024 is a record of the original work done by Devika (R21DB012) and Puneeth Raj (R21DB048) under our supervision and guidance and that this Minor project work has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or similar title to any candidate of any University.

Place: Bangalore
Date:

Internal Guide Signature:

External Guide Signature: Signature of the Program Co-Ordinator

Signature of the Director

Submitted for the University Examination held on_____

Internal Examiner External Examiner

DECLARATION

I, DEVIKA.G (R21DB012) and PUNEETH RAJ. K (R21DB048) hereby declare that this Minor project work entitled "SERVERLESS FILE SHARING APPLICATION" under the guidance of Dr. Sasi Kala and MR. Priyadarshi and that this Minor project work has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or similar title to any candidate of any University.

Signature of the Candidate

Date:

Countersigned by

Signature of the Internal guide

Signature of the External guide

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INTRODUCTION

1.1 INTRODUCTION TO THE PROJECT

In today's fast-paced digital landscape, efficient and secure file sharing is a cornerstone of modern collaboration. Our project centers on the creation of a serverless file sharing application using AWS services. This application is designed to offer users a straightforward yet robust platform for sharing files, bolstered by the scalability and security inherent in serverless architecture. With the increasing demand for remote work and seamless data exchange, our project aims to streamline file sharing, promoting productivity and ease of use in the cloud.

1.2 STATEMENT OF THE PROBLEM

In an era characterized by remote work and digital collaboration, the existing methods for file sharing often lack the agility, security, and user-friendliness required for modern workflows. Traditional file-sharing solutions may be cumbersome to manage, prone to security vulnerabilities, and lacking in scalability. This project addresses the pressing need for an advanced file-sharing platform that leverages serverless architecture and AWS services to provide an efficient, secure, and user-centric solution for file sharing in the cloud.

SYSTEM ANALYSIS

2.1 Existing System

The current landscape for file sharing predominantly relies on traditional methods, including on-premises servers and basic cloud storage solutions. These systems often suffer from scalability issues, security concerns, complex infrastructure requirements, and limited usability. Additionally, they may not adequately support remote work and collaboration, leading to performance bottlenecks and increased costs over time. To address these limitations, there is a growing need for a more agile, secure, and user-friendly file-sharing solution. This project seeks to develop a serverless file sharing application using AWS services, offering a modern and efficient alternative to traditional systems.

2.2 Proposed System

The proposed system represents a paradigm shift in file sharing, introducing a serverless architecture underpinned by AWS services. Unlike traditional methods, this system offers a highly adaptable, secure, and user-centric approach to file sharing in the cloud. It overcomes the limitations of existing systems by providing effortless scalability, robust security features including user authentication and access control, and an intuitive and visually appealing user interface.

At its core, this system leverages the power of AWS services such as Amazon DynamoDB for efficient metadata management, Amazon S3 for reliable and scalable file storage, and AWS Lambda for serverless computing. By harnessing these capabilities, the proposed system streamlines file sharing processes and enhances user productivity, making it an ideal solution for modern work environments characterized by remote collaboration and digital interaction. With this innovative approach, the proposed system not only addresses the shortcomings of the existing systems but also sets a new standard for cloud-based file sharing, emphasizing ease of use, security, and scalability.

Advantages of the Proposed System

Scalability: The proposed system offers seamless scalability to accommodate growing data and user demands, ensuring optimal performance at all times.

Security: Robust security measures, including user authentication and access control, protect sensitive data from unauthorized access.

Usability: A modern and intuitive user interface enhances the overall user experience, making file sharing effortless and efficient.

Cost-Efficiency: By leveraging AWS serverless architecture, the system minimizes operational costs, making it a cost-effective solution.

Remote Collaboration: The system supports remote work and collaboration, allowing geographically dispersed teams to share and access files with ease.

High Availability: Utilizing AWS resources ensures high availability and redundancy, reducing the risk of downtime and data loss.

Streamlined Processes: The system streamlines file sharing processes, increasing productivity and user satisfaction.

Innovation: It sets a new standard for cloud-based file sharing, emphasizing modernization, security, and scalability.

TOOLS AND TECHNOLOGIES

3.1 HARDWARE REQUIREMENTS:

1. Computer: Your personal laptop is your primary hardware requirement. Ensure that it meets or exceeds the following specifications:

- Processor: A multi-core processor (e.g., Intel Core i5 or equivalent) for faster execution of development tasks.
- RAM: At least 8 GB of RAM to handle development tools and virtual machines.
- Storage: An SSD (Solid-State Drive) is recommended for faster read/write speeds and improved performance.
- Operating System: Your laptop should run a compatible operating system, such as Windows, macOS, or Linux.

2. Internet Connection: A reliable and high-speed internet connection is essential for accessing AWS services, downloading software updates, and collaborating with team members if applicable. A stable internet connection ensures that you can work efficiently with cloud resources.

3. External Monitor (Optional): While not a strict requirement, having an external monitor can significantly enhance your productivity by providing more screen real estate for multitasking and working with multiple AWS services and development tools simultaneously.

4. Keyboard and Mouse: Invest in a comfortable keyboard and mouse, especially if you plan to work extensively on your laptop. Ergonomic accessories can improve your overall comfort and productivity.

5. Power Supply: Ensure you have a reliable power supply or backup solutions, like a UPS (Uninterruptible Power Supply), to avoid unexpected interruptions during development tasks

3.2 SOFTWARE REQUIREMENTS:

1. **AWS Account:** You need an active AWS account to access and utilize AWS cloud services.

2. **AWS Command Line Interface (CLI):** Install the AWS CLI on your local development environment to interact with AWS services using command-line commands.

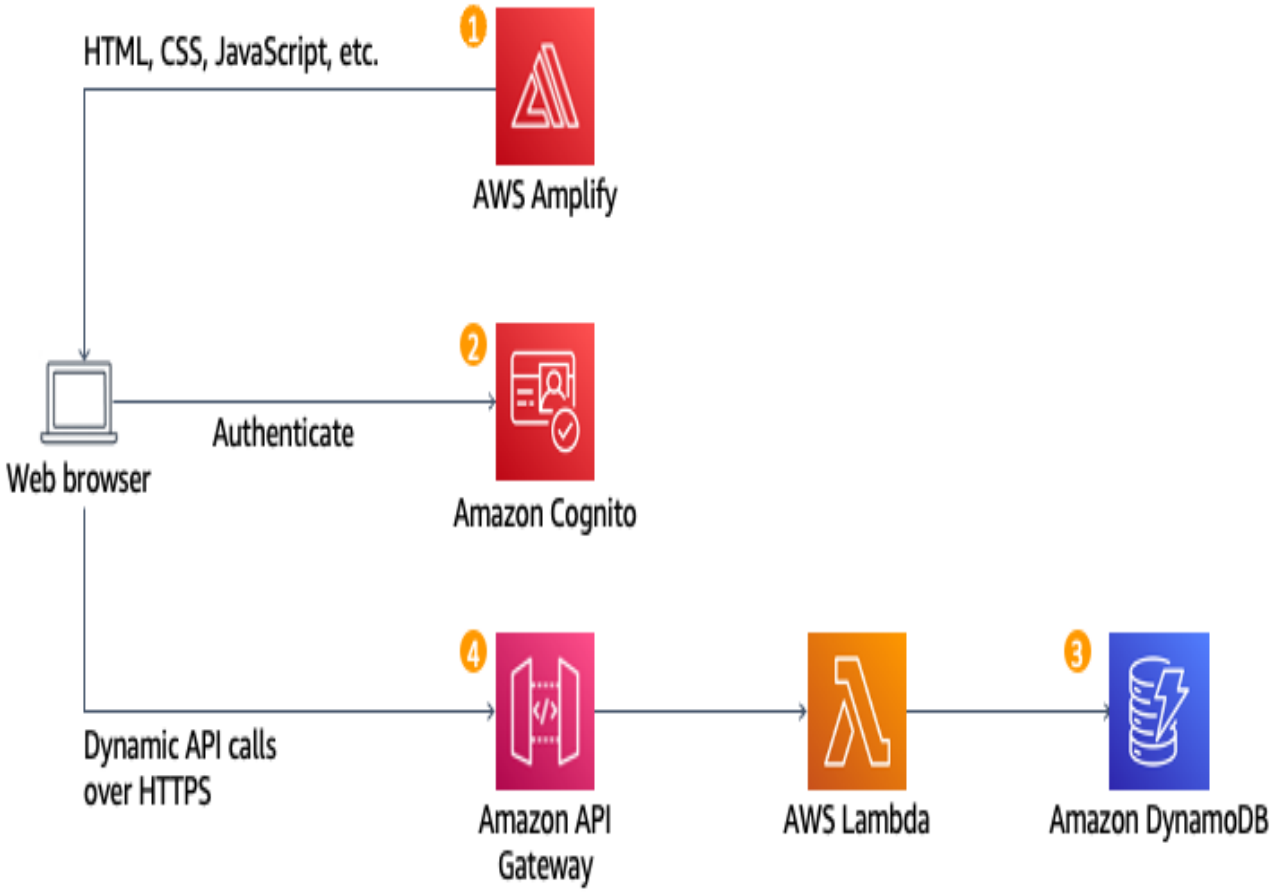
3. **Integrated Development Environment (IDE) or Code Editor:** Choose an IDE or code editor that supports your preferred programming language(s). Common choices include Visual Studio Code, IntelliJ IDEA, PyCharm (for Python), and AWS Cloud9 (a cloud-based IDE).

4. **Git and Version Control:** Set up Git and choose a version control platform (e.g., GitHub, GitLab, Bitbucket) for tracking changes to your project code and collaborating with team members.

5. **Programming Languages and Frameworks:** Depending on your project's requirements, you may need specific programming languages and frameworks. For example, Node.js (for AWS Lambda), Python (for Lambda), and relevant front-end frameworks if applicable

SYSTEM DESIGN

ARCHITECTURE DIAGRAM



SYSTEM DEVELOPMENT STRATEGY

1. Requirements Analysis:

    1. Objective: Thoroughly understand and document functional and non-functional requirements for the file-sharing application.

    2. Approach: Conduct stakeholder meetings, gather user stories, and analyze project documentation to define clear and comprehensive requirements.

2. Architectural Design:

    1. Objective: Define the overall system architecture, emphasizing serverless components and AWS services.

    2. Approach: Leverage AWS Lambda for file operations, Amazon S3 for storage, and DynamoDB for metadata management. Ensure scalability, security, and optimal performance.

3. Data Design:

    1. Objective: Design data models for storing file metadata in DynamoDB and managing file storage in S3.

    2. Approach: Define DynamoDB tables with appropriate attributes for file metadata. Consider S3 bucket organization and versioning for efficient data management.

4. User Interface Design:

    1. Objective: Create an intuitive and responsive user interface for seamless file interactions.

    2. Approach: Utilize HTML, CSS, and JavaScript for the web interface. Prioritize user experience with clear navigation, file previews, and interactive features.

5. Security Design:

    1. Objective: Ensure robust security measures for data protection and user access.
    2. Approach: Implement IAM roles with least privilege for Lambda functions. Enforce HTTPS for secure communication. Leverage S3 bucket policies and access control lists (ACLs) for granular control over file access.

6. Integration Design:

    1. Objective: Integrate AWS services for smooth operation and data flow.
    2. Approach: Establish seamless integration between Lambda functions, S3, and DynamoDB. Utilize AWS SDKs for effective communication and error handling.

7. Scalability Design:

    1. Objective: Design the system to handle variable workloads and scale efficiently.
    2. Approach: Leverage the serverless architecture of AWS Lambda for automatic scaling. Optimize S3 configurations for scalability and performance.

8. Testing Strategy Design:

    1. Objective: Develop a comprehensive testing strategy to ensure the functionality, security, and performance of the system.
    2. Approach: Implement unit testing for individual functions, integration testing for component interactions, and end-to-end testing for user scenarios. Include security testing, load testing, and user acceptance testing (UAT).

9. Documentation Plan:

    1. Objective: Create detailed documentation for developers, administrators, and end-users.
    2. Approach: Document system architecture, data models, API specifications, deployment procedures, and user guides. Maintain clear and up-to-date documentation throughout the development lifecycle.

10. Review and Approval:

    1. Objective: Facilitate regular reviews and approvals to ensure alignment with project goals.
    2. Approach: Conduct design reviews with stakeholders, development teams, and security experts. Incorporate feedback and obtain necessary approvals before moving to the implementation phase.

IMPLEMENTATION STEPS

1.Setup AWS Environment:

- Create an AWS account if you do not have one.
- Configure AWS CLI with your credentials.

2.Create an S3 Bucket:

- Go to the AWS S3 console.
- Create a new S3 bucket (e.g., filesharing-s3).

3.Create a DynamoDB Table:

- Go to the AWS DynamoDB console.
- Create a new table (e.g., FileMetadata) with the primary key as FileName (String).

4.Configure IAM Roles:

1. Ensure that Lambda functions have the necessary IAM roles and permissions to interact with S3 and DynamoDB.

5.HTML and JavaScript:

1. Use the provided HTML and JavaScript code for the frontend.
2. Update the script to interact with your Lambda functions and AWS services.

6.Testing:

1. Test your application locally before deployment.
2. Ensure that file upload, download, and deletion work as expected.

7.Deployment:

1. Deploy your Lambda functions, HTML, and associated configurations.
2. You can use AWS SAM, Serverless Framework, or the AWS Management Console for deployment.

8.Monitor and Optimize:

1. Set up monitoring using AWS CloudWatch.
2. Optimize your Lambda functions and configurations for performance.

9.User Training:

1. Provide training sessions for end-users on using the file-sharing application.

10.Documentation:

1. Update or create documentation for your application, including deployment guides and user manuals.

11.Continuous Improvement:

1. Collect user feedback and iteratively improve your application.

TESTING STRATEGY

1. Unit Testing:

- Objective: Ensure individual components (JavaScript functions, Lambda functions) work as expected.
- Approach:
    - Test JavaScript functions in script.js to handle file upload, UI updates, and interactions with AWS SDK.
    - Unit test Lambda functions for file upload, download, and deletion, validating logic and error handling.
- Tools:
    - JavaScript Unit Testing Frameworks (e.g., Jest, Mocha) for frontend code.
    - AWS SAM (Serverless Application Model) for testing Lambda functions locally.

2. Integration Testing:

- Objective: Validate the interactions between frontend components and AWS services (S3, DynamoDB, Lambda).
- Approach:
    - Test the integration of HTML, JavaScript, and AWS SDK components.
    - Verify that Lambda functions interact correctly with S3 and DynamoDB.
- Tools:
    - Selenium or Cypress for end-to-end testing of the user interface.
    - AWS SDK provides mocks for simulating AWS service interactions during testing.

3. Security Testing:

- Objective: Identify and address security vulnerabilities in the application.
- Approach:
    - Check for proper implementation of pre-signed URLs for secure file interactions.

- Review AWS IAM roles and permissions for Lambda functions.

- Tools:
    - Manual code reviews for security best practices.
    - AWS IAM Policy Simulator for testing IAM roles.

4. User Acceptance Testing (UAT):

- Objective: Validate that the application meets user expectations and business requirements.
- Approach:
    - Conduct testing with real users or stakeholders.
    - Ensure that users can successfully perform file upload, download, and deletion operations.
- Tools:
    - User feedback and testing sessions.

5. Performance Testing:

- Objective: Evaluate the application's performance under different scenarios.
- Approach:
    - Measure the time taken for file upload and download operations.
    - Simulate concurrent user actions to assess system scalability.
- Tools:
    - Apache JMeter or Gatling for load testing.
    - AWS CloudWatch for monitoring performance metrics.

6. Deployment Testing:

- Objective: Ensure a smooth deployment process without disrupting the live application.
- Approach:
    - Test the deployment of Lambda functions, HTML, and associated configurations.

- Verify that the new version works seamlessly with existing data.

- Tools:
    - AWS Code Deploy for automated deployments.

7. Backup and Recovery Testing:

- Objective: Verify the ability to recover from data loss or system failures.
- Approach:
    - Test backup and restore procedures for S3 and DynamoDB.
    - Simulate scenarios like accidental file deletion and ensure recovery mechanisms work.
- Tools:
    - AWS S3 Versioning for file backup.
    - DynamoDB backups and restores.

8. Documentation Testing:

- Objective: Ensure that all documentation, including user manuals and system architecture, is accurate and up-to-date.
- Approach:
    - Review and verify documentation for completeness.
    - Ensure that deployment guides are clear and follow best practices.
- Tools:
    - Manual review and validation against the deployed application.

9. Cross-Browser Testing:

- Objective: Confirm the application functions correctly across different web browsers.
- Approach:
    - Test the application on popular browsers (Chrome, Firefox, Safari).
    - Verify consistency in UI and functionality.
- Tools:

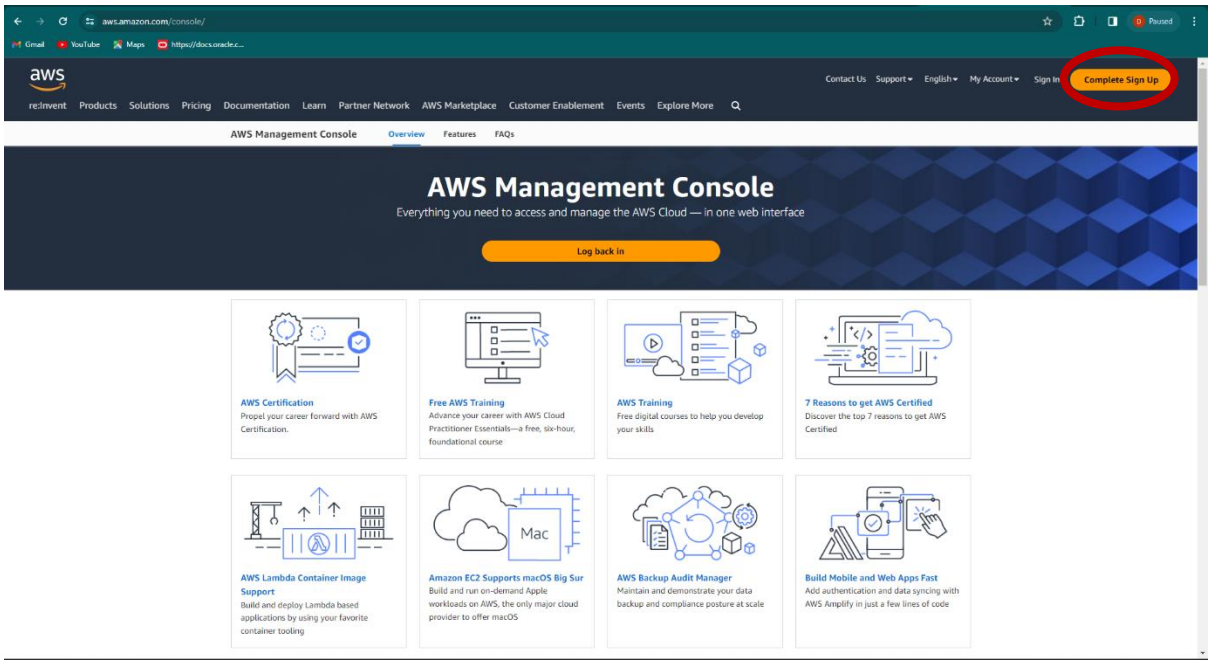
- Cross-browser testing tools like Browser Stack or CrossBrowserTesting.

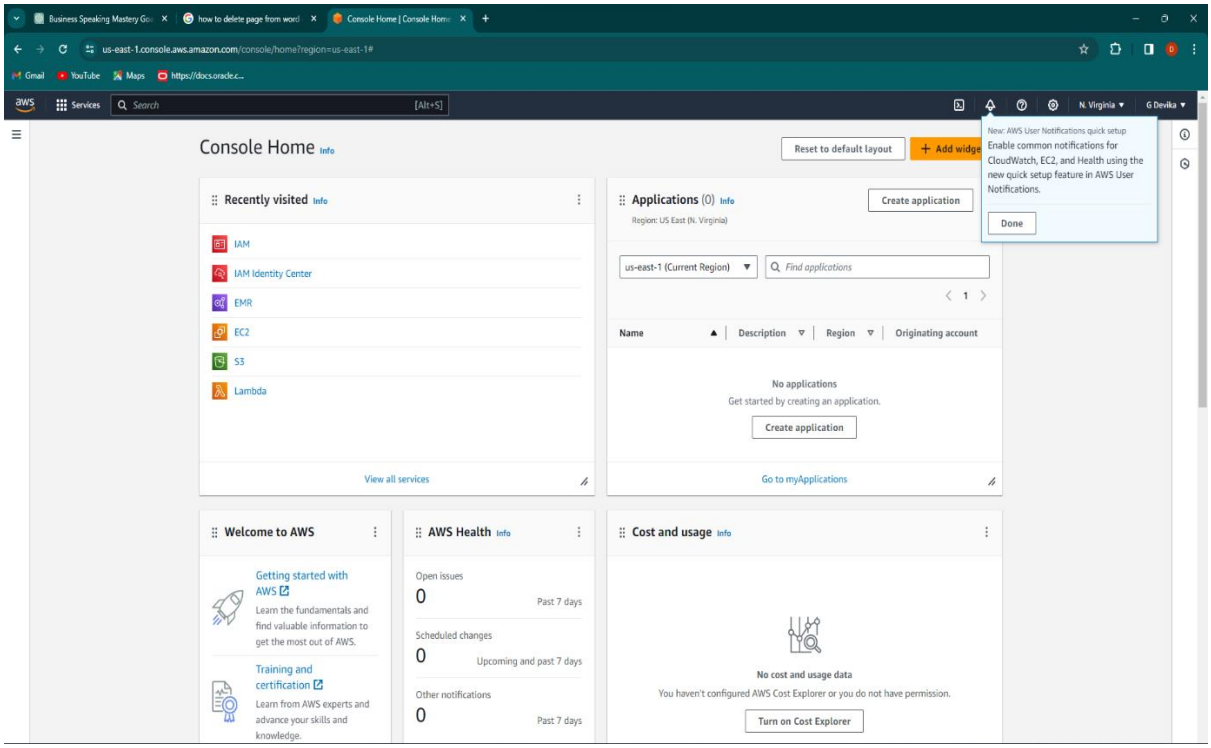
10. Accessibility Testing:

- Objective: Ensure the application is accessible to users with disabilities.
- Approach:
    - Verify that UI elements are labelled correctly.
    - Test keyboard navigation and screen reader compatibility.
- Tools:
    - Accessibility testing tools like Axe or Lighthouse

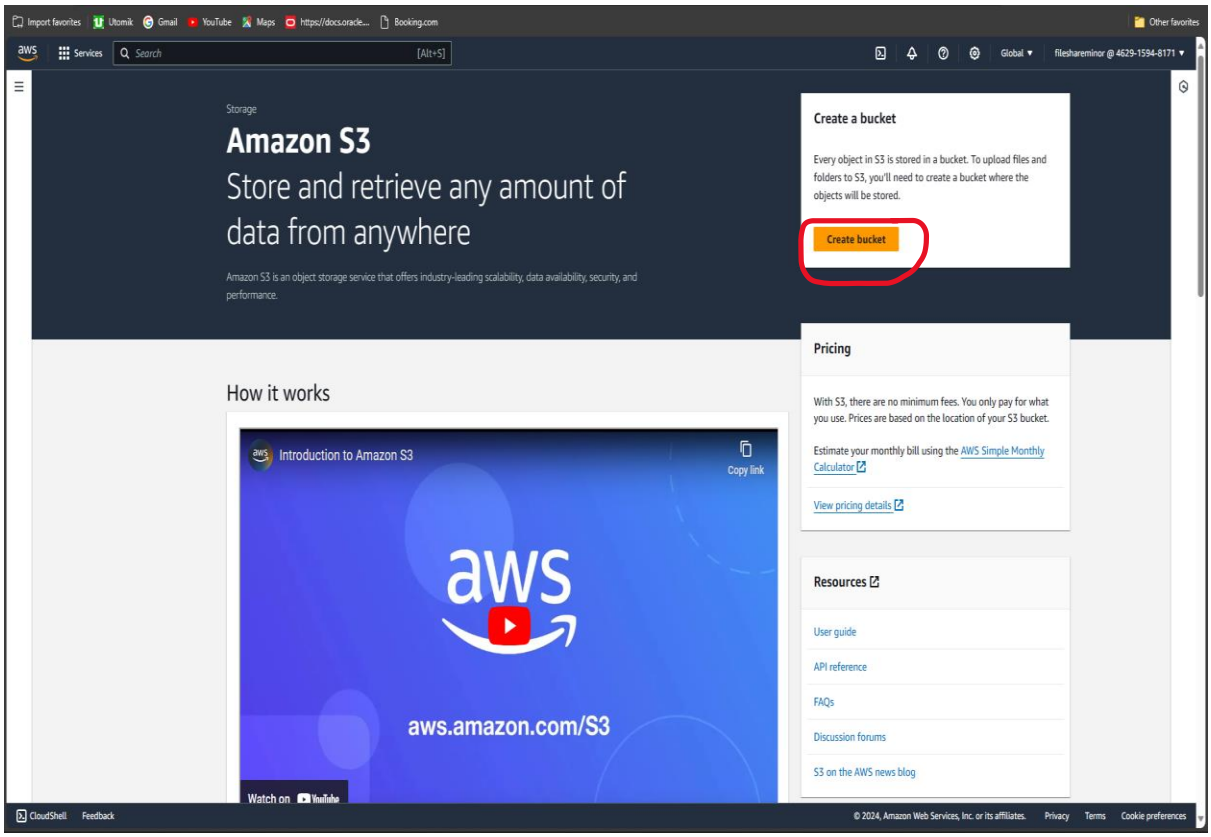
SNAPSHOTS

STEP 1: -Creating an AWS account and logging into AWS Management console.

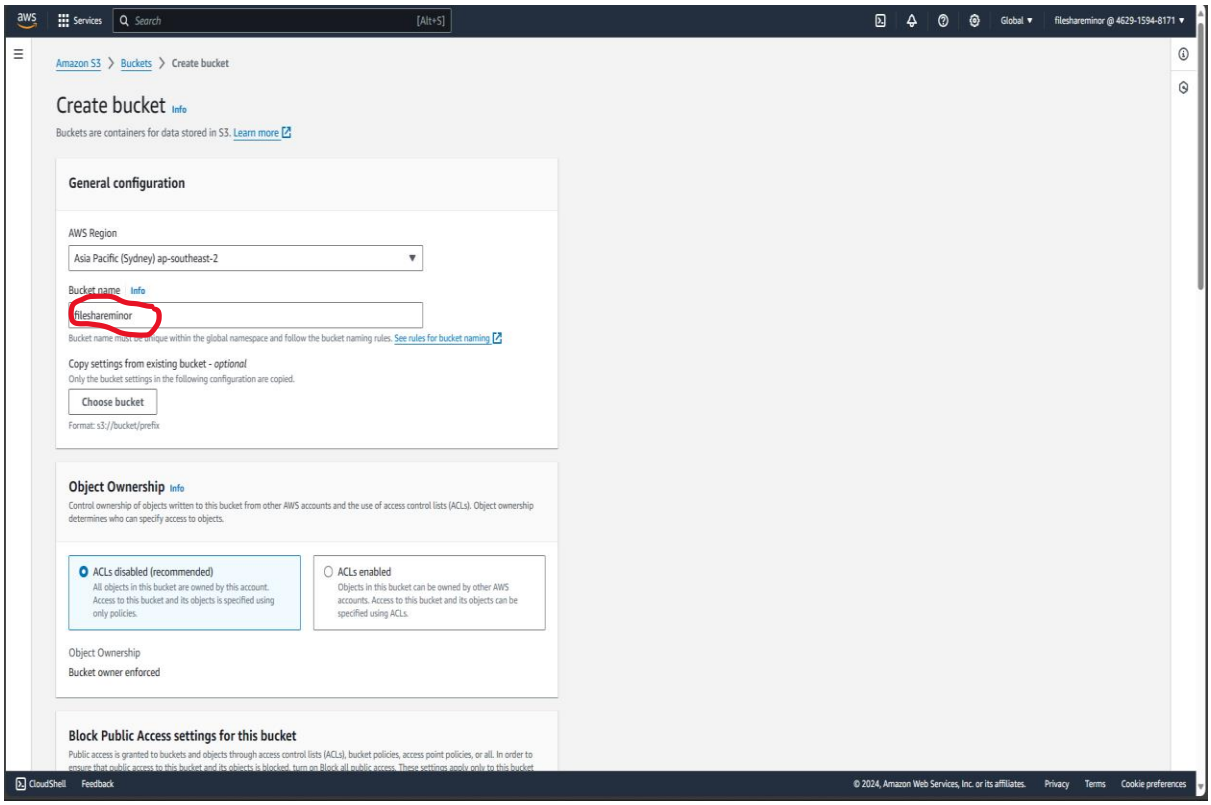



Console Home Info
Reset to default layout
Add widget
Recently visited Info
IAM
IAM Identity Center
EMR
EC2
S3
Lambda
View all services
Applications (0) Info
Region: US East (N. Virginia)
Create application
us-east-1 (Current Region)
Find applications
Name
Description
Region
Originating account
No applications
Get started by creating an application.
Create application
Go to myApplications
New: AWS User Notifications quick setup
Enable common notifications for CloudWatch, EC2, and Health using the new quick setup feature in AWS User Notifications.
Done
Welcome to AWS
Getting started with AWS
Learn the fundamentals and find valuable information to get the most out of AWS.
Training and certification
Learn from AWS experts and advance your skills and knowledge.
AWS Health Info
Open issues
0
Past 7 days
Scheduled changes
0
Upcoming and past 7 days
Other notifications
0
Past 7 days
Cost and usage Info
No cost and usage data
You haven't configured AWS Cost Explorer or you do not have permission.
Turn on Cost Explorer

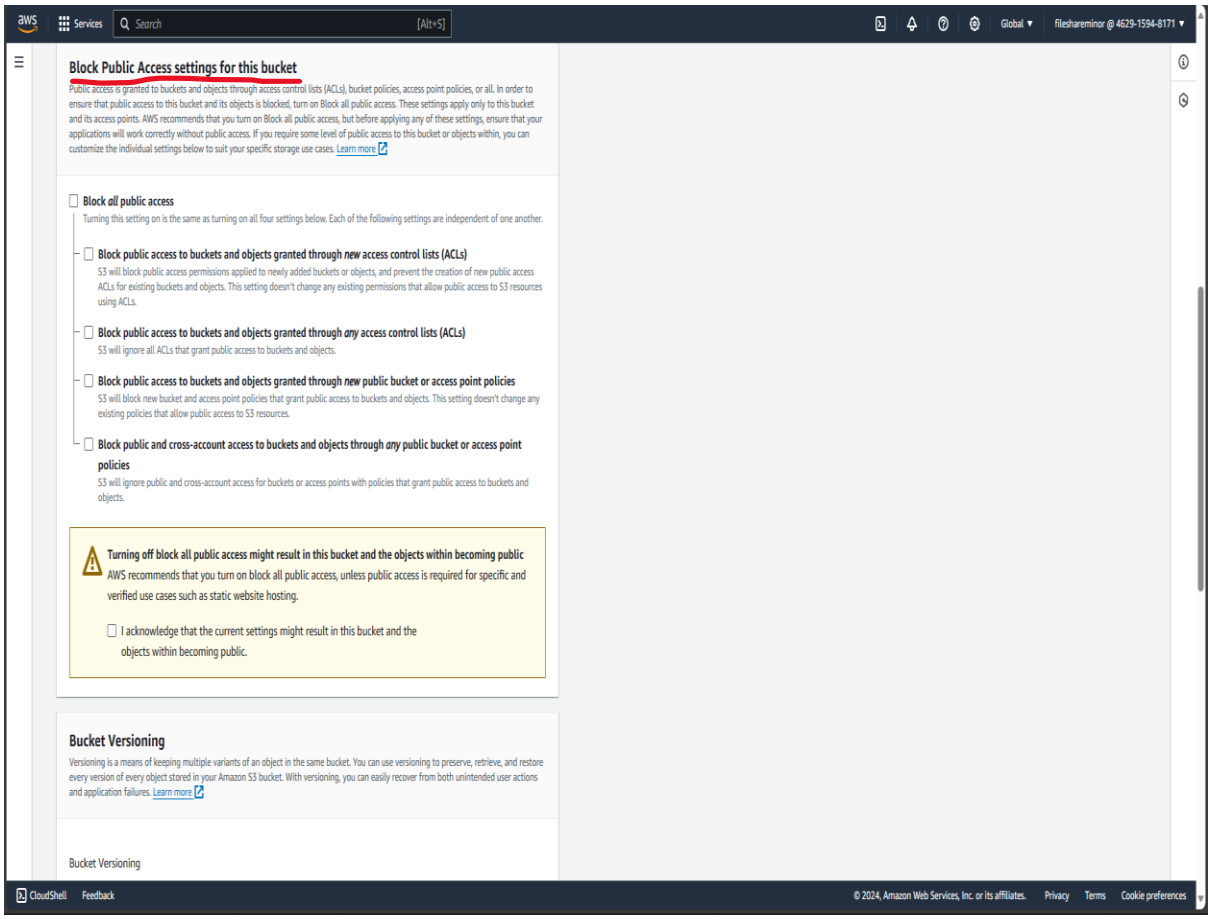
STEP 2: -Create S3Bucket and upload the file of source code and html file.



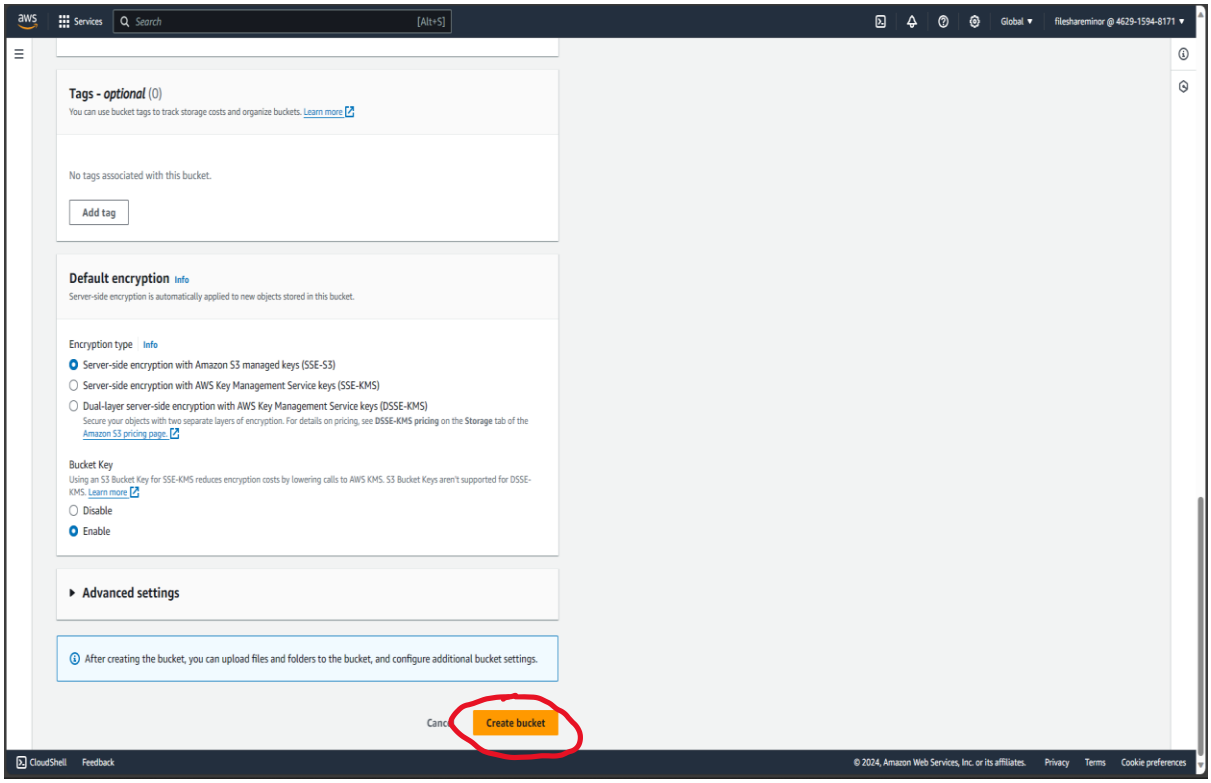
Give name for your Bucket

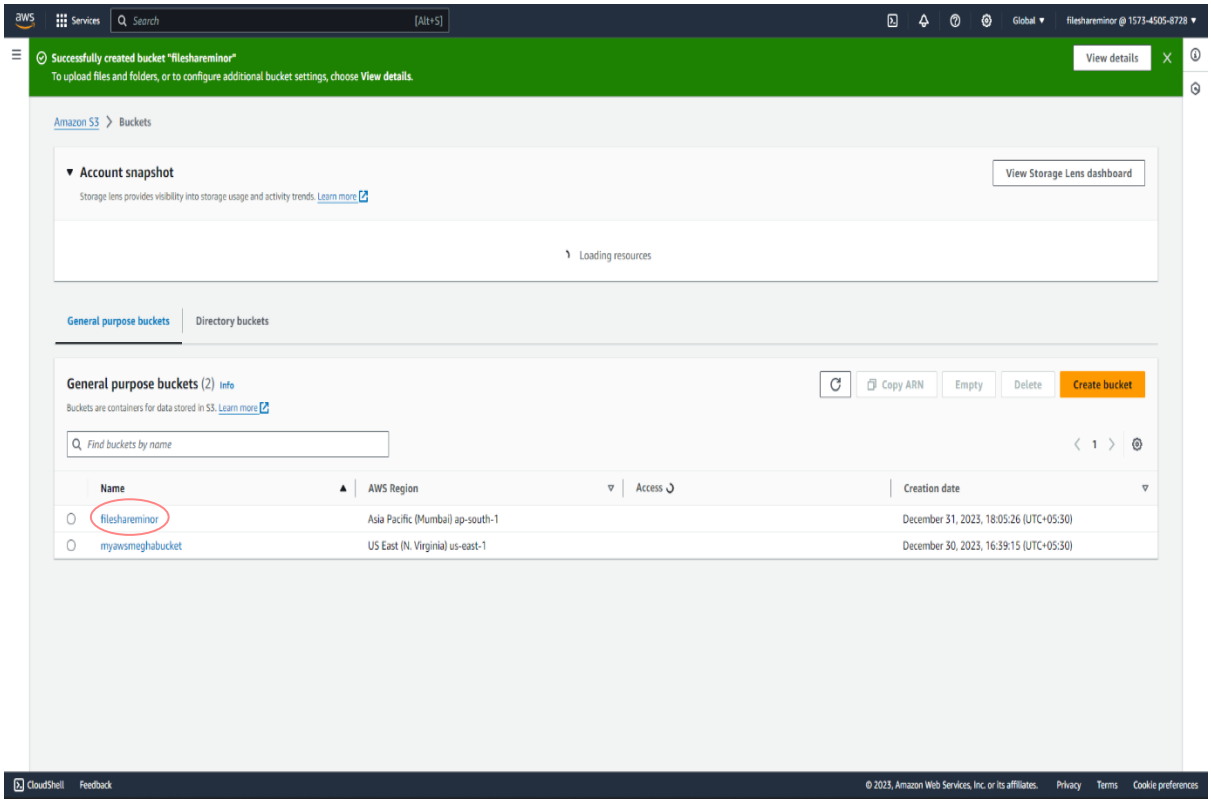


Give public access for your Bucket

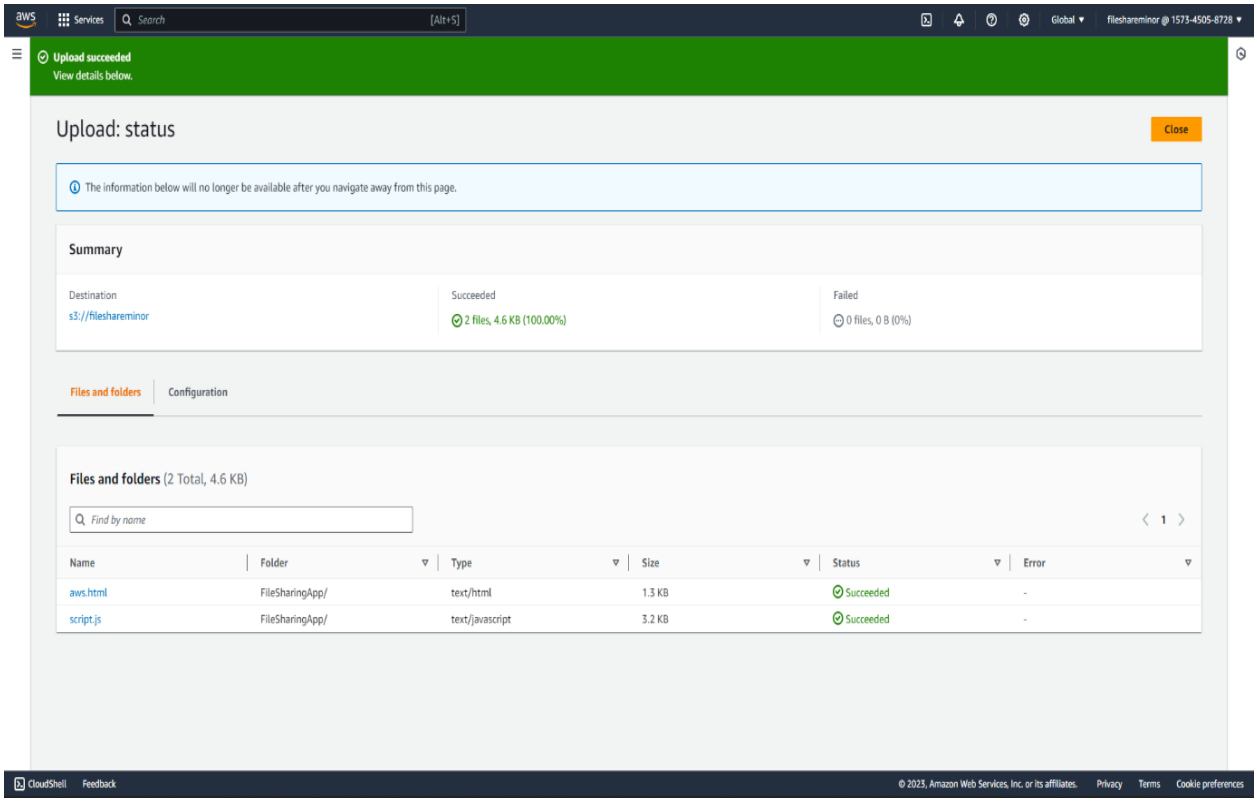


Click on Create button

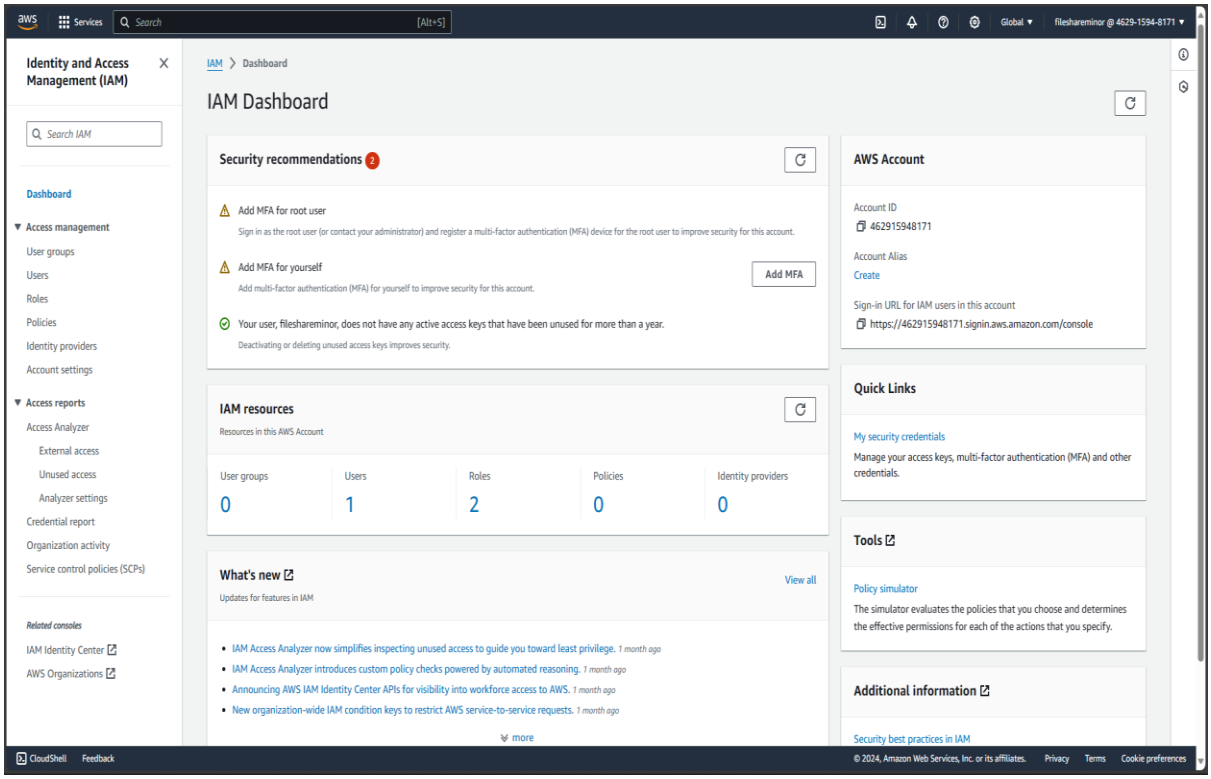


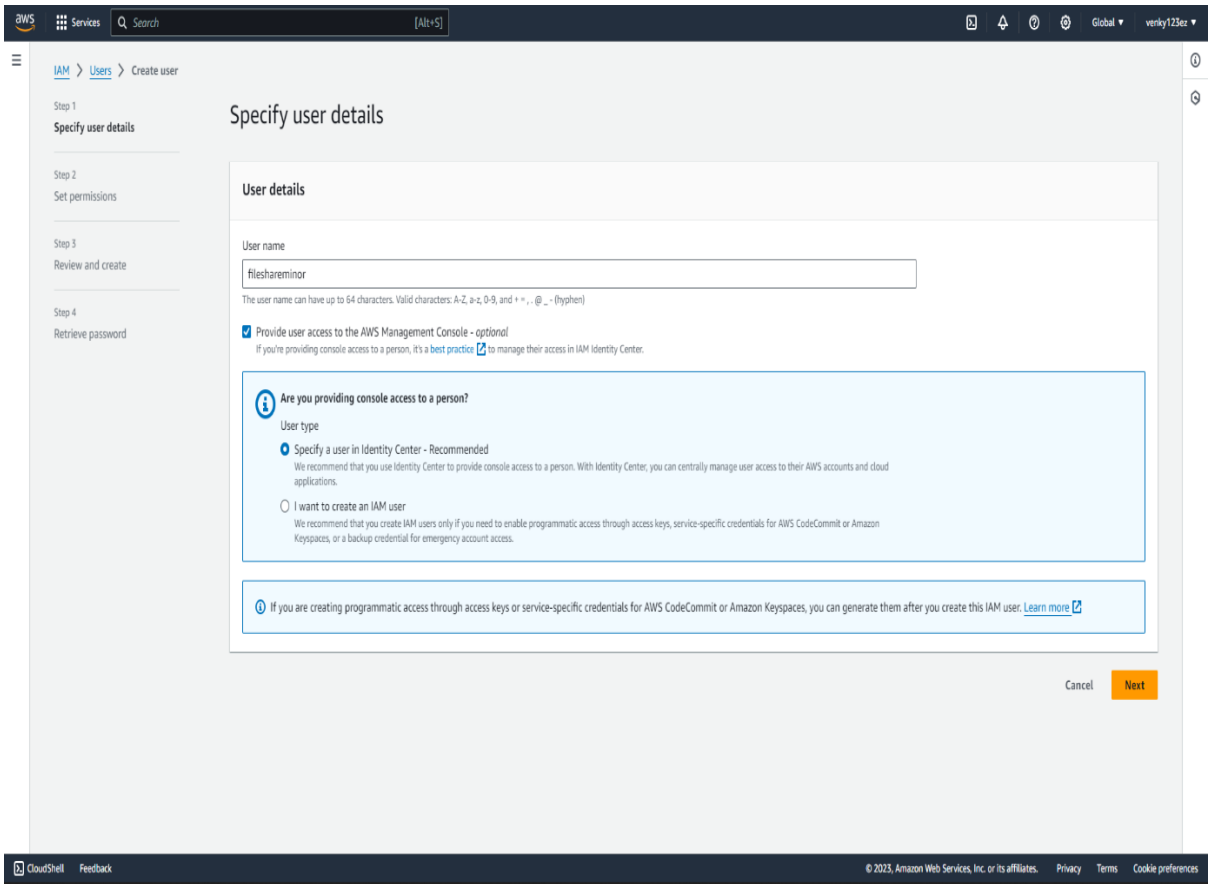

Services
Search
[Alt+S]
Global
fileshareminor @ 1573-4505-8728
Successfully created bucket "fileshareminor"
To upload files and folders, or to configure additional bucket settings, choose View details.
View details
Amazon S3 > Buckets
Account snapshot
Storage lens provides visibility into storage usage and activity trends. Learn more
View Storage Lens dashboard
Loading resources
General purpose buckets
Directory buckets
General purpose buckets (2) Info
Buckets are containers for data stored in S3. Learn more
Copy ARN
Empty
Delete
Create bucket
Find buckets by name
Name
AWS Region
Access
Creation date
fileshareminor
Asia Pacific (Mumbai) ap-south-1
December 31, 2023, 18:05:26 (UTC+05:30)
myawsmeghabucket
US East (N. Virginia) us-east-1
December 30, 2023, 16:39:15 (UTC+05:30)
CloudShell
Feedback
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

Uploaded the file successfully:



Create an IAM user and login to IAM user




Services
Search
[Alt+S]
Global
venky123ez
IAM
Users
Create user
Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Step 4
Retrieve password
Specify user details
User details
User name
fileshareminor
The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)
Provide user access to the AWS Management Console - optional
If you're providing console access to a person, it's a best practice to manage their access in IAM Identity Center.
Are you providing console access to a person?
User type
Specify a user in Identity Center - Recommended
We recommend that you use Identity Center to provide console access to a person. With Identity Center, you can centrally manage user access to their AWS accounts and cloud applications.
I want to create an IAM user
We recommend that you create IAM users only if you need to enable programmatic access through access keys, service-specific credentials for AWS CodeCommit or Amazon Keyspaces, or a backup credential for emergency account access.
If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can generate them after you create this IAM user. Learn more
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Next
CloudShell
Feedback
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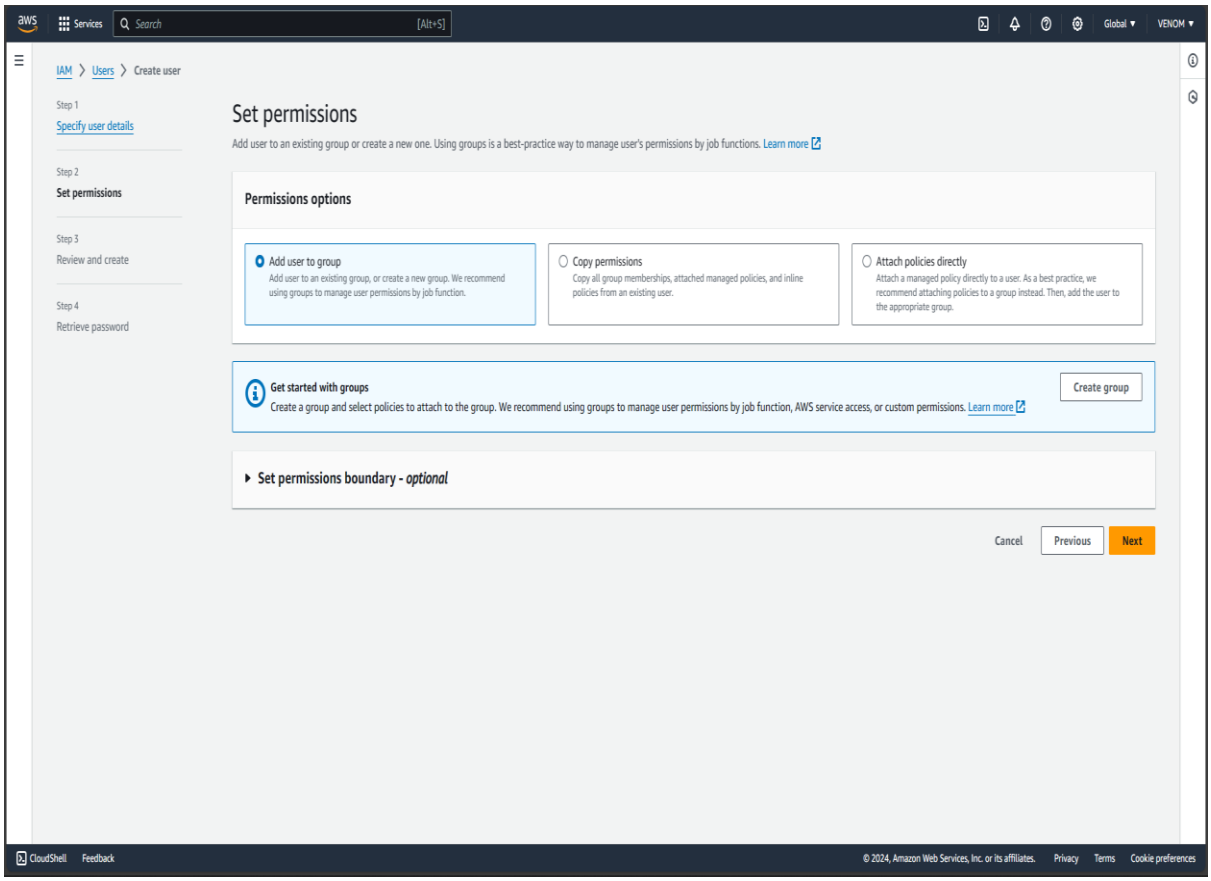
aws
Services
Search
[Alt+S]
Global
VENOM
IAM
Users
Create user
Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Step 4
Retrieve password
Set permissions
Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. Learn more
Permissions options
Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.
Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.
Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.
Get started with groups
Create a group and select policies to attach to the group. We recommend using groups to manage user permissions by job function, AWS service access, or custom permissions. Learn more
Create group
Set permissions boundary - optional
Cancel
Previous
Next
CloudShell
Feedback
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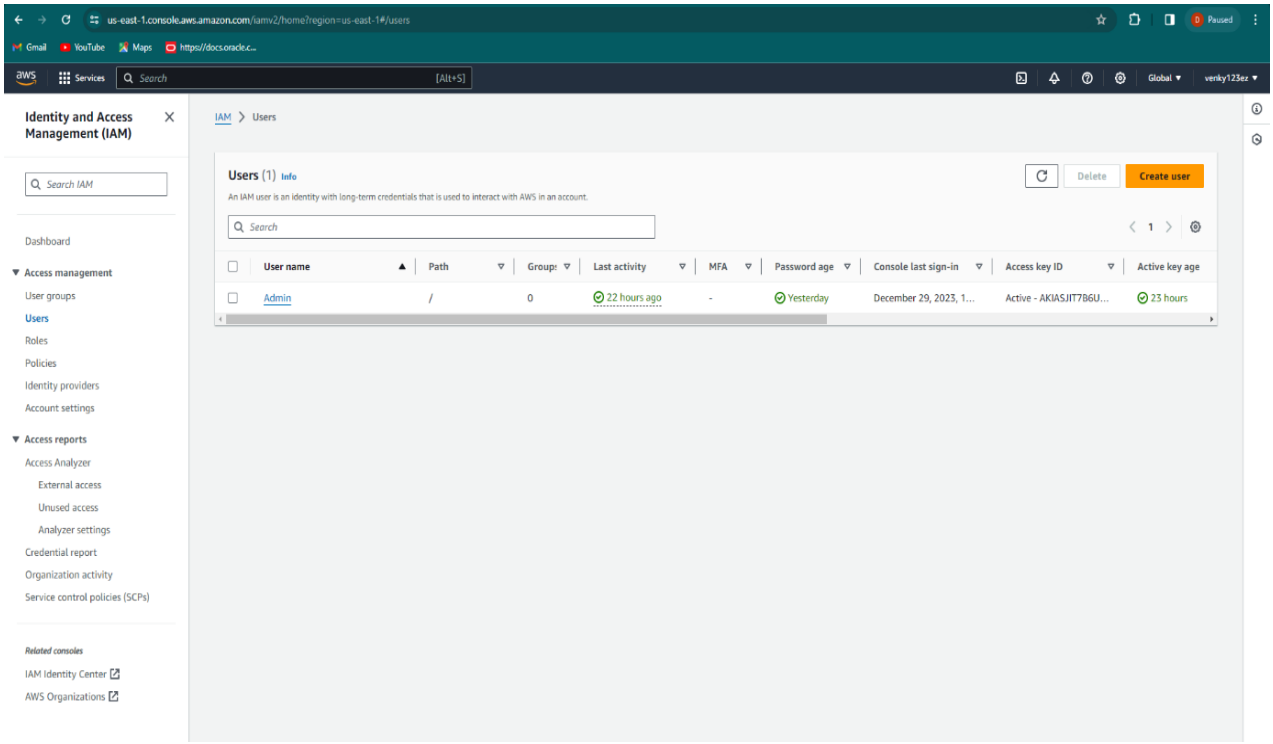
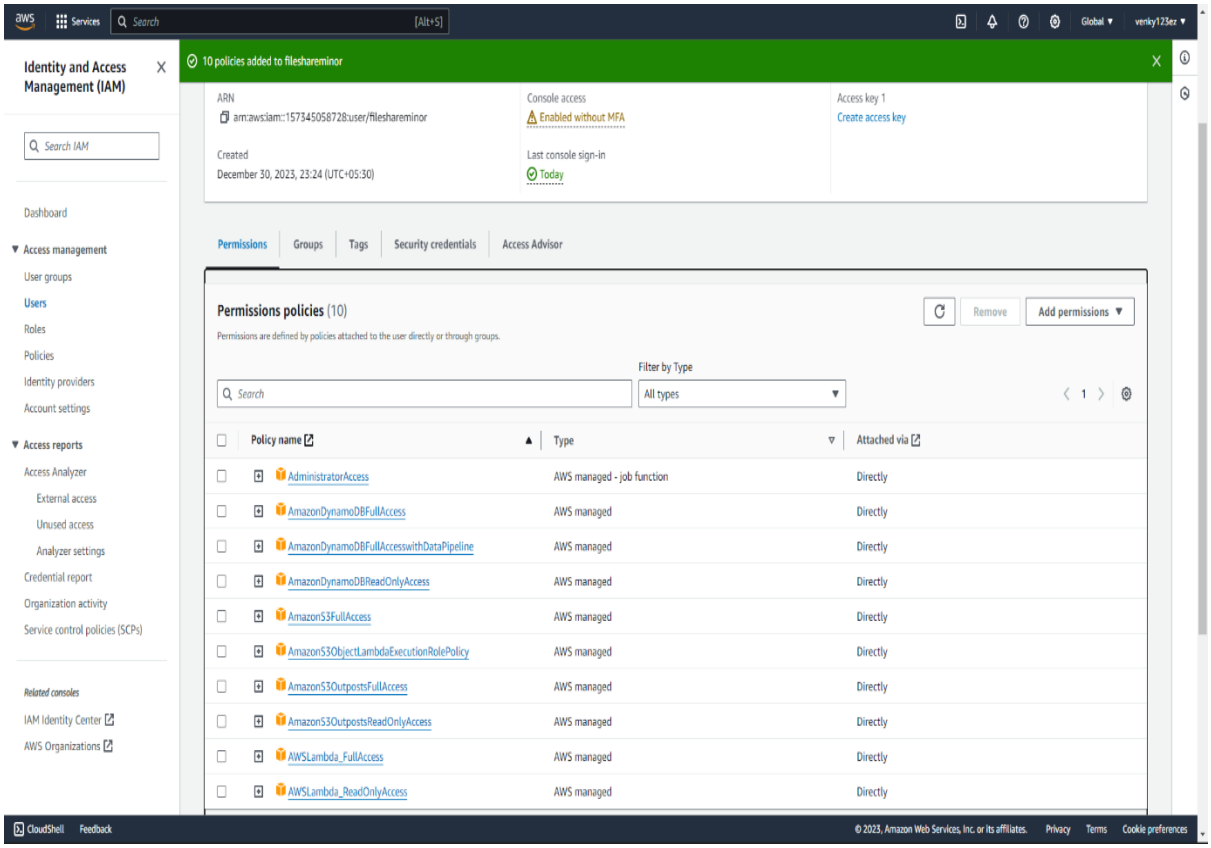
Privacy
Terms
Cookie preferences

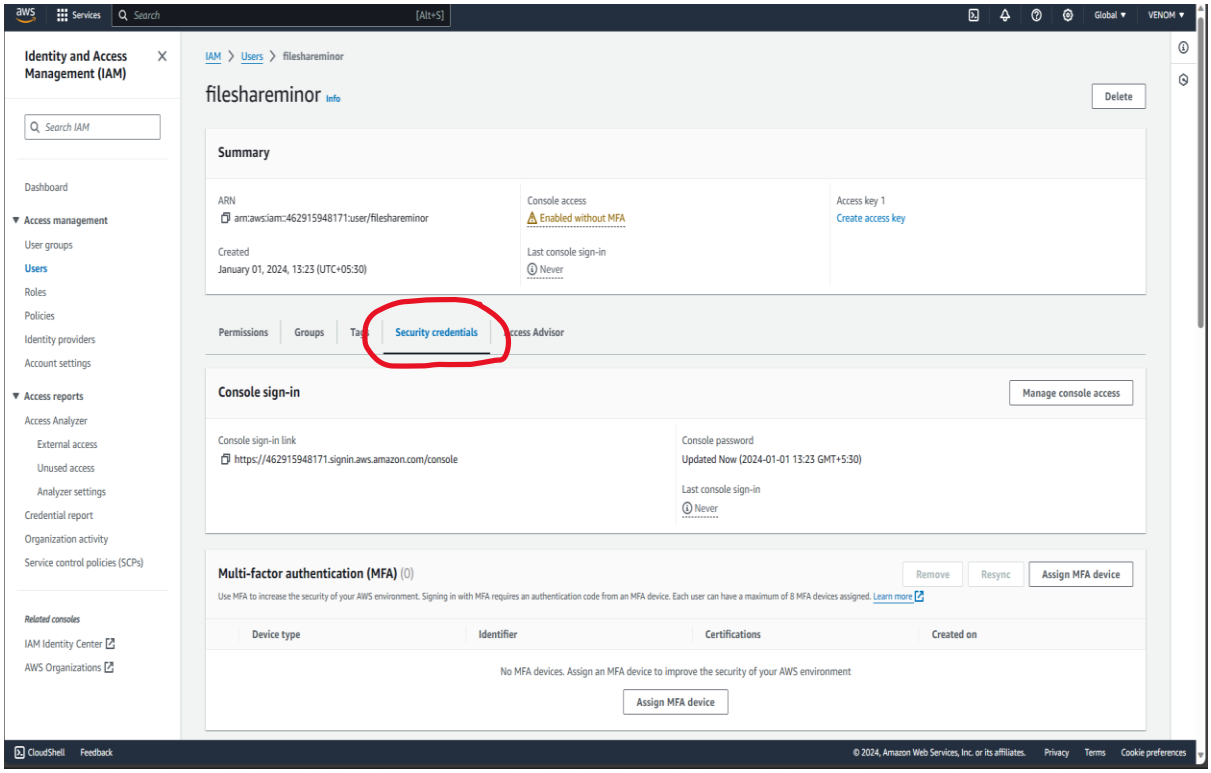
Successfully Created an IAM user



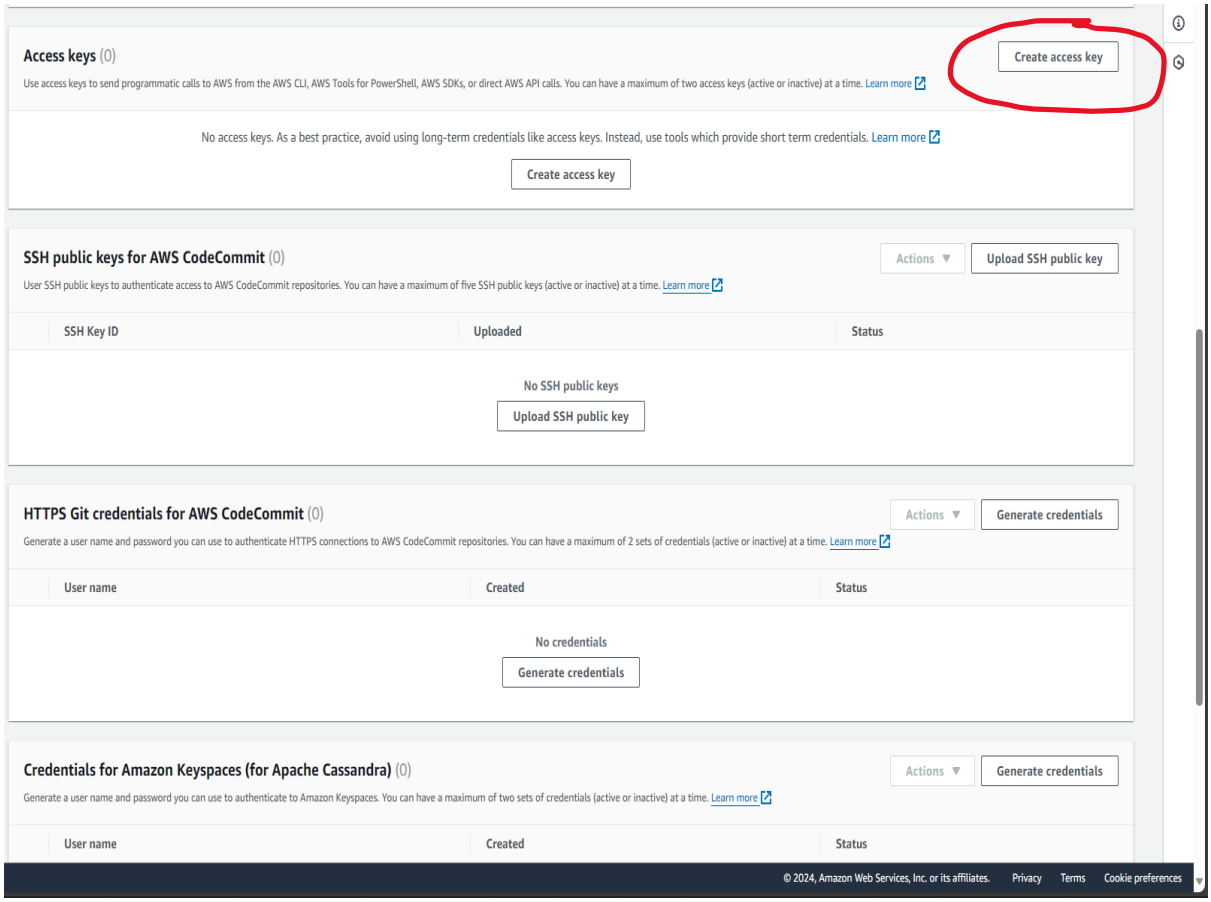
Add the Policies permissions for the IAM user to get full access.



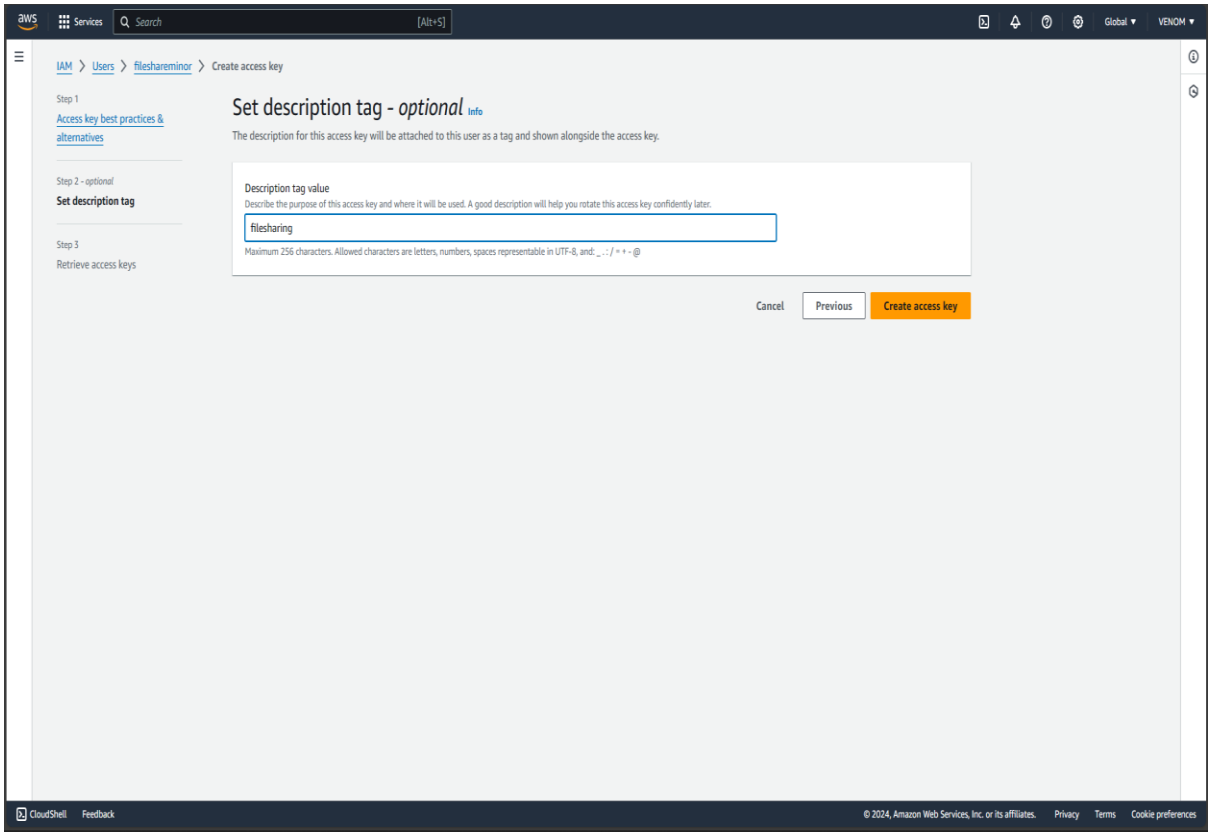
Generate the access key for your IAM to include it in the Code

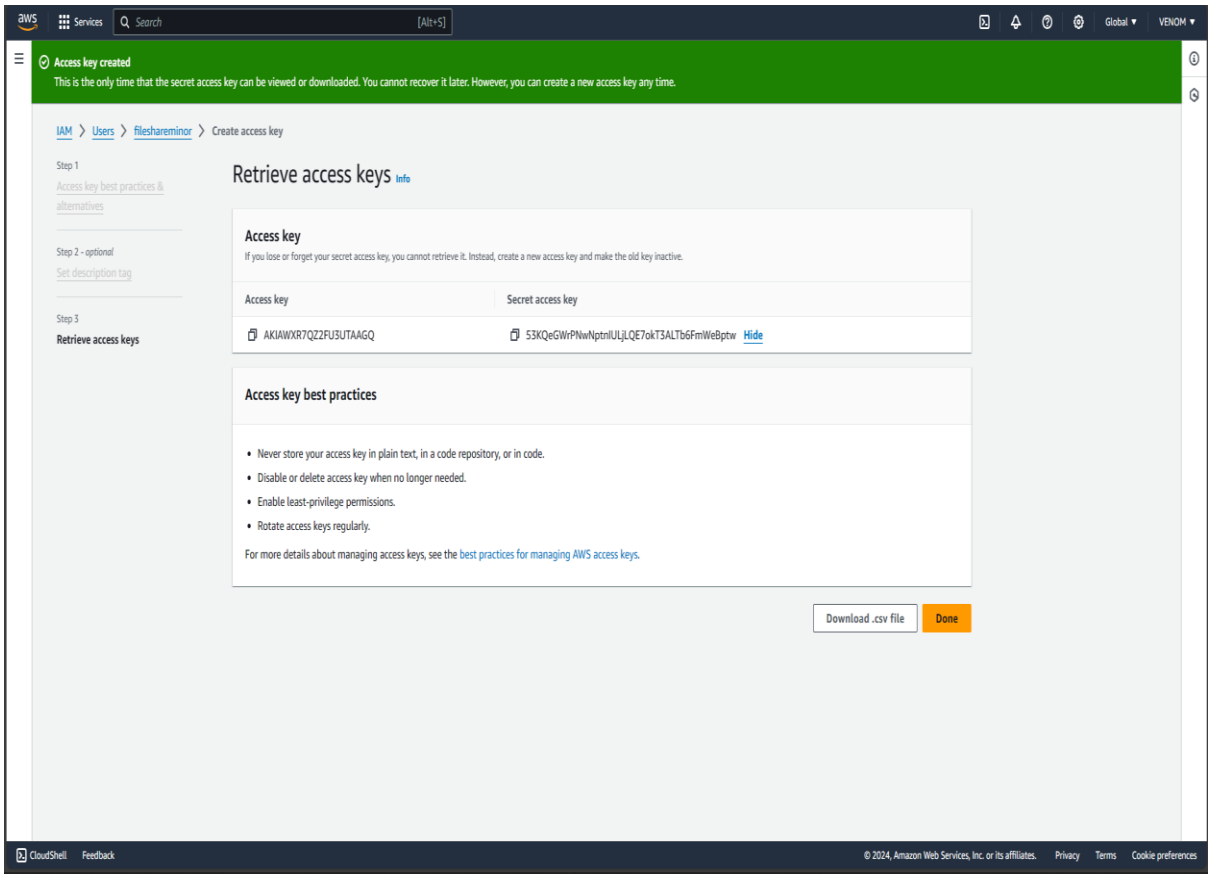


Click on Create access key



Give name for access key




Services
Search
[Alt+S]
Global
VENOM
Access key created
This is the only time that the secret access key can be viewed or downloaded. You cannot recover it later. However, you can create a new access key any time.
IAM
Users
fileshareminor
Create access key
Step 1
Access key best practices & alternatives
Step 2 - optional
Set description tag
Step 3
Retrieve access keys
Retrieve access keys Info
Access key
If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and make the old key inactive.
Access key
Secret access key
AKIAWXR7QZ2FU3UTAAGQ
53KQeGWrPNwNptnIULjLQE7okT3ALTb6FmWeBptw
Hide
Access key best practices
Never store your access key in plain text, in a code repository, or in code.
Disable or delete access key when no longer needed.
Enable least-privilege permissions.
Rotate access keys regularly.
For more details about managing access keys, see the best practices for managing AWS access keys.
Download .csv file
Done
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
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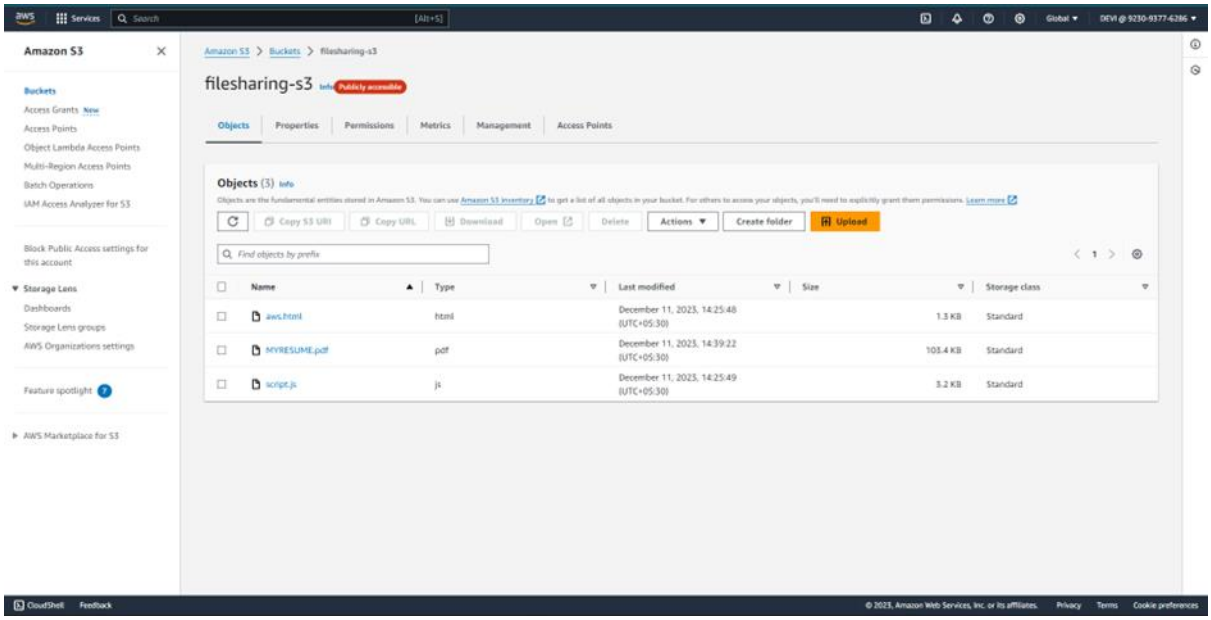
Cookie preferences

Now Upload the Script.js and html file to Your S3 Bucket.



The following File contains the Code in it.

Pseudo-code included in the aws.html file is given below:

Segment-1: AWS SDK Configuration

```
// AWS SDK Configuration
var region = "us-east-1";
var accessKeyId = "your-access-key-id";
var secretAccessKey = "your-secret-access-key";

AWS.config.update({
    region: region,
    credentials: new AWS.Credentials(accessKeyId, secretAccessKey)
});
```

Segment-2: S3 Service Instance Creation.

```
// Create an instance of the S3 service
var s3 = new AWS.S3();
```

Segment-3: File List Refresh Function

```
// Function to refresh the file list in the table
function refreshFileList(bucketname) {
    // Implementation details for fetching file list from S3
    s3.listObjectsV2({ Bucket: bucketname }, (err, data) => {
        if (err) {
            console.log("Error fetching file list", err);
        } else {
            // Update the fileTable with the retrieved file data
            updateFileTable(data.Contents);
        }
    });
}
```

Segment-4: File Upload Function

```
// Function to upload files to S3
function uploadFiles(bucketname) {
    // Implementation details for handling file upload to S3
    let files = document.getElementById('fileInput').files;

    for (let i = 0; i < files.length; i++) {
        let file = files[i];
        let params = {
            Bucket: bucketname,
            Key: file.name,
            Body: file
        };

        // Use the S3 upload method to upload the file
        s3.upload(params, (err, data) => {
            if (err) {
                console.log("Error uploading file", err);
            } else {
                console.log("File uploaded successfully");
                // Refresh the file list after successful upload
                refreshFileList(bucketname);
            }
        });
    }
}
```

Segment-5: File Delete Function:

```
// Function to delete a file from S3
function deleteFile(bucketname, objectKey) {
    // Implementation details for deleting a file from S3
    let params = {
        Bucket: bucketname,
        Key: objectKey
    };

    // Use the S3 deleteObject method to delete the file
    s3.deleteObject(params, (err, data) => {
        if (err) {
            console.log("Error deleting file", err);
        } else {
            console.log("File deleted successfully");
            // Refresh the file list after successful deletion
            refreshFileList(bucketname);
        }
    });
}
```

Segment-6: Initial file List Refresh

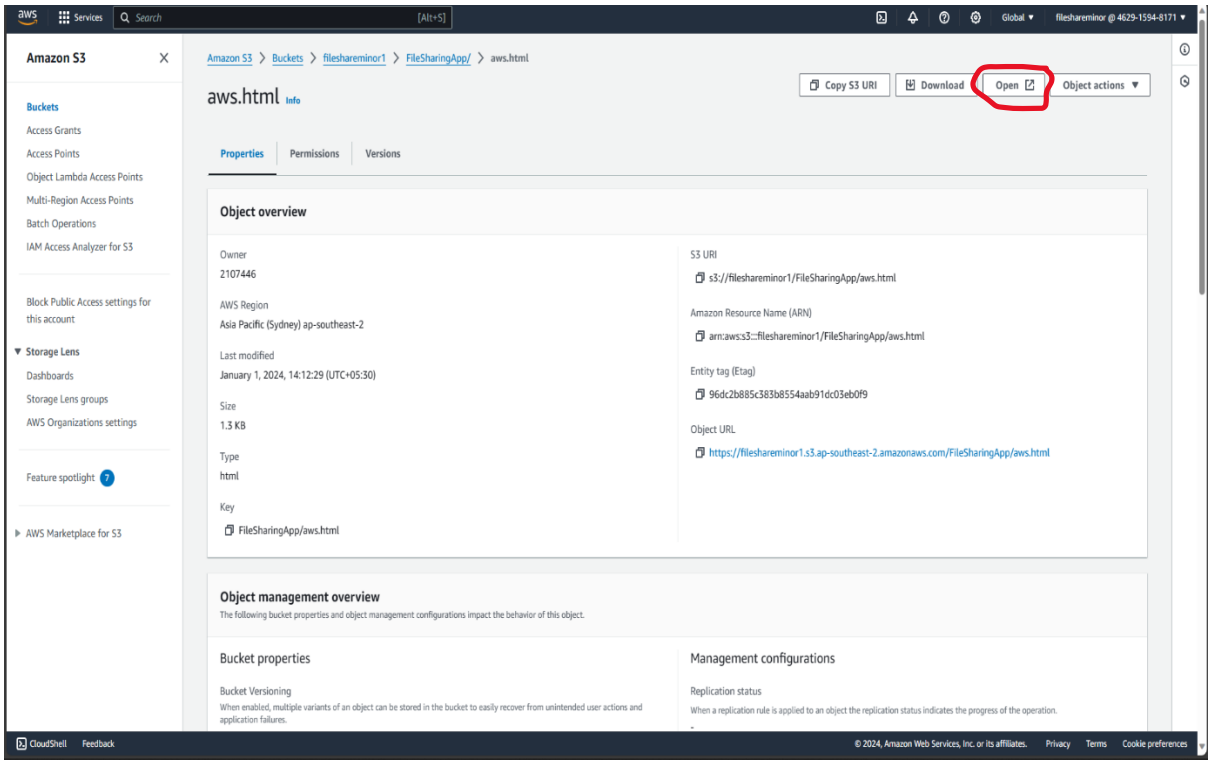
```
// Initial file list refresh for the default bucket
refreshFileList("filesharing-s3");
```

Source Code

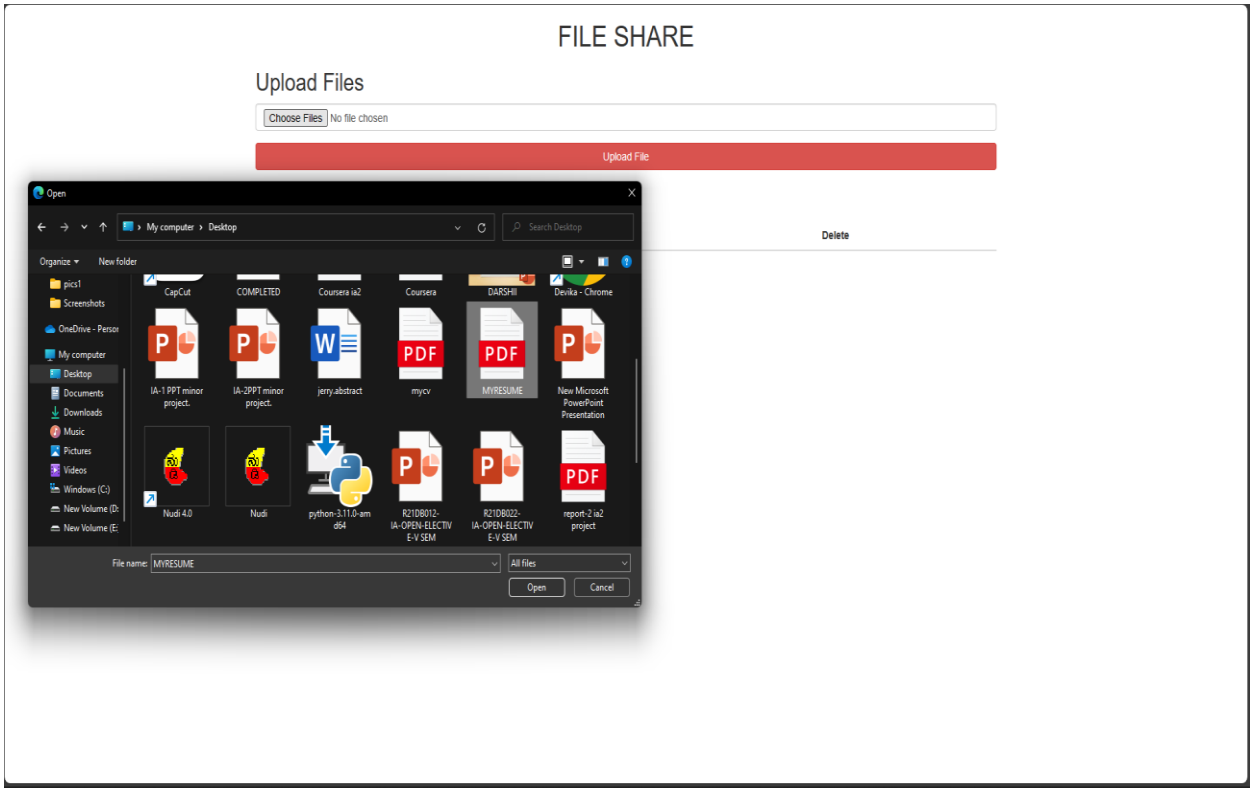
```
var region = "us-east-1";
var accessKeyId = "AKIA5N3FNG6PEVCXD2MR";
var secretAccessKey = "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";

AWS.config.update({
    region: region,
    credentials: new AWS.Credentials(accessKeyId, secretAccessKey)
});

var s3 = new AWS.S3();

function refreshFileList(bucketname) {
    var tableBody = document.querySelector("#fileTable tbody");
    tableBody.innerHTML = "";

    s3.listObjectsV2({ Bucket: bucketname }, (err, data) => {
        if (err) {
            console.log("Error fetching file list", err);
        } else {
            data.Contents.forEach((object) => {
                var fileRow = document.createElement('tr');

                var fileNameCell = document.createElement('td');
                fileNameCell.textContent = object.Key;
                fileRow.appendChild(fileNameCell);

                var fileSizeCell = document.createElement("td");
                fileSizeCell.textContent = object.Size;
                fileRow.appendChild(fileSizeCell);

                var downloadCell = document.createElement('td');
                var downloadLink = document.createElement('a');

                // Generate a pre-signed URL with the 'response-content-disposition' parameter
                var params = {
                    Bucket: bucketname,
                    Key: object.Key,
                    ResponseContentDisposition: 'attachment; filename="' + object.Key + '"'
                };

                downloadLink.href = s3.getSignedUrl("getObject", params);
                downloadLink.textContent = "Download";

                downloadCell.appendChild(downloadLink);
                fileRow.appendChild(downloadCell);

                var deleteCell = document.createElement('td');
                var deleteButton = document.createElement('button');
                deleteButton.textContent = "Delete";
                deleteButton.addEventListener('click', () => {
                    deleteFile(bucketname, object.Key);
                });
```

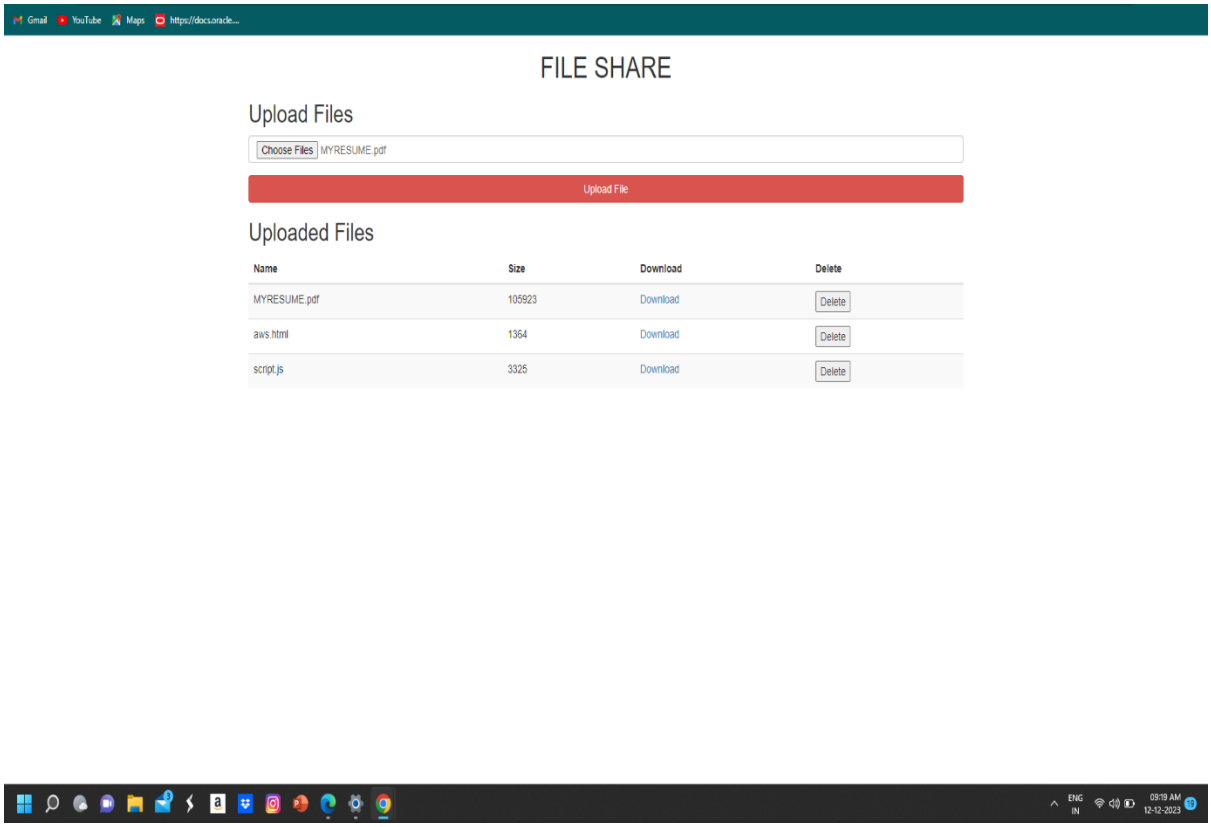
```
                deleteCell.appendChild(deleteButton);
                fileRow.appendChild(deleteCell);

                tableBody.appendChild(fileRow);
            });
        }
    });
}

function uploadFiles(bucketname) {
    let files = document.getElementById('fileInput').files;

    for (let i = 0; i < files.length; i++) {
        let file = files[i];
        let params = {
            Bucket: bucketname,
            Key: file.name,
            Body: file
        };

        s3.upload(params, (err, data) => {
            if (err) {
                console.error("Error uploading file", err);
            } else {
                console.log("File uploaded successfully");
                refreshFileList(bucketname);
            }
        });
    }
}

function deleteFile(bucketname, objectKey) {
    var params = {
        Bucket: bucketname,
        Key: objectKey
    };

    s3.deleteObject(params, (err, data) => {
        if (err) {
            console.log("Error deleting file", err);
        } else {
            console.log("File deleted successfully");
            refreshFileList(bucketname);
        }
    });
}

// Initial file list refresh
refreshFileList("filesharing-s3");
```

Direct to the application website now

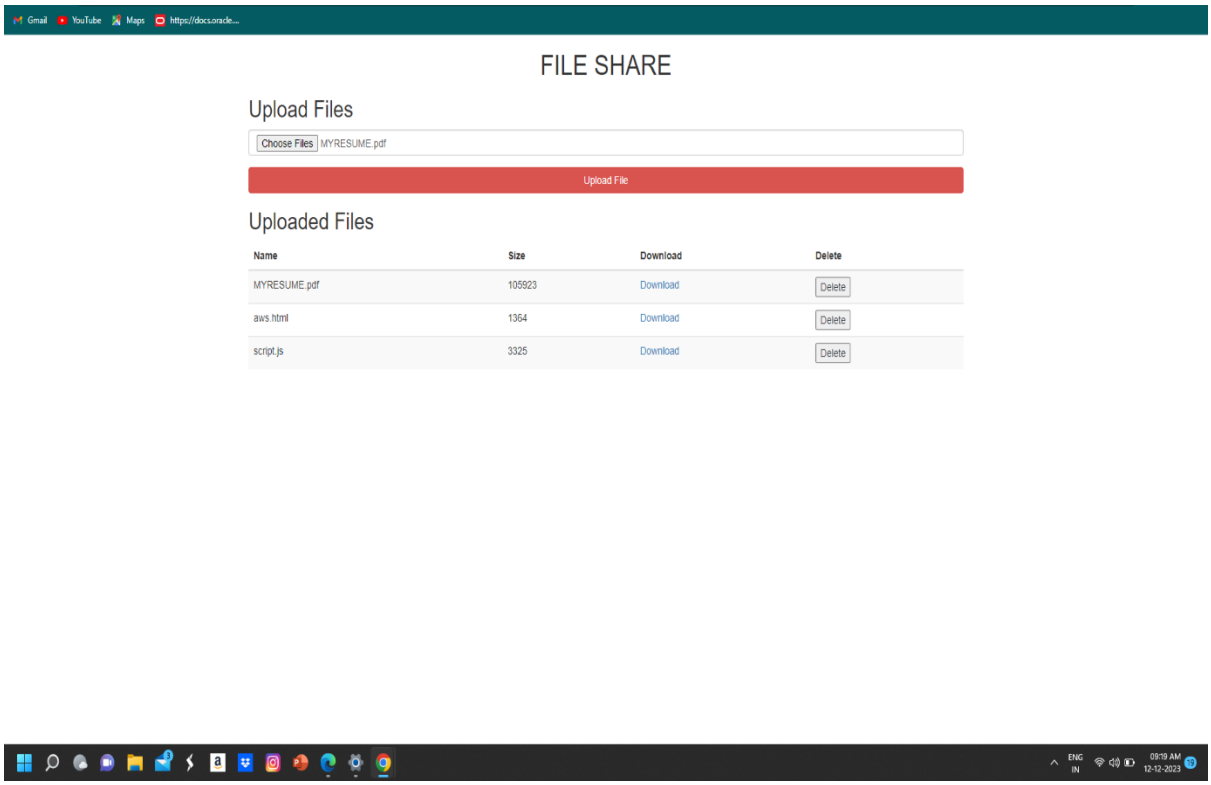


Now You can Upload the file you need to share

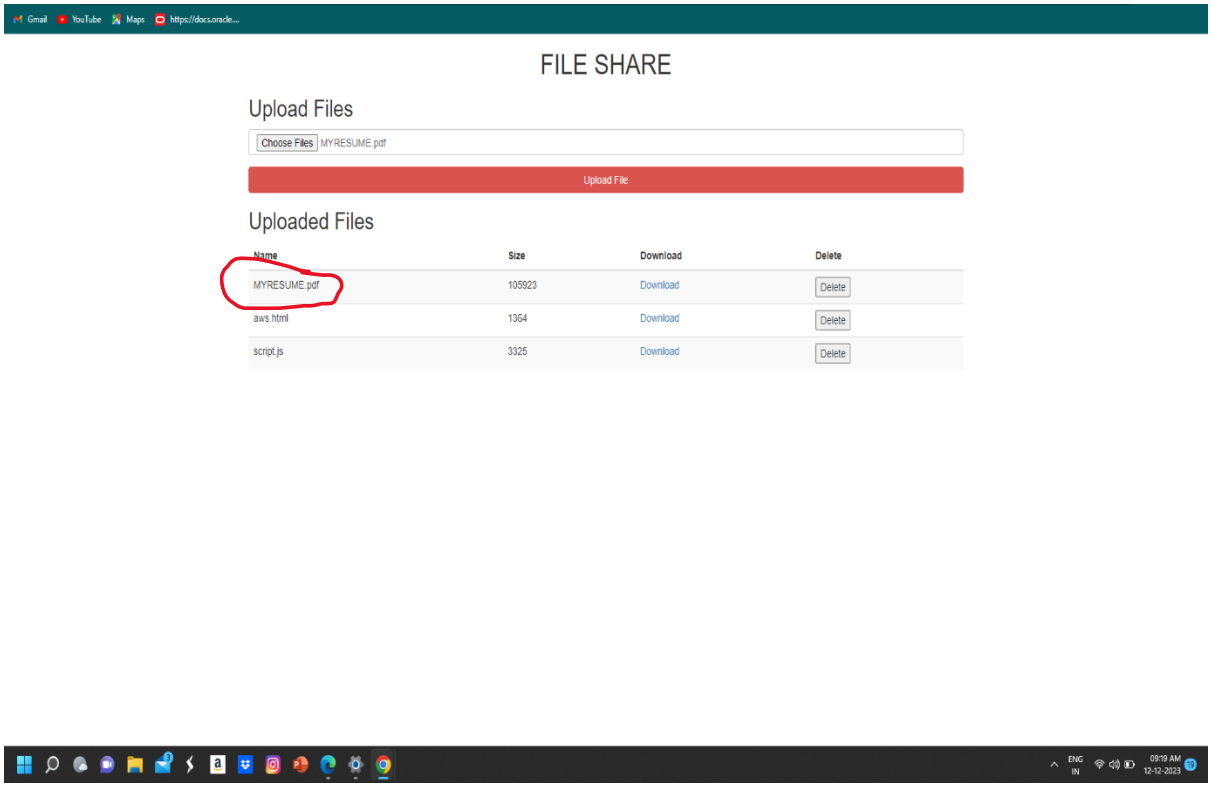



Gmail
YouTube
Maps
https://docs.oracle...
FILE SHARE
Upload Files
Choose Files
MYRESUME.pdf
Upload File
Uploaded Files
Name
Size
Download
Delete
MYRESUME.pdf
105923
Download
Delete
aws.html
1364
Download
Delete
script.js
3325
Download
Delete
ENG
IN
09:19 AM
12-12-2023

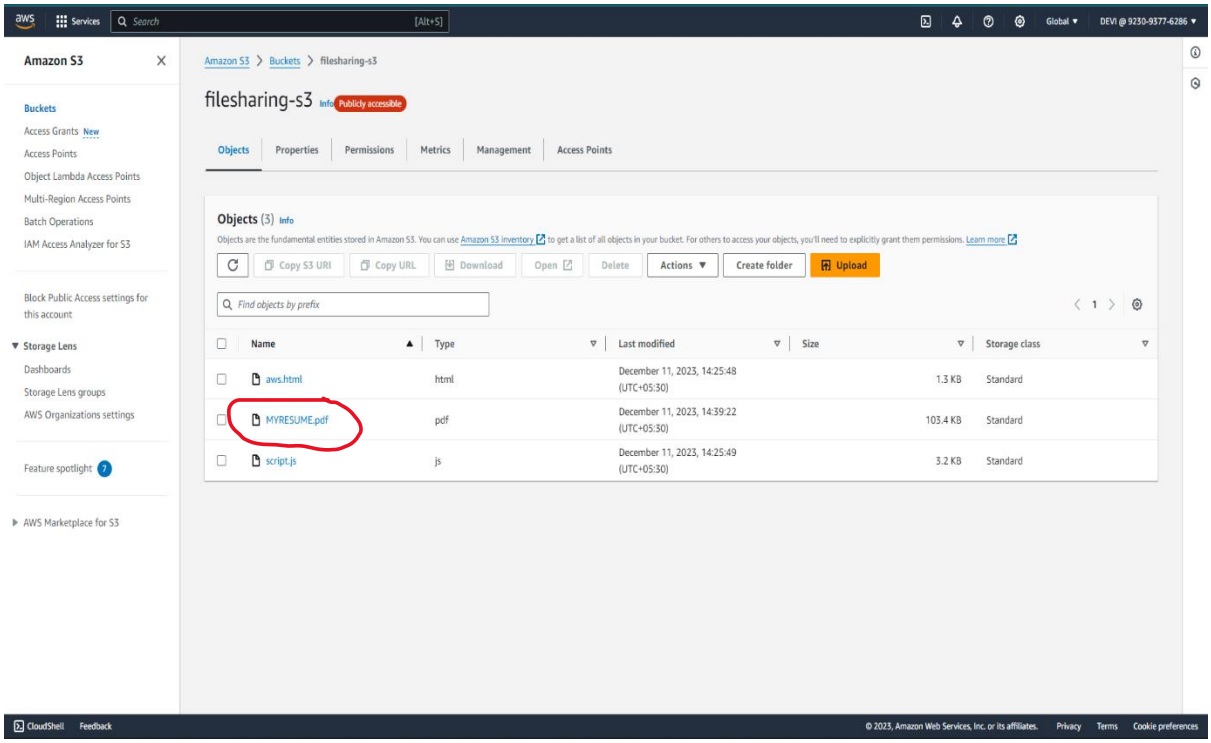
Final Image of the output:



I have Uploaded the ‘MYRESUME’ file to share



The uploaded file is shown in your AWS S3 bucket too.



Conclusion:

1. The development of the serverless file sharing application using Amazon DynamoDB, Amazon S3 bucket, and AWS Lambda has been successfully accomplished. The project leverages the power of AWS cloud services to provide a seamless and scalable file sharing experience. Key functionalities include file upload, download, and deletion, all orchestrated through AWS Lambda functions and DynamoDB for efficient metadata management.

2. The application is designed to be serverless, ensuring cost-effectiveness, scalability, and high availability. Users can easily upload files through a user-friendly interface, and the system dynamically updates the file list using S3 and DynamoDB. The solution adheres to AWS best practices, ensuring security and optimal performance.

3. Overall, the project achieves its objectives by delivering a robust and user-friendly file sharing platform powered by AWS cloud services. Future enhancements and optimizations can be explored to further enhance the application's capabilities and meet evolving user requirements.

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