	Bansilal Ramnath Agarwal Charitable Trust's Vishwakarma Institute of Information Technology **Department of Artificial Intelligence and Data Science**

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Class: TY	Division: C	Roll No: 373020
Semester: V	Academic Year: 2023-2024	
Subject Name & Code: Cloud Computing & Analytics: ADUA31203		
Title of Assignment: Deploy any static application on S3.		
Date of Performance: 14-09-2023	Date of Submission: 14-09-2023	

Assignment No.- 4

Theory:

1) What is S3 (Refer AWS Docs).

Ans: a) Amazon S3 is an object storage service that offers industry-leading scalability, data availability, security, and performance.

b) Store and protect any amount of data for a range of use cases, such as data lakes, websites, cloud-native applications, backups, archive, machine learning, and analytics.

c) Amazon S3 is designed for 99.999999999% (11 9's) of durability, and stores data for millions of customers all around the world.

2) Difference between Object Storage and Block Storage.

Ans: A) Object storage:

Object storage stores and manages data as discrete units called objects. An object typically consists of the actual data—such as documents, images, or data values— and its associated metadata. Metadata is additional information about the object that you can use to retrieve it. The metadata can include attributes like the unique identifier, object's name, size, creation date, and custom-defined tags.

Object storage systems use a flat namespace, so objects are stored without the need for a hierarchical structure. Instead, the object's unique identifier provides the address for the object within the storage system. A hashing algorithm generates the ID from the object's content, which ensures that objects with the same content have the same identifier.

B) Block storage:

Block storage works by dividing data into fixed-sized blocks and storing them as individual units. Blocks range from a few kilobytes to several megabytes in size. They can be predetermined during the configuration process.

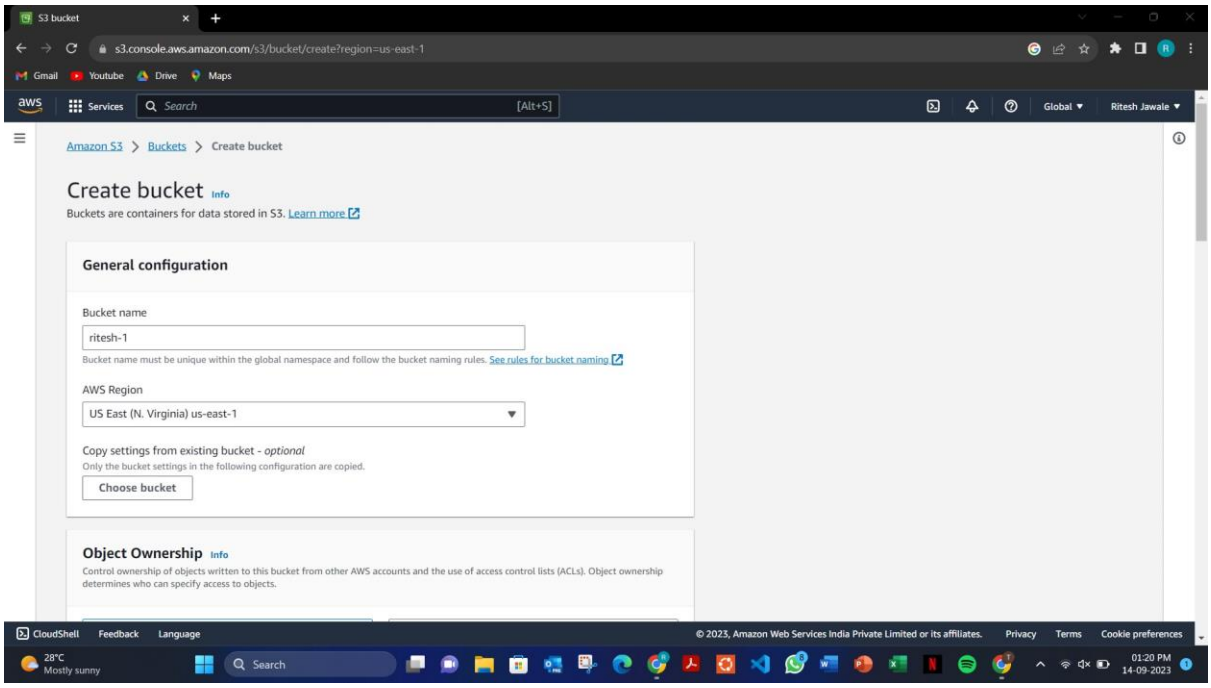
The operating system gives each block a unique address or block number, logged inside a data lookup table. The addressing uses a logical block addressing (LBA) scheme that assigns a sequential number to each block.

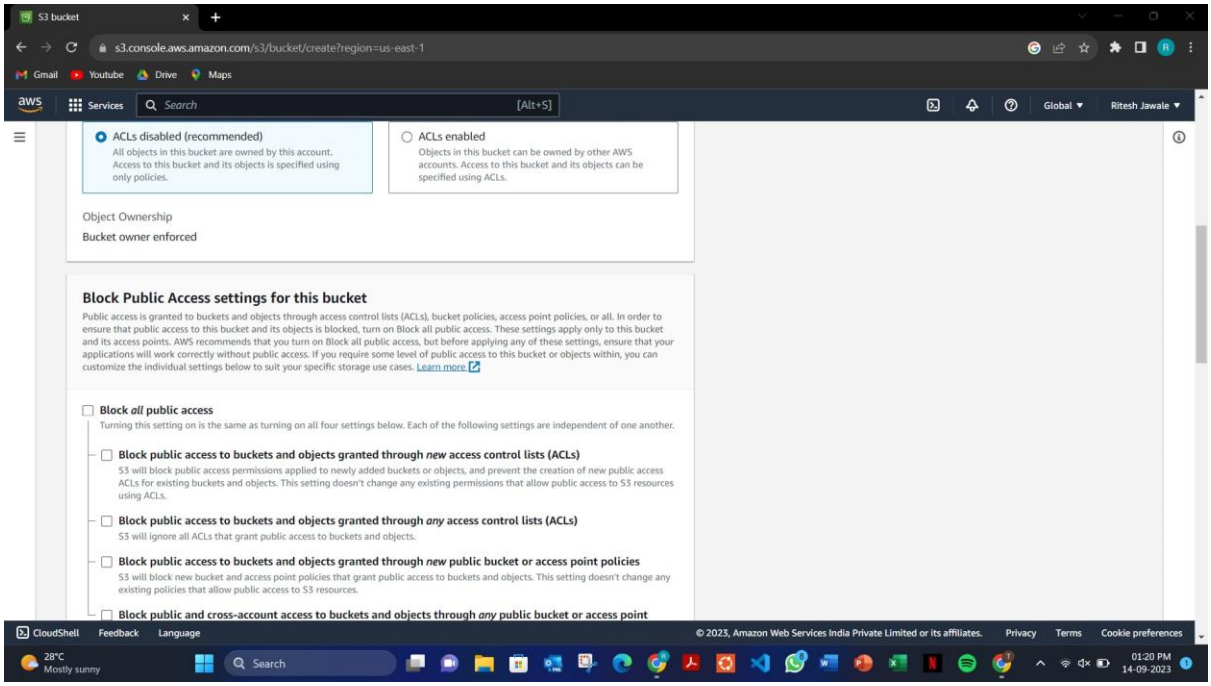
Block storage allows direct access to individual data blocks. You can read or write data to specific blocks without having to retrieve or modify the entire dataset the block belongs to.

3) S3 Storage classes.

Ans: The S3 storage classes include S3 Intelligent-Tiering for automatic cost savings for data with unknown or changing access patterns, S3 Standard for frequently accessed data, S3 Standard-Infrequent Access (S3 Standard-IA) and S3 One Zone-Infrequent Access (S3 One Zone-IA) for less frequently accessed data, S3 Glacier Instant Retrieval for archive data that needs immediate access, S3 Glacier Flexible Retrieval (formerly S3 Glacier) for rarely accessed long-term data that does not require immediate access, and Amazon S3 Glacier Deep Archive (S3 Glacier Deep Archive) for long-term archive and digital preservation with retrieval in hours at the lowest cost storage in the cloud. If you have data residency requirements that can't be met by an existing AWS Region, you can use the S3 Outposts storage class to store your S3 data on premises. Amazon S3 also offers capabilities to manage your data throughout its lifecycle. Once an S3 Lifecycle policy is set, your data will automatically transfer to a different storage class without any changes to your application.

<u>Screenshots of uploading website on S3:</u>




S3 bucket
s3.console.aws.amazon.com/s3/bucket/create?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
Search
[Alt+S]
Global
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ACLs disabled (recommended)
All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.
ACLs enabled
Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.
Object Ownership
Bucket owner enforced
Block Public Access settings for this bucket
Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. Learn more
Block all public access
Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.
Block public access to buckets and objects granted through new access control lists (ACLs)
S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.
Block public access to buckets and objects granted through any access control lists (ACLs)
S3 will ignore all ACLs that grant public access to buckets and objects.
Block public access to buckets and objects granted through new public bucket or access point policies
S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.
Block public and cross-account access to buckets and objects through any public bucket or access point
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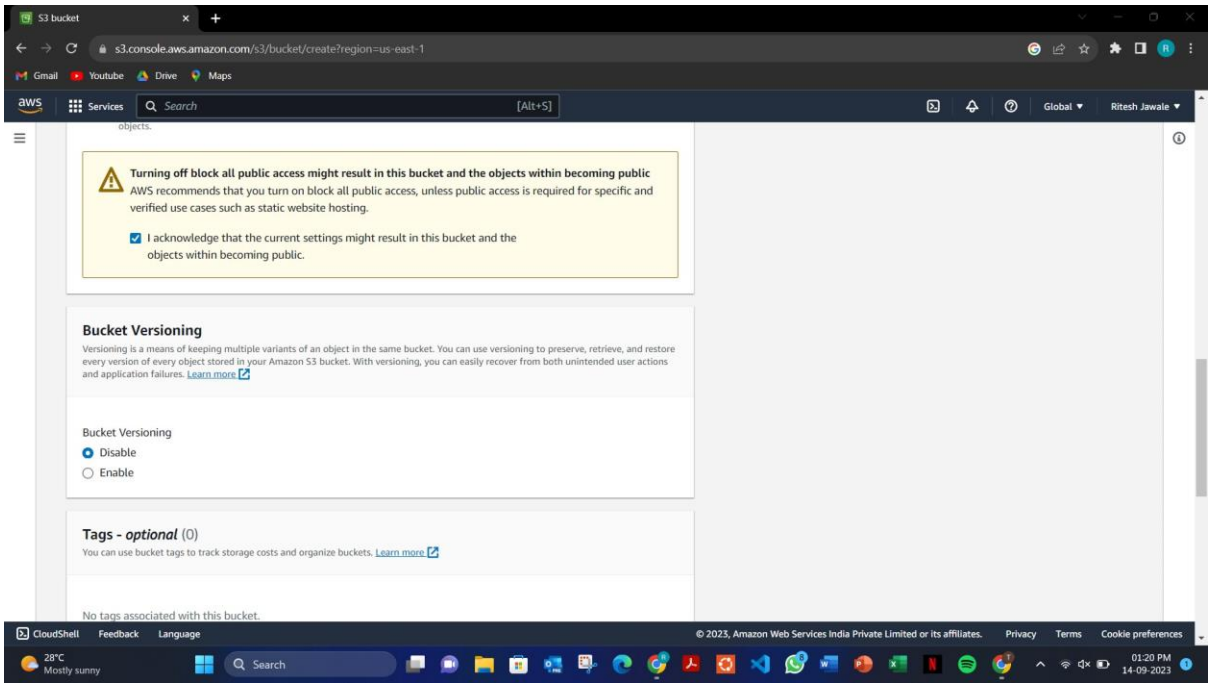
S3 bucket
s3.console.aws.amazon.com/s3/bucket/create?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
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objects.
Turning off block all public access might result in this bucket and the objects within becoming public
AWS recommends that you turn on block all public access, unless public access is required for specific and verified use cases such as static website hosting.
I acknowledge that the current settings might result in this bucket and the objects within becoming public.
Bucket Versioning
Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. Learn more
Bucket Versioning
Disable
Enable
Tags - optional (0)
You can use bucket tags to track storage costs and organize buckets. Learn more
No tags associated with this bucket.
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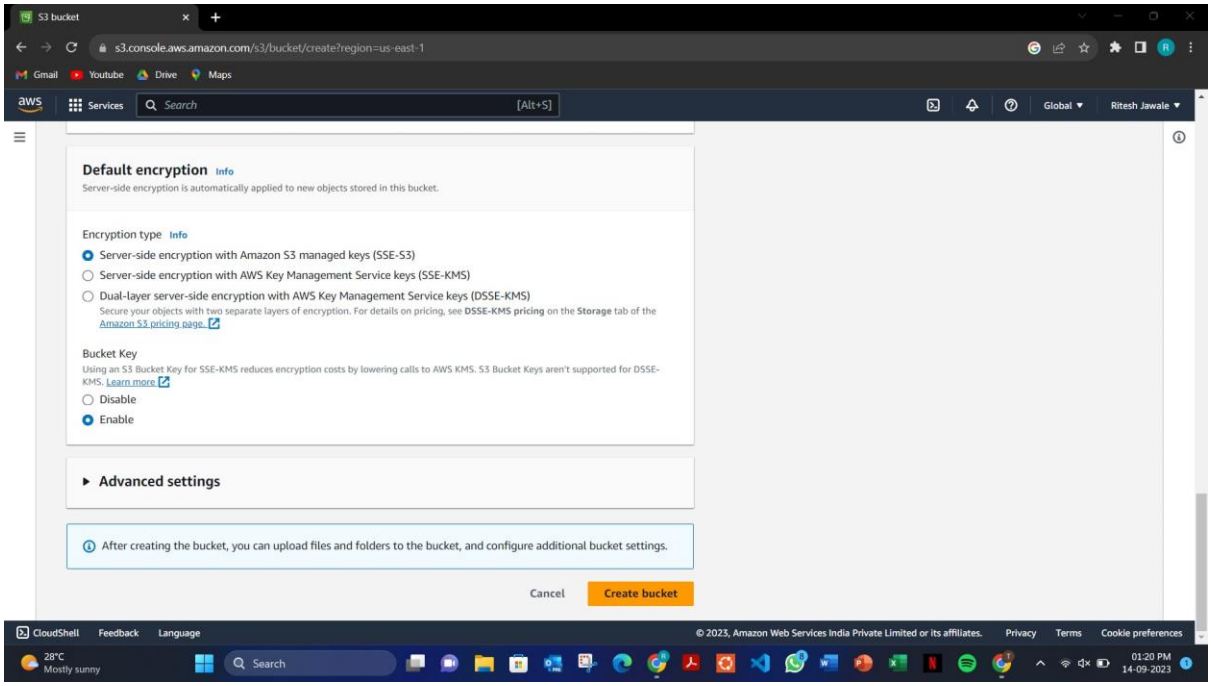
S3 bucket
s3.console.aws.amazon.com/s3/bucket/create?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
Search
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Default encryption Info
Server-side encryption is automatically applied to new objects stored in this bucket.
Encryption type Info
Server-side encryption with Amazon S3 managed keys (SSE-S3)
Server-side encryption with AWS Key Management Service keys (SSE-KMS)
Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)
Secure your objects with two separate layers of encryption. For details on pricing, see DSSE-KMS pricing on the Storage tab of the Amazon S3 pricing page.
Bucket Key
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. Learn more
Disable
Enable
Advanced settings
After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.
Cancel
Create bucket
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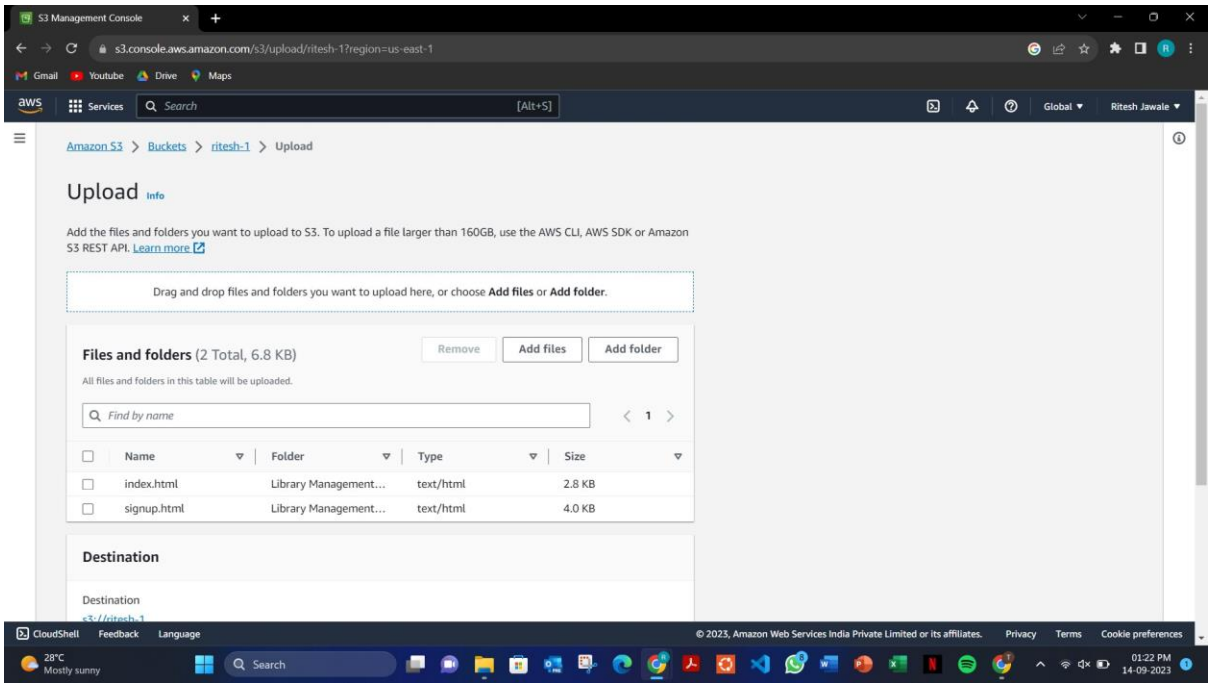
S3 Management Console
s3.console.aws.amazon.com/s3/upload/ritesh-1?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
Search
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Amazon S3 > Buckets > ritesh-1 > Upload
Upload Info
Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more
Drag and drop files and folders you want to upload here, or choose Add files or Add folder.
Files and folders (2 Total, 6.8 KB)
Remove
Add files
Add folder
All files and folders in this table will be uploaded.
Find by name
1
Name
Folder
Type
Size
index.html
Library Management...
text/html
2.8 KB
signup.html
Library Management...
text/html
4.0 KB
Destination
Destination
s3://ritesh-1
CloudShell
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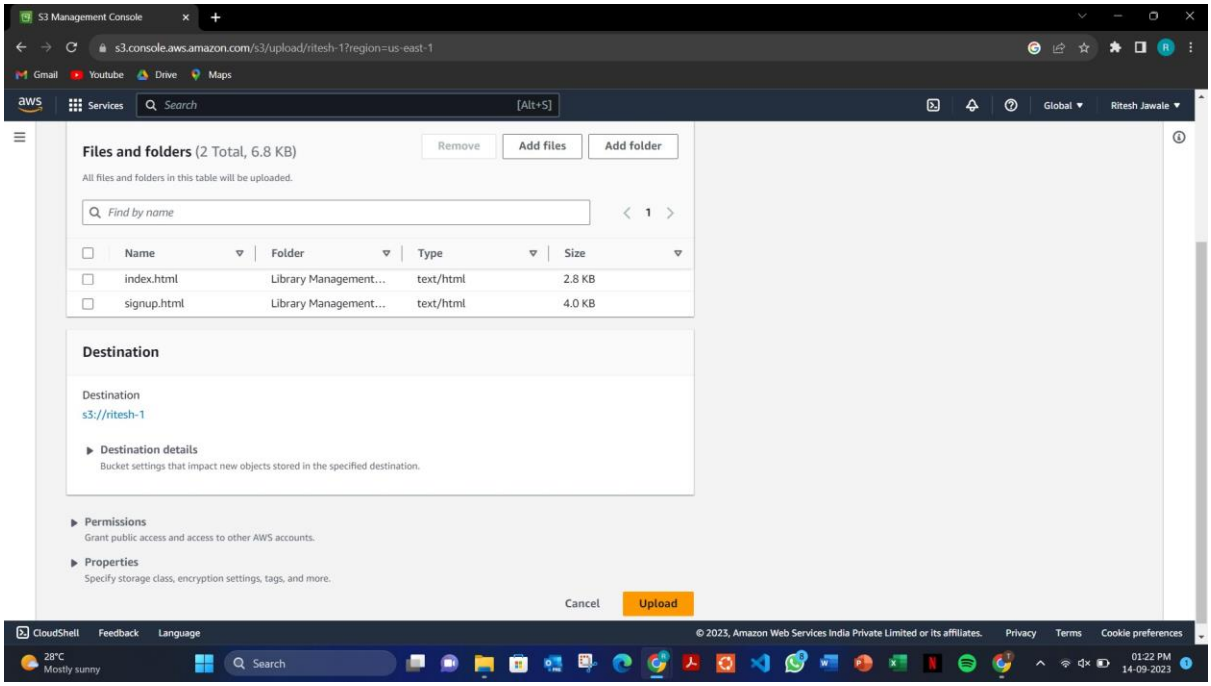
S3 Management Console
s3.console.aws.amazon.com/s3/upload/ritesh-1?region=us-east-1
Gmail
Youtube
Drive
Maps
Services
Search
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Global
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Files and folders (2 Total, 6.8 KB)
Remove
Add files
Add folder
All files and folders in this table will be uploaded.
Find by name
1
Name
Folder
Type
Size
index.html
Library Management...
text/html
2.8 KB
signup.html
Library Management...
text/html
4.0 KB
Destination
Destination
s3://ritesh-1
Destination details
Bucket settings that impact new objects stored in the specified destination.
Permissions
Grant public access and access to other AWS accounts.
Properties
Specify storage class, encryption settings, tags, and more.
Cancel
Upload
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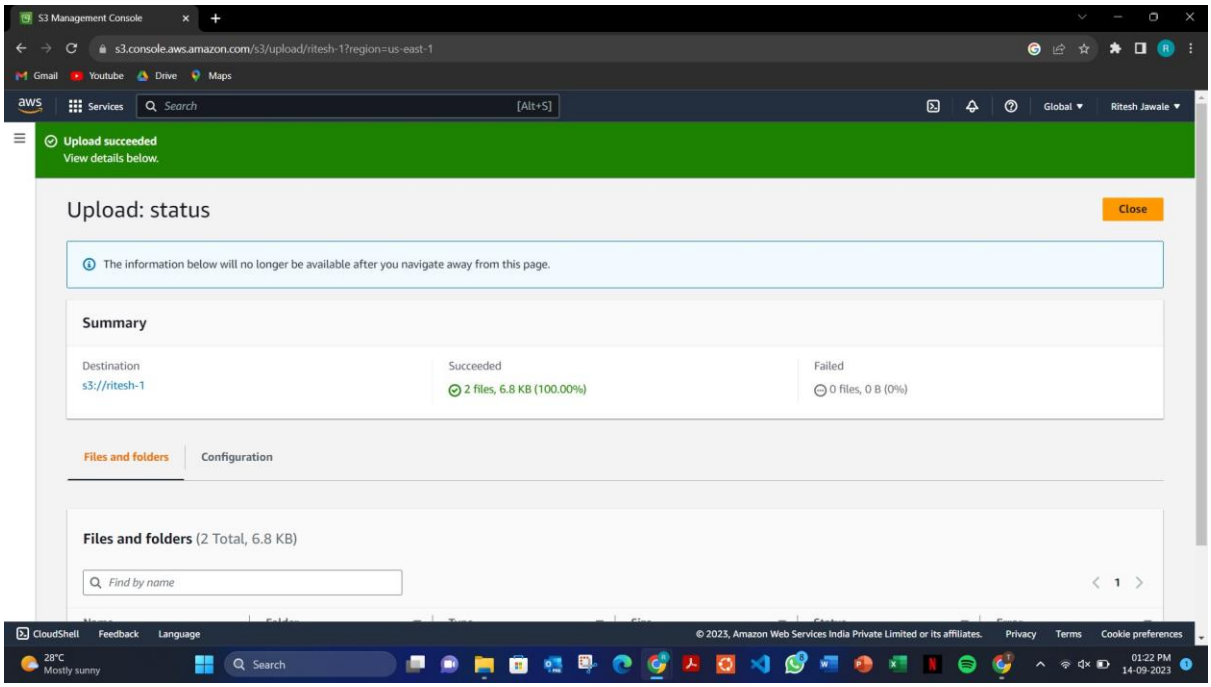
S3 Management Console
s3.console.aws.amazon.com/s3/upload/ritesh-1?region=us-east-1
Gmail
Youtube
Drive
Maps
Services
Search
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Global
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Upload succeeded
View details below.
Upload: status
Close
The information below will no longer be available after you navigate away from this page.
Summary
Destination
s3://ritesh-1
Succeeded
2 files, 6.8 KB (100.00%)
Failed
0 files, 0 B (0%)
Files and folders
Configuration
Files and folders (2 Total, 6.8 KB)
Find by name
1
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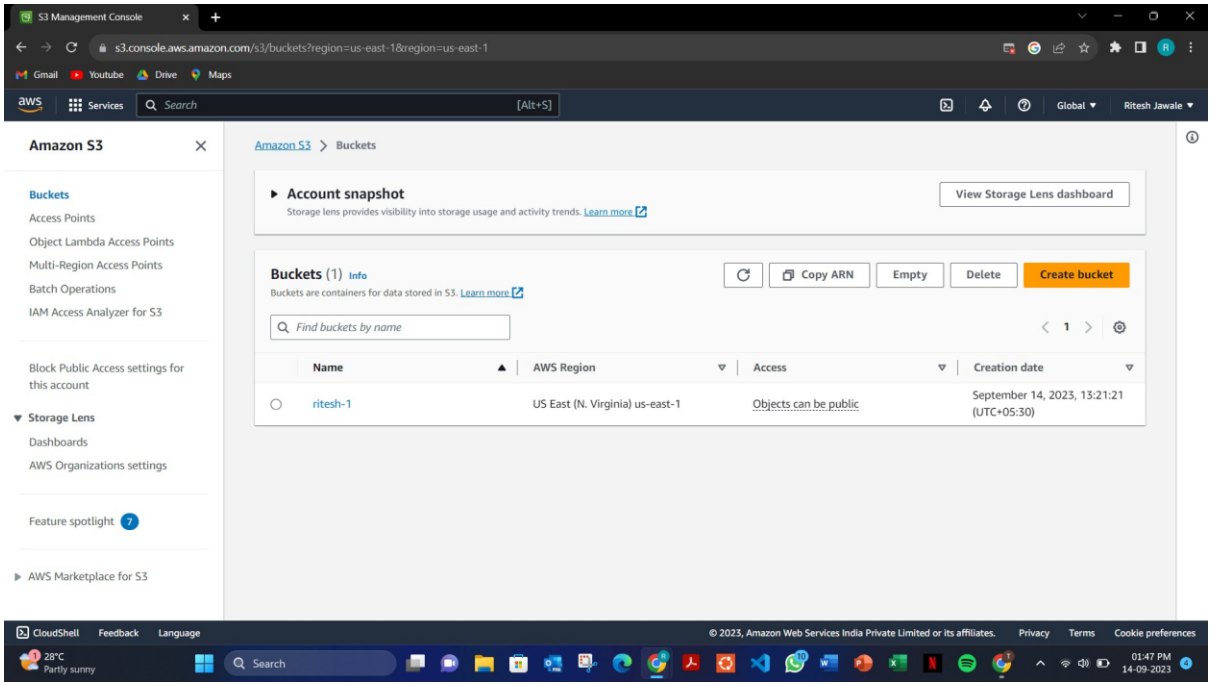
S3 Management Console
s3.console.aws.amazon.com/s3/buckets?region=us-east-1&region=us-east-1
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Services
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets
Account snapshot
Storage lens provides visibility into storage usage and activity trends. Learn more
View Storage Lens dashboard
Buckets (1) 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
ritesh-1
US East (N. Virginia) us-east-1
Objects can be public
September 14, 2023, 13:21:21 (UTC+05:30)
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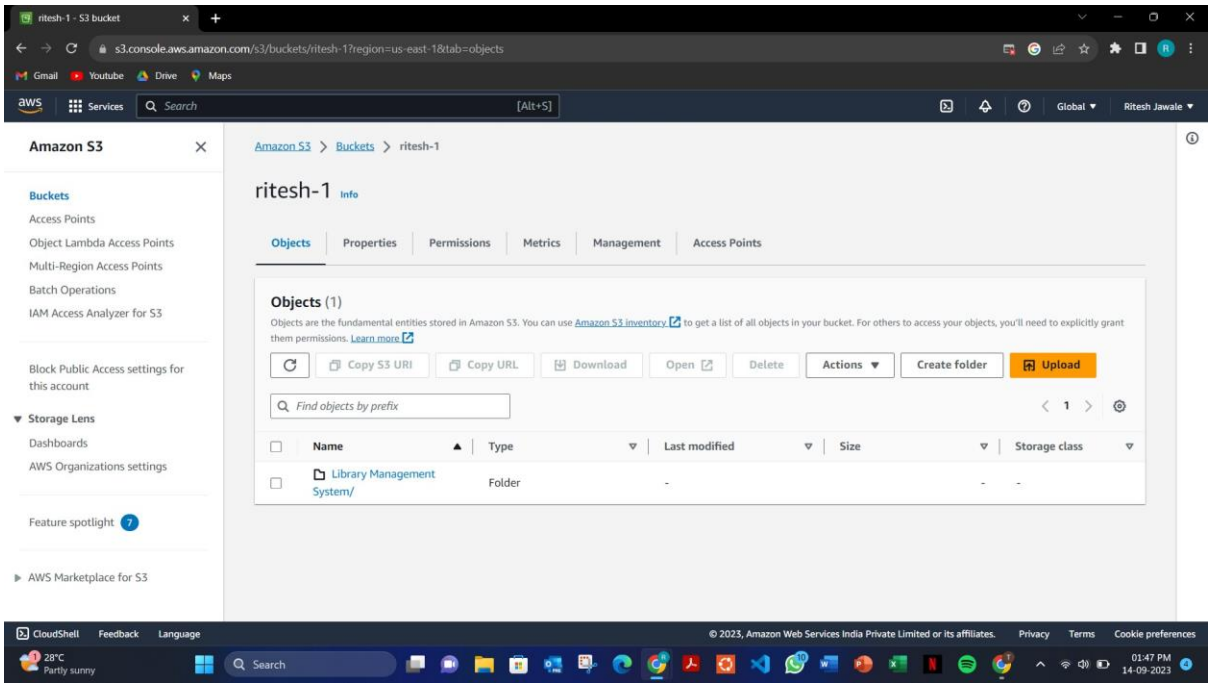
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&tab=objects
Gmail
Youtube
Drive
Maps
aws
Services
Search
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Global
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > ritesh-1
ritesh-1 Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Objects (1)
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Name
Type
Last modified
Size
Storage class
Library Management System/
Folder
CloudShell
Feedback
Language
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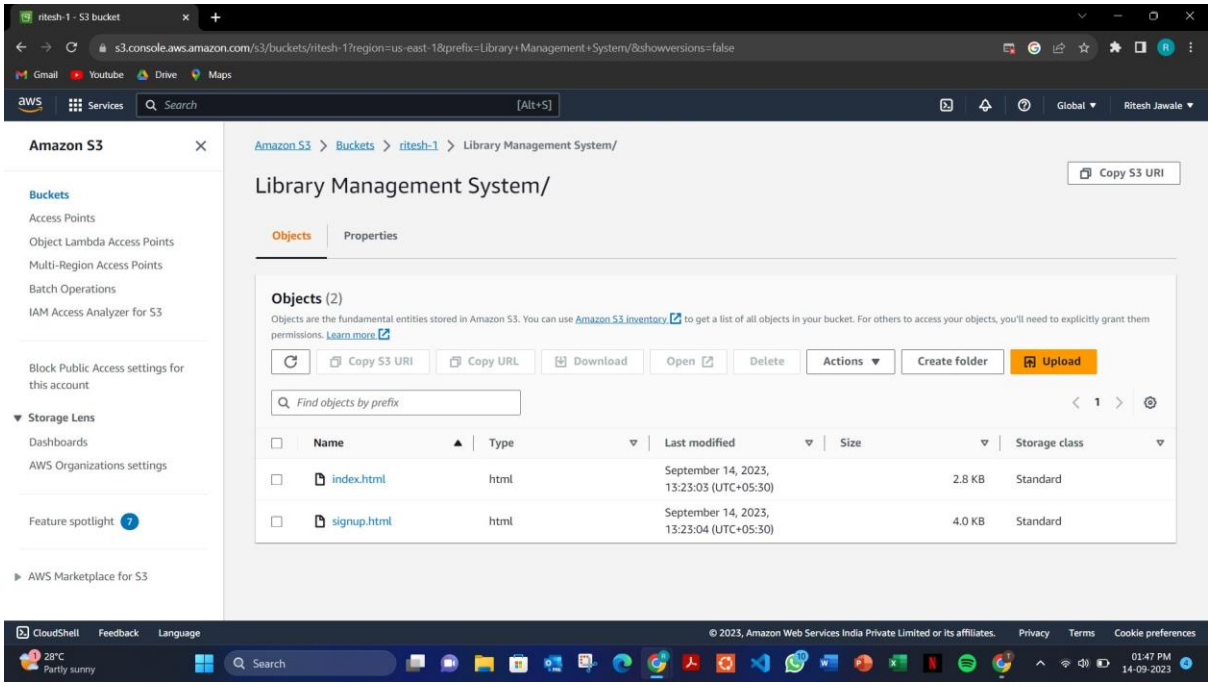
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&prefix=Library+Management+System/&showversions=false
Gmail
Youtube
Drive
Maps
aws
Services
Search
[Alt+S]
Global
Ritesh Jawale
Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > ritesh-1 > Library Management System/
Library Management System/
Copy S3 URI
Objects
Properties
Objects (2)
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Name
Type
Last modified
Size
Storage class
index.html
html
September 14, 2023, 13:23:03 (UTC+05:30)
2.8 KB
Standard
signup.html
html
September 14, 2023, 13:23:04 (UTC+05:30)
4.0 KB
Standard
CloudShell
Feedback
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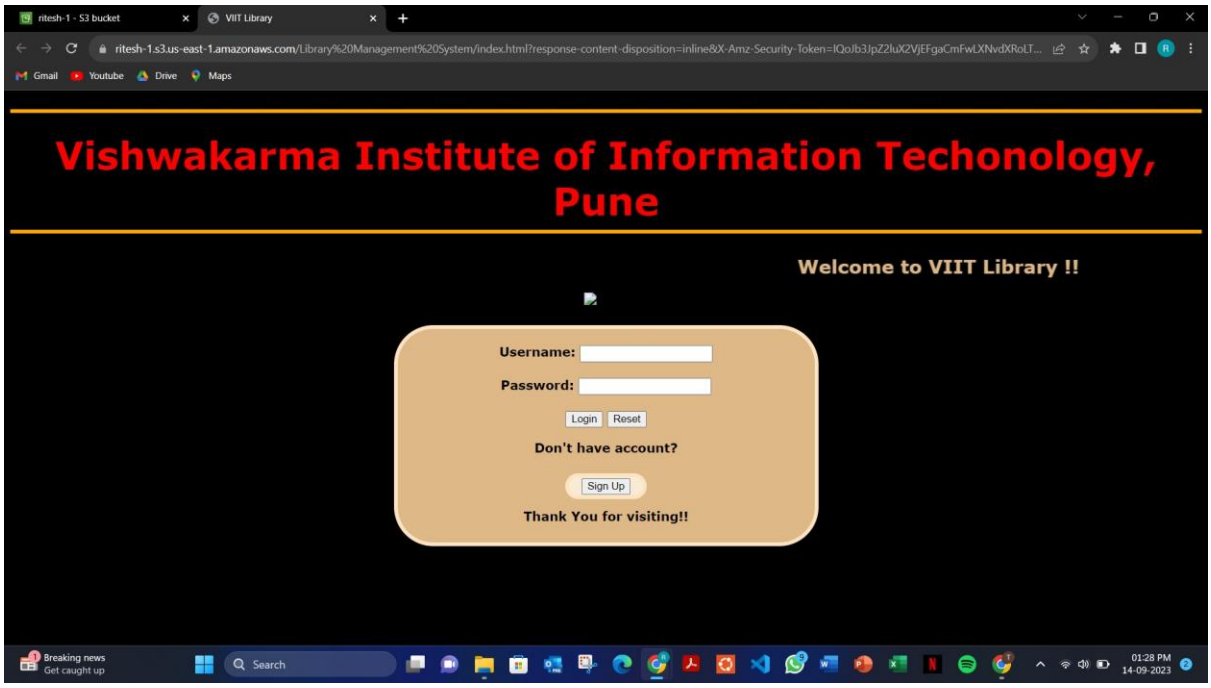
ritesh-1 - S3 bucket
VIIT Library
ritesh-1.s3.us-east-1.amazonaws.com/Library%20Management%20System/index.html?response-content-disposition=inline&X-Amz-Security-Token=IQoJb3JpZ2luX2VjEFgaCmFwLXNvdXRoLT...
Gmail
Youtube
Drive
Maps
Vishwakarma Institute of Information Techonology, Pune
Welcome to VIIT Library !!
Username:
Password:
Login
Reset
Don't have account?
Sign Up
Thank You for visiting!!
Breaking news
Get caught up
Search
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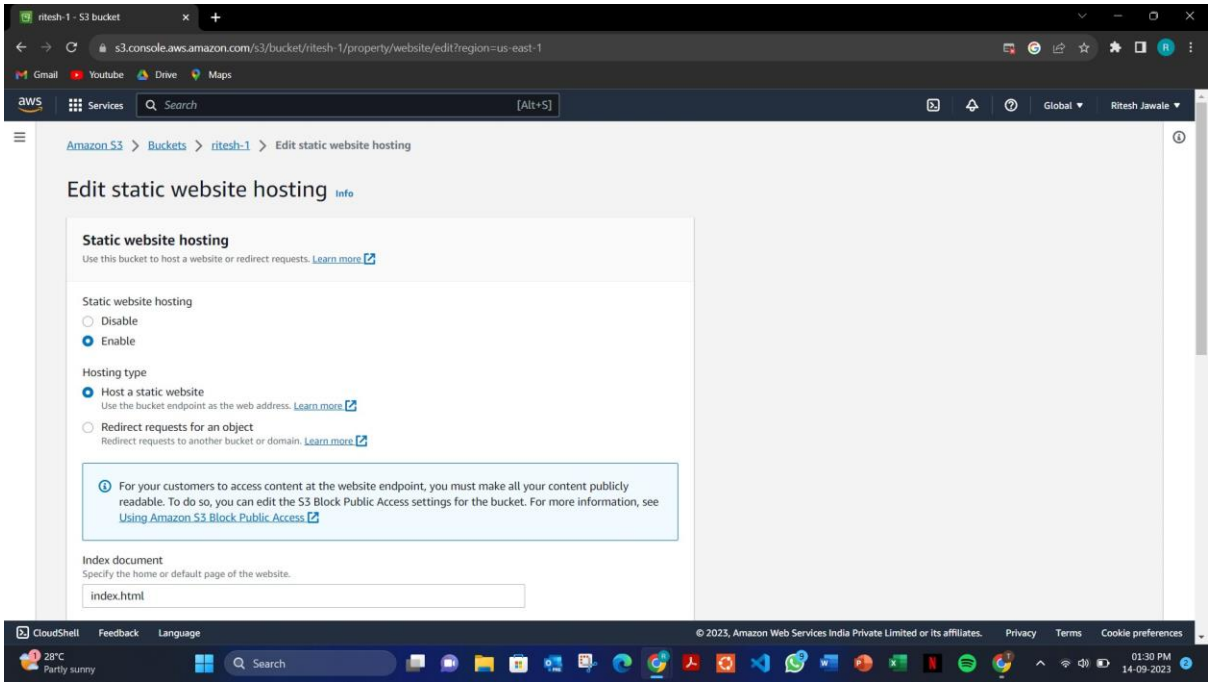
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/bucket/ritesh-1/property/website/edit?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
Search
[Alt+S]
Global
Ritesh Jawale
Amazon S3 > Buckets > ritesh-1 > Edit static website hosting
Edit static website hosting Info
Static website hosting
Use this bucket to host a website or redirect requests. Learn more
Static website hosting
Disable
Enable
Hosting type
Host a static website
Use the bucket endpoint as the web address. Learn more
Redirect requests for an object
Redirect requests to another bucket or domain. Learn more
For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see Using Amazon S3 Block Public Access
Index document
Specify the home or default page of the website.
index.html
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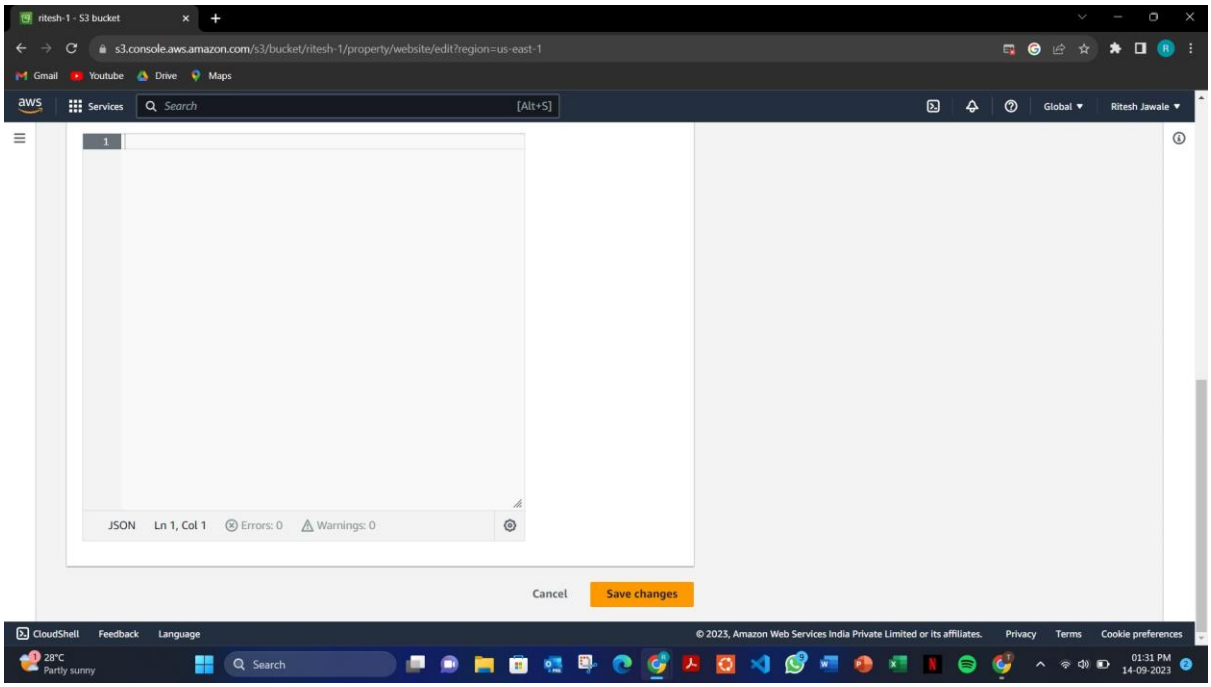
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/bucket/ritesh-1/property/website/edit?region=us-east-1
Gmail
Youtube
Drive
Maps
aws
Services
Search
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1
JSON
Ln 1, Col 1
Errors: 0
Warnings: 0
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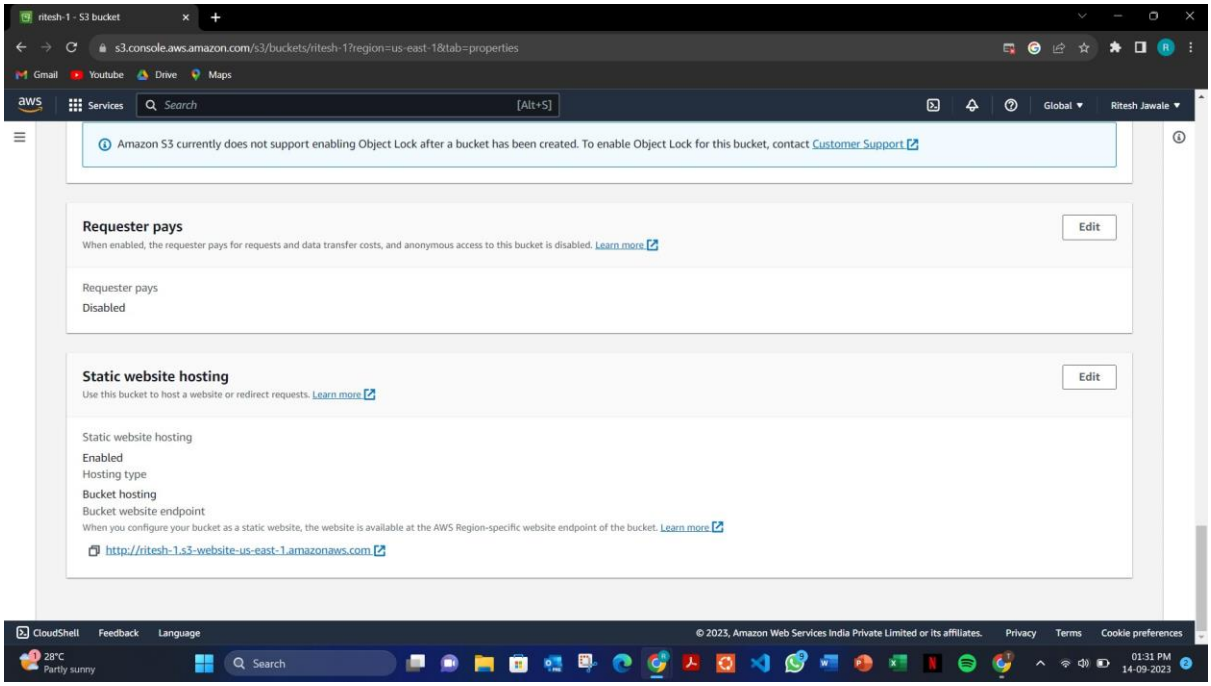
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&tab=properties
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Youtube
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Maps
aws
Services
Search
[Alt+S]
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Amazon S3 currently does not support enabling Object Lock after a bucket has been created. To enable Object Lock for this bucket, contact Customer Support
Requester pays
When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. Learn more
Edit
Requester pays
Disabled
Static website hosting
Use this bucket to host a website or redirect requests. Learn more
Edit
Static website hosting
Enabled
Hosting type
Bucket hosting
Bucket website endpoint
When you configure your bucket as a static website, the website is available at the AWS Region-specific website endpoint of the bucket. Learn more
http://ritesh-1.s3-website-us-east-1.amazonaws.com
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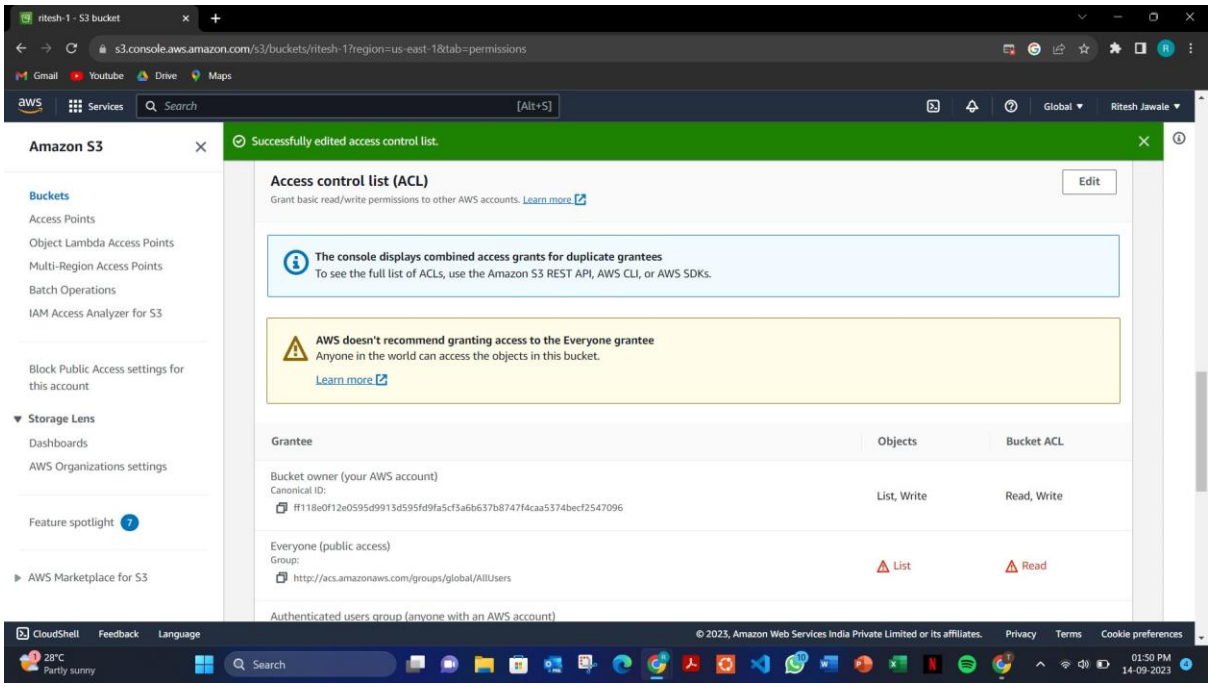
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&tab=permissions
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Youtube
Drive
Maps
aws
Services
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Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
7
AWS Marketplace for S3
Successfully edited access control list.
Access control list (ACL)
Grant basic read/write permissions to other AWS accounts. Learn more
Edit
The console displays combined access grants for duplicate grantees
To see the full list of ACLs, use the Amazon S3 REST API, AWS CLI, or AWS SDKs.
AWS doesn't recommend granting access to the Everyone grantee
Anyone in the world can access the objects in this bucket.
Learn more
Grantee
Objects
Bucket ACL
Bucket owner (your AWS account)
Canonical ID:
ff118e0f12e0595d9913d595fd9fa5cf3a6b637b8747f4caa5374becf2547096
List, Write
Read, Write
Everyone (public access)
Group:
http://acs.amazonaws.com/groups/global/AllUsers
List
Read
Authenticated users group (anyone with an AWS account)
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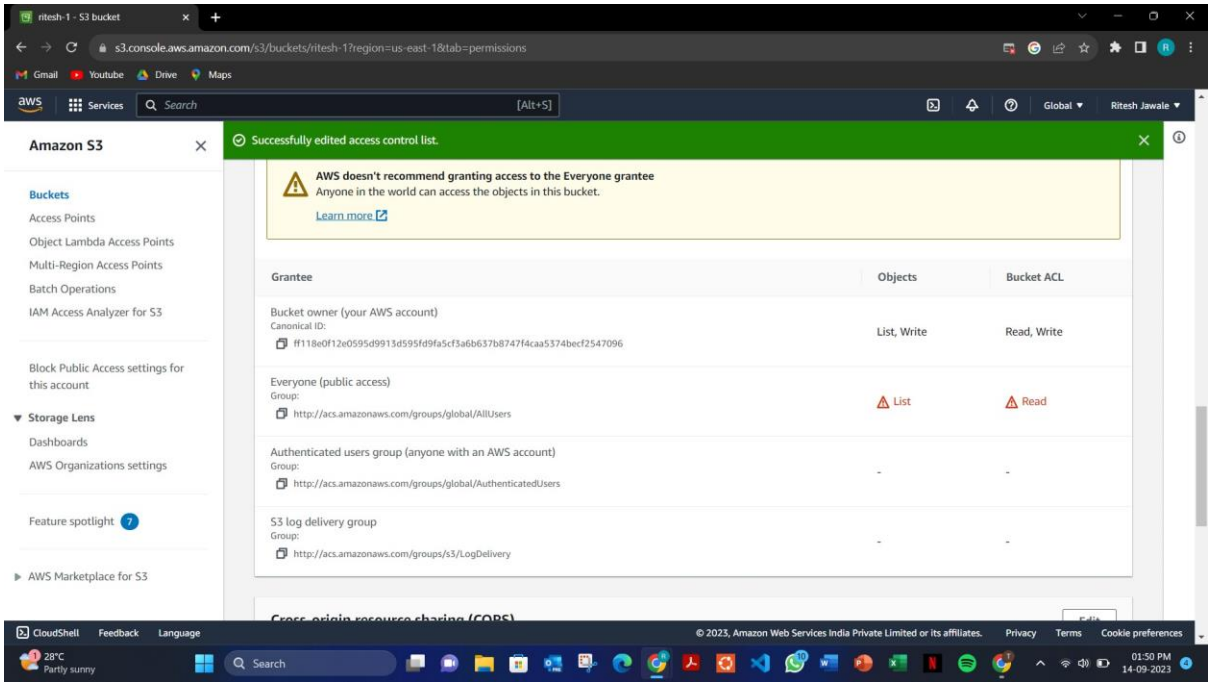
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&tab=permissions
Gmail
Youtube
Drive
Maps
aws
Services
Search
[Alt+S]
Global
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Amazon S3
Successfully edited access control list.
AWS doesn't recommend granting access to the Everyone grantee
Anyone in the world can access the objects in this bucket.
Learn more
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Grantee
Objects
Bucket ACL
Bucket owner (your AWS account)
Canonical ID:
ff118e0f12e0595d9913d595fd9fa5cf3a6b637b8747f4caa5374becf2547096
List, Write
Read, Write
Everyone (public access)
Group:
http://acs.amazonaws.com/groups/global/AllUsers
List
Read
Authenticated users group (anyone with an AWS account)
Group:
http://acs.amazonaws.com/groups/global/AuthenticatedUsers
S3 log delivery group
Group:
http://acs.amazonaws.com/groups/s3/LogDelivery
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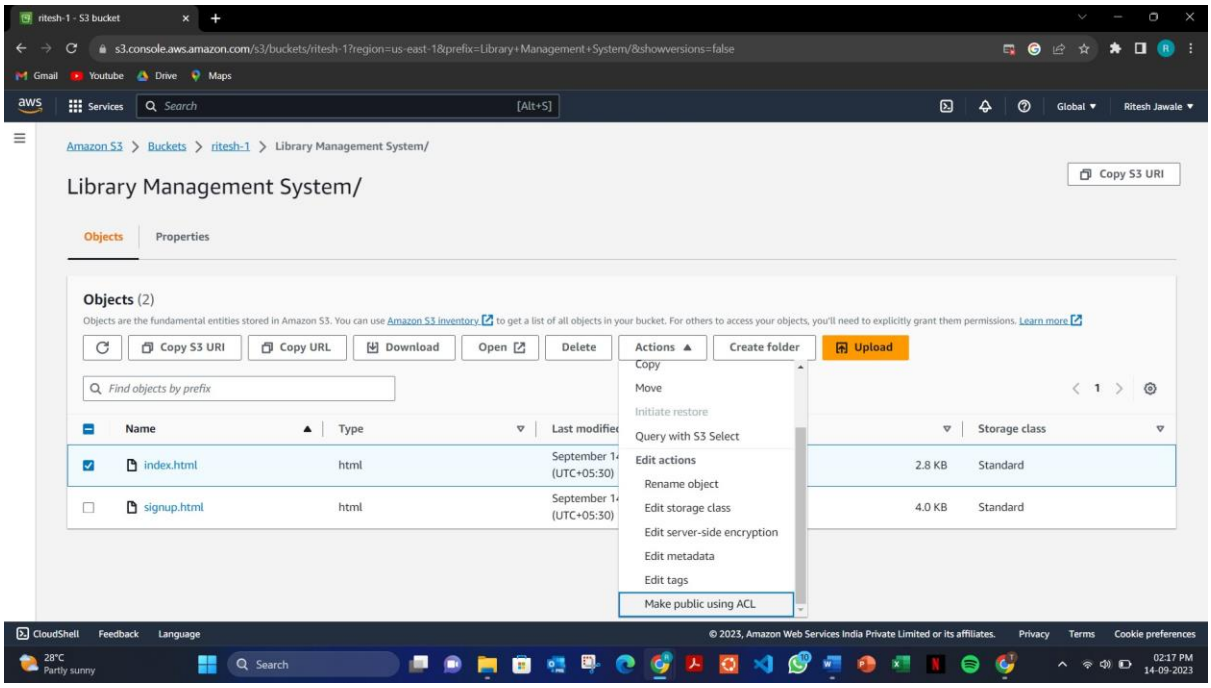
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1?region=us-east-1&prefix=Library+Management+System/&showversions=false
Gmail
Youtube
Drive
Maps
aws
Services
Search
[Alt+S]
Global
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Amazon S3 > Buckets > ritesh-1 > Library Management System/
Library Management System/
Copy S3 URI
Objects
Properties
Objects (2)
Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Name
Type
Last modified
Storage class
index.html
html
2.8 KB
Standard
signup.html
html
4.0 KB
Standard
Copy
Move
Initiate restore
Query with S3 Select
Edit actions
Rename object
Edit storage class
Edit server-side encryption
Edit metadata
Edit tags
Make public using ACL
CloudShell
Feedback
Language
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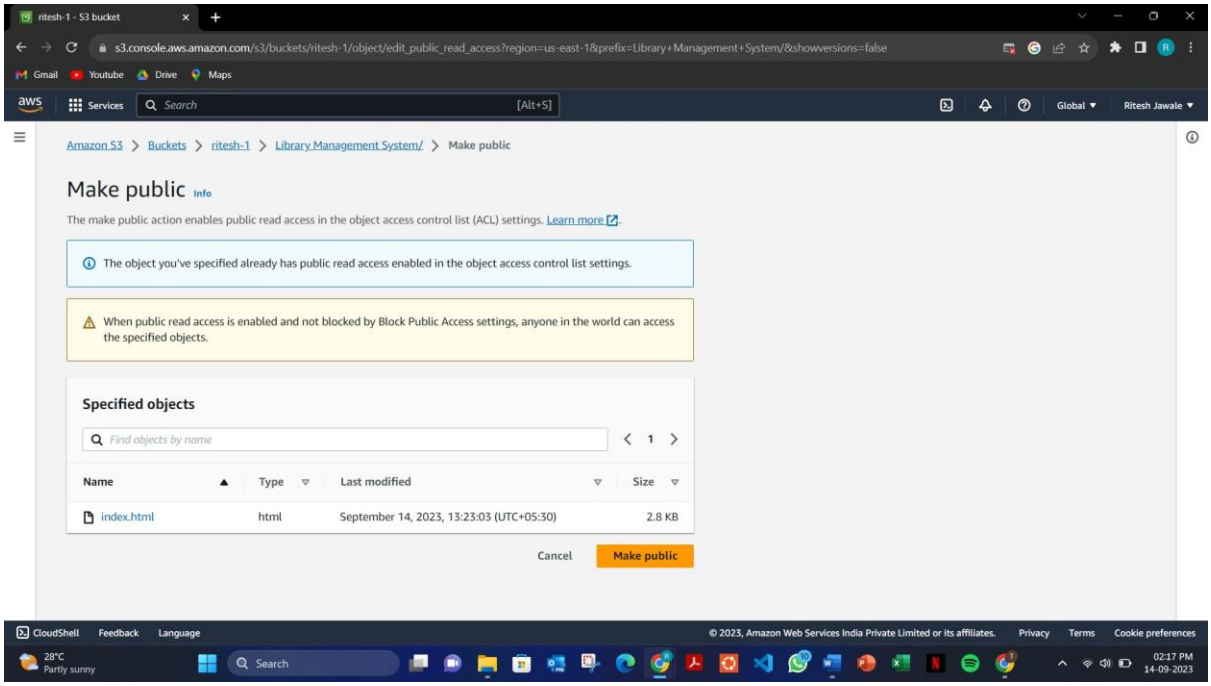
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1/object/edit_public_read_access?region=us-east-1&prefix=Library+Management+System/&showversions=false
Gmail
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Maps
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Global
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Amazon S3 > Buckets > ritesh-1 > Library Management System/ > Make public
Make public Info
The make public action enables public read access in the object access control list (ACL) settings. Learn more
The object you've specified already has public read access enabled in the object access control list settings.
When public read access is enabled and not blocked by Block Public Access settings, anyone in the world can access the specified objects.
Specified objects
Find objects by name
1
Name
Type
Last modified
Size
index.html
html
September 14, 2023, 13:23:03 (UTC+05:30)
2.8 KB
Cancel
Make public
CloudShell
Feedback
Language
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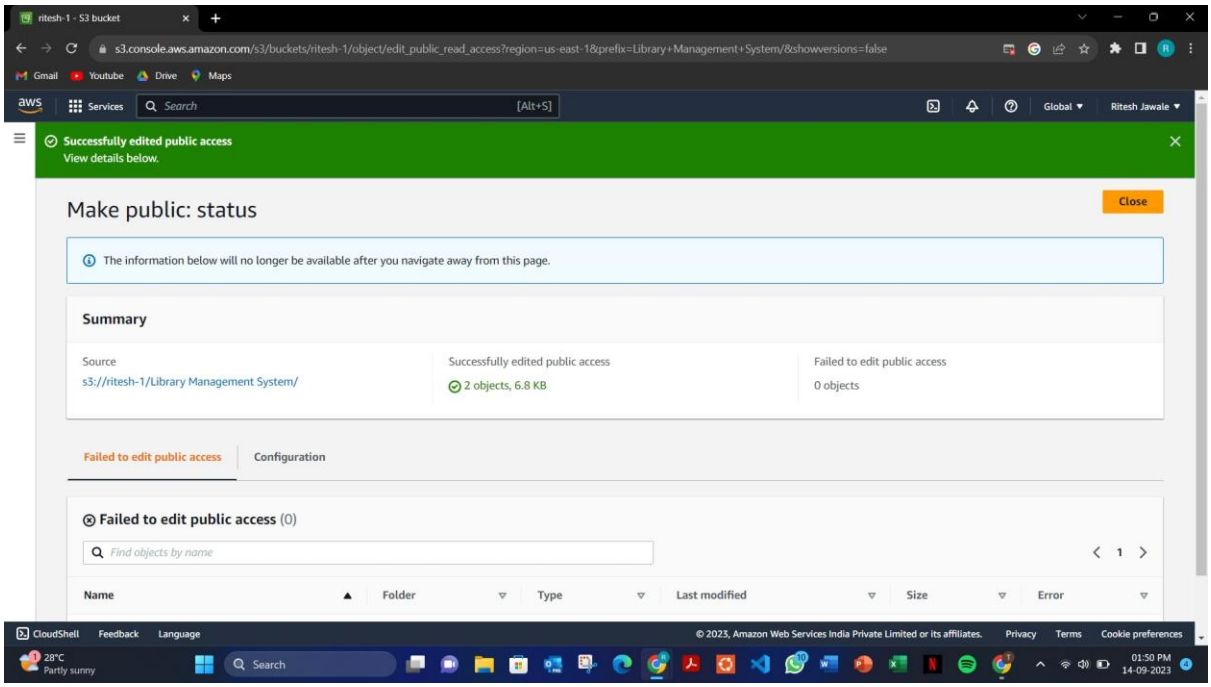
ritesh-1 - S3 bucket
s3.console.aws.amazon.com/s3/buckets/ritesh-1/object/edit_public_read_access?region=us-east-1&prefix=Library+Management+System/&showversions=false
Gmail
Youtube
Drive
Maps
Services
Search
[Alt+S]
Global
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Successfully edited public access
View details below.
Make public: status
Close
The information below will no longer be available after you navigate away from this page.
Summary
Source
s3://ritesh-1/Library Management System/
Successfully edited public access
2 objects, 6.8 KB
Failed to edit public access
0 objects
Failed to edit public access
Configuration
Failed to edit public access (0)
Find objects by name
1
Name
Folder
Type
Last modified
Size
Error
CloudShell
Feedback
Language
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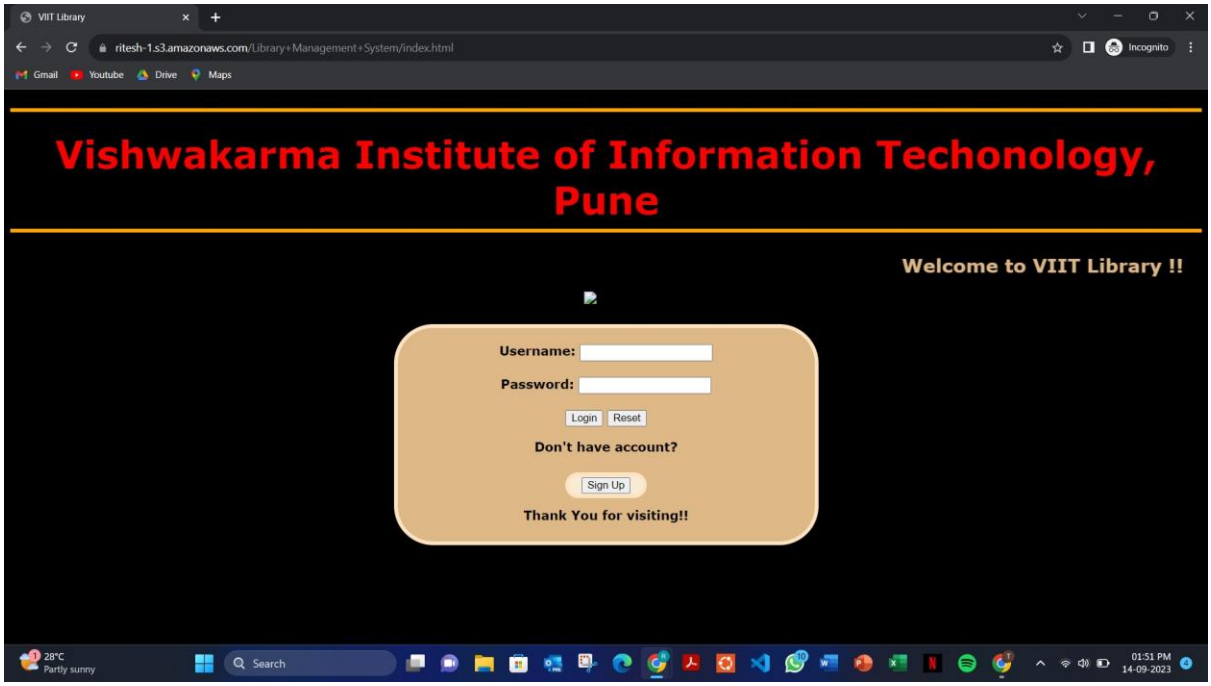
VIIT Library
ritesh-1.s3.amazonaws.com/Library+Management+System/index.html
Incognito
Gmail
Youtube
Drive
Maps
Vishwakarma Institute of Information Techonology, Pune
Welcome to VIIT Library !!
Username:
Password:
Login
Reset
Don't have account?
Sign Up
Thank You for visiting!!
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Search
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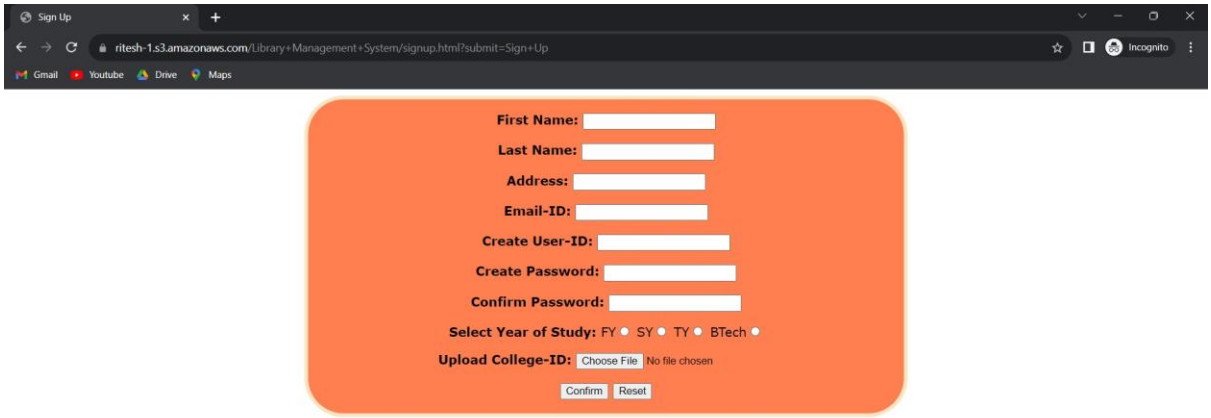
Sign Up
ritesh-1.s3.amazonaws.com/Library+Management+System/signup.html?submit=Sign+Up
Incognito
Gmail
Youtube
Drive
Maps
First Name:
Last Name:
Address:
Email-ID:
Create User-ID:
Create Password:
Confirm Password:
Select Year of Study: FY SY TY BTech
Upload College-ID: Choose File No file chosen
Confirm
Reset


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