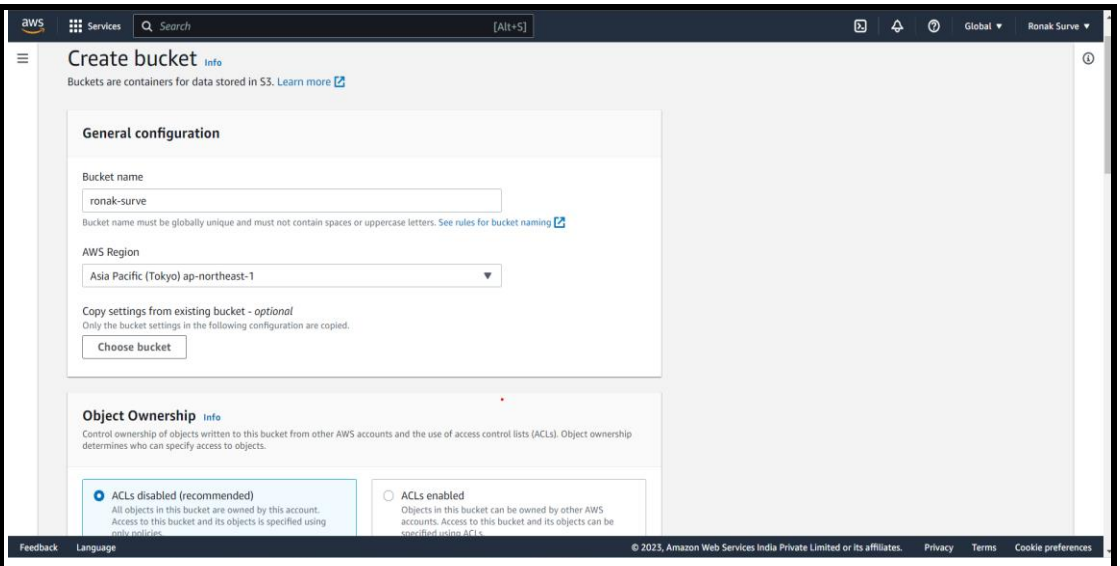
Experiment – 6

NAME: Ronak Surve
ROLL NO: 64
YEAR : 2023
SUBJECT NAME AND CODE: CSL605 Cloud Computing

Learning Objective:	To study and Implement Storage as a Service using Own Cloud/ AWS S3,Glaciers/ Azure Storage.
Learning Outcome:	Students will be able to to understand the concept of Cloud storage and to demonstrate the different types of storages like object storage, block level storages etc.
Course Outcome:	**CSL605.2**
Program Outcome:	1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. 2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. 3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. 4. **Conduct investigations of complex problems:** Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. 5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
Bloom's Taxonomy Level:	Analysis
Theory:	**What is Storage as Service ? Explain different features.** Storage as a Service (SaaS) is a cloud computing model that provides users with on-demand storage capacity over the internet. Rather than owning and maintaining physical storage infrastructure, users can pay for the amount of storage they need and access it from any location with an internet connection. 1. **Scalability**: One of the key features of SaaS is its ability to scale up or down depending on the storage needs of a user. This means that users can easily adjust their storage requirements to match their current needs without having to worry about hardware limitations.

	2. **Accessibility:** SaaS enables users to access their data from anywhere with an internet connection. This feature is particularly useful for businesses with remote workers, as it allows them to access and share data without the need for a physical office. 3. **Data Backup and Recovery:** SaaS providers usually offer backup and recovery services as part of their package. This means that users can rest assured that their data is safe and can be recovered in the event of a disaster. 4. **Security**: SaaS providers implement robust security measures to protect their users' data. These measures may include encryption, access controls, and monitoring for suspicious activity. 5. **Cost Savings:** SaaS eliminates the need for users to purchase and maintain their own storage infrastructure, which can be expensive. Instead, they pay for only the storage they need, which can result in significant cost savings. 6. **Service Level Agreements (SLAs):** SaaS providers typically offer SLAs that guarantee a certain level of uptime, performance, and data availability. These SLAs ensure that users receive a reliable and consistent service.
Procedure	Demonstrate the different types of storages like object storage, block level storages etc. supported by Cloud Platforms like Own Cloud/ AWS S3, Glaciers/ Azure Storage.
Steps	1. **Create an AWS account:** If you don't already have one, create an AWS account. You will need to provide a credit card to create an account, but AWS has a free tier that you can use for 12 months. 2. **Create an S3 bucket:** Once you have an AWS account, go to the S3 console and create a new bucket. A bucket is like a folder where you can store files. Give the bucket a name and select the region you want it to be in. You can also configure options such as versioning and encryption. 3. **Configure bucket permissions:** By default, your bucket is private, meaning that only you can access it. You can add permissions to allow other AWS accounts or users to access your bucket, either with or without authentication. 4. **Upload files to your bucket:** You can upload files to your bucket using the S3 console, the AWS CLI, or an SDK. You can also configure lifecycle policies to automatically delete or move files after a certain period of time. 5. **Access your bucket:** Once you have uploaded files to your bucket, you can access them via a URL or programmatically using the AWS SDK or API. You can also configure CloudFront, AWS's content delivery network, to serve your files faster and more efficiently.
Outcome :	


Services
Search
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Global
Ronak Surve
Create bucket Info
Buckets are containers for data stored in S3. Learn more
General configuration
Bucket name
ronak-surve
Bucket name must be globally unique and must not contain spaces or uppercase letters. See rules for bucket naming
AWS Region
Asia Pacific (Tokyo) ap-northeast-1
Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.
Choose bucket
Object Ownership Info
Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.
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.
Feedback
Language
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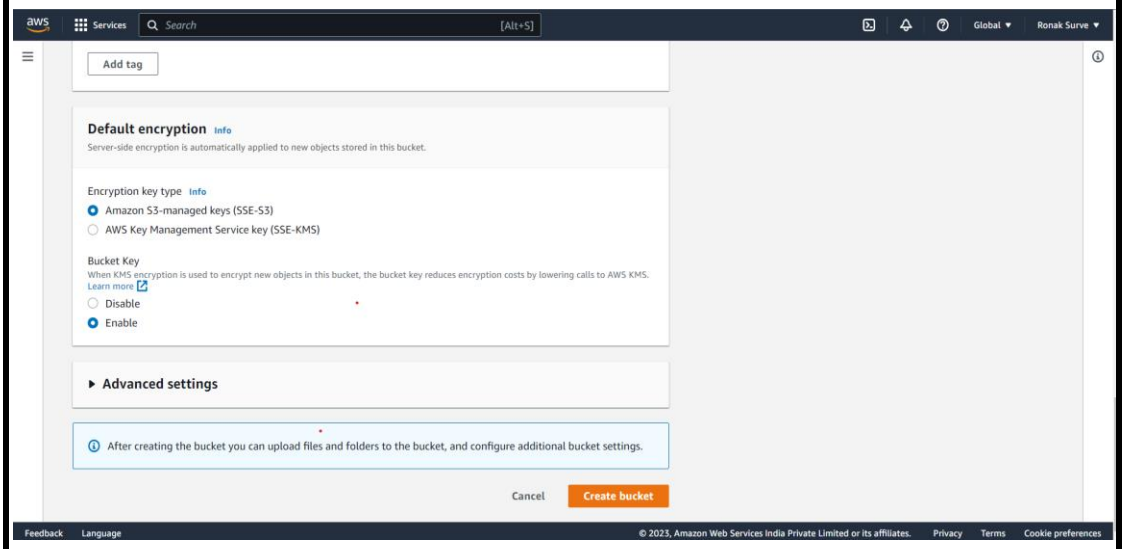
Services
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Add tag
Default encryption Info
Server-side encryption is automatically applied to new objects stored in this bucket.
Encryption key type Info
Amazon S3-managed keys (SSE-S3)
AWS Key Management Service key (SSE-KMS)
Bucket Key
When KMS encryption is used to encrypt new objects in this bucket, the bucket key reduces encryption costs by lowering calls to AWS 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
Feedback
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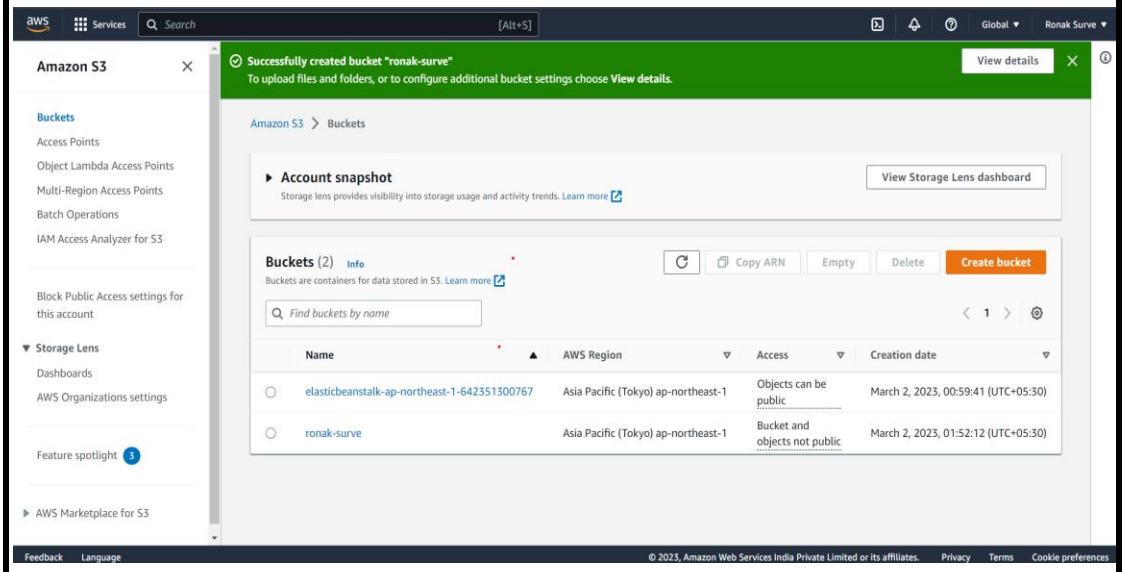
Services
Search
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Global
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight 3
AWS Marketplace for S3
Successfully created bucket "ronak-surve"
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
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
elasticbeanstalk-ap-northeast-1-642351300767
Asia Pacific (Tokyo) ap-northeast-1
Objects can be public
March 2, 2023, 00:59:41 (UTC+05:30)
ronak-surve
Asia Pacific (Tokyo) ap-northeast-1
Bucket and objects not public
March 2, 2023, 01:52:12 (UTC+05:30)
Feedback
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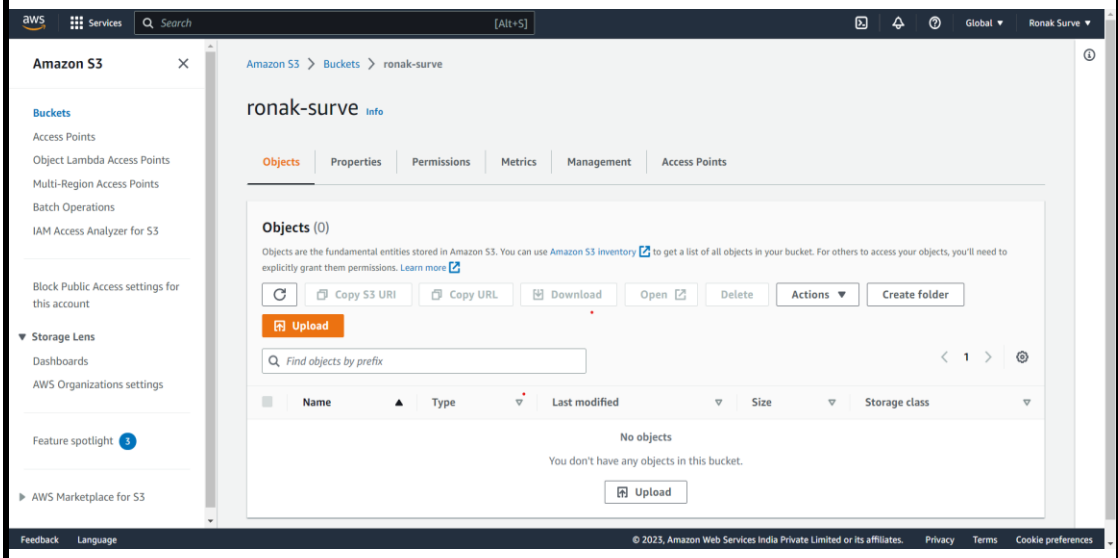
aws
Services
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Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight
AWS Marketplace for S3
Amazon S3 > Buckets > ronak-surve
ronak-surve Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Objects (0)
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
No objects
You don't have any objects in this bucket.
Upload
Feedback
Language
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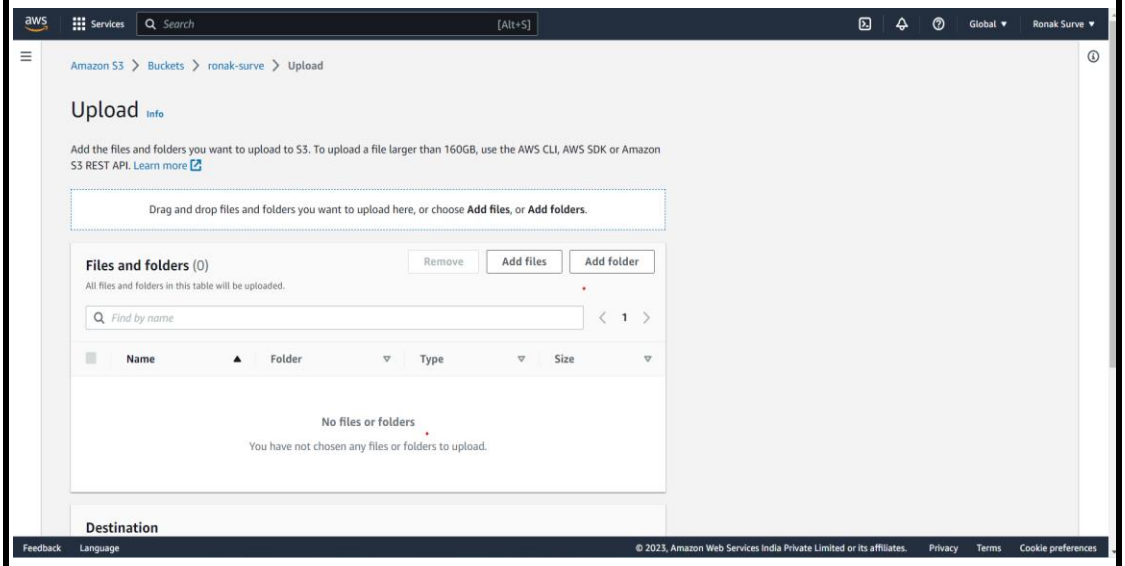
aws
Services
Search
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Global
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Amazon S3 > Buckets > ronak-surve > Upload
Upload Info
Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more
Drag and drop files and folders you want to upload here, or choose Add files, or Add folders.
Files and folders (0)
All files and folders in this table will be uploaded.
Remove
Add files
Add folder
Find by name
Name
Folder
Type
Size
No files or folders
You have not chosen any files or folders to upload.
Destination
Feedback
Language
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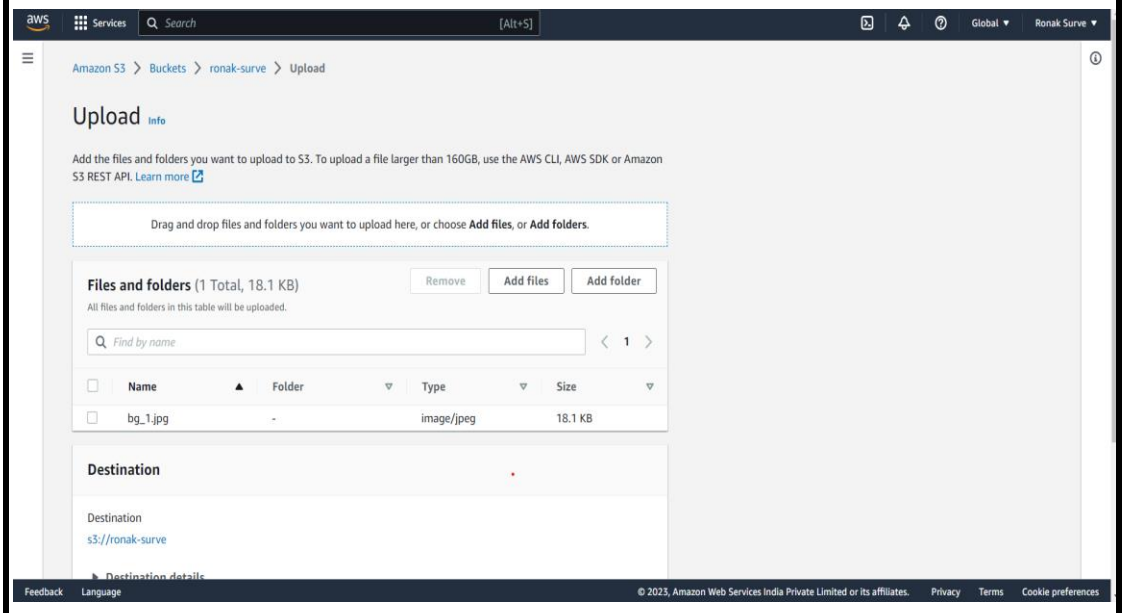
aws
Services
Search
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Global
Ronak Surve
Amazon S3 > Buckets > ronak-surve > Upload
Upload Info
Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more
Drag and drop files and folders you want to upload here, or choose Add files, or Add folders.
Files and folders (1 Total, 18.1 KB)
All files and folders in this table will be uploaded.
Remove
Add files
Add folder
Find by name
Name
Folder
Type
Size
bg_1.jpg
-
image/jpeg
18.1 KB
Destination
Destination
s3://ronak-surve
Destination details
Feedback
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	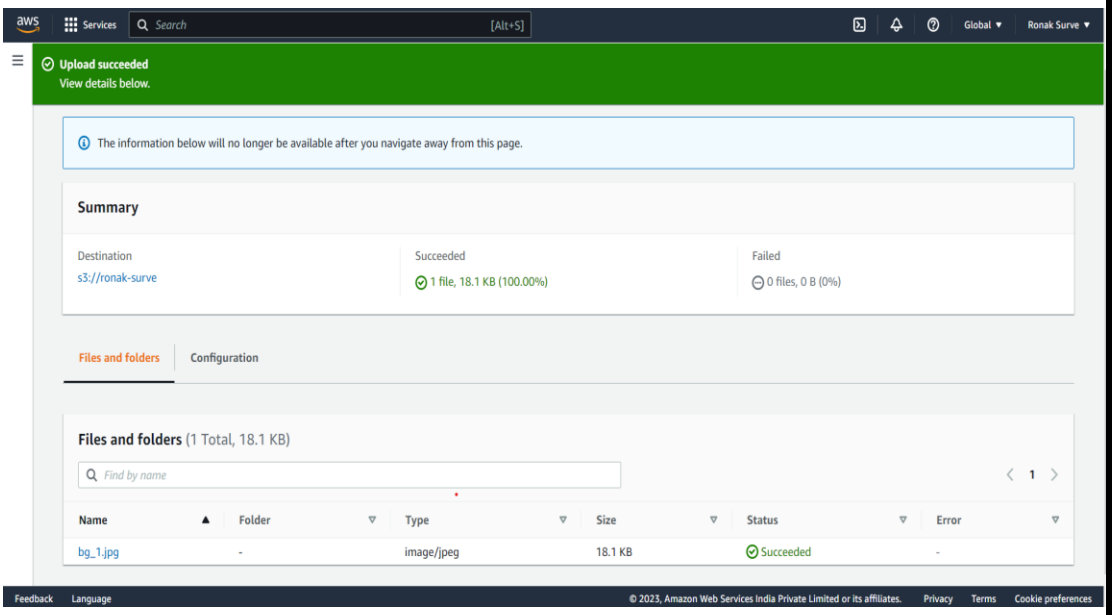
Conclusion :	Understanding and Implementing Storage as a service using AWS S3
References:	Give References: https://www.youtube.com/watch?v=lyBs2rhpVnE