Computer Engineering Department
Program: Sem VI
Course: Cloud Computing Lab(CSL605)
PART A
(PART A: TO BE COMPLETED BY STUDENTS)

Experiment No.5

A.1 Aim:

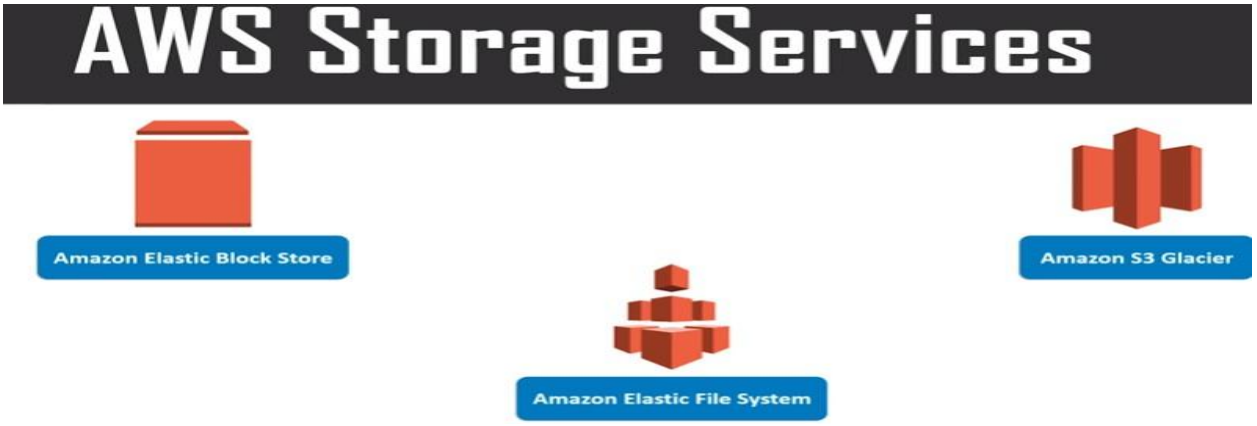
To demonstrate and implement Storage as a service using AWS S3 Service

A.2 Prerequisite:
Knowledge of Networking, Distributed Computing and knowledge of Software architectures.

A.3 Objective:
Objectives this experiment is to provide students overview of AWS storages, its Features and Services.

A.4 Outcome: (LO3)
After successful completion of this experiment student will be able to; Implement IAAS deployment model of cloud.

A.5 Theory:



Amazon Elastic Block storage (EBS): Storage in the form of blocks, each of these blocks associated with one particular instance, so when to access this block make sure that you have an instant connected to it and storage is accessed through that instant only.

Amazon Elastic File System (EFS): It is shared file system; hence it is not attached to a particular system or operating system.

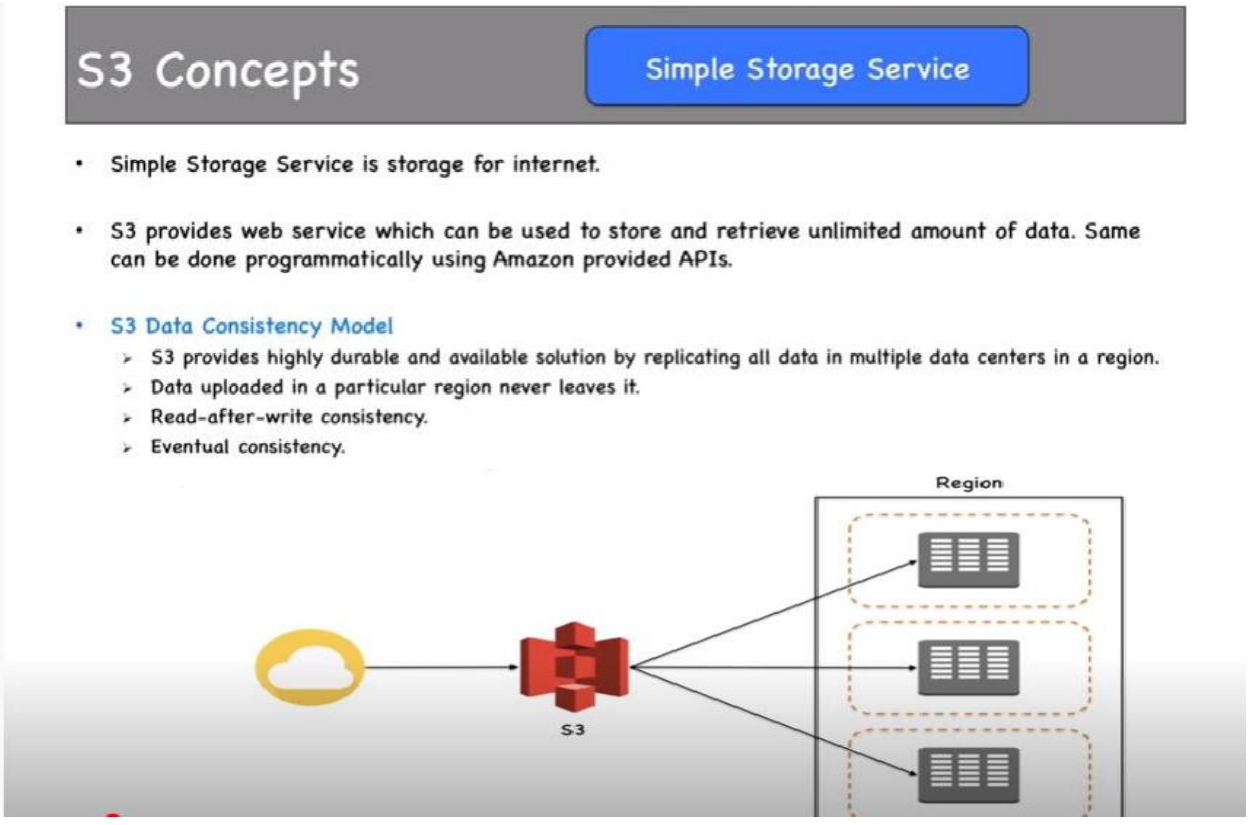
Amazon S3 Glacier: Need to store archive data, certain data that we would not want to retrieve or access on daily basis or frequently, such data you can put on **S3 Glacier**. That is it locks data for certain time during which you cannot access it, once you clear that duration you are free to access that data.
This storage is very cheap as compared to other data storage.
Example: Hospital System (birth certificate data): Birth certificate given by hospital once

baby takes birth, so once you get it you are not requesting it again and again and hospital need to maintain it. That is data which is important but not needed on daily basis.

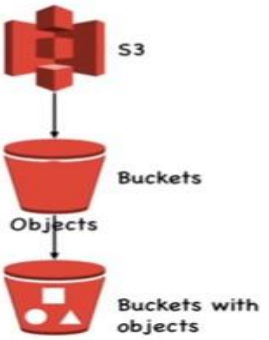
AWS Storage Gateway: Act as middle ware to move data from one system to another system.

What is Amazon S3 (Simple Storage Service)

1) Amazon s3 has a simple web service interface that you can use to store and retrieve any amount of data, at anytime from anywhere on the web.
2) **S3 works on objects and buckets** (Bucket is an container and an object (doc, image, file etc) is an file, which you can stored in container)
3) Online cloud storage



- S3 follows a storage hierarchy in keeping data (documents, images, videos, files etc.).



- Management console or S3 APIs can be used to manage buckets and objects.
- Bucket names have to be Globally unique irrespective of which region they are created in.
- Max 100 buckets can be created per account.

Amazon S3 (Simple Storage Service) provides object storage which is built for storing and recovering any amount of information or data from anywhere over the internet

4)

- ✓ Amazon S3 provides storage through web services interface
- ✓ It is designed for developers where web-scale computing can be easier for them
- ✓ It provides 99.999999999% durability and 99.99% availability of objects
- ✓ It can store computer files up to 5 terabytes in size

5)

Object & Bucket in Amazon S3

An object consists of data, key(assigned name) and metadata

A bucket stores objects

When data is added to the bucket, Amazon S3 creates a unique version ID and allocates it to the object

For Example:

Key(name)

Object: folder/Penguins.jpg

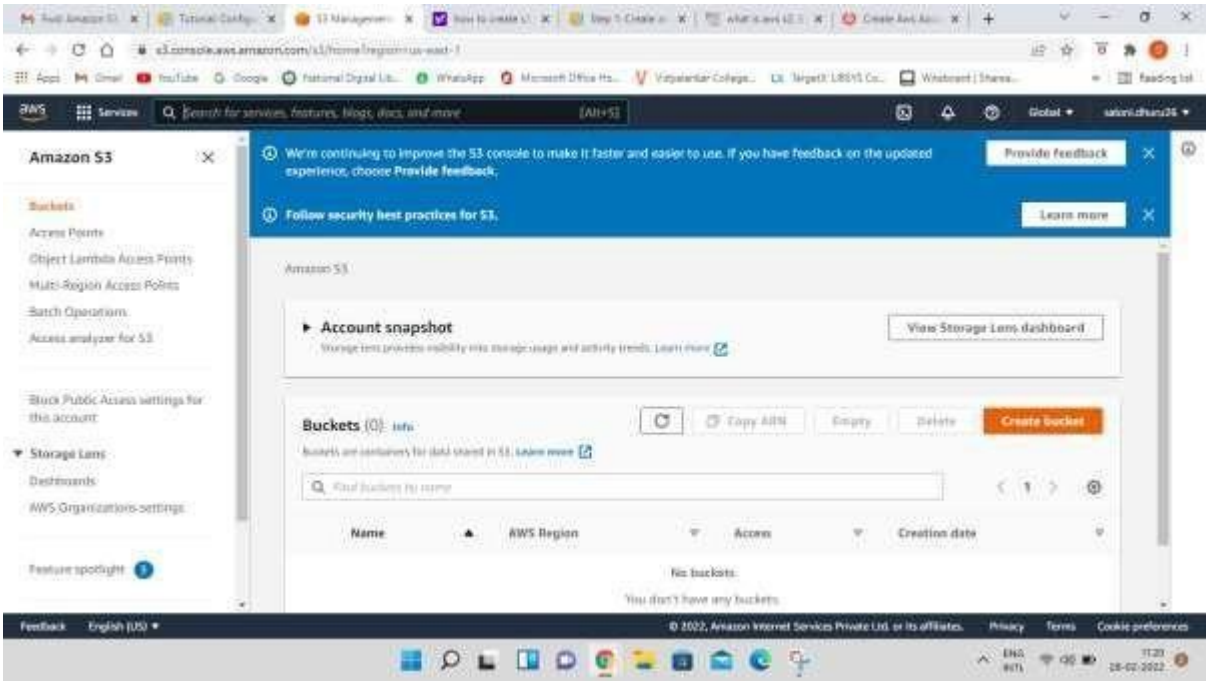
Bucket: simplilearn

Version ID

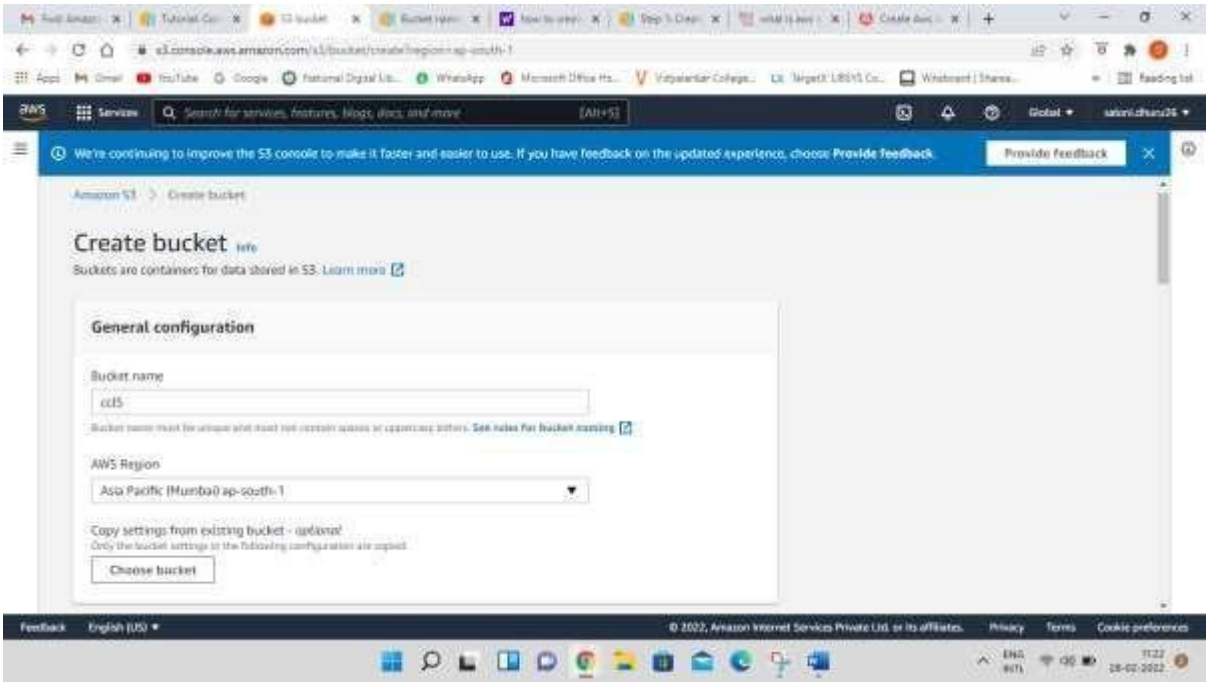
Link Address: https://s3.amazonaws.com/simplilearn/folder/Penguins.jpg

Steps to Implement Storage as a Service using Own Cloud/ AWS, Glaciers

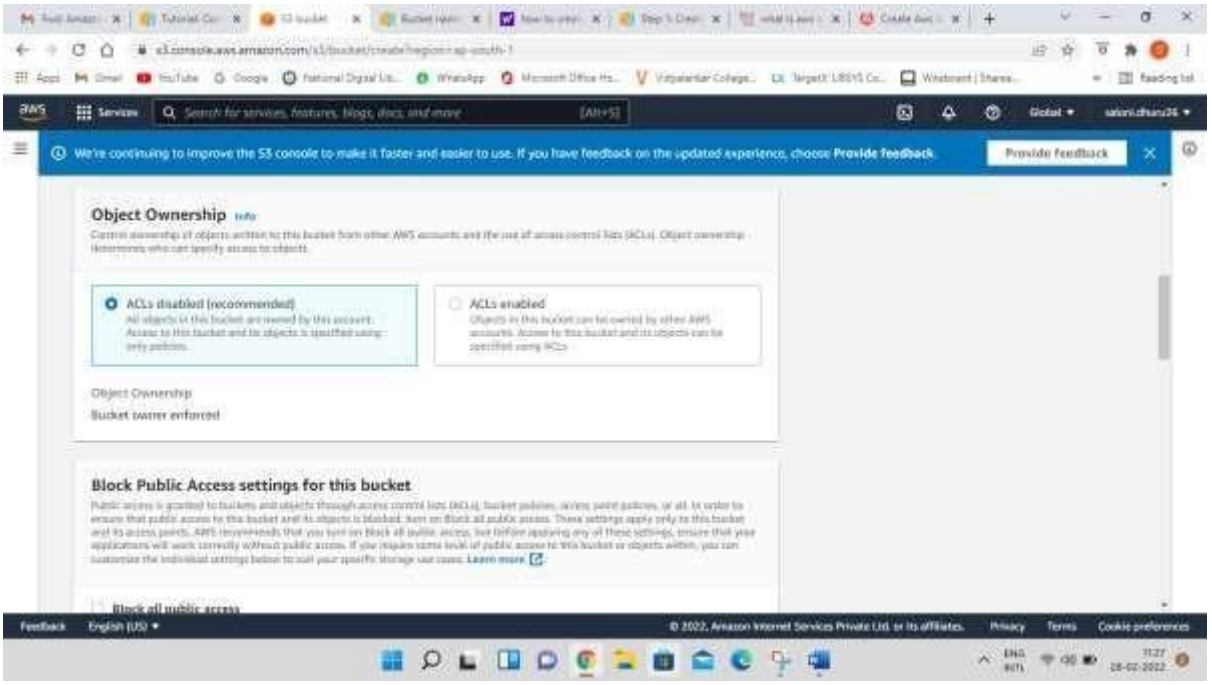
Step-1: click on create bucket



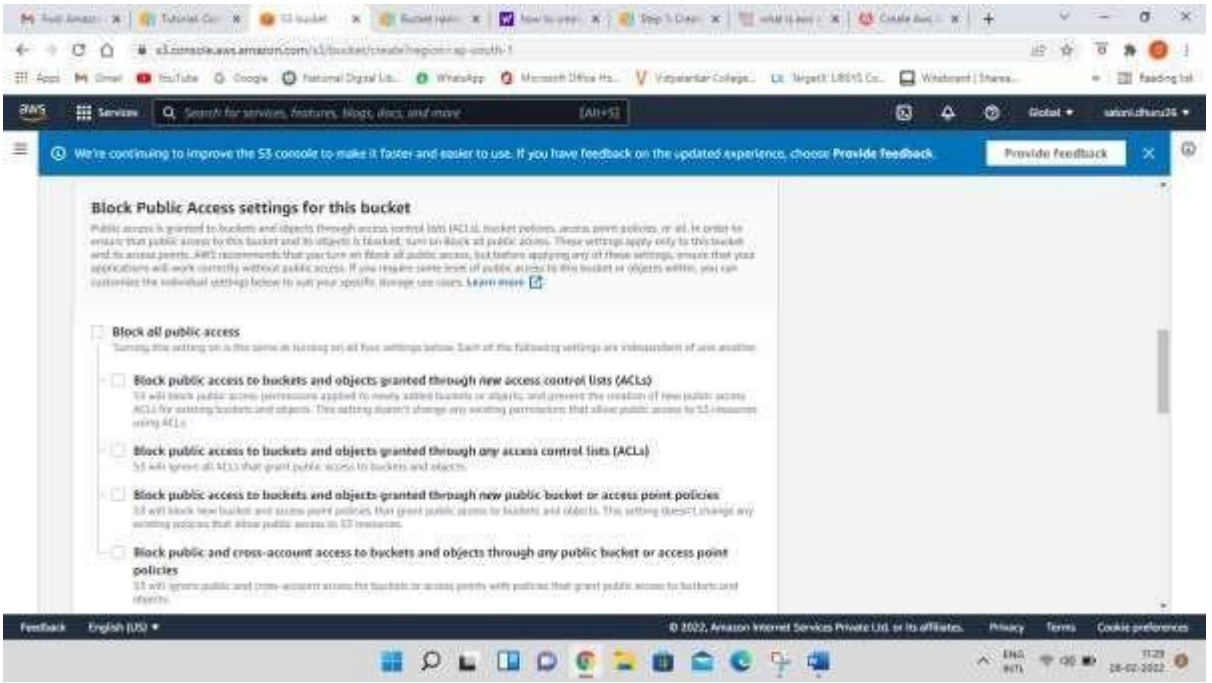
Step-2: Give Bucket name & select region for storage



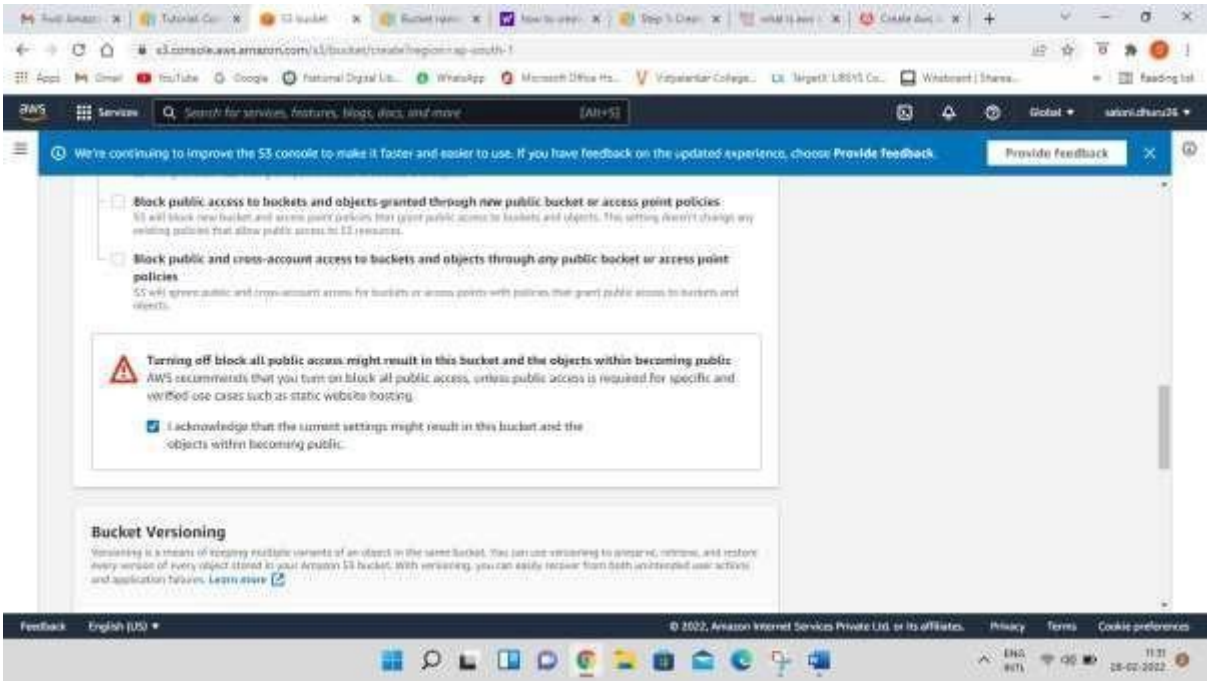
Step-3: Keep object ownership setting as ACLs Disabled as by-default



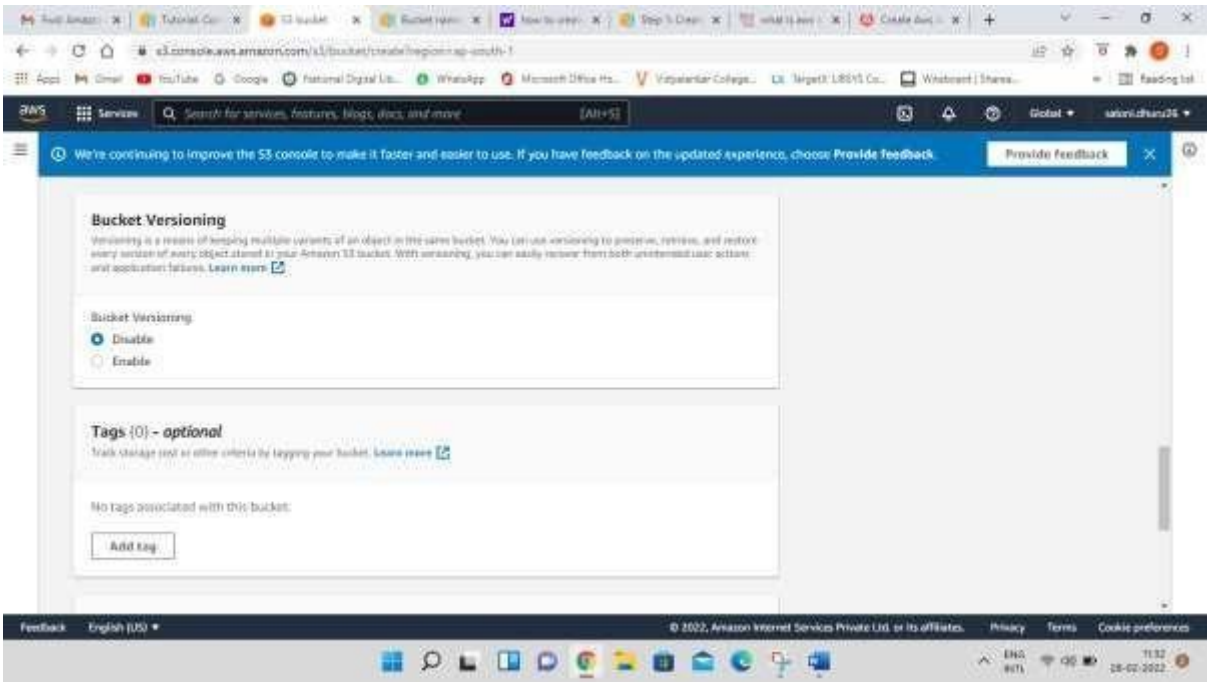
Step-4: Disable block all public access checkbox



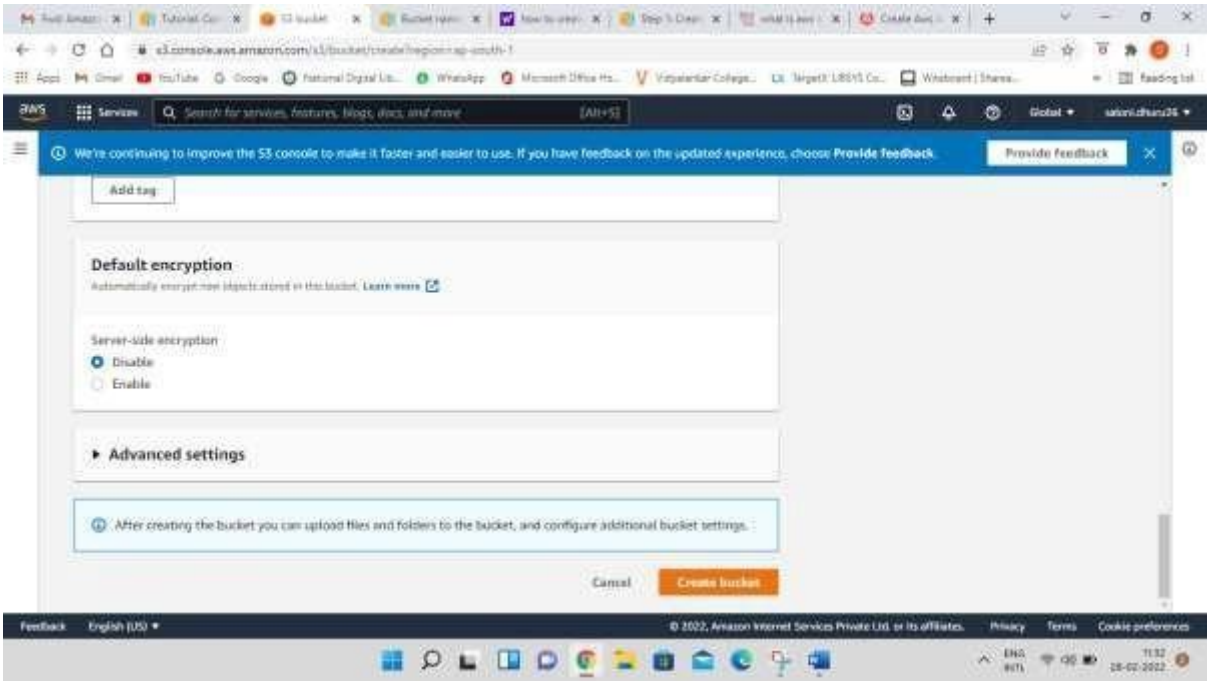
Step-5: Select the checkbox for **Turning off block all public access might result in this bucket and the objects within becoming public**



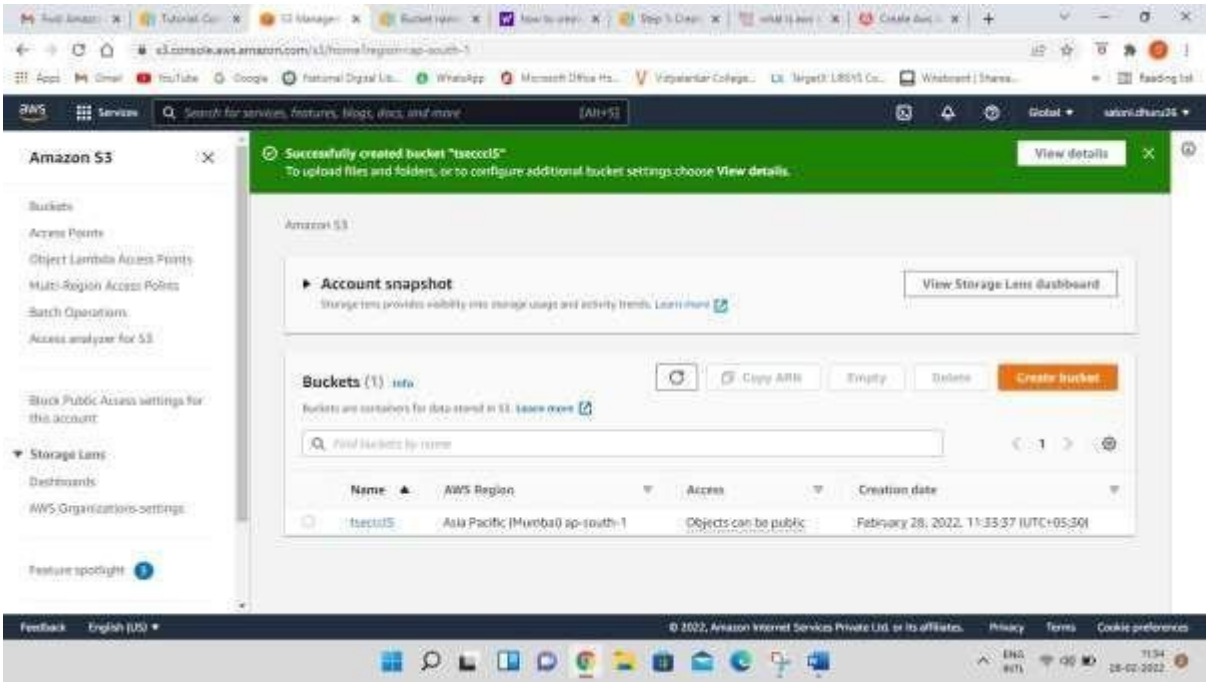
Step-6: Keep bucket versioning as disabled and add tags if required.



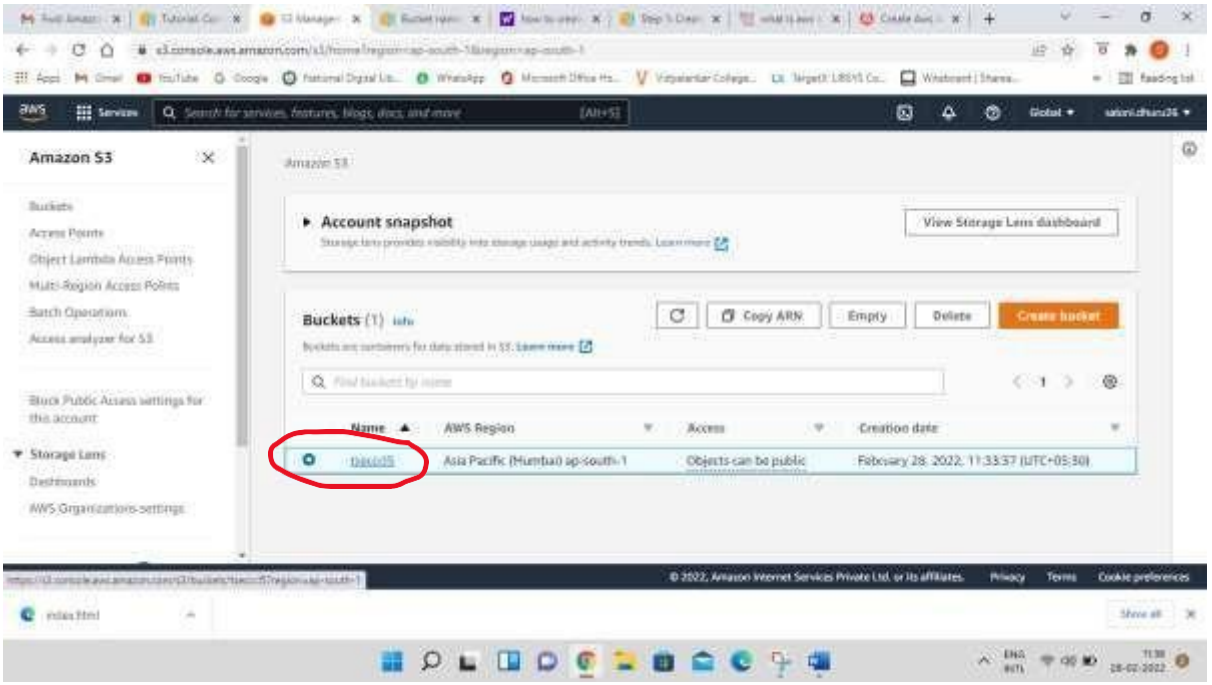
Step-7: Keep default encryption disabled and click on create bucket button



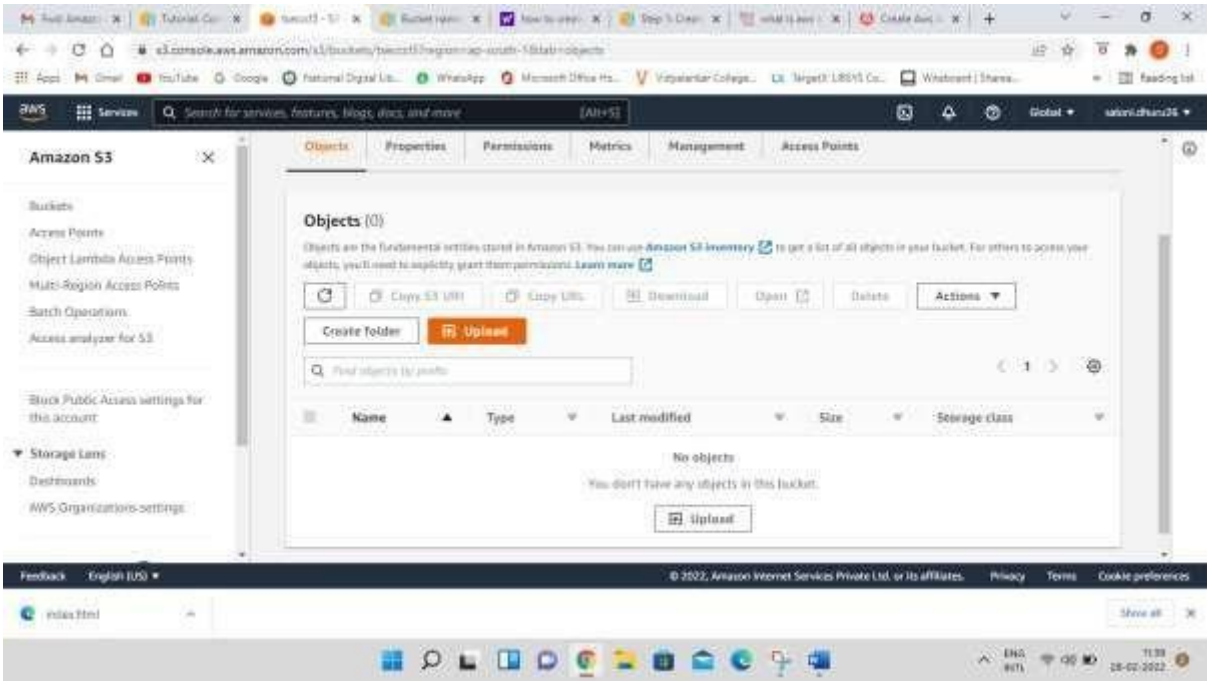
You can now see the successful creation of your bucket



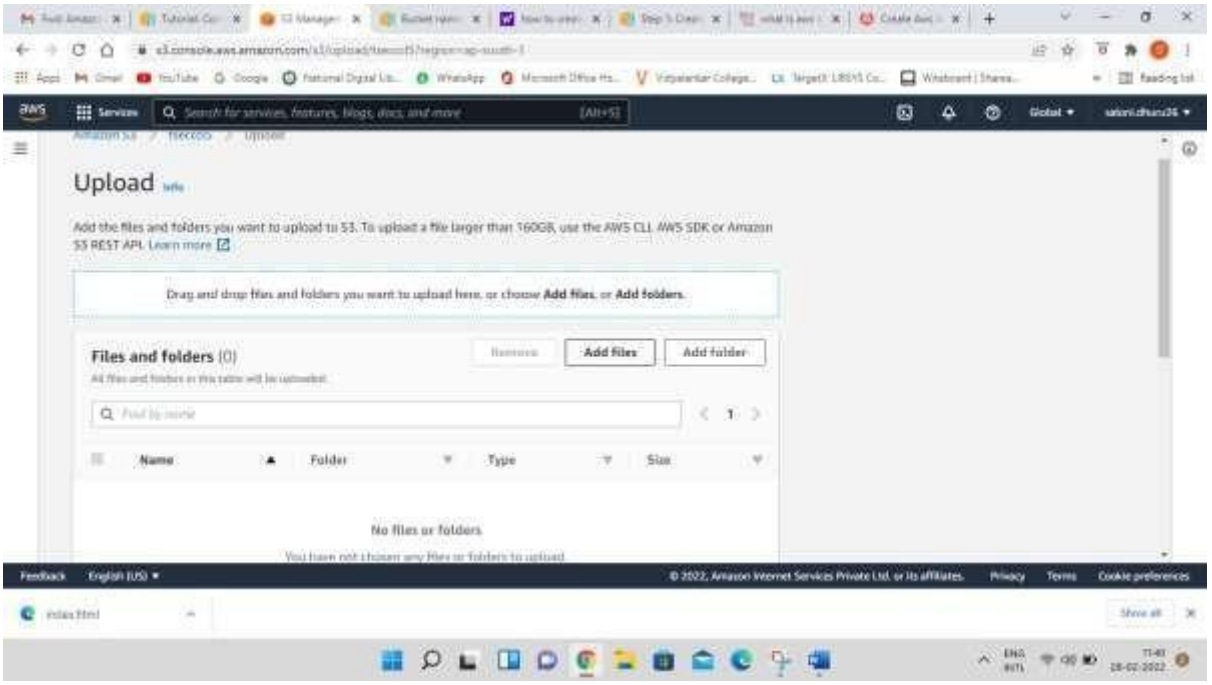
Step-8: now click on the bucket that you have created



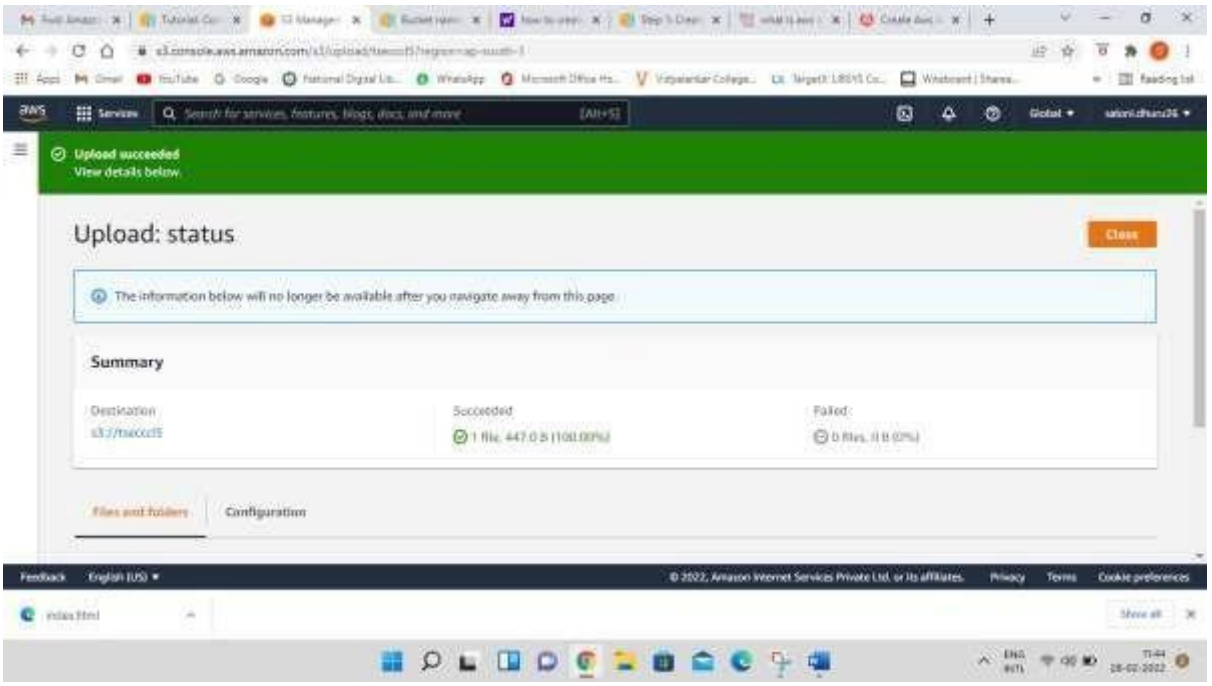
Step-9: You can either create a folder here or upload an existing file in the bucket



Step-10: now click on upload button and click on add files button browse your local machine and select which file you need to upload on S3 next click on upload button at bottom right end

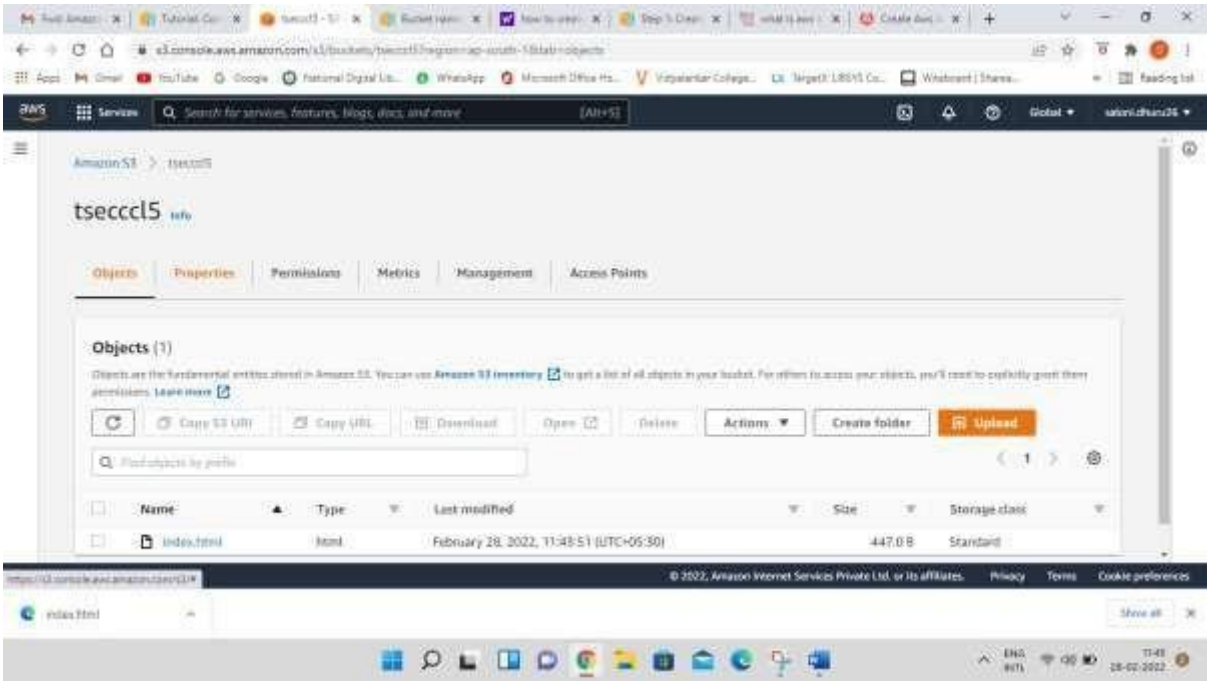


Now you can check the upload status screen

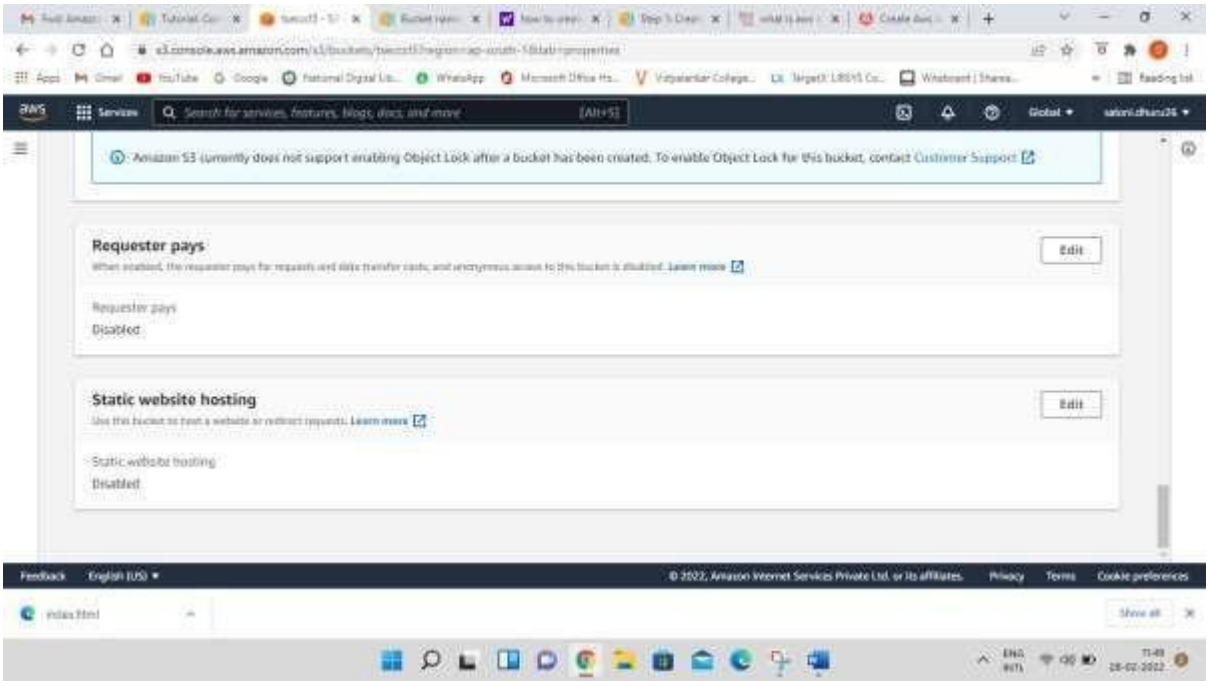


Now click on close button

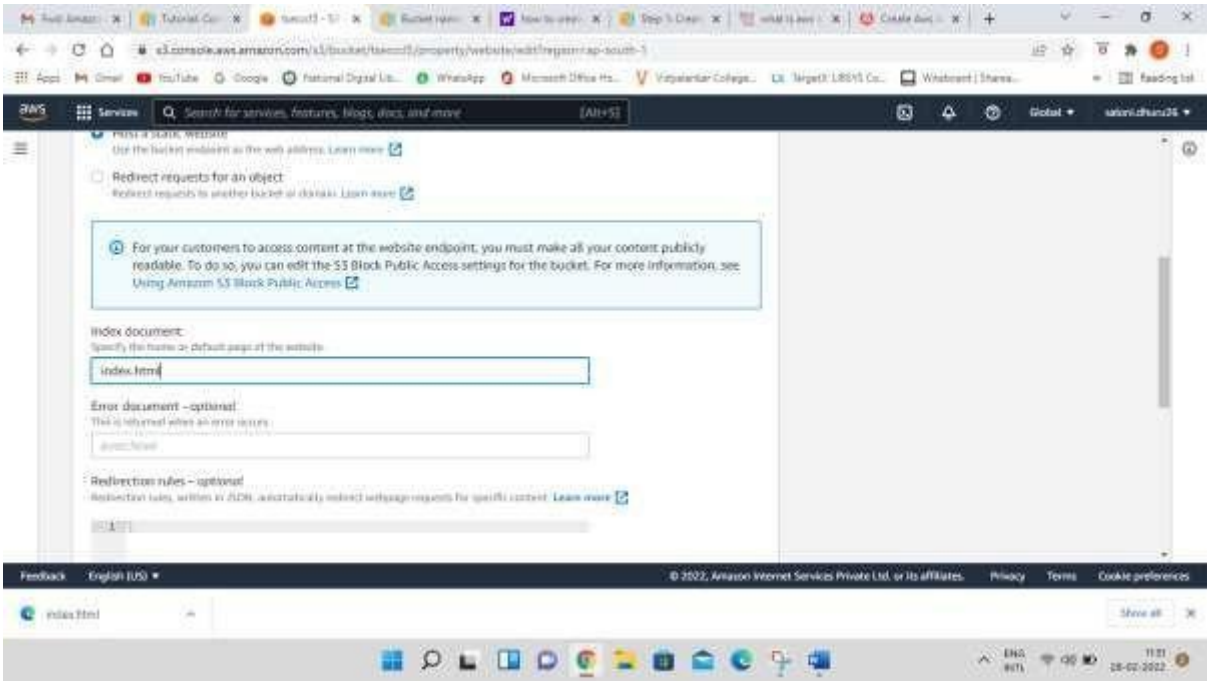
The screen will appear as below



Step-11: Select properties and scroll down to **Static website hosting** option which is disabled now click on Edit option on right side

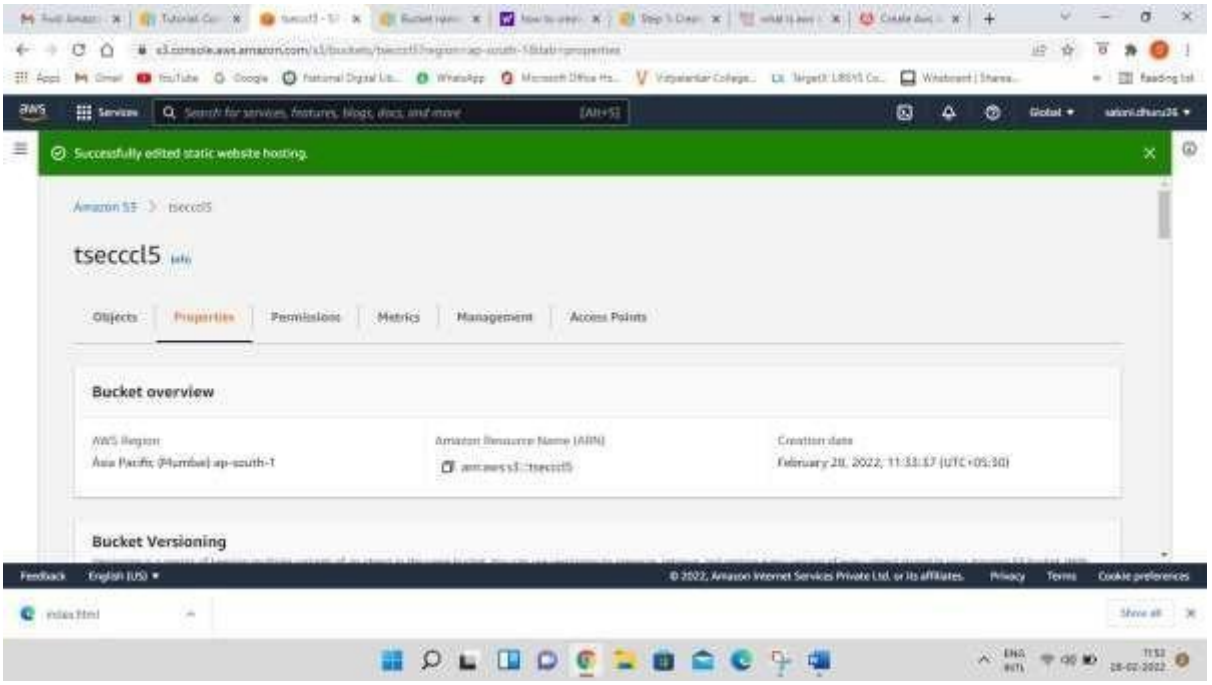


Step-12: Enable the radio button and specify the file name in **Index document** which you have added in S3

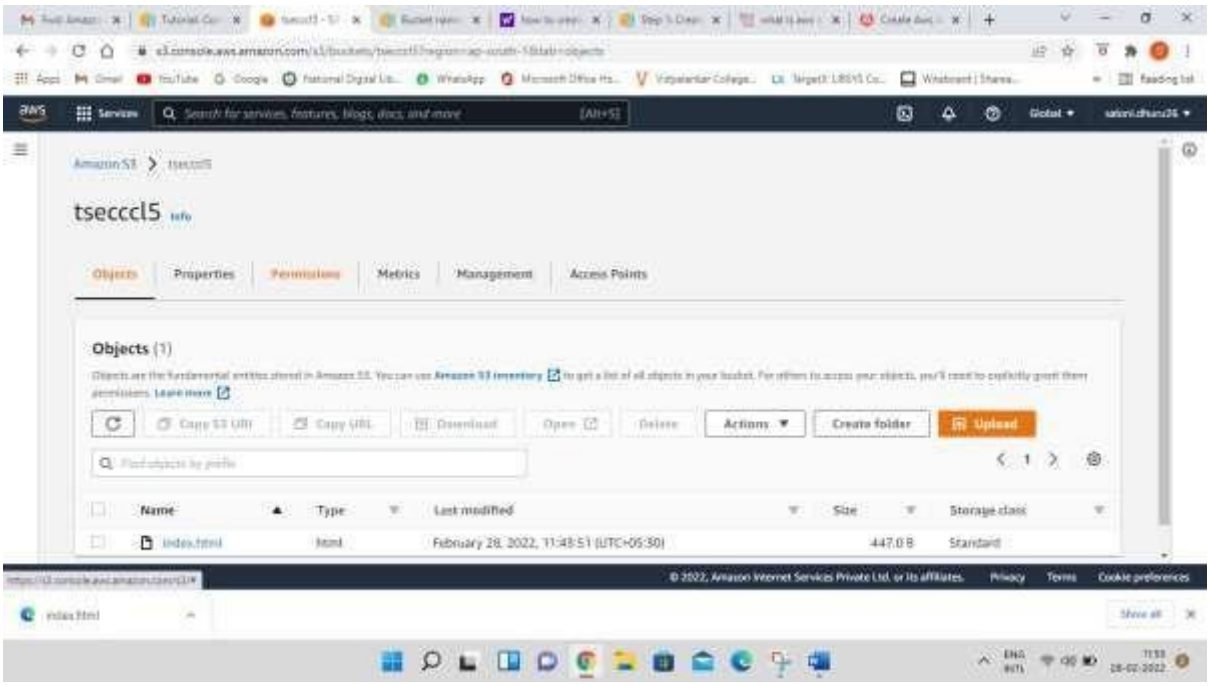


Scroll down and save the changes at bottom right

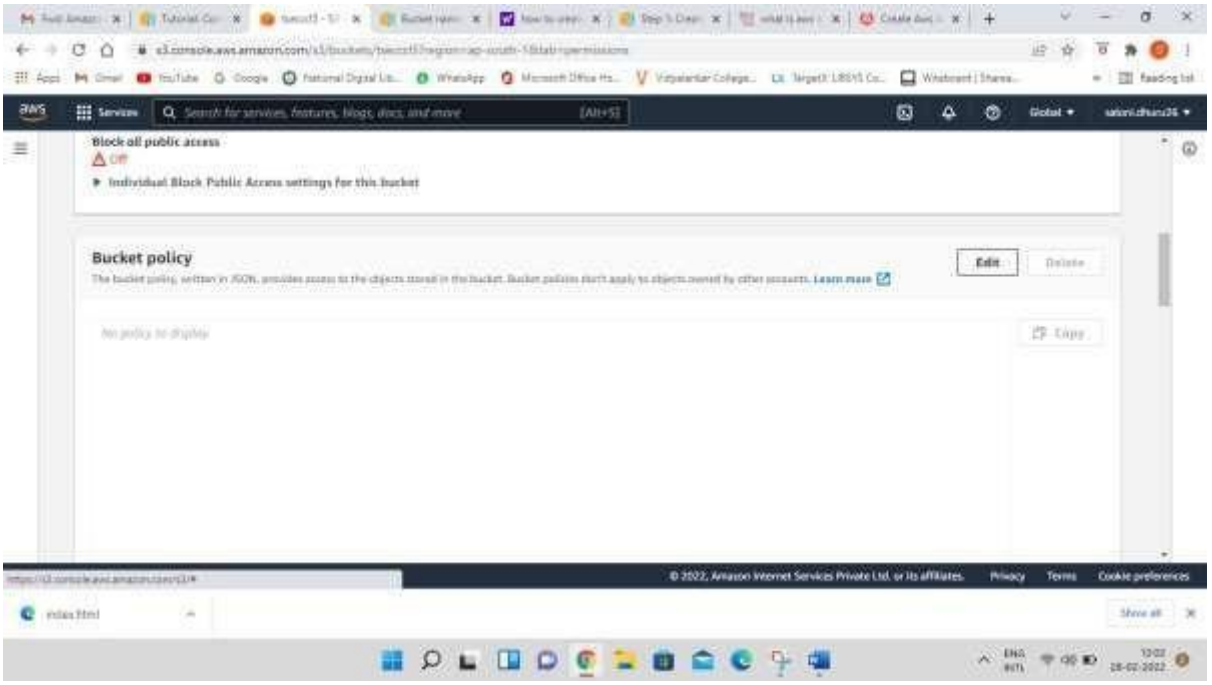
Following screen will appear



Step-13: Click on Permissions Tab



Step-14: In **bucket policy** click on Edit option

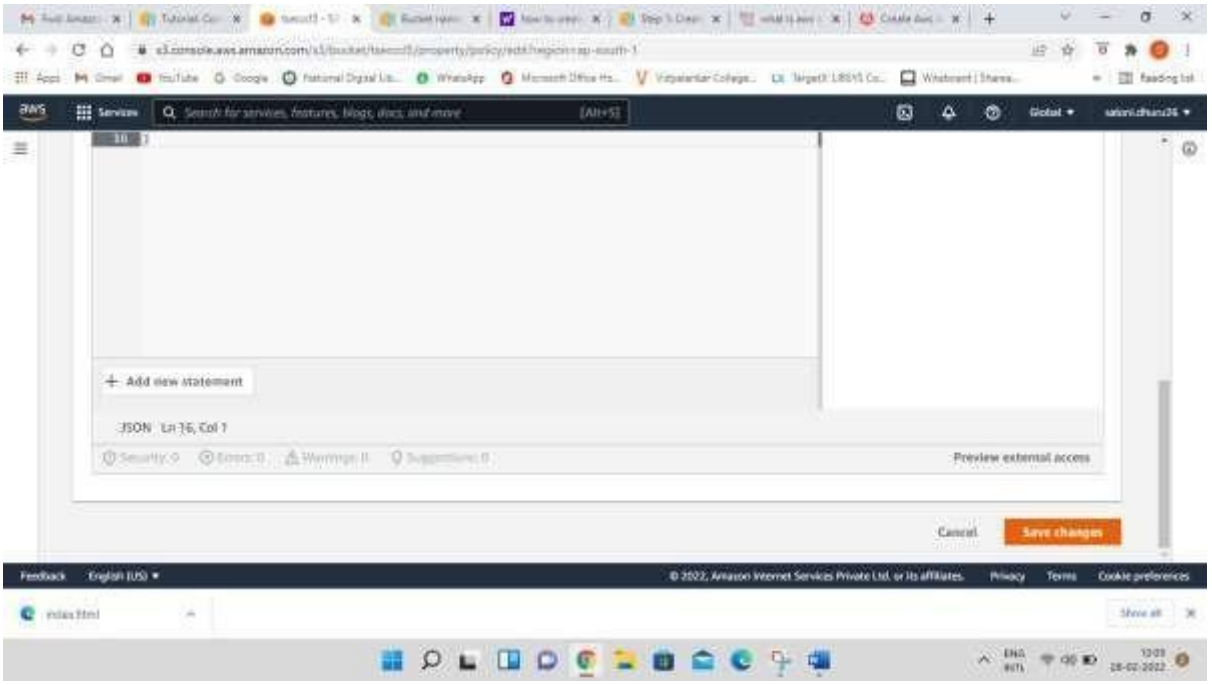


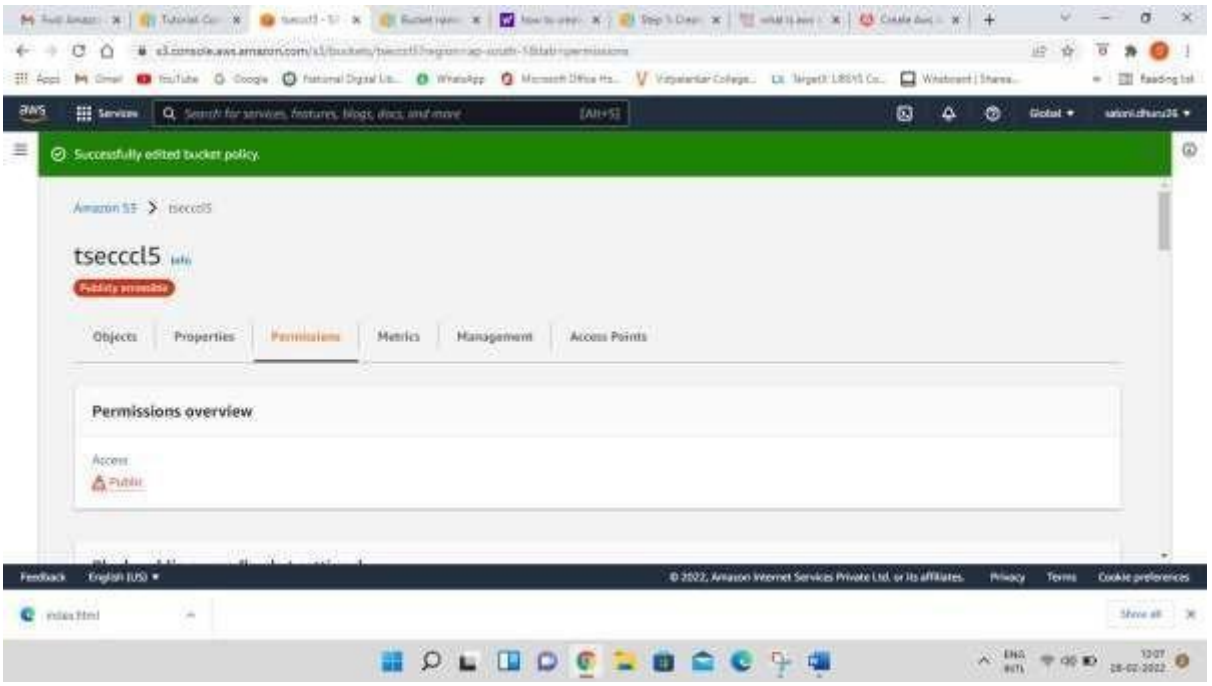
Step 15- after clicking on edit button paste the following code in bucket policy

```
{
   "Version": "2012-10-17",
   "Statement": [
      {
         "Sid": "PublicReadGetObject",
         "Effect": "Allow",
         "Principal": "*",
         "Action": [
            "s3:GetObject"
         ],
         "Resource": [
            "arn:aws:s3:::Bucket-Name/*"
         ]
      }
   ]
}
```

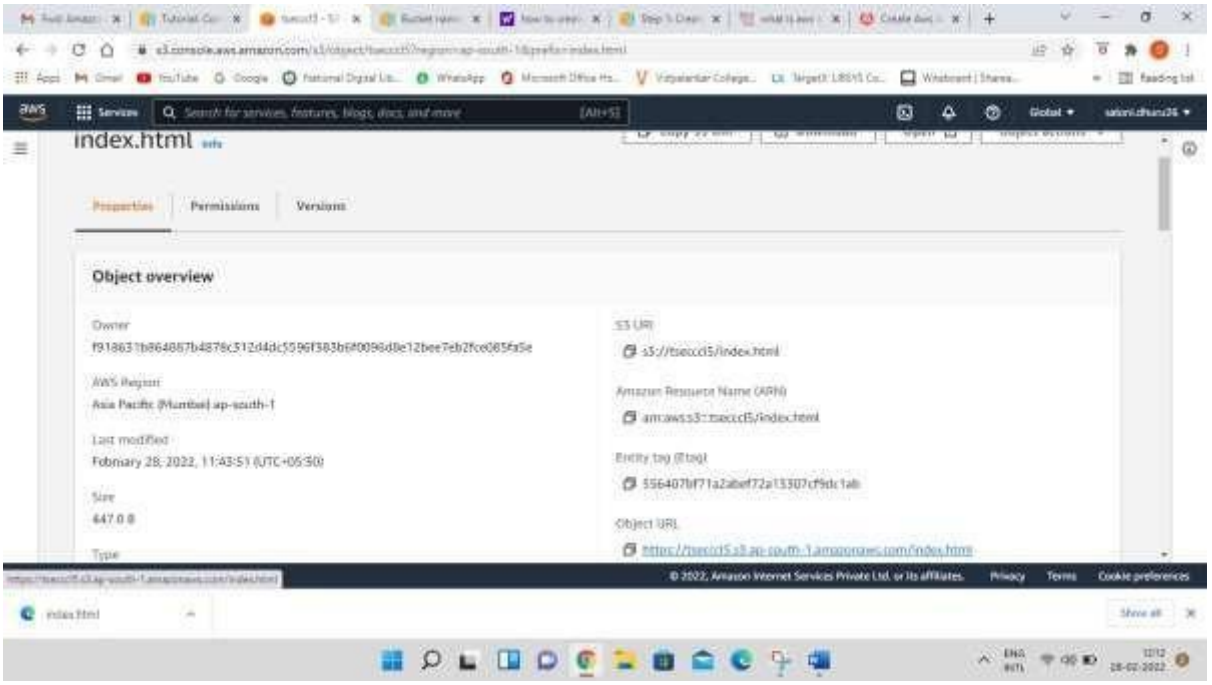
Note-Make sure that you add your bucket name in the code above

Scroll down and click on Save Changes button

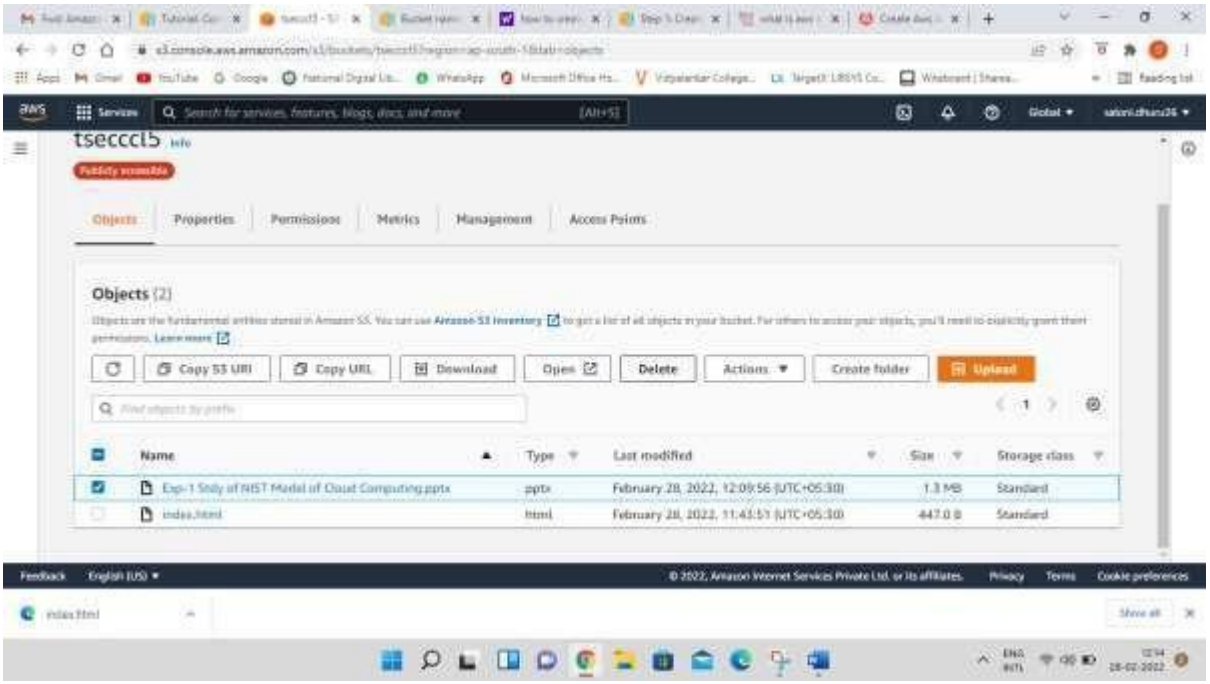




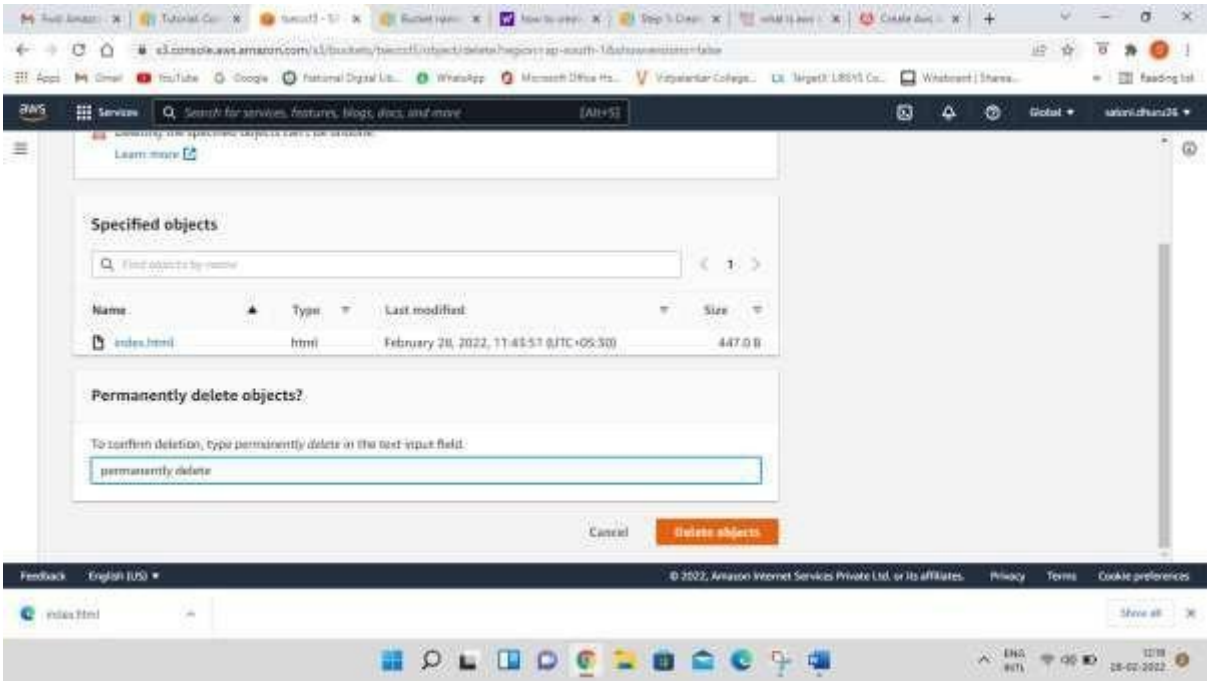
Step-16: open your html file and click on Object URL



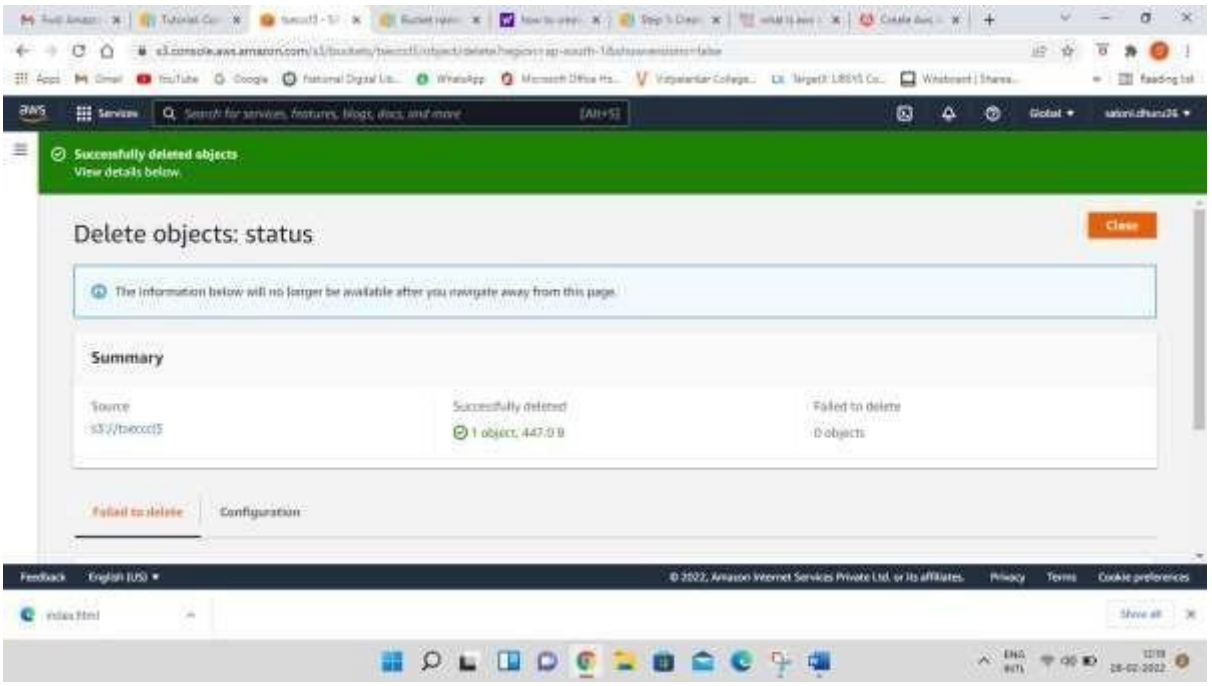
Step-17: Now for delete files click on checkbox of your file and then click on **Delete** Button



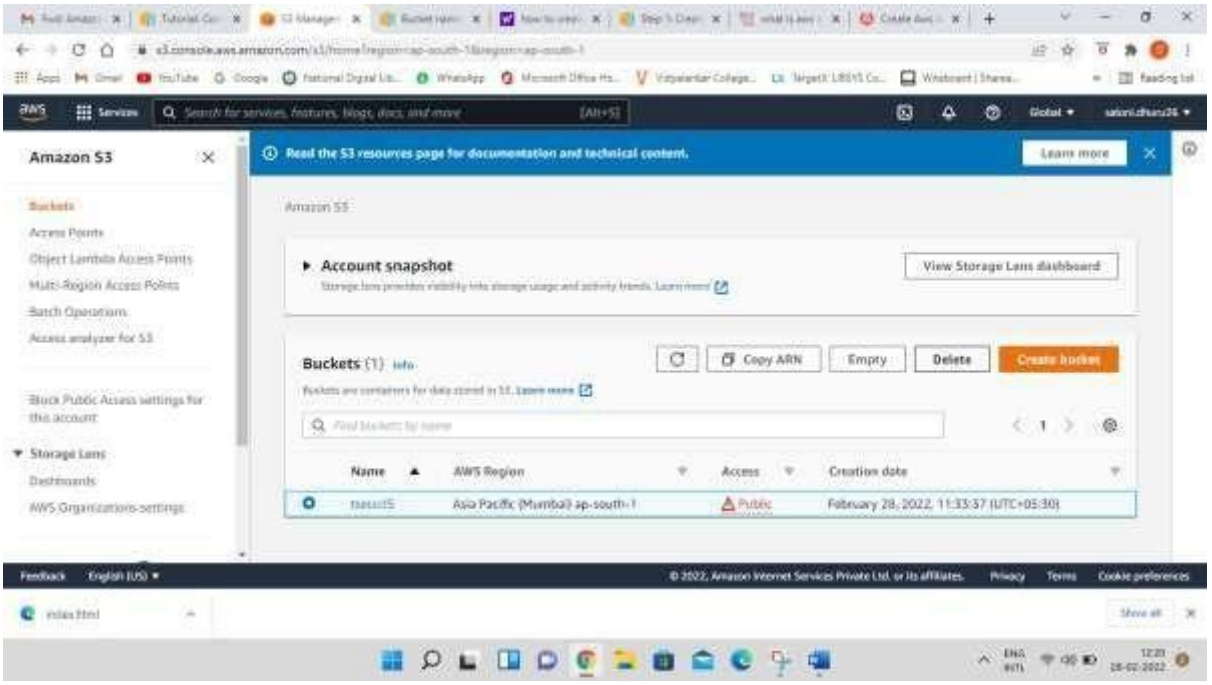
Write permanently delete and click on delete object button



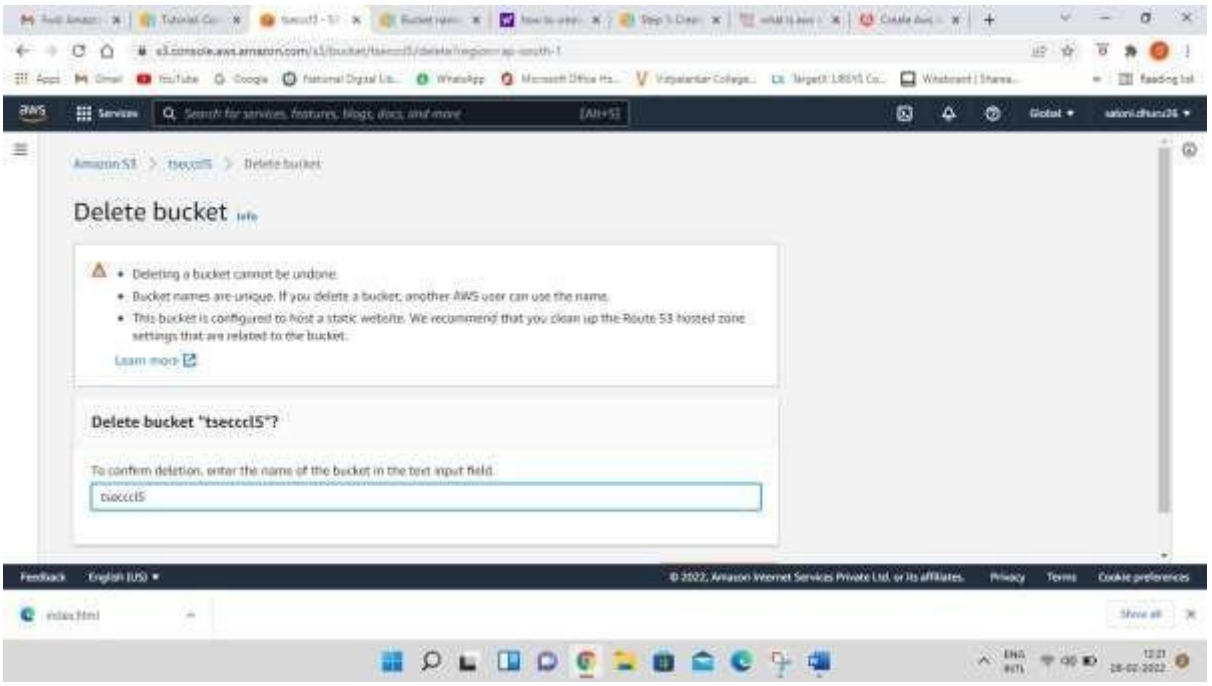
Now click on close button



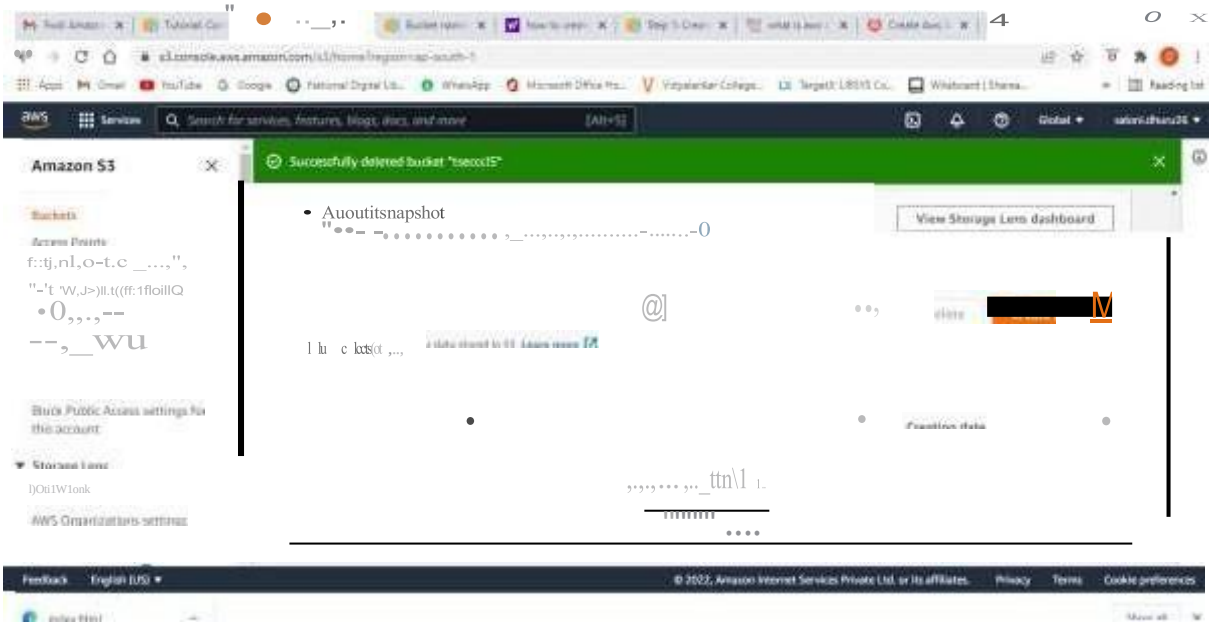
Step-18: now come to Amazon S3 tab and select your bucket and then click on delete button



Write down your bucket name in delete bucket tab and click on delete button at bottom right



You can see that the bucket is deleted


Amazon S3
Successfully deleted bucket "tseccc15"
Auoutitsnapshot
View Storage Lens dashboard
Block Public Access settings for this account
Storage Lens
AWS Organizations settings
Feedback
English (US)
© 2022, Amazon Internet Services Private Ltd. or its affiliates.
Privacy
Terms
Cookie preferences

i1P1.CllOV

PART B

(PART B: TO BE COMPLETED BY STUDENTS)

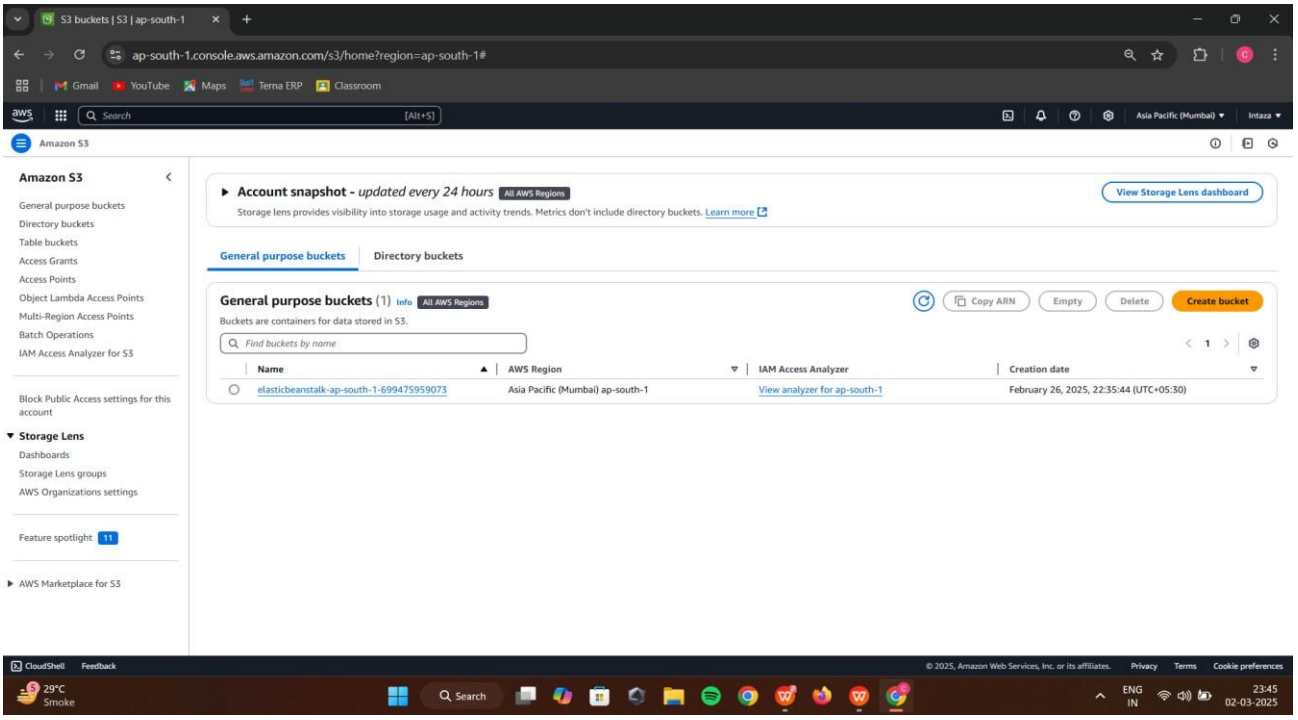
(Students must submit the soft copy as per following segments within two hours of the practical. The soft copy must be uploaded on the ERP or emailed to the concerned lab in charge faculties at the end of the practical in case the there is no ERP access available)

Roll No.B30	Name: Pranjal Bhatt
Class :TE COMPS B	Batch :B2
Date of Experiment:	Date of Submission:
Grade :	

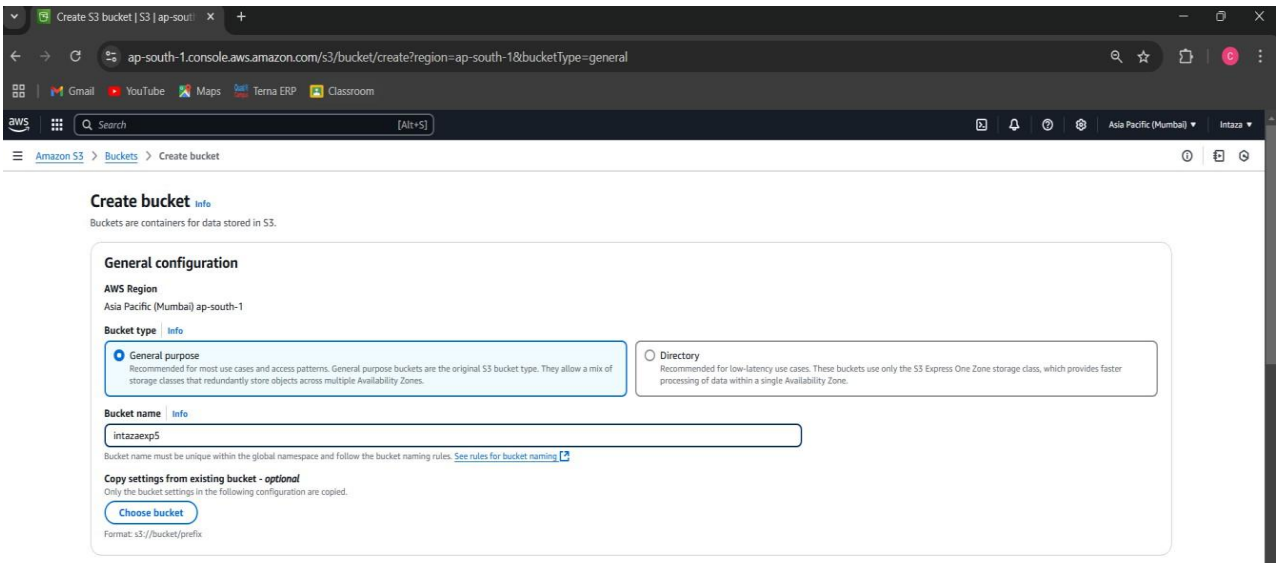
B.1 Question of Curiosity:

Q.1: Create Bucket using AWS S3 service (Add stepwise screenshots of the same)

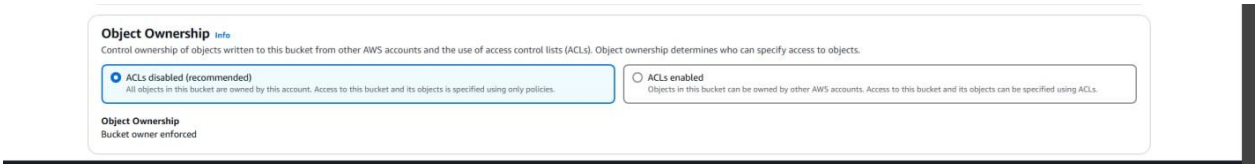
Step-1: click on create bucket



Step-2: Give Bucket name & select region for storage



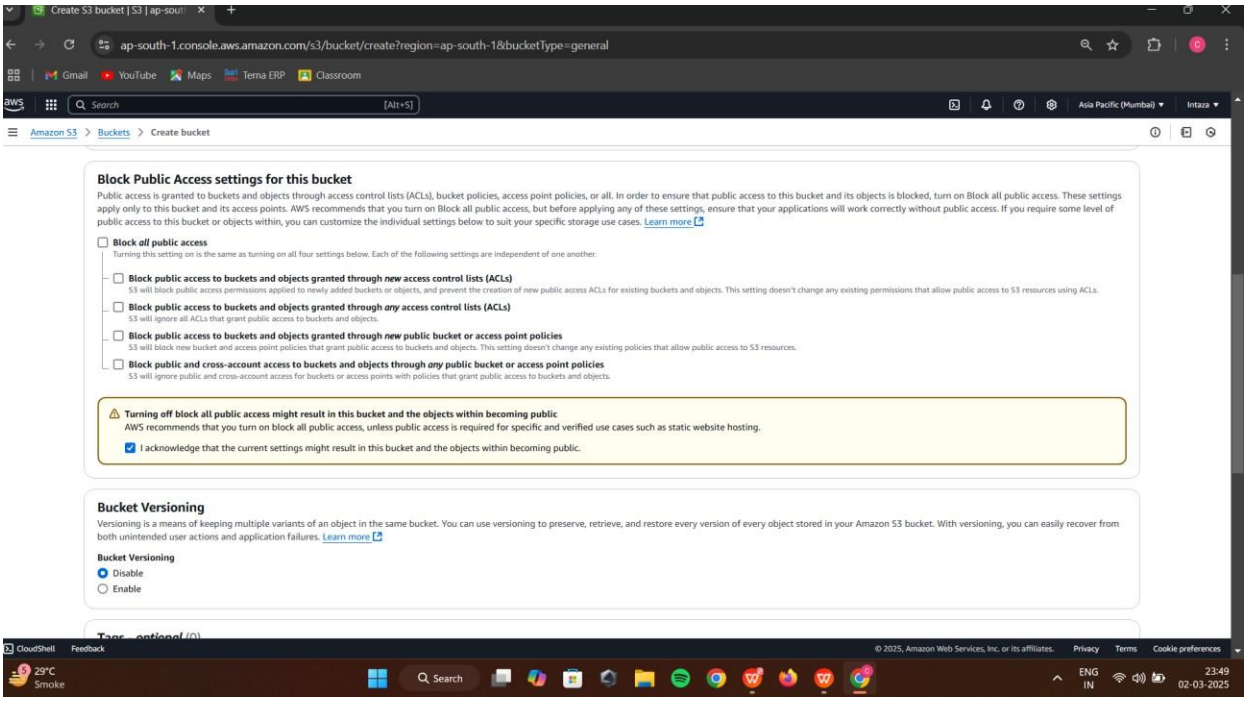
Step-3: Keep object ownership setting as ACLs Disabled as by-default



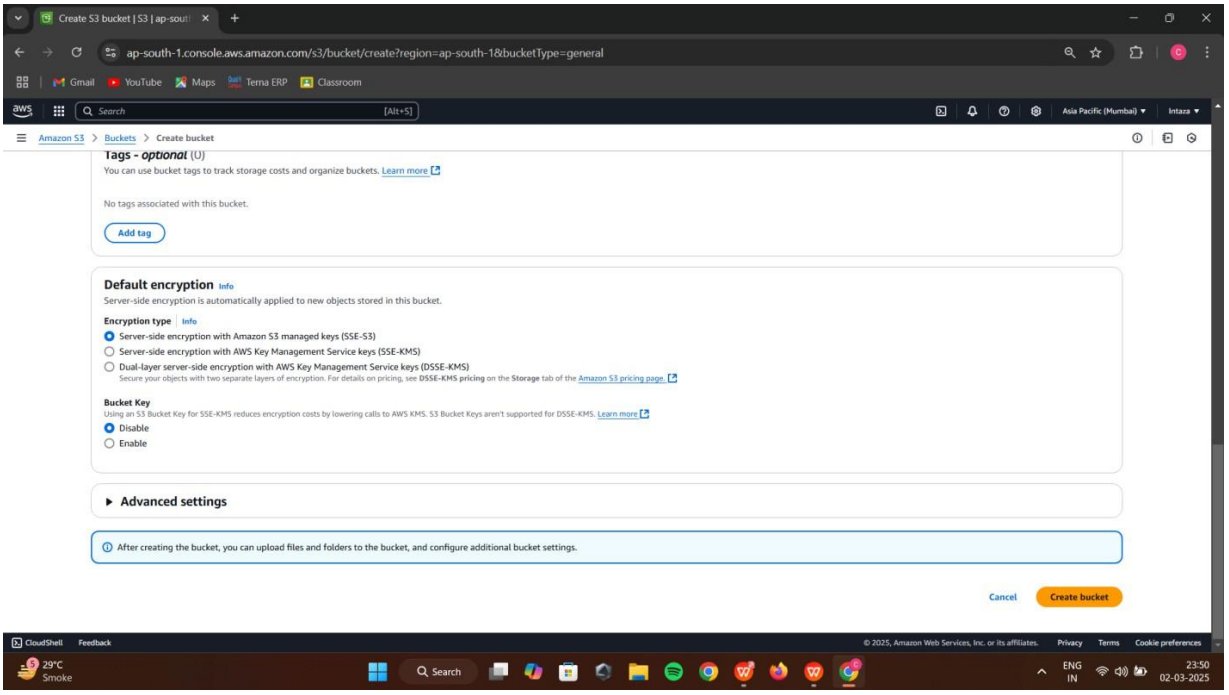
Step-4: Disable block all public access checkbox

Step-5: Select the checkbox for Turning off block all public access might result in this bucket and the objects within becoming public

Step-6: Keep bucket versioning as disabled and add tags if required.

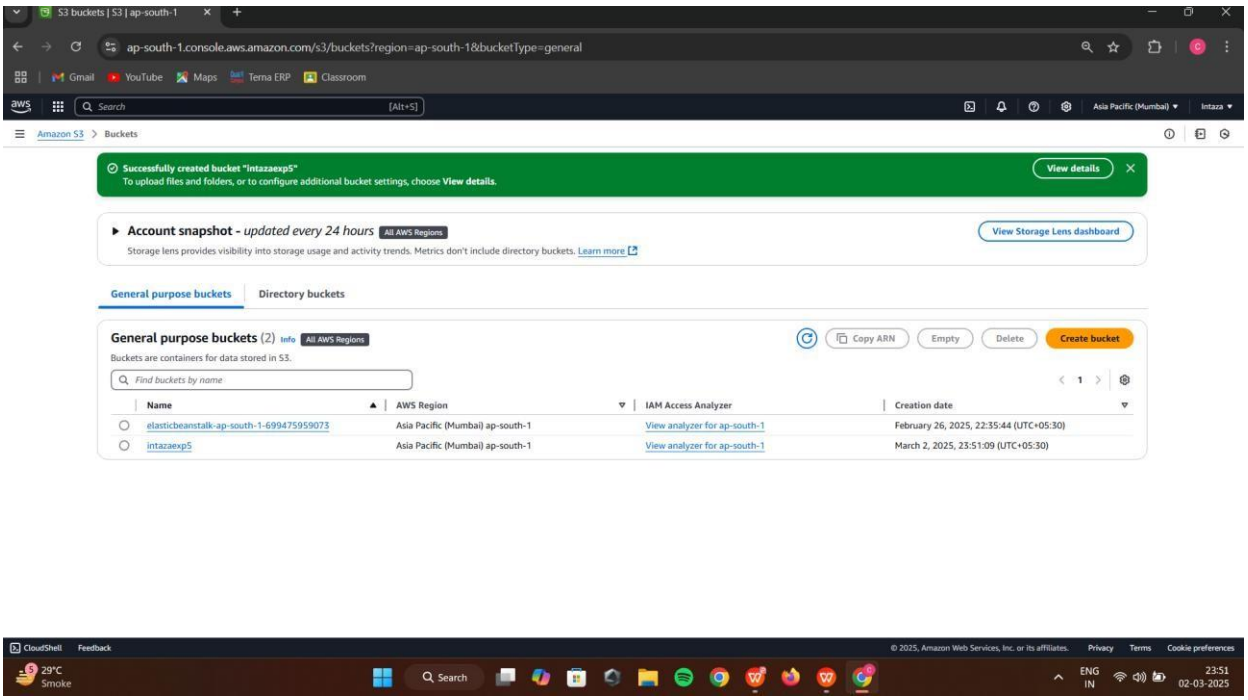


Step-7: Keep default encryption disabled and click on create bucket button



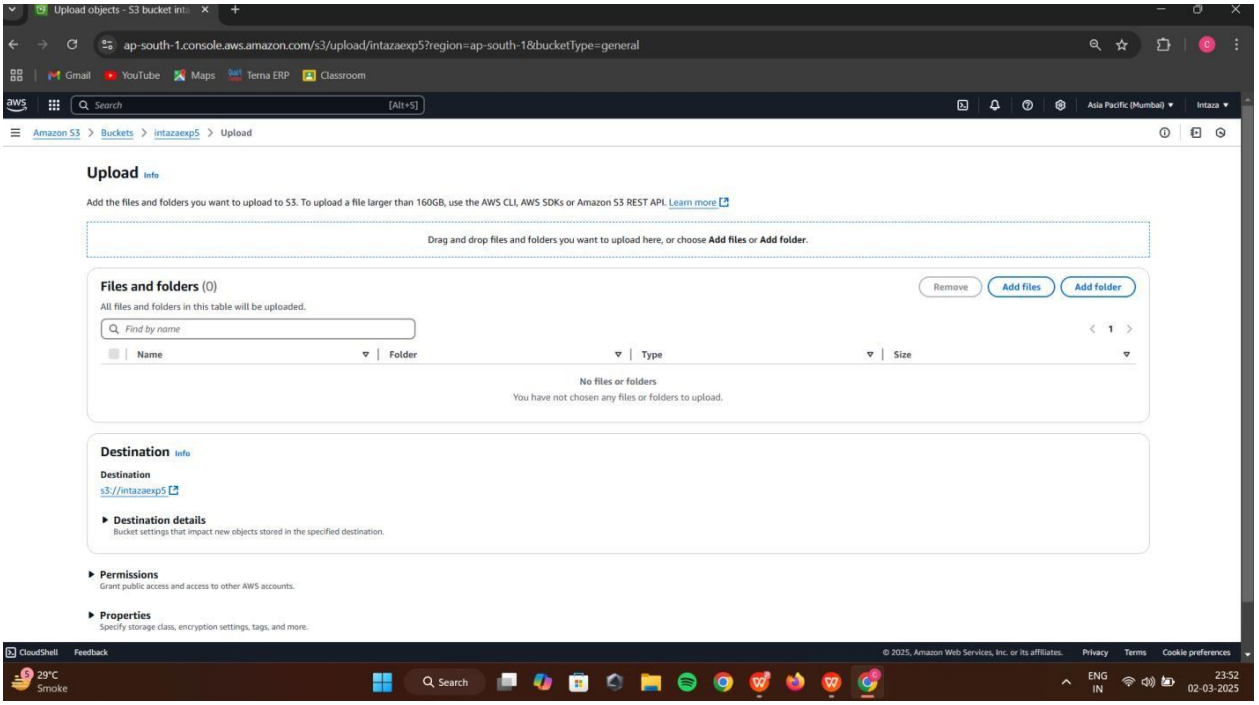
step-8:You can now see the successful creation of your bucket

Step-9: now click on the bucket that you have created

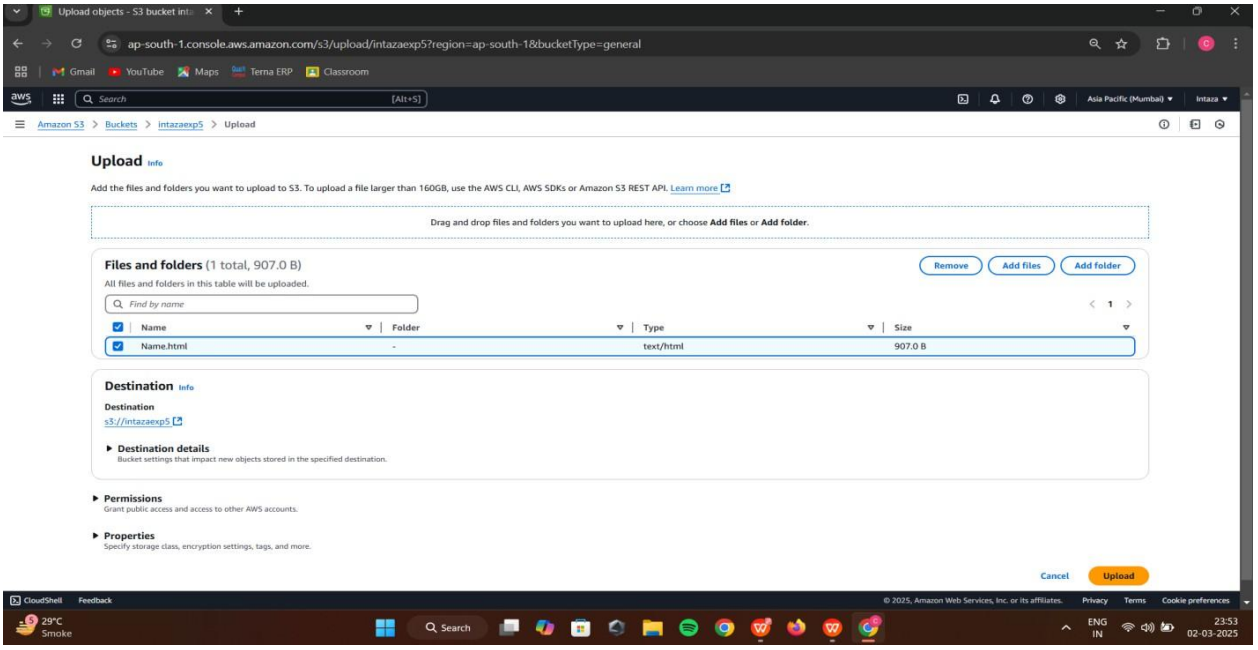


Q2: Add Objects to *Bucket created (Add stepwise screenshots of the same)*

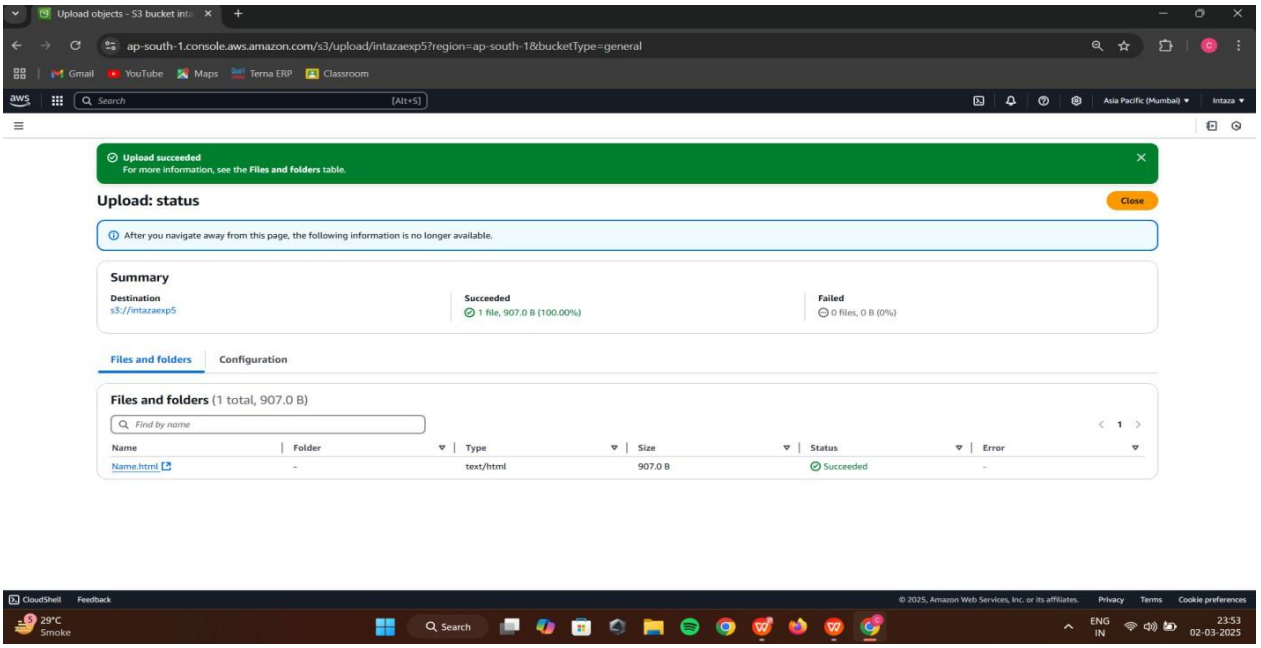
Step-10: You can either create a folder here or upload an existing file in the bucket



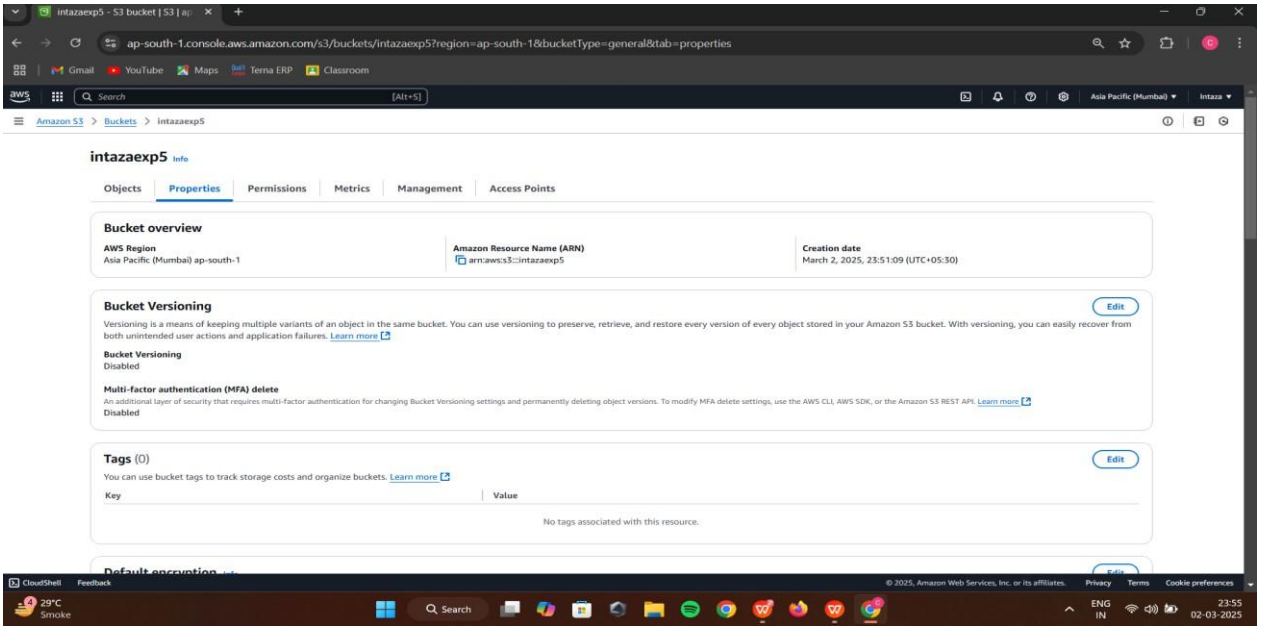
Step-10: now click on upload button and click on add files button browse your local machine and select which file you need to upload on S3 next click on upload button at bottom right end

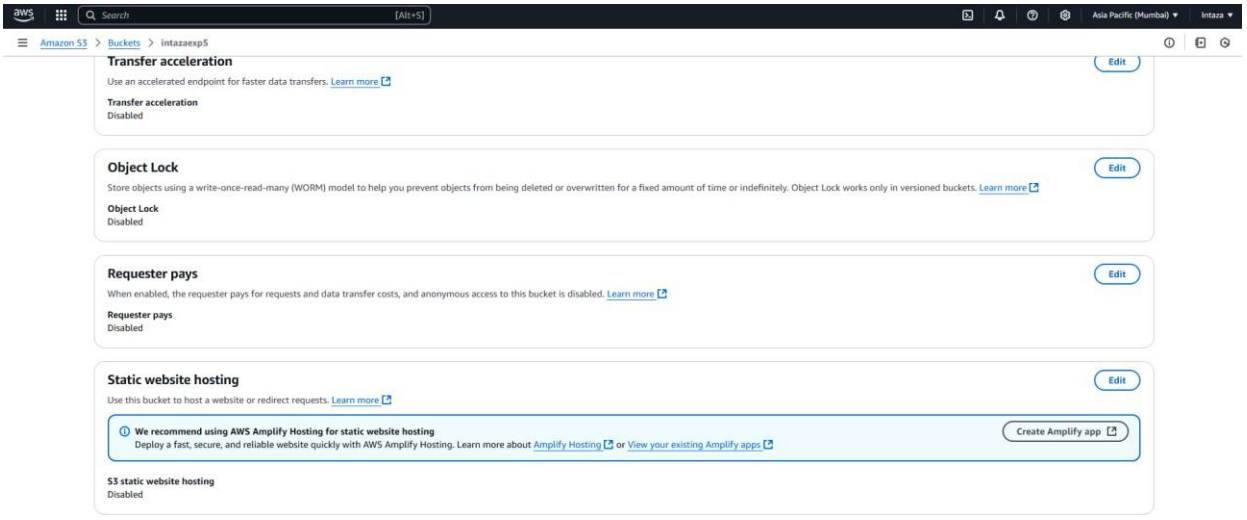


Step-11: Now you can check the upload status screen, Now click on close button.

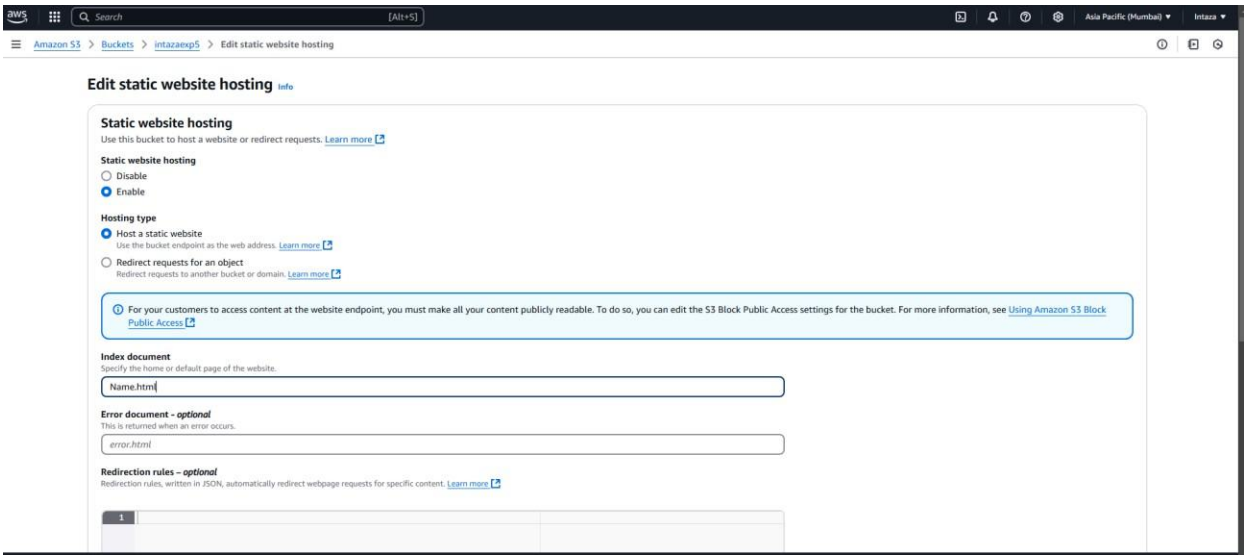


Step-12: Select properties and scroll down to Static website hosting option which is disabled now click on Edit option on right side

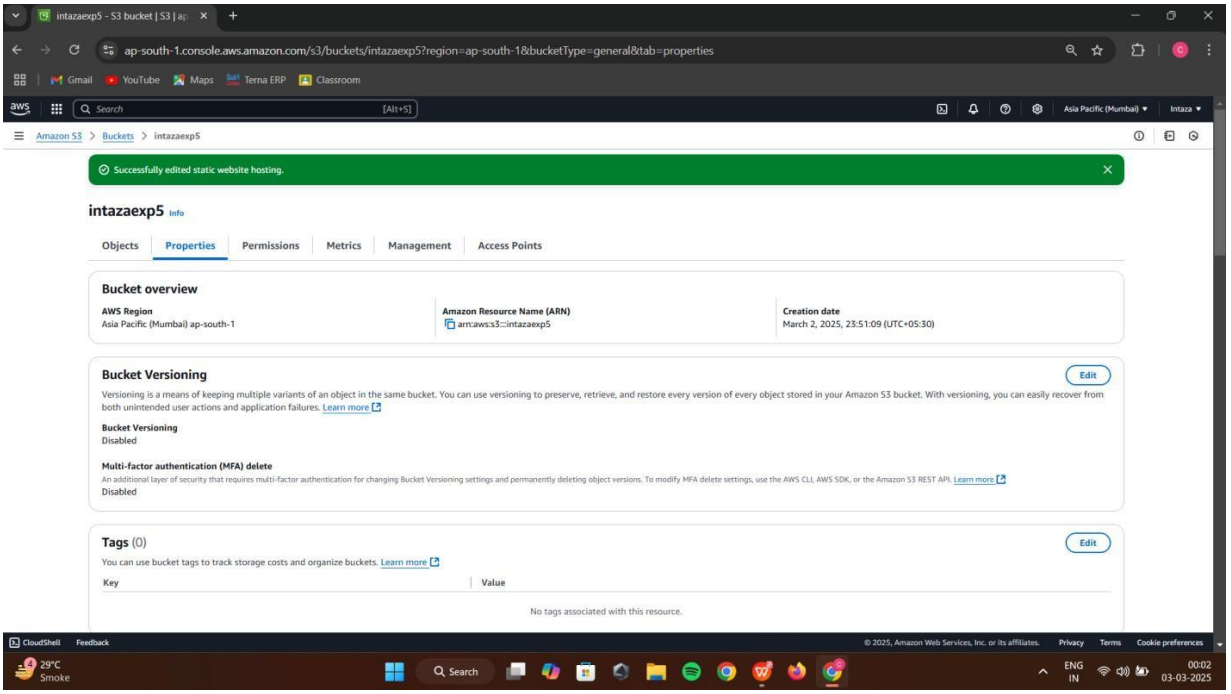




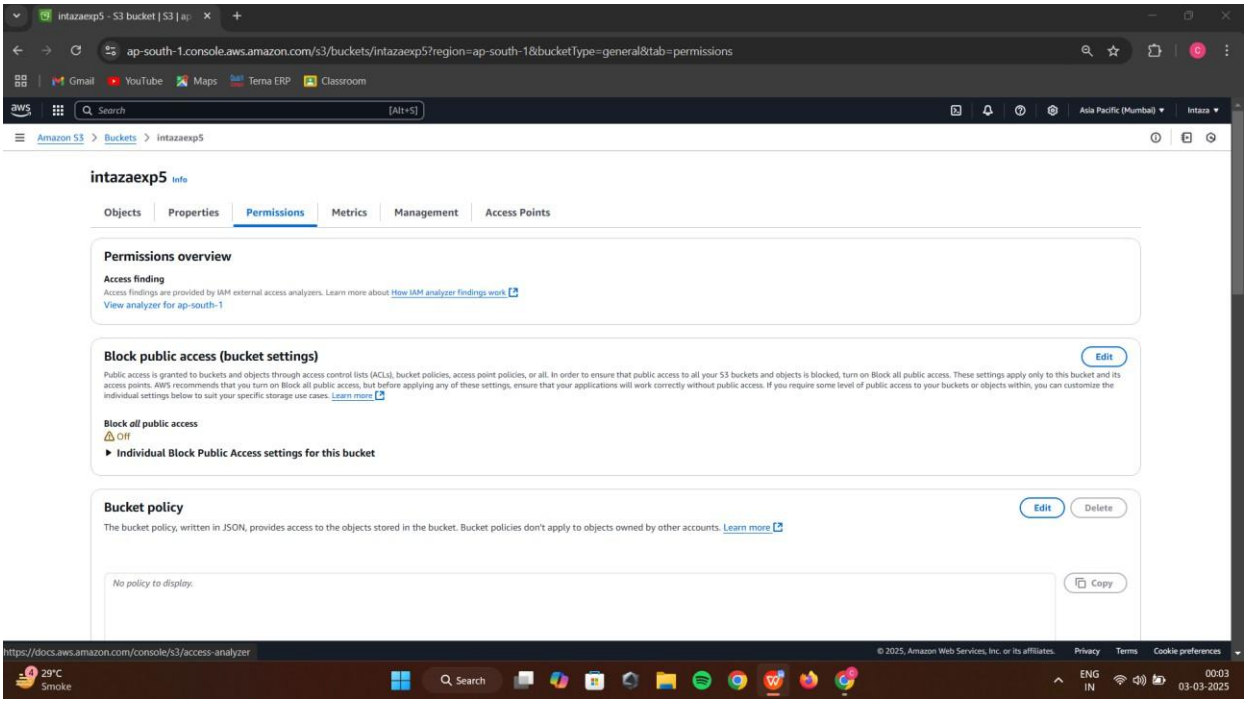
Step-13: Specify the file name in Index document which you have added in S3



Step-14: Scroll down and save the changes at bottom right, Following screen will appear



Step-15: Click on Permissions Tab

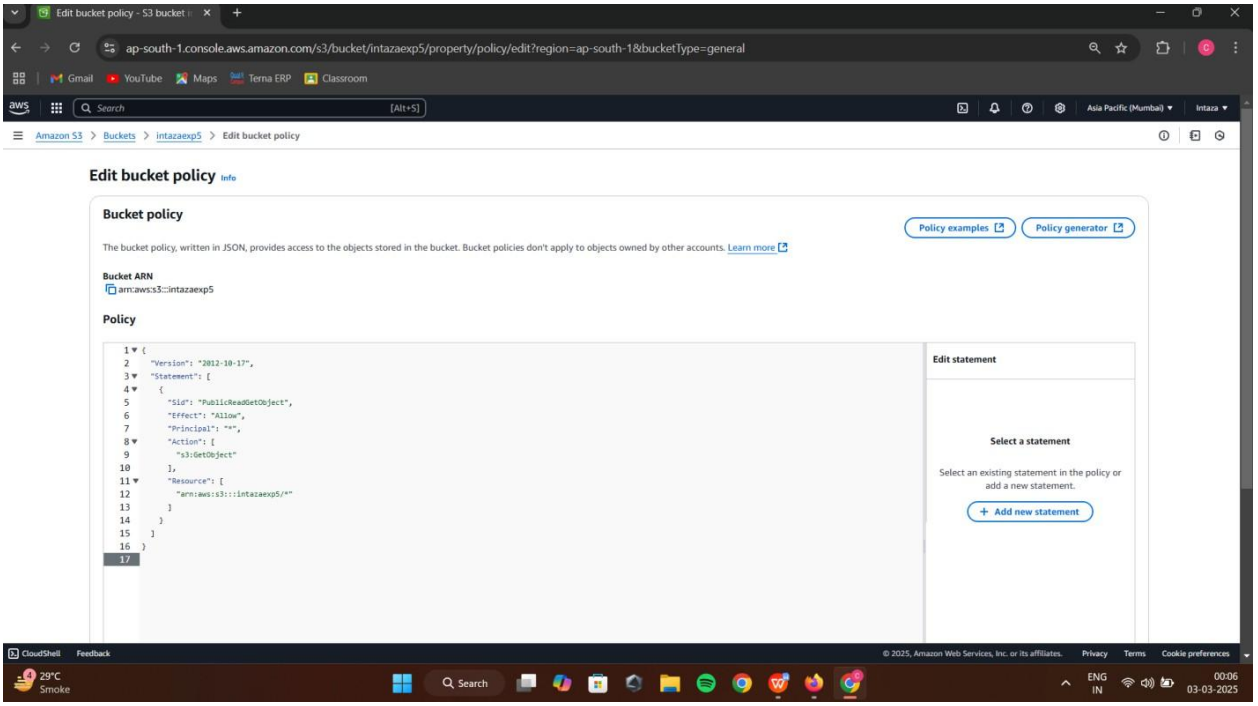


Step-16: In bucket policy click on Edit option

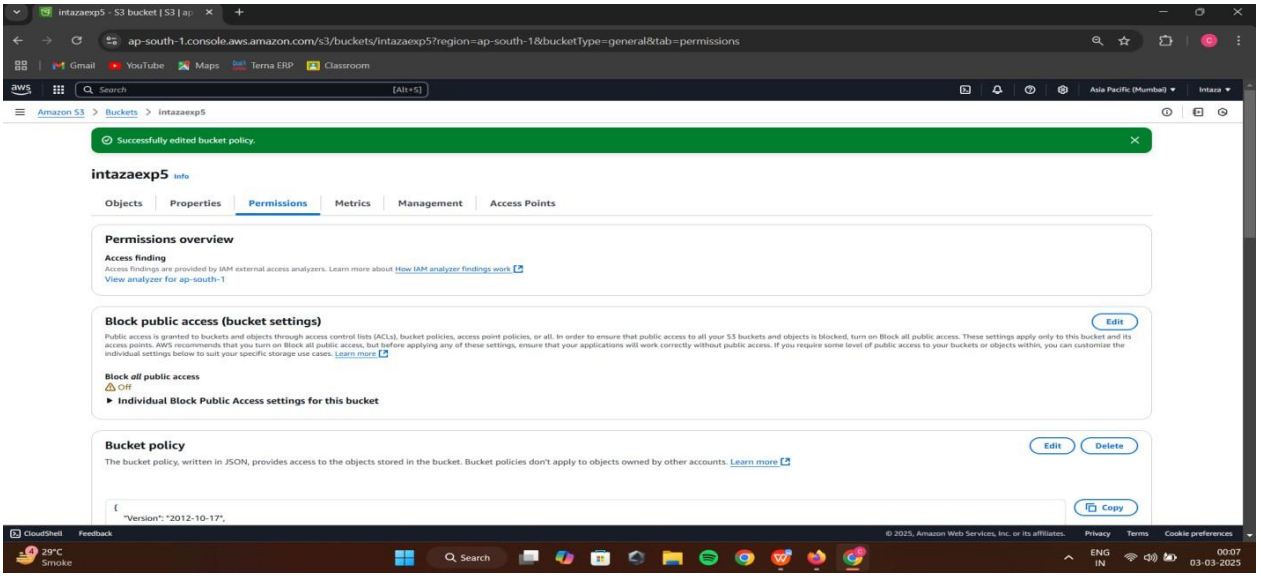
Step 17- after clicking on edit button paste the following code in bucket policy

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "PublicReadGetObject",
            "Effect": "Allow",
            "Principal": "*",
            "Action": [
                "s3:GetObject"
            ],
            "Resource": [
                "arn:aws:s3:::Bucket-Name/*"
            ]
        }
    ]
}
```

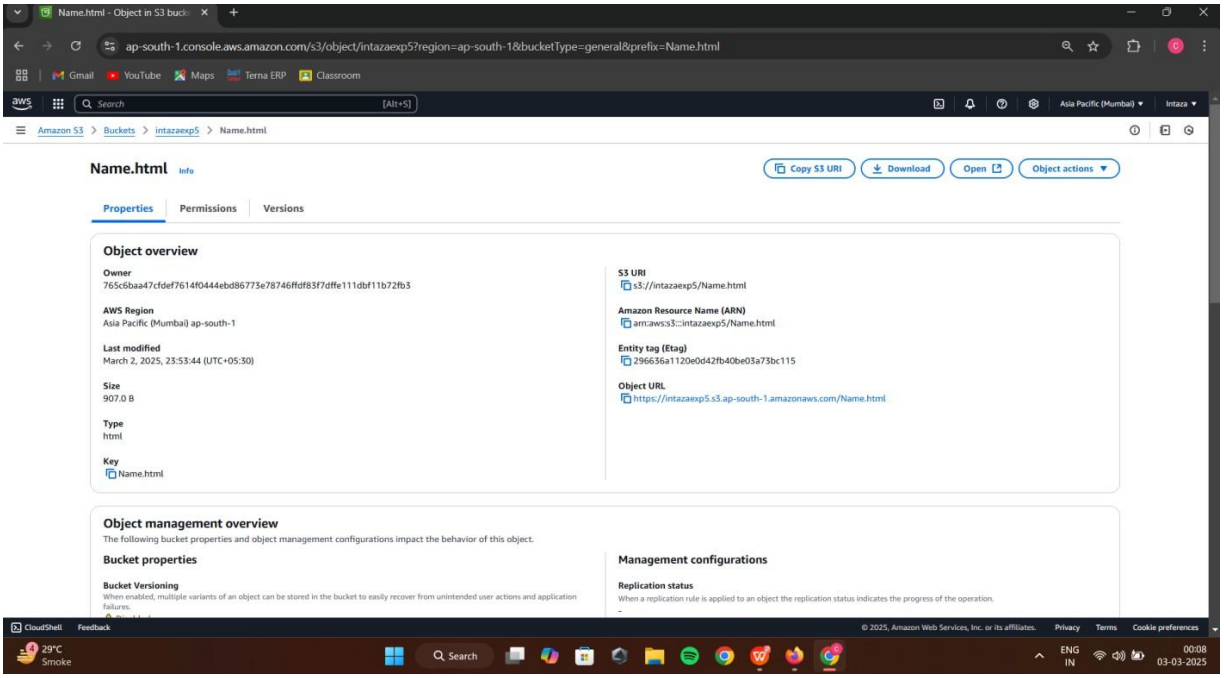
Note-Make sure that you add your bucket name in the code above

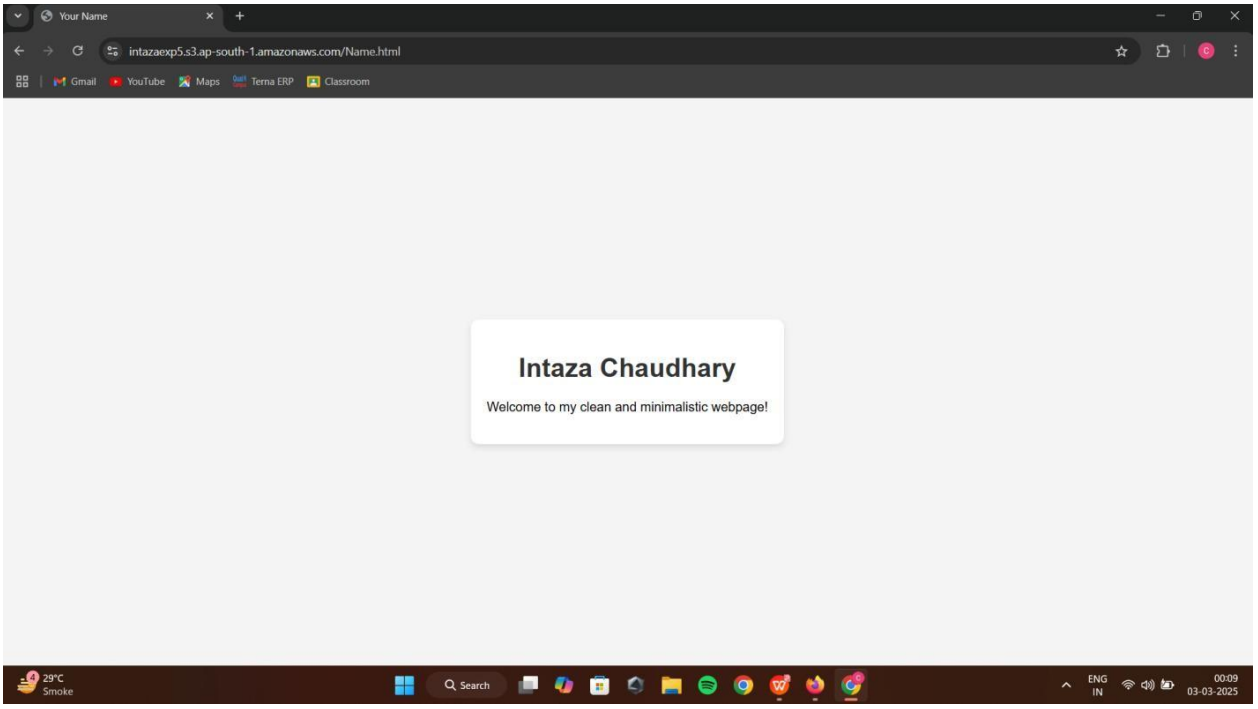


Scroll down and click on Save Changes button

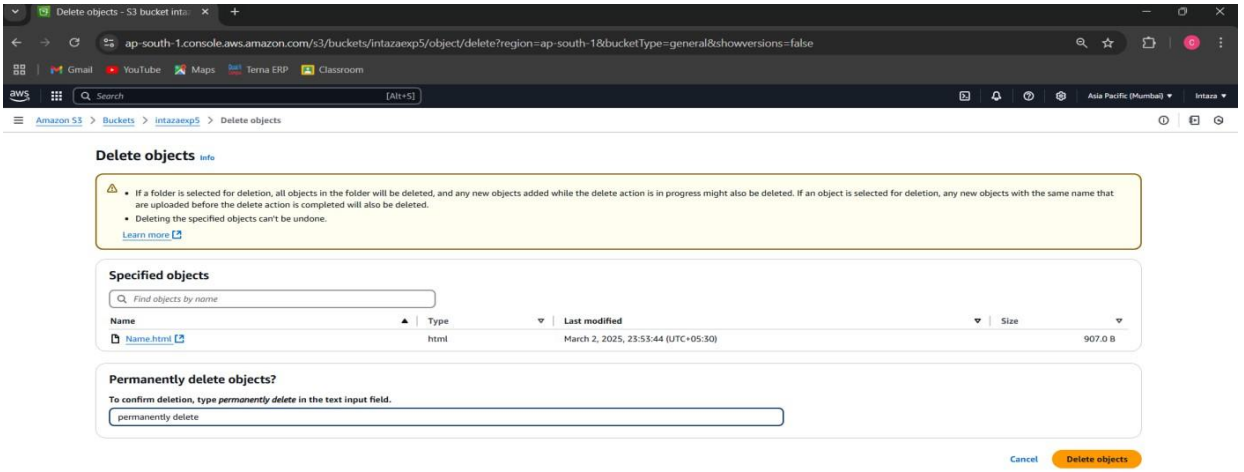


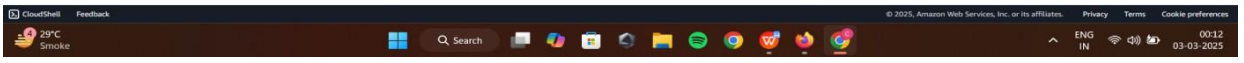
Step-18: open your html file and click on Object URL

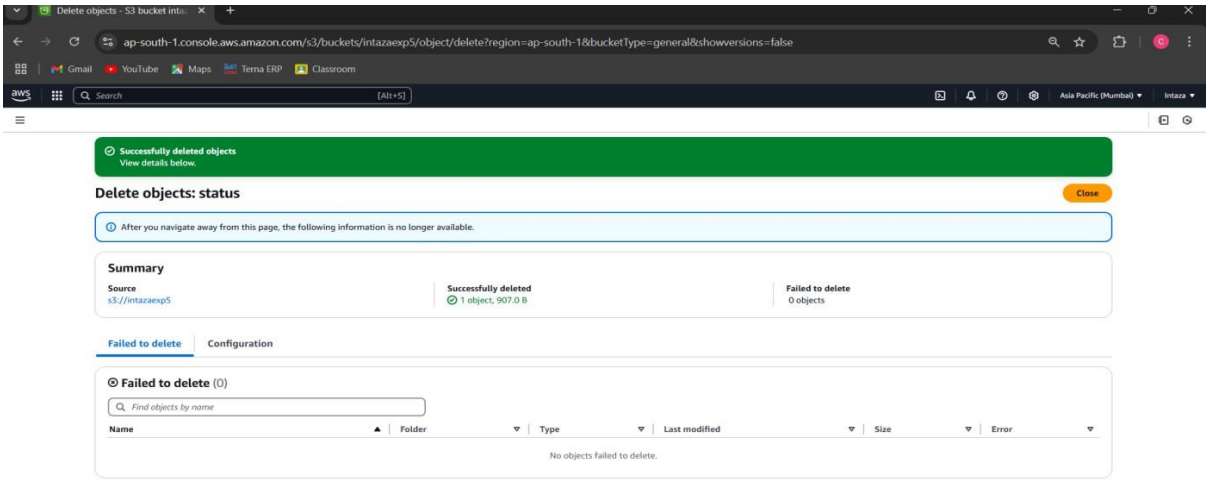




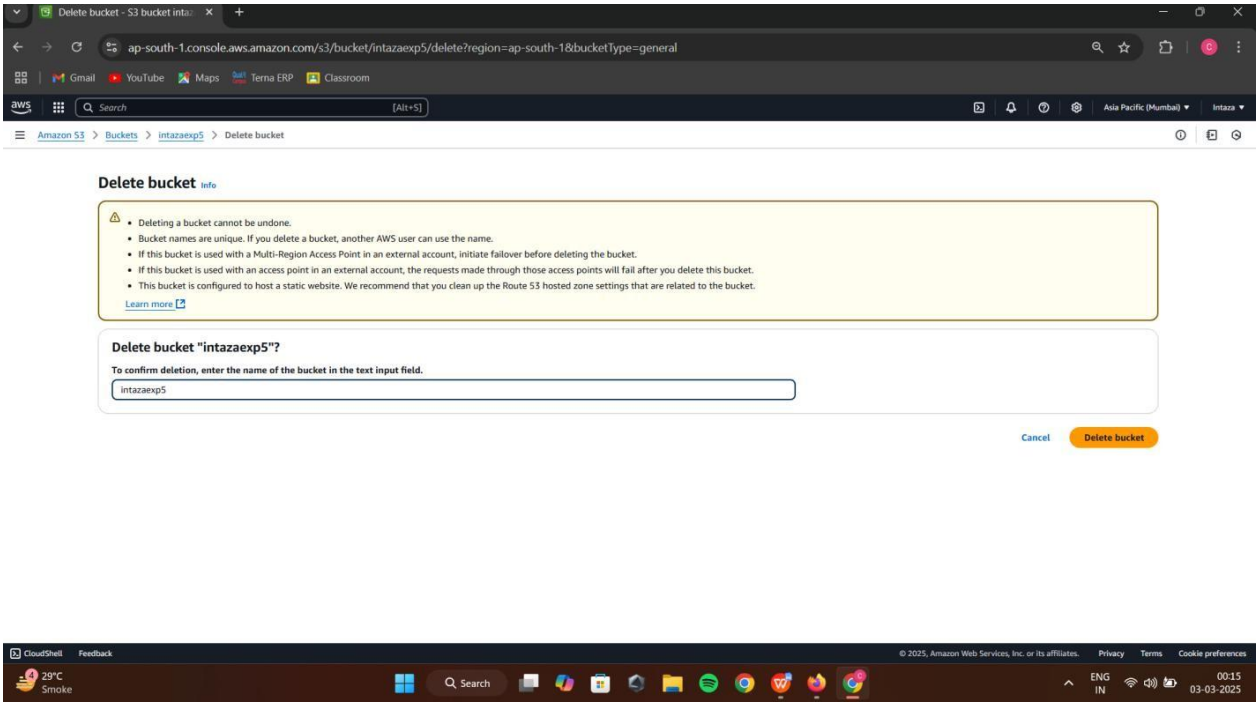
Step-19: Now for delete files click on checkbox of your file and then click on Delete Button,Write permanently delete and click on delete object button



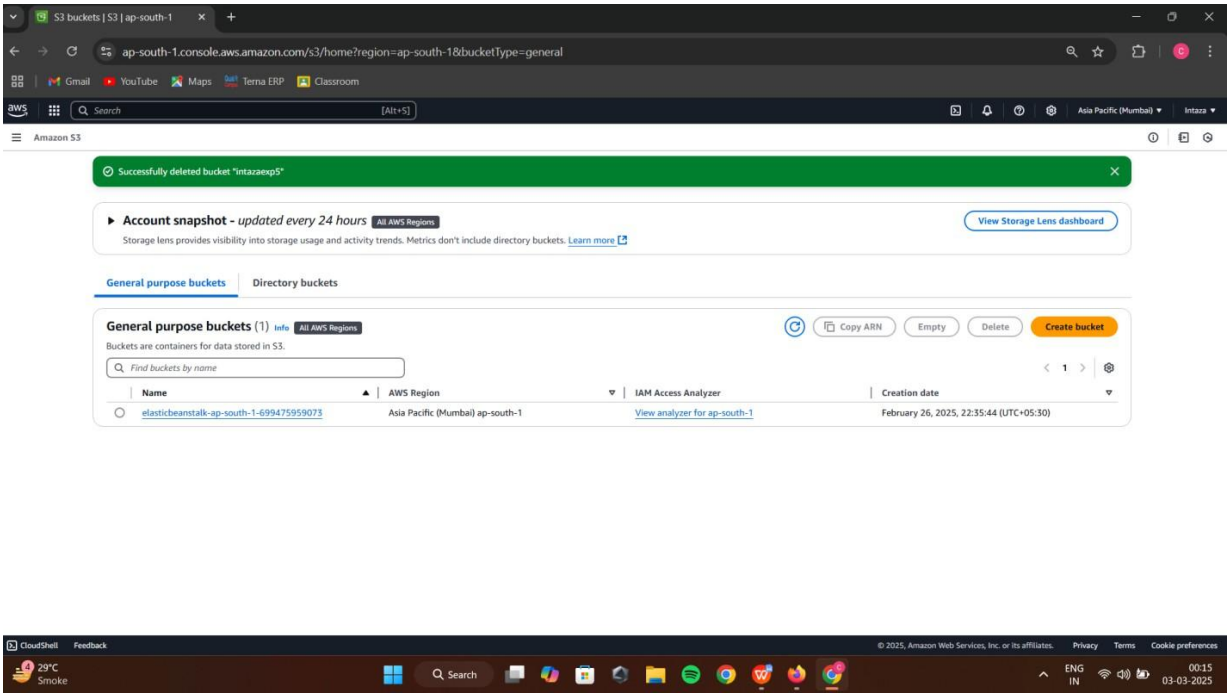




Step-20: now come to Amazon S3 tab and select your bucket and then click on delete button, Write down your bucket name in delete bucket tab and click on delete button at bottom right



Step-21: You can see that the bucket is deleted



Q3: Compare Google drive with AWS S3

GOOGLE DRIVE	AMAZON S3
It is owned by Google LLC.	It is owned by Amazon.
It was launched in 2012.	It was launched in 2006.
It offers 15 GB free storage space.	It offers 5 GB free storage space.
It was developed by Google.	It was developed by Amazon Web Services(AWS).
The number of users using Google Drive is more.	The number of users using Amazon S3 isless.
It provides full security of data.	It also provides full security of data but comparatively less.
It has the maximum storage size of 30 TB.	It has the unlimited maximum storage sizefor paid users.
It does not support remote uploading.	Remote uploading is not supported here also.
Maximum file size in Google Drive is 5TB.	Here maximum file size is 5 TB.
It supports file versioning.	It also supports file versioning.

B.2 Conclusion:

In this experiment, we successfully demonstrated the implementation of **Storage as a Service (SaaS)** using **AWS S3**. Through this, students gained practical exposure to various AWS storage solutions, including **Amazon EBS, Amazon EFS, Amazon S3 Glacier, and AWS Storage Gateway**, understanding their use cases and benefits.