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## Assignment No. 4

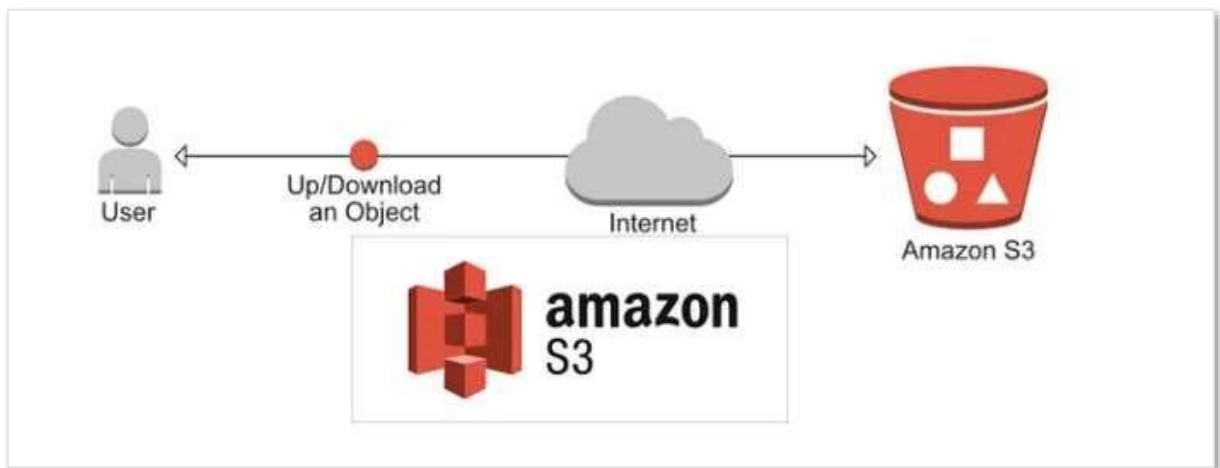
**Aim:** Deploy static Web application on S3 bucket.

### Theory:

#### What is Amazon S3?

Amazon Simple Storage Service (Amazon S3) is a scalable, high-speed, web-based cloud storage service. The service is designed for online backup and archiving of data and applications on Amazon Web Services (AWS). It has a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web.

- Amazon S3 is Object-based storage, i.e., you can store the images, word files, pdf files, etc. The files which are stored in S3 can be from 0 Bytes to 5 TB.
- Files are stored in Bucket. A bucket is like a folder available in S3 that stores the files.
- S3 is a universal namespace, which means the names must be unique globally. Bucket contains a DNS address. Therefore, the bucket must contain a unique name to generate a unique DNS address.



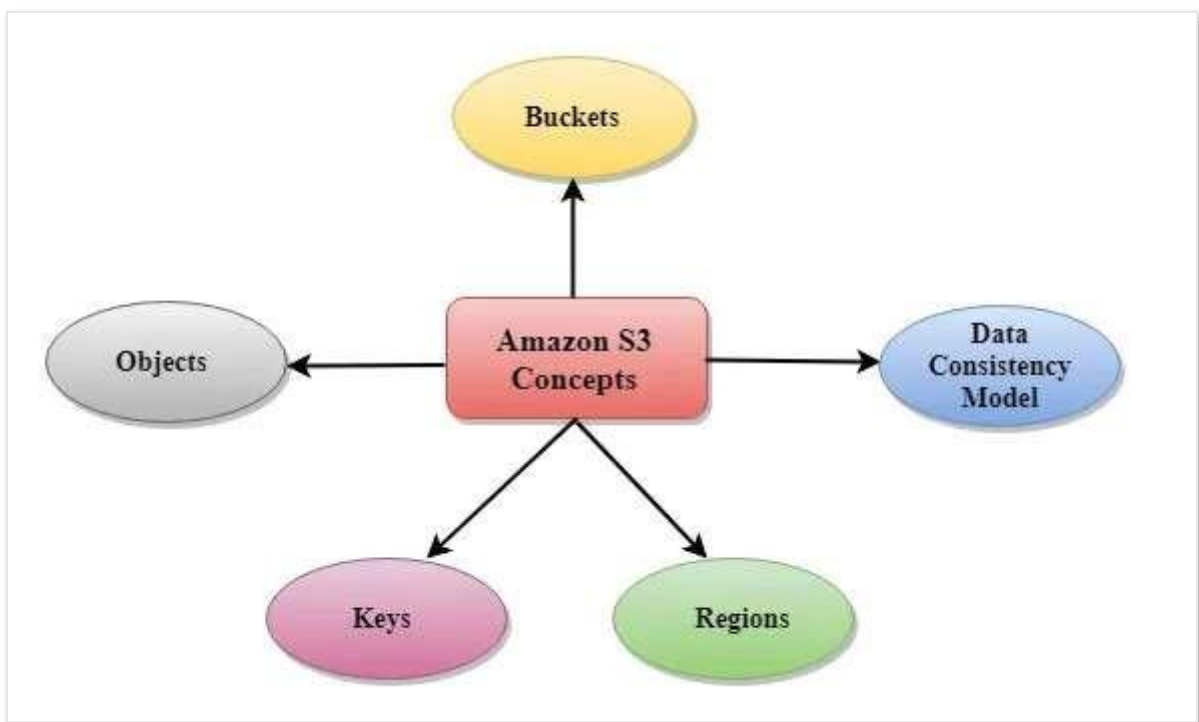
<https://s3-eu-west-1.amazonaws.com/p-sample-bucket>

region  
name

bucket  
name

If you create a bucket, the URL looks like this:

## Amazon S3 Concepts



### 1. Buckets

- A bucket is a container used for storing objects. Every object is incorporated in a bucket.
- A bucket has no limit to the number of objects. No bucket can exist inside of other buckets.
- The AWS user that creates a bucket owns it, and no other AWS user cannot own it. Therefore, we can say that the ownership of a bucket is not transferrable. Only the owner can delete a bucket.

## 2. Objects

- Objects are the entities that are stored in an S3 bucket. An object consists of object data and metadata where metadata is a set of name-value pairs that describes the data.
- An object consists of some default metadata such as date last modified, and standard HTTP metadata, such as Content-type. Custom metadata can also be specified at the time of storing an object.
- It is uniquely identified within a bucket by key and version ID.

## 3. Key

- A key is a unique identifier for an object. Every object in a bucket is associated with one key.
- An object can be uniquely identified by using a combination of bucket name, the key, and optionally version ID.

## 4. Regions

- You can choose a geographical region. A region is chosen in such a way that it optimizes the latency, minimize costs or address regulatory requirements.
- Objects will not leave the region unless you explicitly transfer the objects to another region.

## 5. Data Consistency Model

Two types of models:

- Read-after-write consistency for PUTS of new objects.

For a PUT request, S3 stores the data across multiple servers to achieve high availability. A process stores an object to S3 and will be immediately available to read.

- Eventual consistency for overwrite PUTS and DELETES

For PUTS and DELETES to objects, the changes are reflected eventually, and not immediately.

## Advantages of Amazon S3

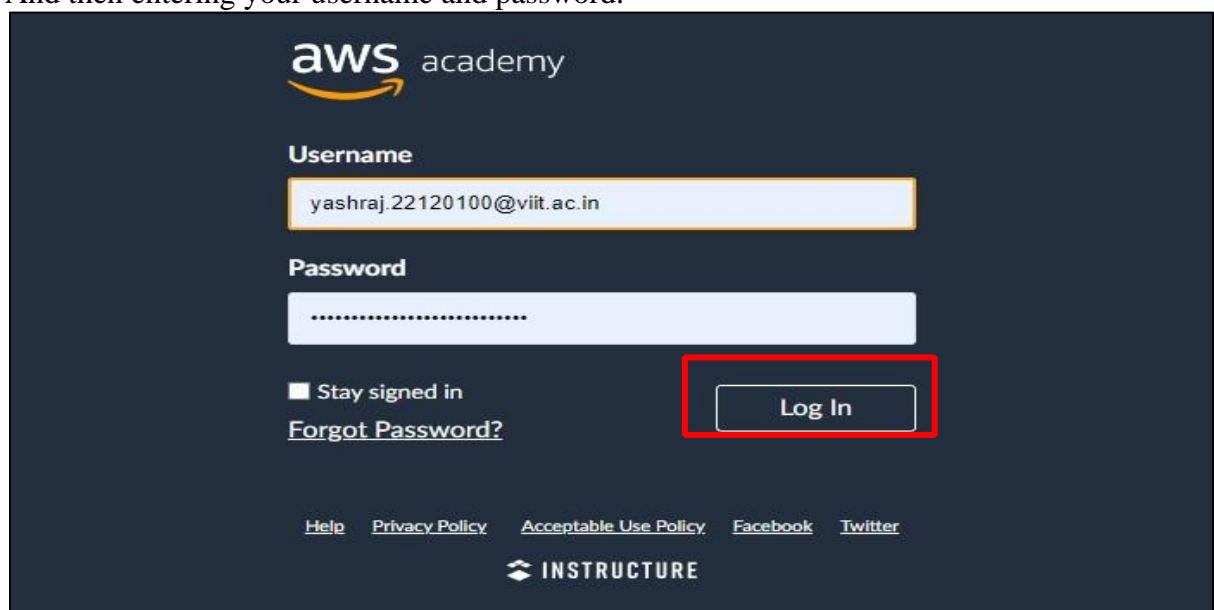
1. Storing data
2. Downloading data
3. Permissions
4. Standard interfaces
5. Security

## Steps to to upload static web application on the aws cloud using S3 service –

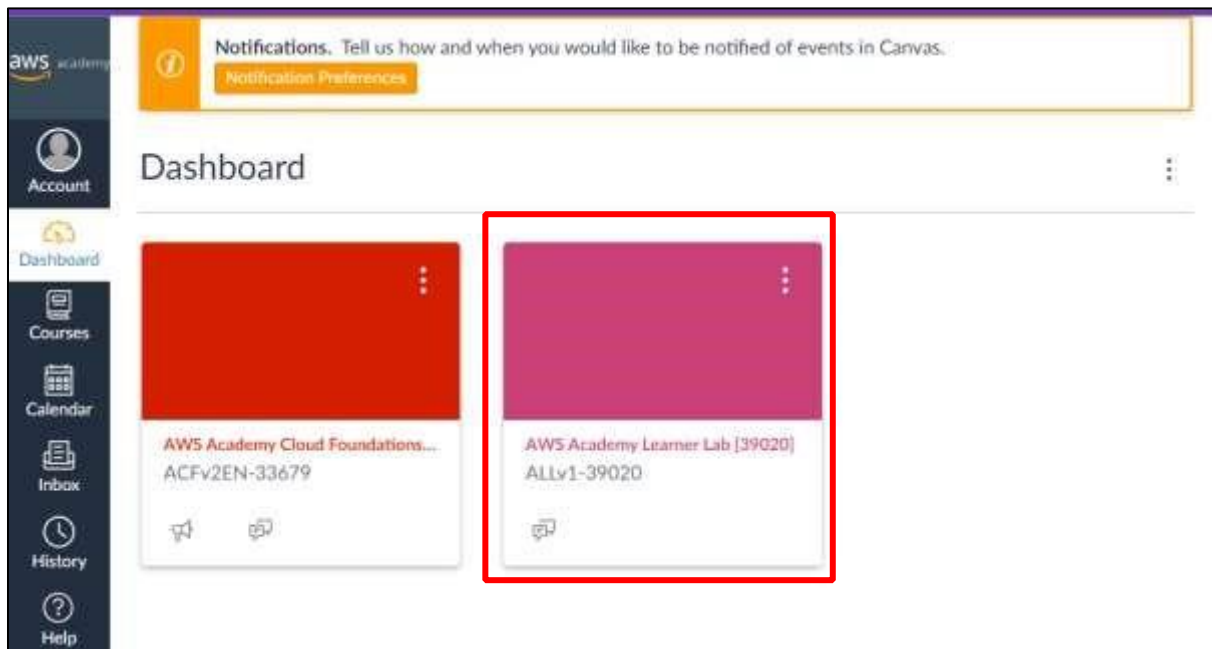
1] Login into your Aws Academy Canvas Account By clicking on student login



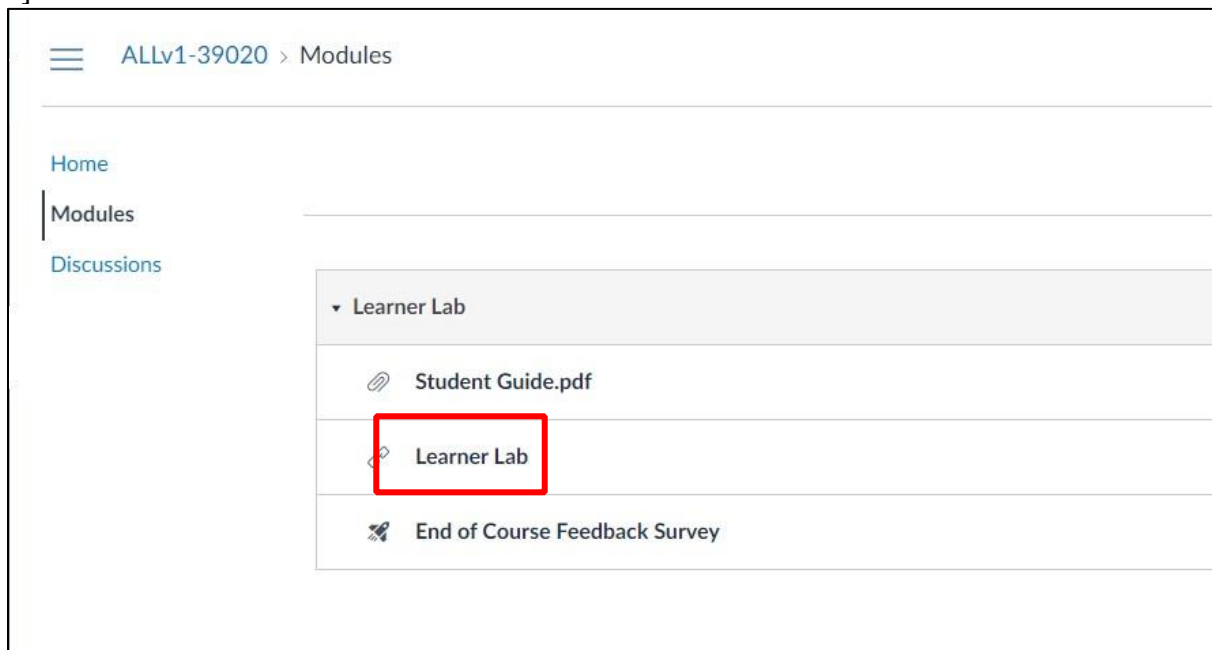
And then entering your username and password.



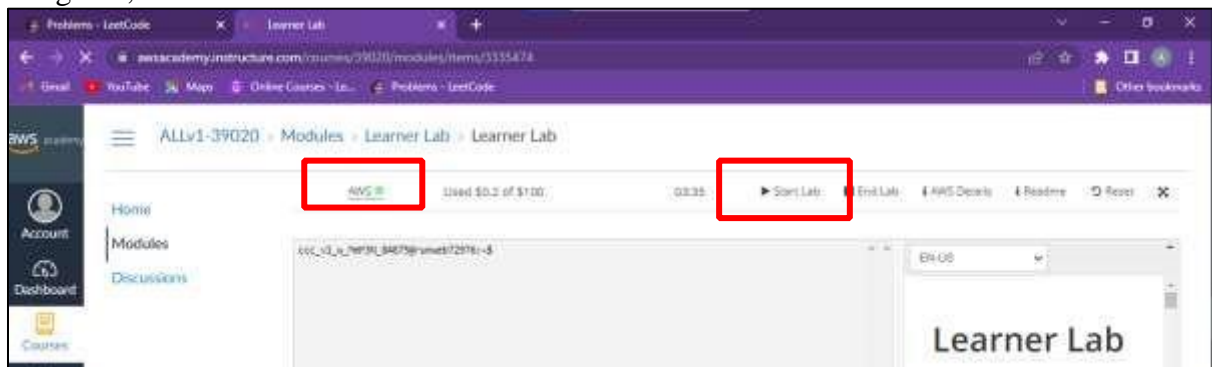
2] Then click on the AWS Academy Learner Lab in the dashboard.



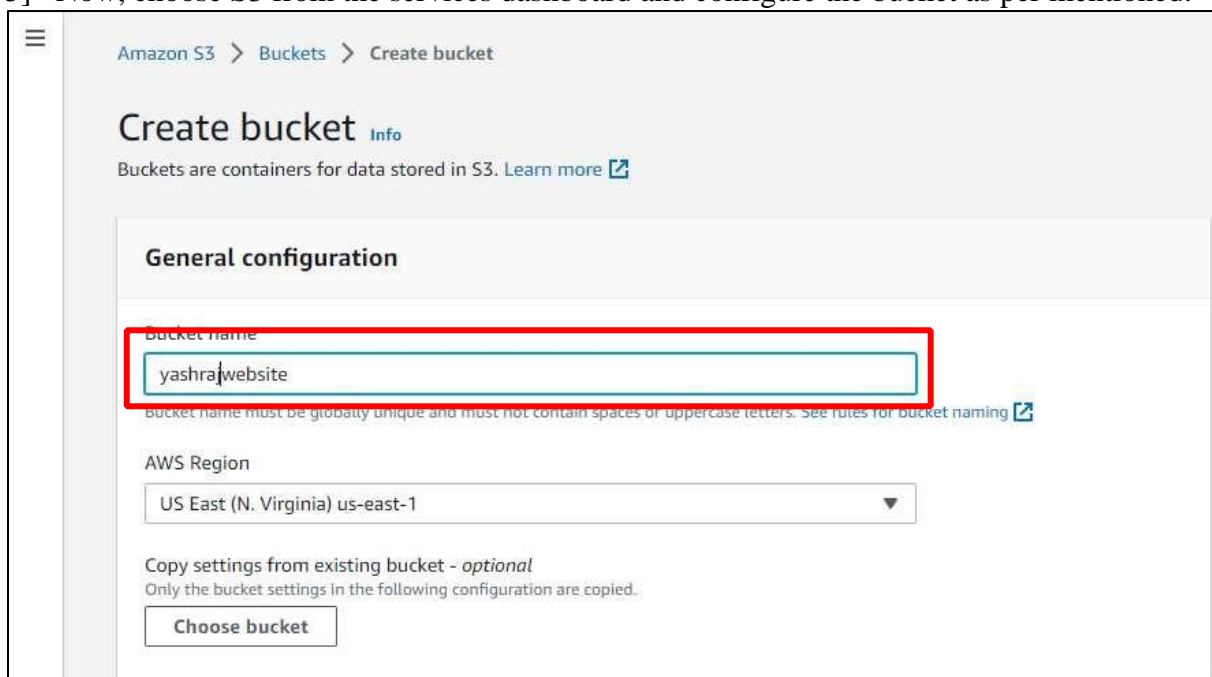
3] In the modules section of the Lab click on learner lab.



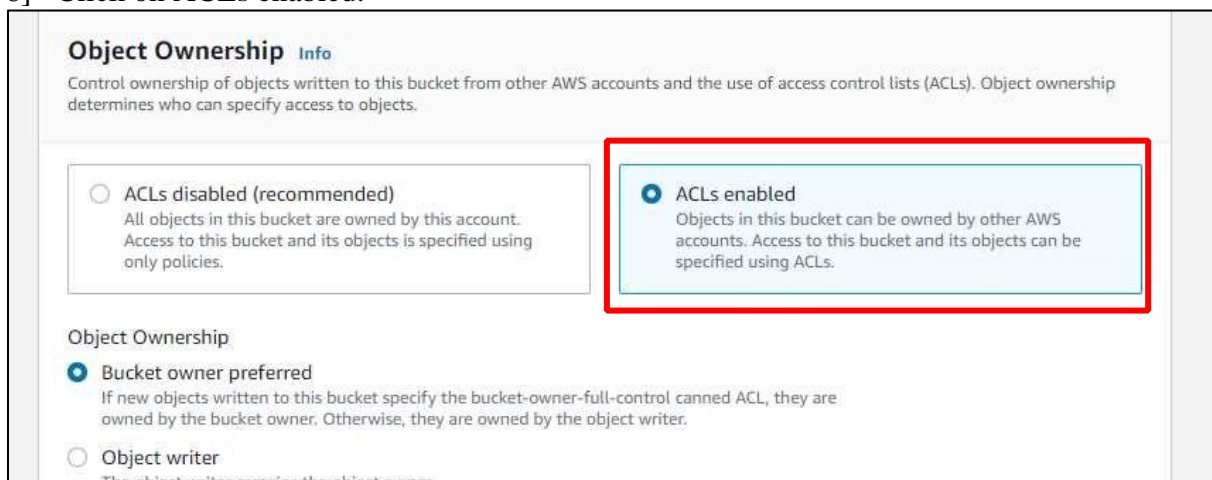
- 4] Then this window will open, click on the start lab button and after the AWS button turns green, click on the AWS button.



- 5] Now, choose S3 from the services dashboard and configure the bucket as per mentioned.



- 6] Click on ACLs enabled.



7] Unchecked the “Block all public access” checkbox.

**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 policies**  
S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

8] Then click on create bucket button.

► **Advanced settings**

After creating the bucket you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel **Create bucket**

9] Now your bucket is created, click on the name of your bucket.

Successfully created bucket "yashrajwebsite" [View details](#)

To upload files and folders, or to configure additional bucket settings choose [View details](#).

Amazon S3 > Buckets

► **Account snapshot** [View Storage Lens dashboard](#)  
Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

**Buckets (1)** [Info](#) [Refresh](#) [Copy ARN](#) [Empty](#) [Delete](#) [Create bucket](#)

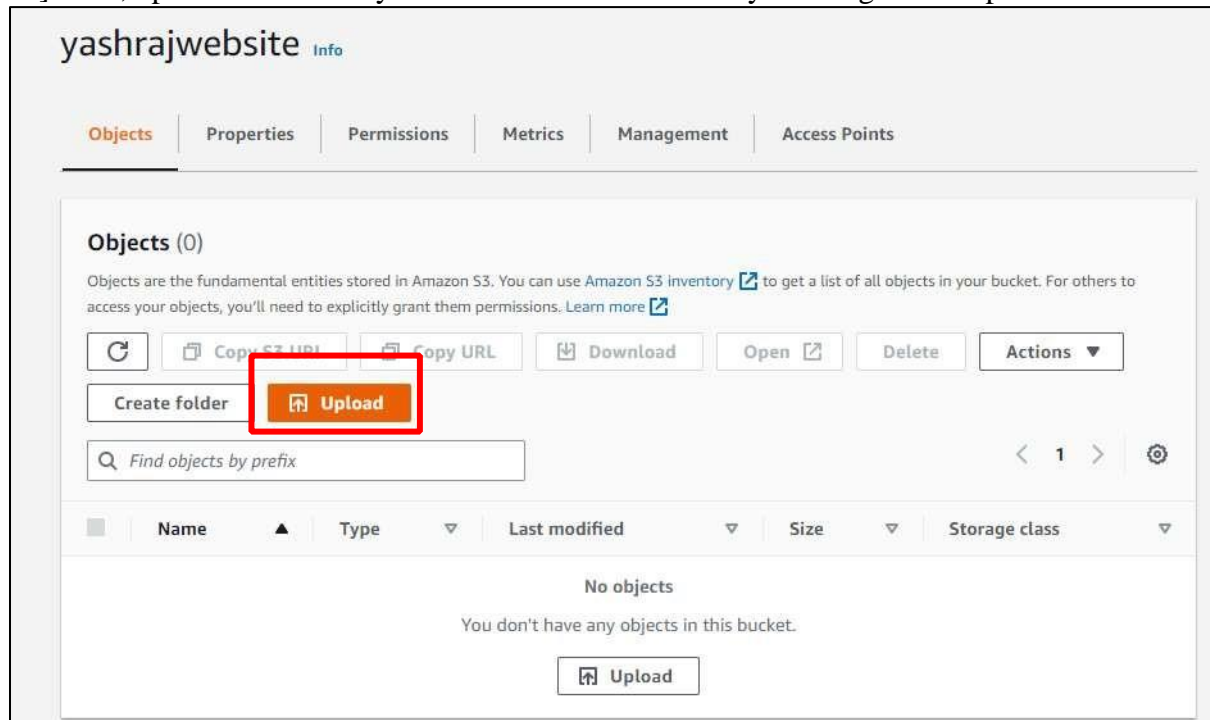
Buckets are containers for data stored in S3. [Learn more](#)

Find buckets by name

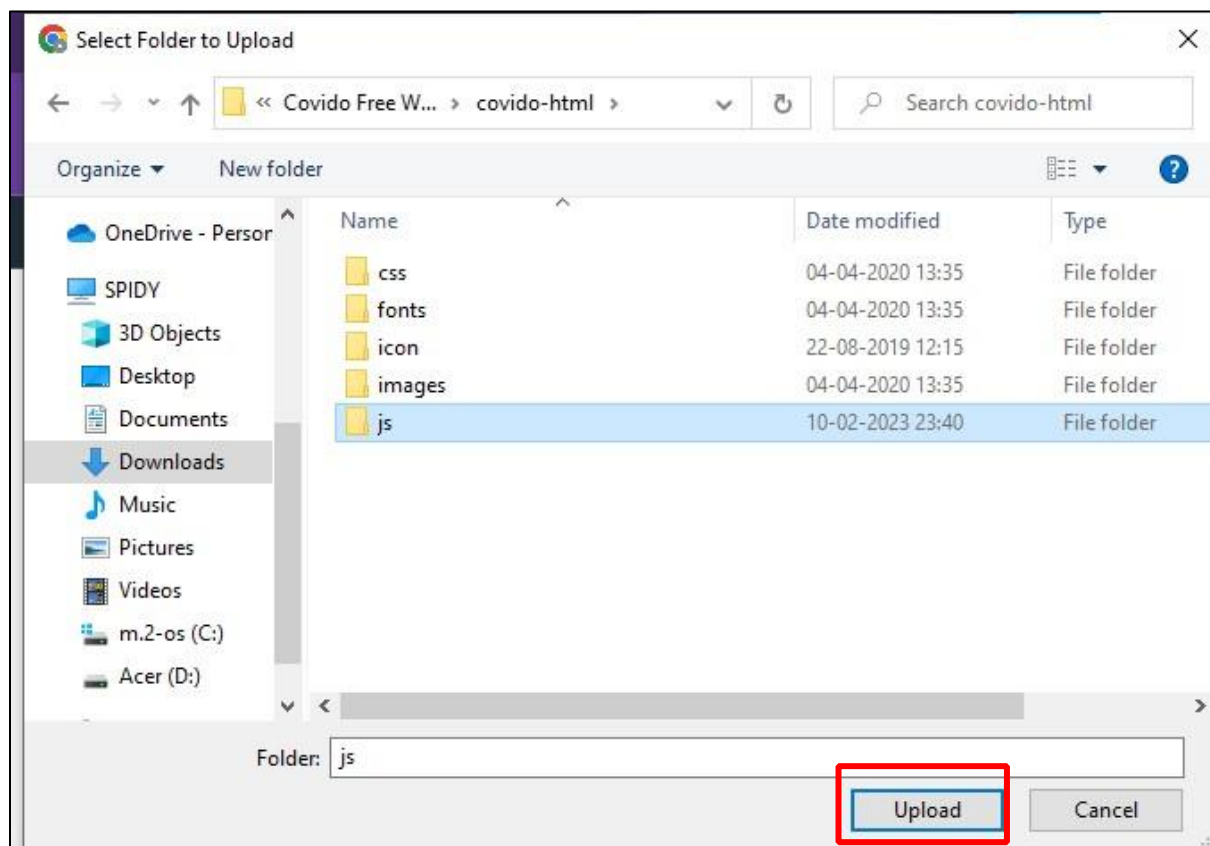
Name	AWS Region	Access	Creation date
yashrajwebsite	US East (N. Virginia) us-east-1	Objects can be public	February 10, 2023, 23:37:58 (UTC+05:30)



10] Now, upload the files of your static website to host. By clicking on the upload button.

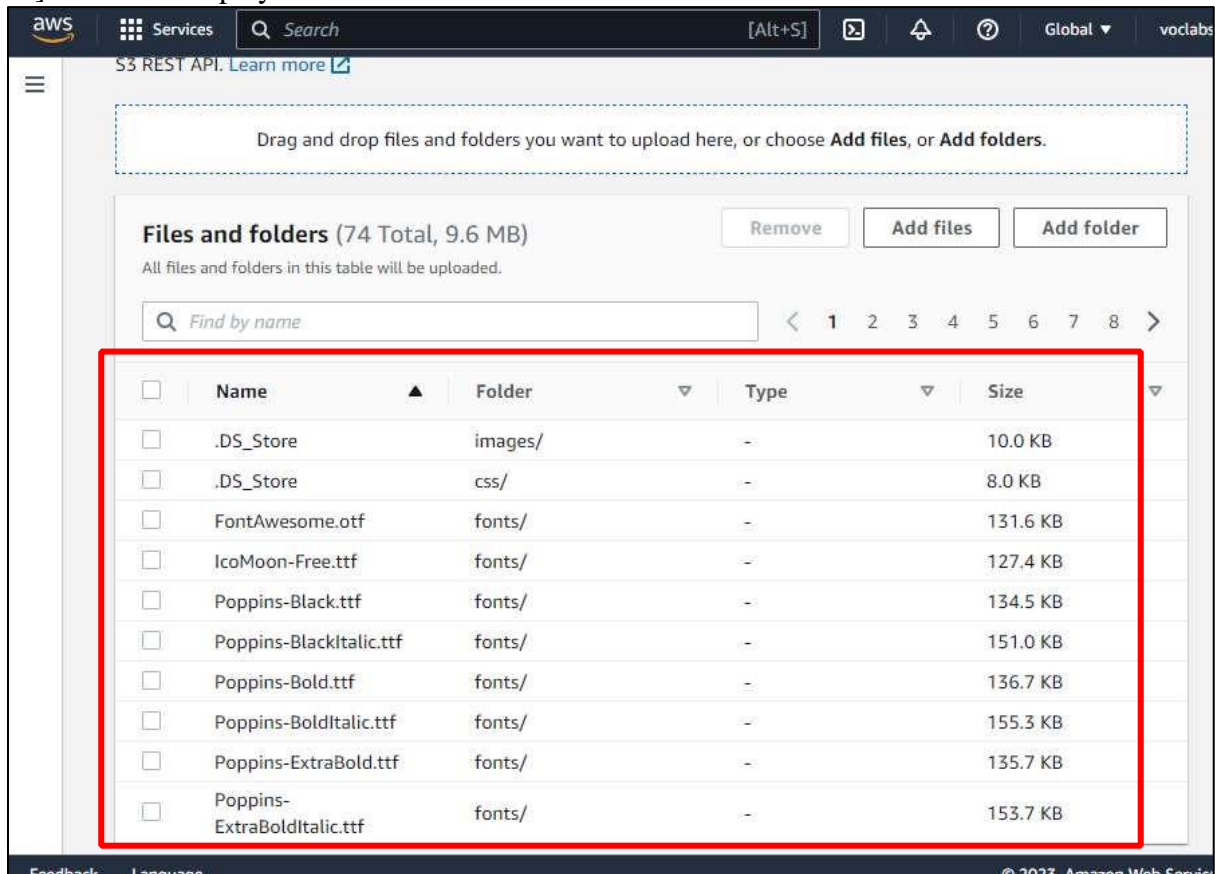


11] Choose your files.





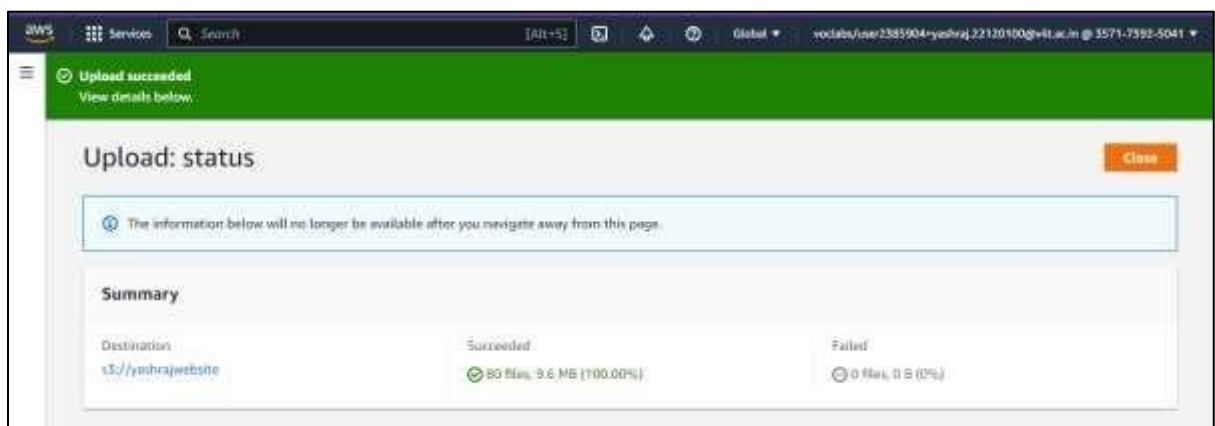
12] Files will display on the console here.



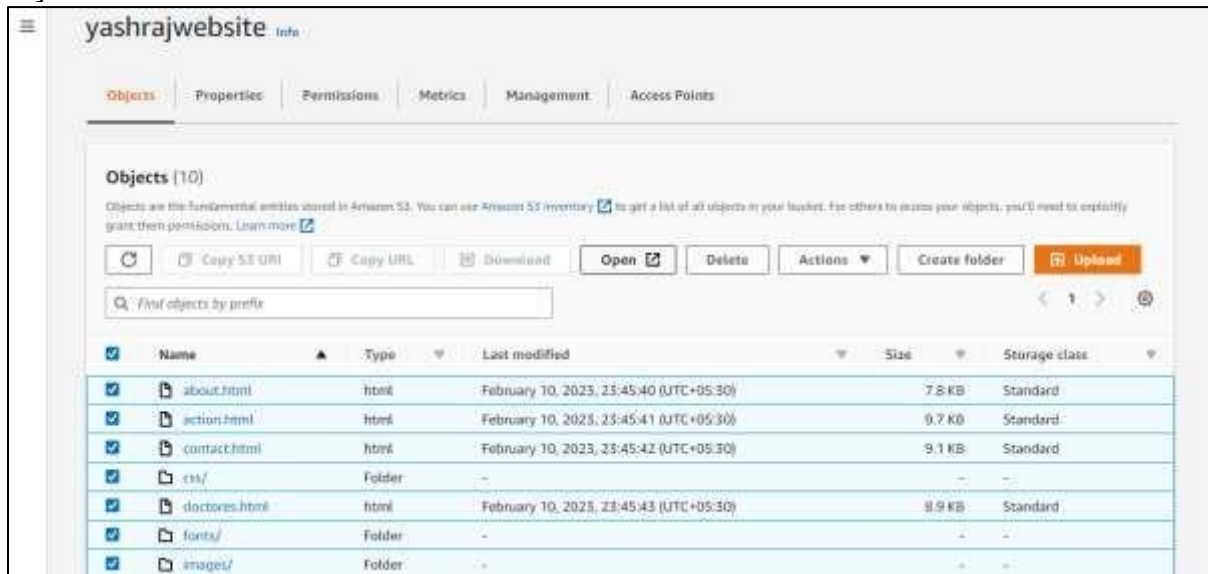
13] Click on the upload button.



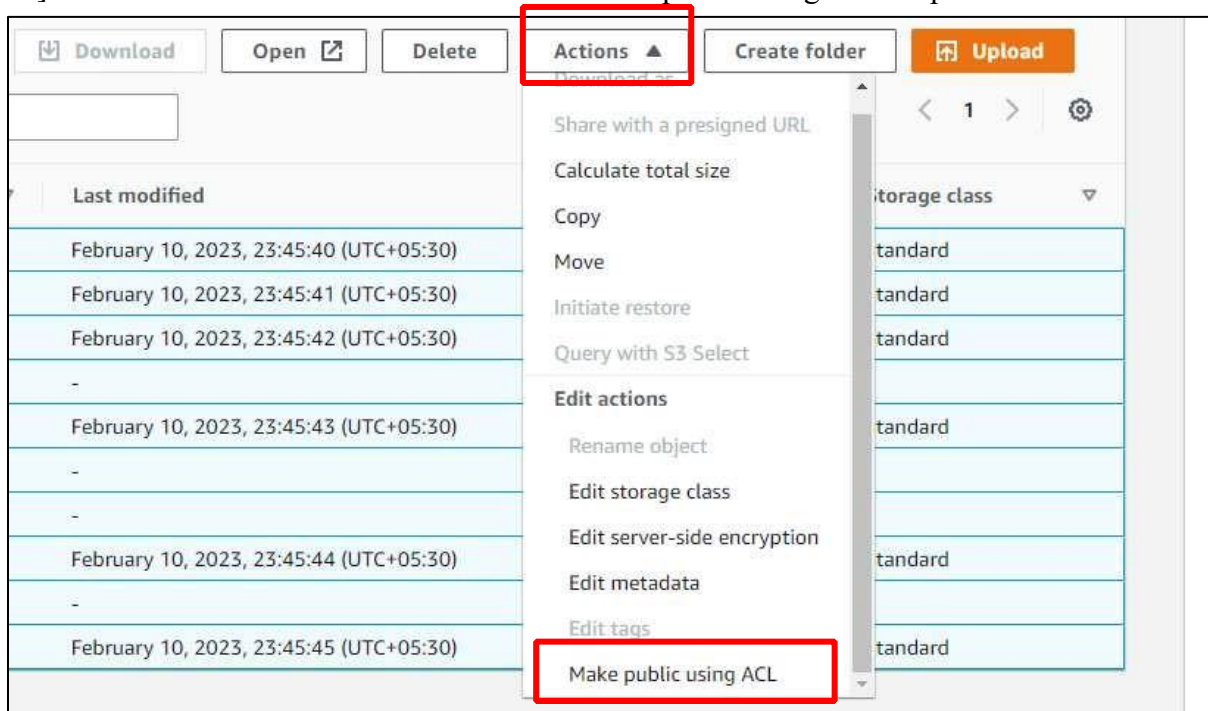
14] Your files will be uploaded here.



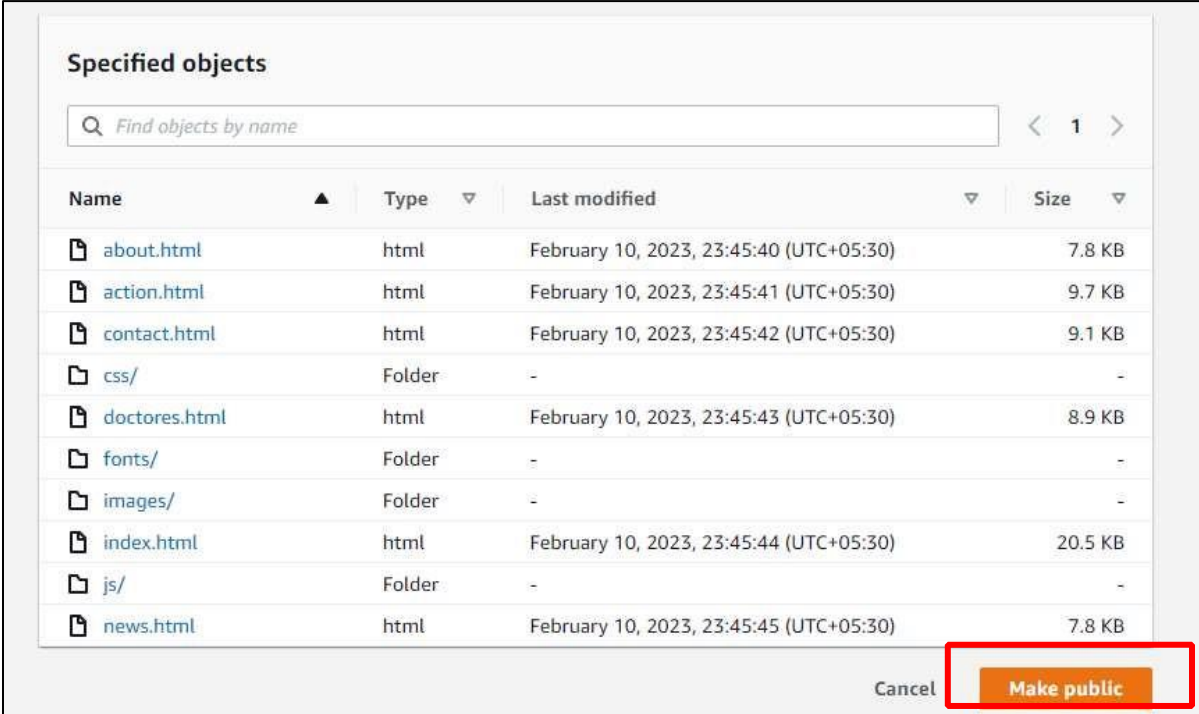
15] Select all the files.



17] Click on “Actions” tab and click on the “Make public using ACL” option.



18] Click on Make public button.



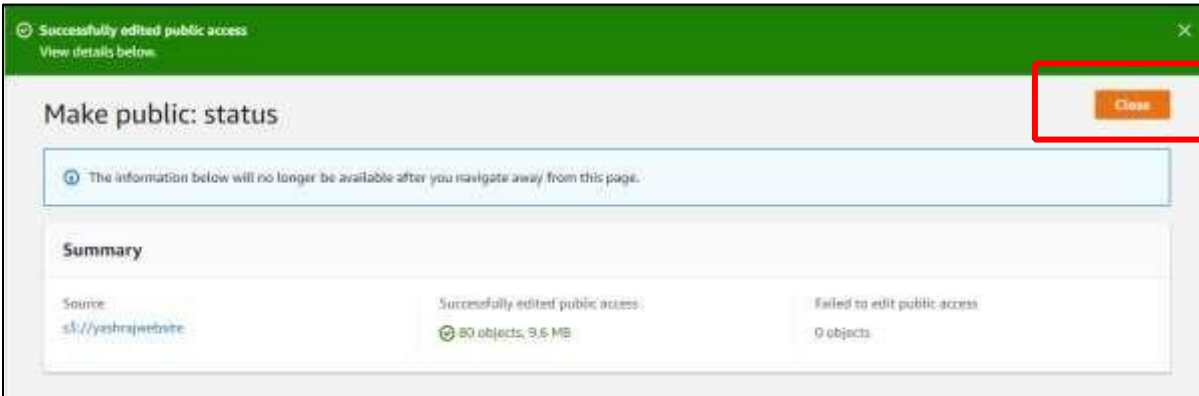
**Specified objects**

Find objects by name

Name	Type	Last modified	Size
about.html	html	February 10, 2023, 23:45:40 (UTC+05:30)	7.8 KB
action.html	html	February 10, 2023, 23:45:41 (UTC+05:30)	9.7 KB
contact.html	html	February 10, 2023, 23:45:42 (UTC+05:30)	9.1 KB
css/	Folder	-	-
doctores.html	html	February 10, 2023, 23:45:43 (UTC+05:30)	8.9 KB
fonts/	Folder	-	-
images/	Folder	-	-
index.html	html	February 10, 2023, 23:45:44 (UTC+05:30)	20.5 KB
js/	Folder	-	-
news.html	html	February 10, 2023, 23:45:45 (UTC+05:30)	7.8 KB

Cancel **Make public**

19] Status prompt will appear. Click on close.



Successfully edited public access  
View details below

**Make public: status**

The information below will no longer be available after you navigate away from this page.

**Summary**

Source	Successfully edited public access	Failed to edit public access
s3://yashrajwebsite	80 objects, 9.6 MB	0 objects

**Close**

20] Scroll down the main page and click on edit button in static website hosting tab.



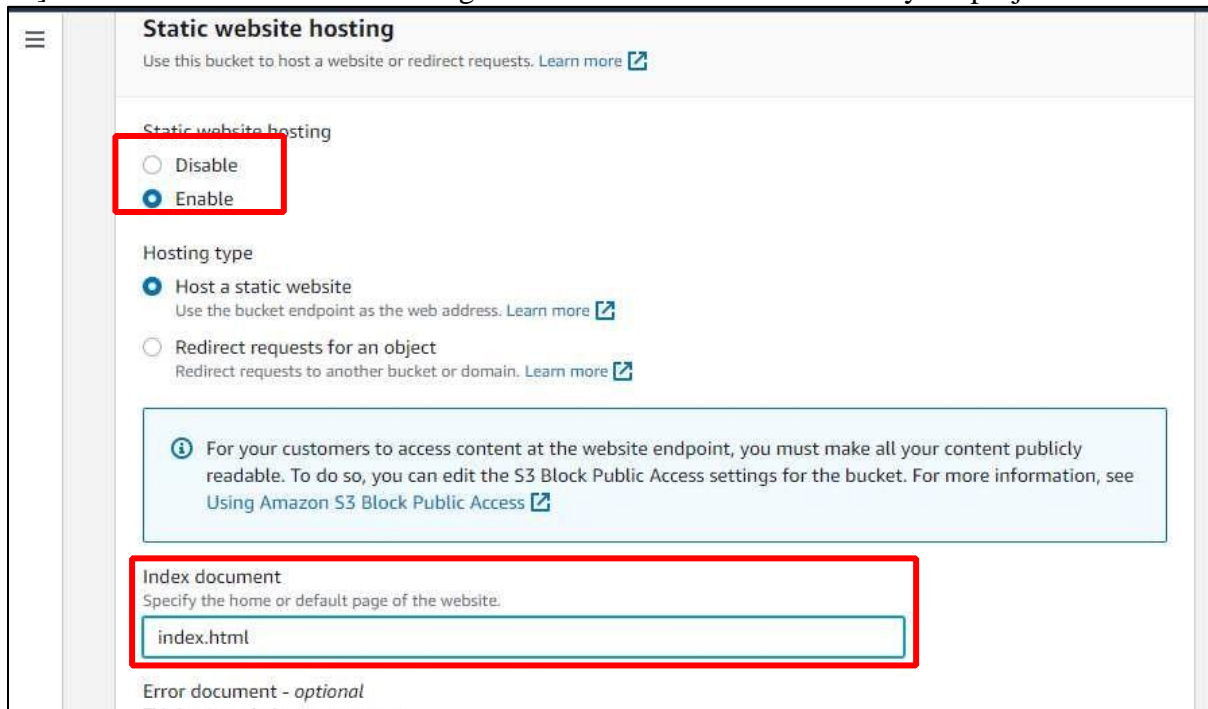
**Static website hosting**

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting  
Disabled

**Edit**

21] Enable the static website hosting and enter the index document of your project.



**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

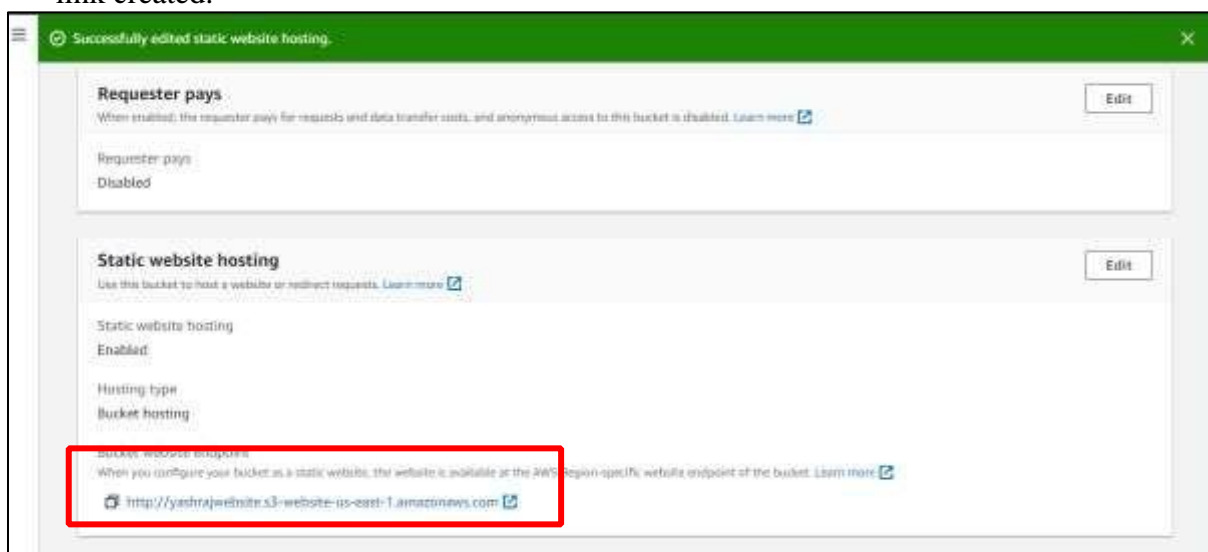
Error document - optional

22] Click on Save changes button.



Cancel **Save changes**

23] Now, you have successfully deployed static website using AWS S3 bucket. Click on the link created.



**Successfully edited static website hosting.**

**Requester pays**  
When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. [Learn more](#)

Requester pays  
Disabled

**Static website hosting**  
Use this bucket to host a website or redirect requests. [Learn more](#)

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://yashrajwebsite.s3-website-us-east-1.amazonaws.com>

24] Here is the output of the hosted website.

Link -

<http://yashrajwebsite.s3-website-us-east-1.amazonaws.com/>

