HOST A WEBSITE USING AMAZON S3

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Date Created: 28th October 2024
Version: 1

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1. INTRODUCTION TO WEBSITE HOSTING

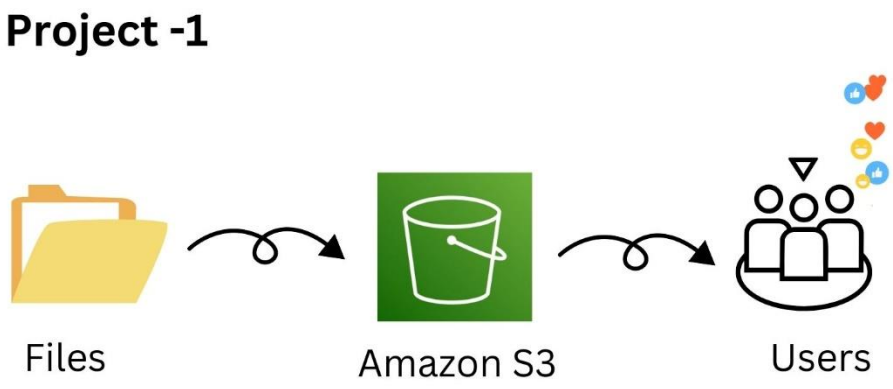
Website hosting is the process of storing website files (such as HTML, CSS, images, and other media) on a server that is accessible to users over the Internet. When someone visits a website, they're accessing these files through a browser, which fetches and displays them from a server. Hosting makes a website available 24/7 for users worldwide, managed by specialized services.

There are multiple types of websites hosting available today, ranging from shared hosting to more advanced options like virtual private servers (VPS), dedicated servers, and cloud hosting solutions. Each hosting solution varies in terms of control, scalability, performance and cost.

2. REQUIREMENTS FOR THE PROJECT

1. **AWS Account:** A registered account on Amazon Web Services to access cloud services.
2. **Web Browser:** A modern browser like google chrome or Microsoft edge to access AWS Management Console and tools.
3. **Active Internet Connection:** Reliable Internet access for consistent connectivity
4. **Amazon S3 service**: Access to Amazon S3 for hosting and storing data files.
5. **Basic of Simple Storage Service (S3):** Familiarity with S3 basics such as creating buckets and uploading files.

3. ARCHITECTURE

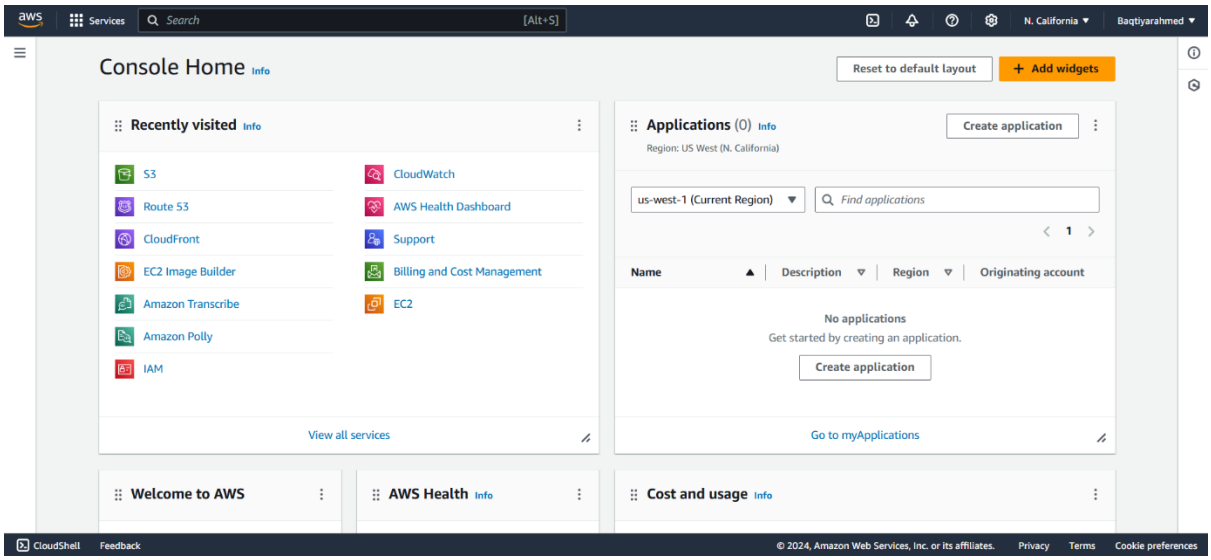


4. AMAZON S3 AS HOSTING SOLUTION

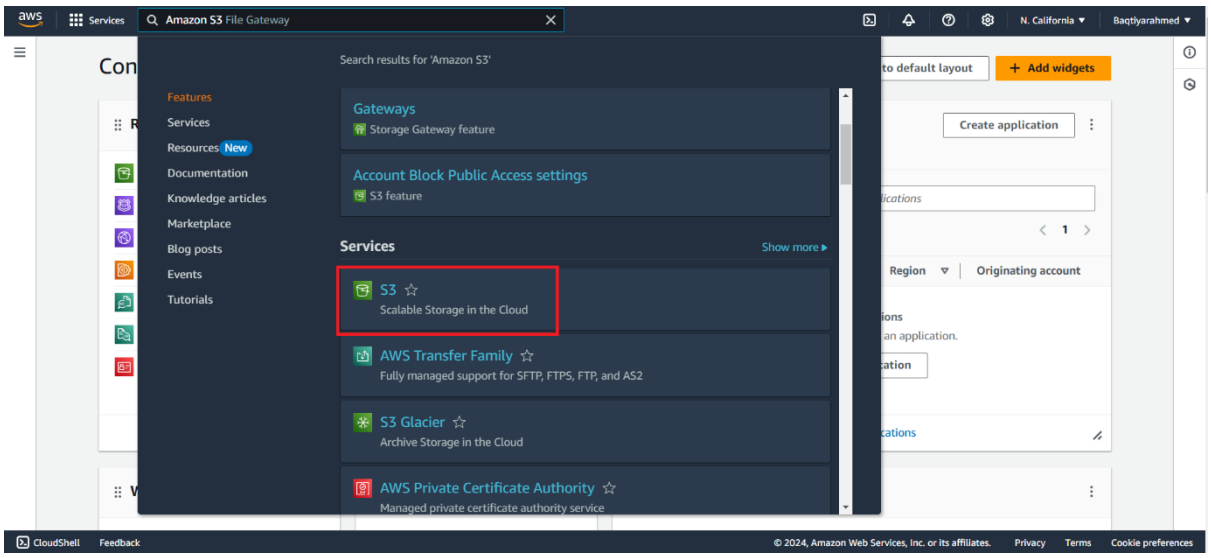
Amazon S3 stands for Simple Storage Service is an approach for hosting websites, particularly suited for static websites, which has fixed content that doesn't require server-side scripting. Amazon Web Services provides S3 Bucket provides reliable, scalable, and cost-effective object storage. Let's go this project together!

➔ First, you need to create an AWS Account by visiting www.aws.com.

a. Now Open AWS Management Console

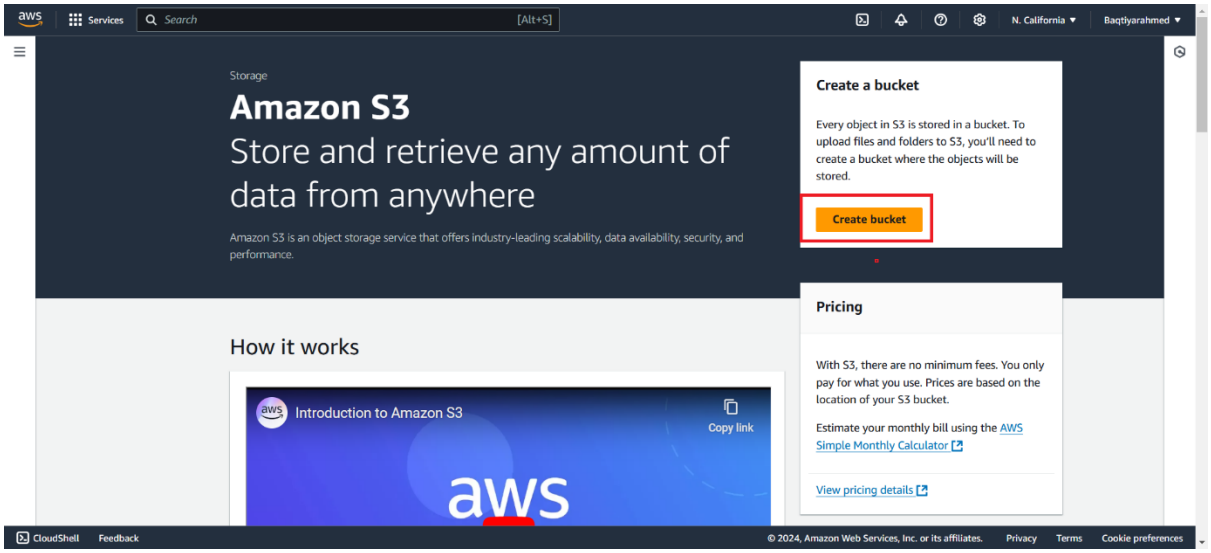


b. Search for Amazon S3 in the console and open it.



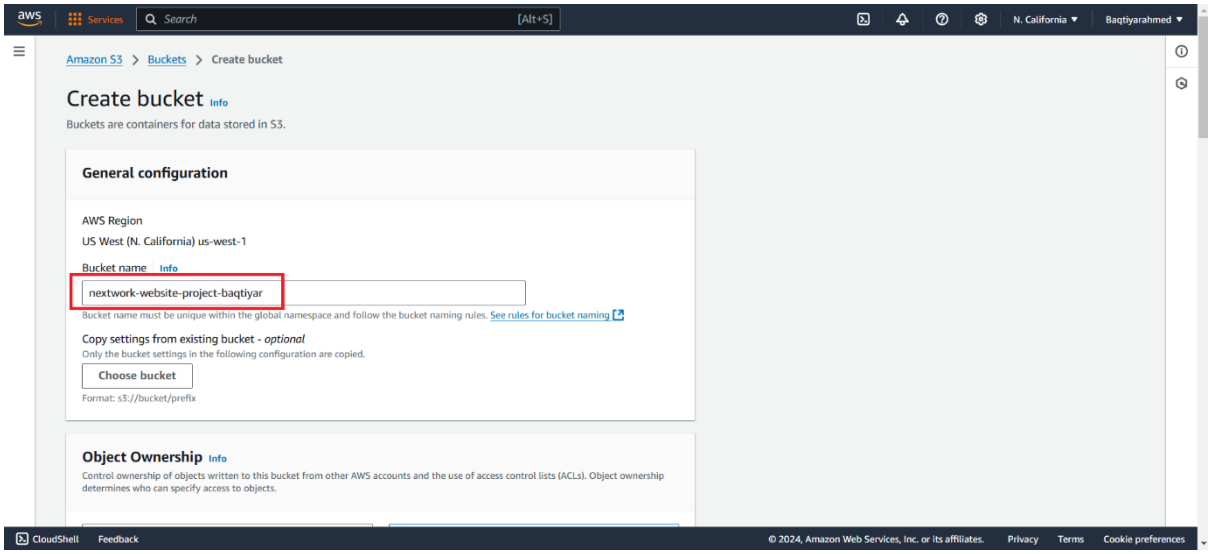
c. Click on create bucket

i. Choose AWS Region that is closest to you, I choose **N. California**



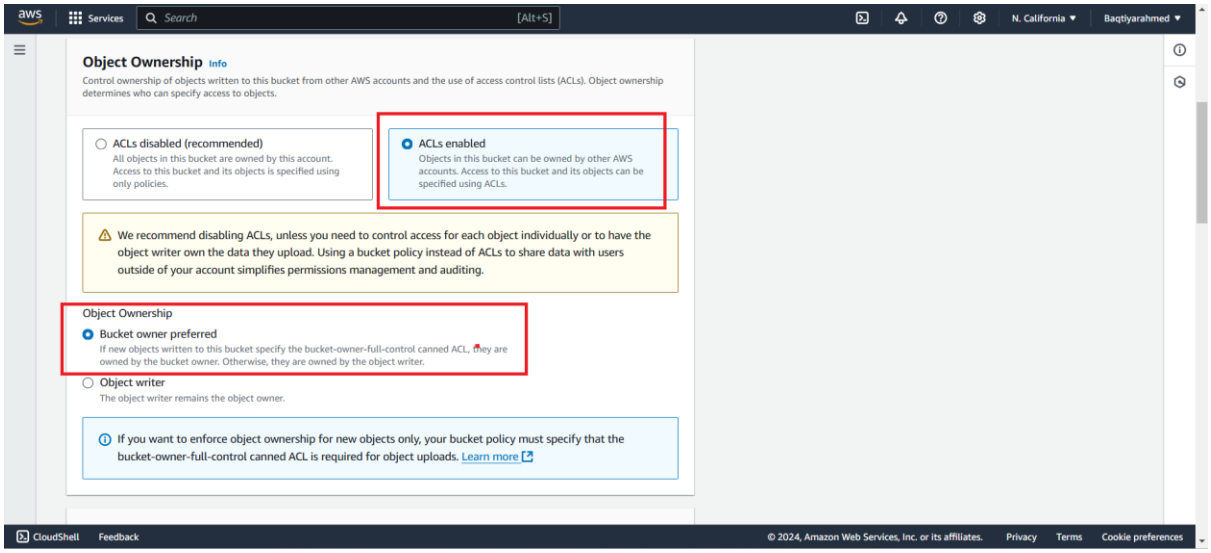
d. Configure your Bucket

i. Write your bucket name which should be unique (AWS Bucket names are unique to each AWS user all over the world)



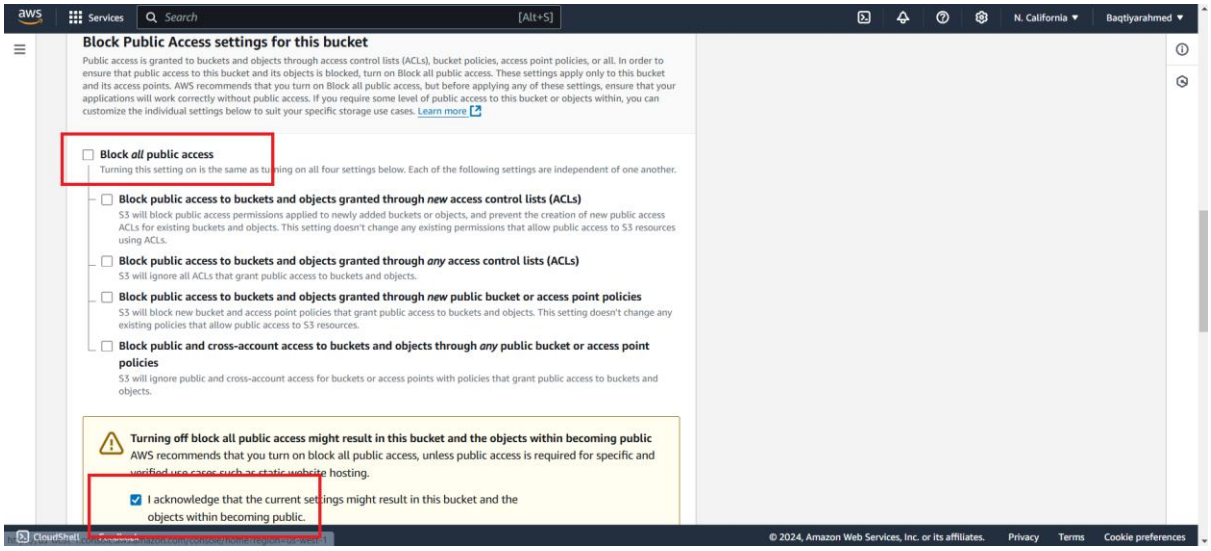
ii. For Object Ownership choose ACLs enabled

iii. Choose Bucket Owner preferred



iv. For Block Public Access settings for this bucket, clear the check box for Block all public access.

v. Check the box that says, “I acknowledge that the current settings might result in this bucket and the objects within becoming public”.



5. WHAT IS AN ACL?

Ans: An ACL stands for Access Control List in Amazon S3 is like list of permissions that decides who can see, edit, or delete specific files (or objects) in your storage bucket (folder.

Let me explain you with an example:

Imagine you have a folder on your windows computer named “Photos” with two files in it:

1. vacation.jpg 2. passport.jpg

You want to share vacation.jpg with friends but keep passport.jpg private.
Using Windows terminology (for easy understanding):

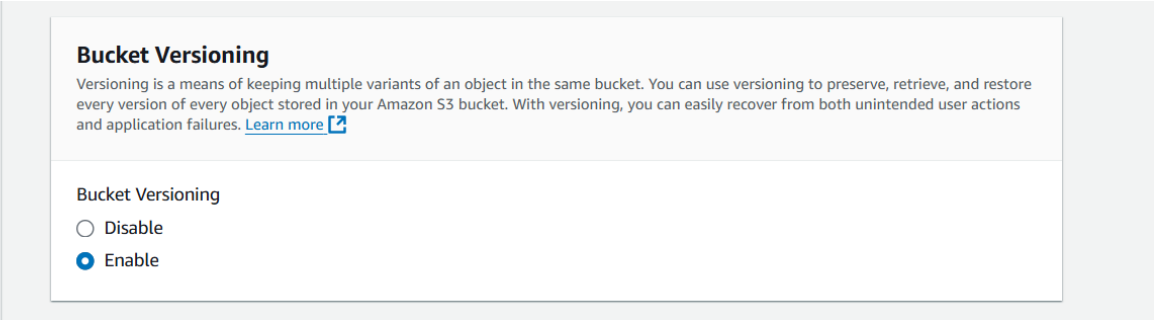
Access Control List (ACL) – This would be like setting specific permissions for each file.
For vacation.jpg, you'd allow "Everyone" to view it.
For passport.jpg, you'd restrict access so only you can see it.

Bucket Policy – This would be like setting a single permission for the entire "Photos" folder.

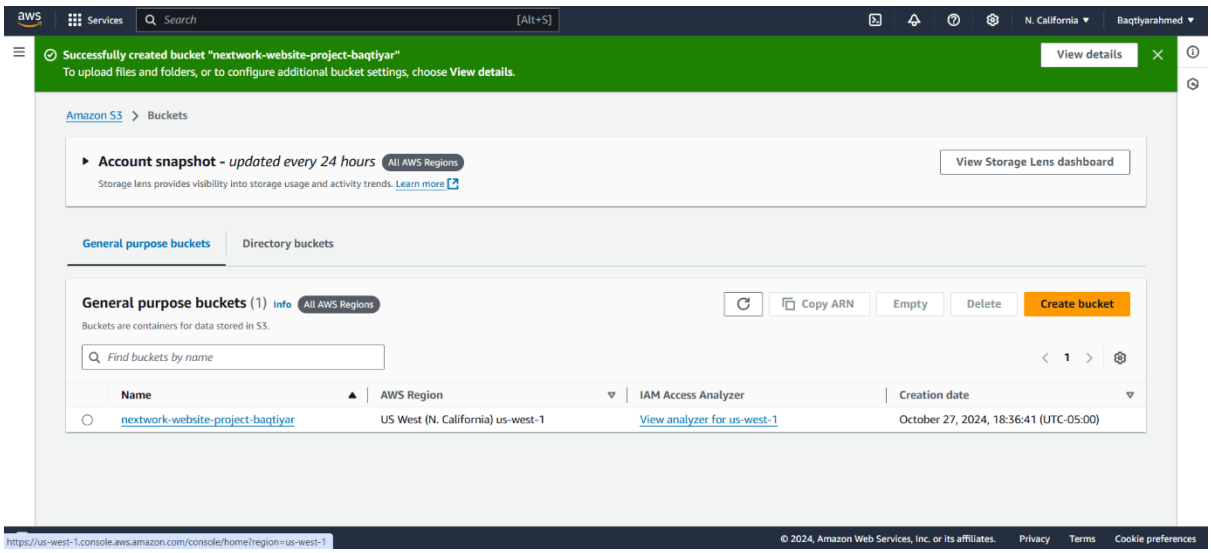
If you want all files in "Photos" to be public, you set the folder's permissions to "Everyone."
Now, both files would be viewable by anyone.

However, if passport.jpg needs to stay private, you wouldn't want to use a folder-wide policy.
Instead, you'd go with individual file permissions, just like ACLs in S3.

vi. Enable the Bucket Versioning

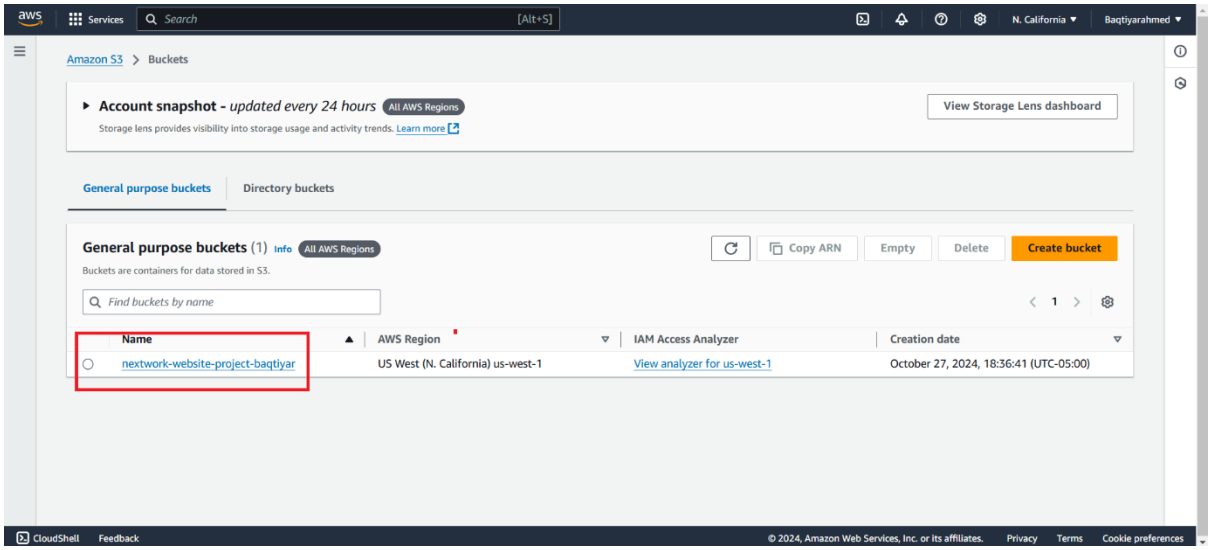


➔ Don't go into advance settings, just click on **Create Bucket**, and it will pop-up with this

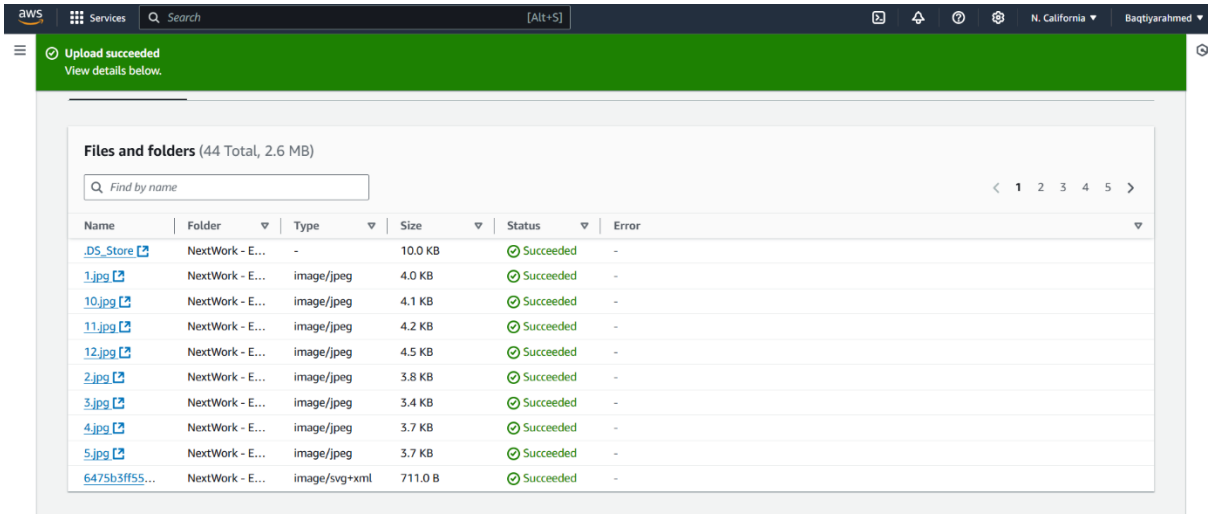


e. Upload website content to your bucket

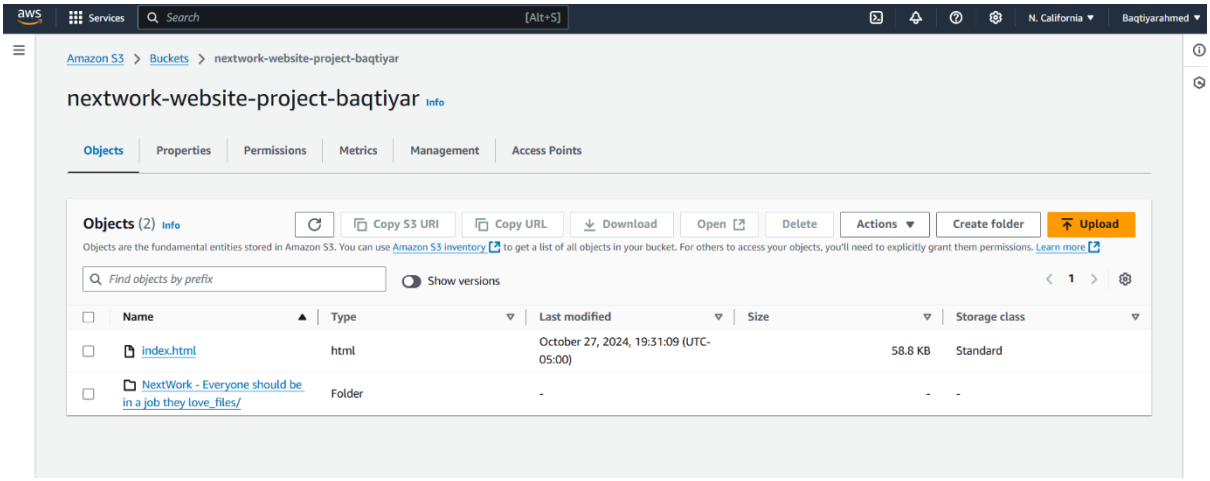
- ➔ Download the files by visiting my GitHub
- ➔ Download the files which are nothing but the website data.
- ➔ Unzip the folder, you will see two files in it "_MACOSX" and "Nextwork-Everyone should be in a job they love"
- ➔ While uploading you must upload the second file after unzipping it, which has the same name as parent directory.
- ➔ Now download index.html file (Tip: right click on the link and save link as.), keep it in the same unzip folder.
- ➔ If you get stuck here follow this - link
    - i. Click on the bucket name in Amazon S3 Console, then click upload and follow the steps above.



- ii. Now Choose Upload, and Add files (Index.html) then Add folder

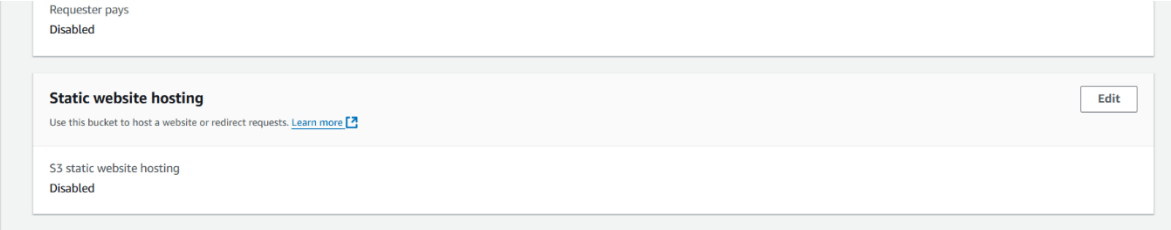


- iii. Now it should look something like this



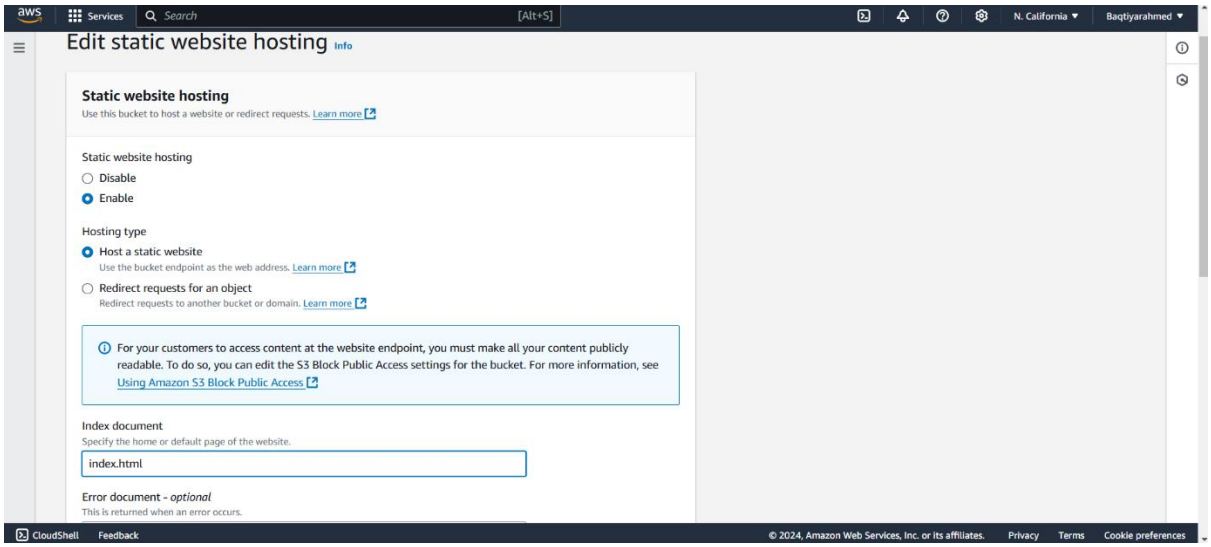
f. Enabling static website hosting

i. Now click on bucket name, then go to Properties tab, and scroll all the way down to static website hosting.



ii. Click on Edit and Enable it.

iii. Specify the default page of the website, which is index.html, then click on save changes.



➔ In the static website hosting panel under Bucket website endpoint, click on the URL
➔ Error occurred right?
➔ This happened because the static website which I am hosting is still private.
➔ To solve this, we need to set the permissions of the objects to public.

403 Forbidden

- Code: AccessDenied
- Message: Access Denied
- RequestId: BFXZBEZ1D689MFY6
- HostId: /fHj2jgLMqXDxgtubFB7ZXy1NP8qSL/fJYZk2whhzOjyqd7oyEUEDixte6tpmpxax7s11opedMk=

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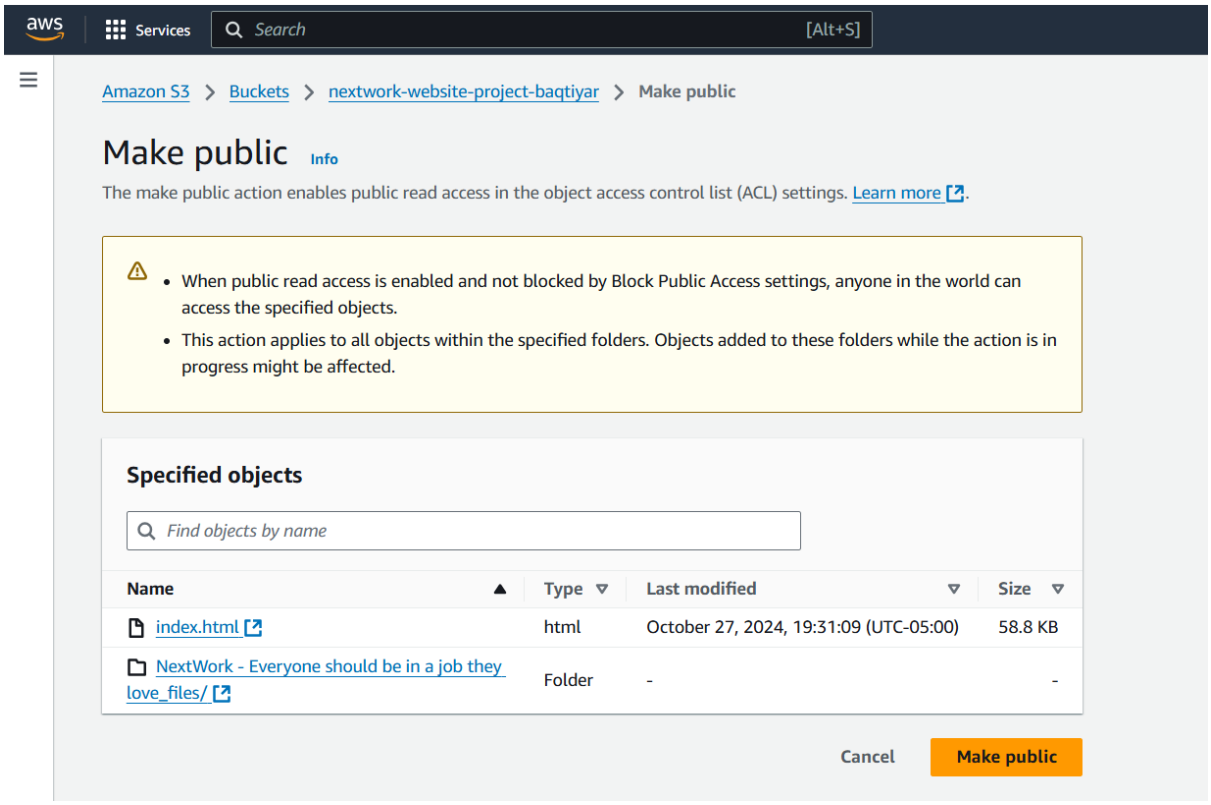
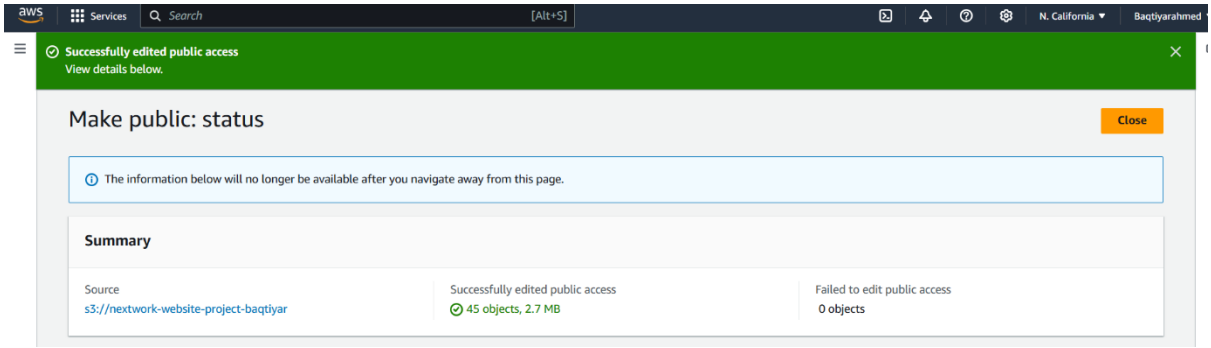
g. Grant Permissions

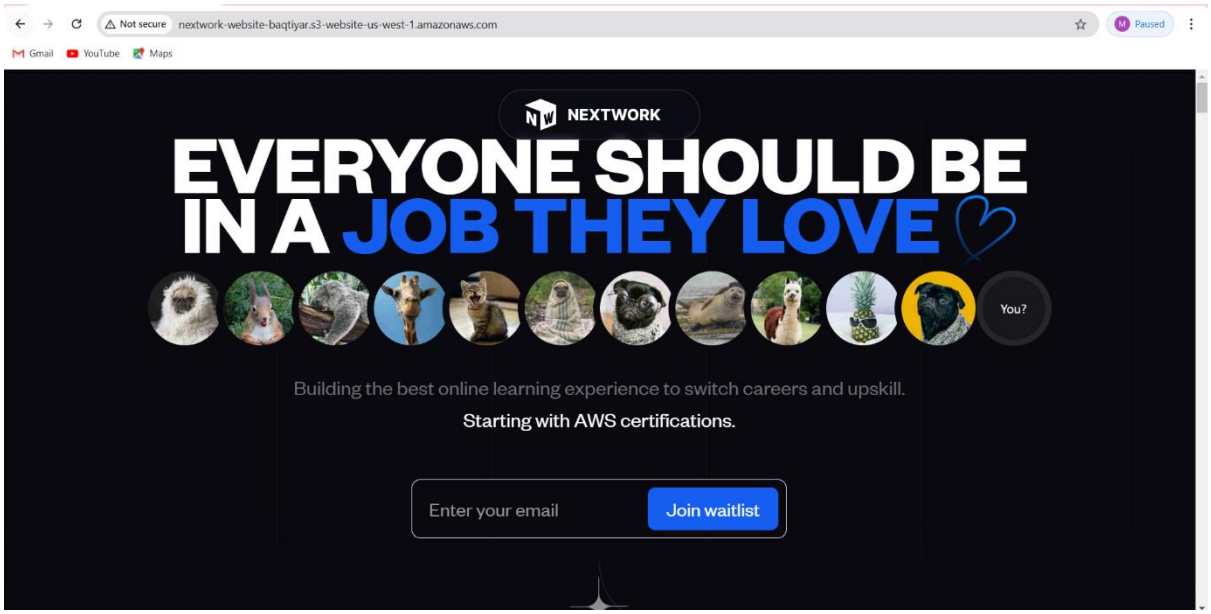
i. Go to objects tab and select both the objects and scroll down the Action tab and click “Make public using ACL”



h. Click Make public, it will show you



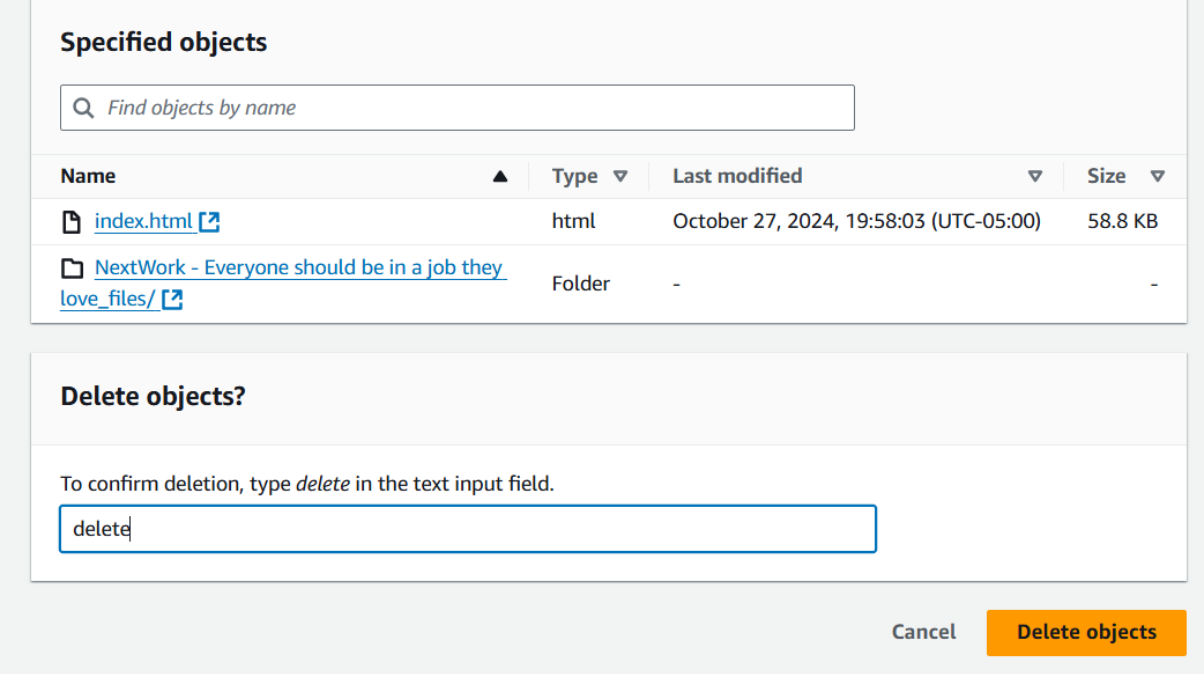
i. Refresh the URL and it will show you the output which is the website



Final Output is ready

j. Make sure you delete all the resources in Amazon S3 Bucket

i. To delete all the resources head back to the Objects tab, select the check boxes next to your object and choose Delete.



ii. Now go to Buckets page, select your bucket (network-website-project-baqtiyar), and delete it

6. QUICK RECAP

Let's recap what we have accomplished so far

- ➔ We created an S3 Bucket using AWS Management Console
- ➔ We uploaded the Website data (including index.html and website files) to an S3 Bucket.
- ➔ Hosted a static website on an S3 bucket.
- ➔ Learned about ACL (Access Control List)
- ➔ Turned on public access for your objects for the world to see your website.

Thank you so much for reading and completing this project with me.