

Static Website Hosting using Amazon S3

1. Project Overview

This project demonstrates how to host a **static website** using **Amazon S3**, one of the core storage services in AWS.

The goal is to store website files (HTML and images) in an S3 bucket, configure it for static website hosting, allow public access securely, and verify access using the S3 website endpoint.

2. Objective

- Create an S3 bucket to store website files
 - Enable static website hosting on the bucket
 - Upload a simple `index.html` webpage
 - Configure public access permissions correctly
 - Verify the website using the S3 website endpoint
-

3. Architecture Overview

The architecture is simple and serverless:

- **Amazon S3 Bucket** → Stores static website files

- **S3 Static Website Hosting** → Serves content over HTTP
- **Bucket Policy** → Allows public read-only access

No EC2, database, or backend services are involved.

4. Implementation Steps

STEP 1: Create an S3 Bucket

Meaning:

This step creates storage in AWS to hold the static website files such as `index.html` and images.

Procedure:

1. Login to the AWS Management Console
2. Search and open **Amazon S3**
3. Click **Create bucket**

Bucket Settings:

Bucket name:

`my-static-site-anandu-001`

-

Region:

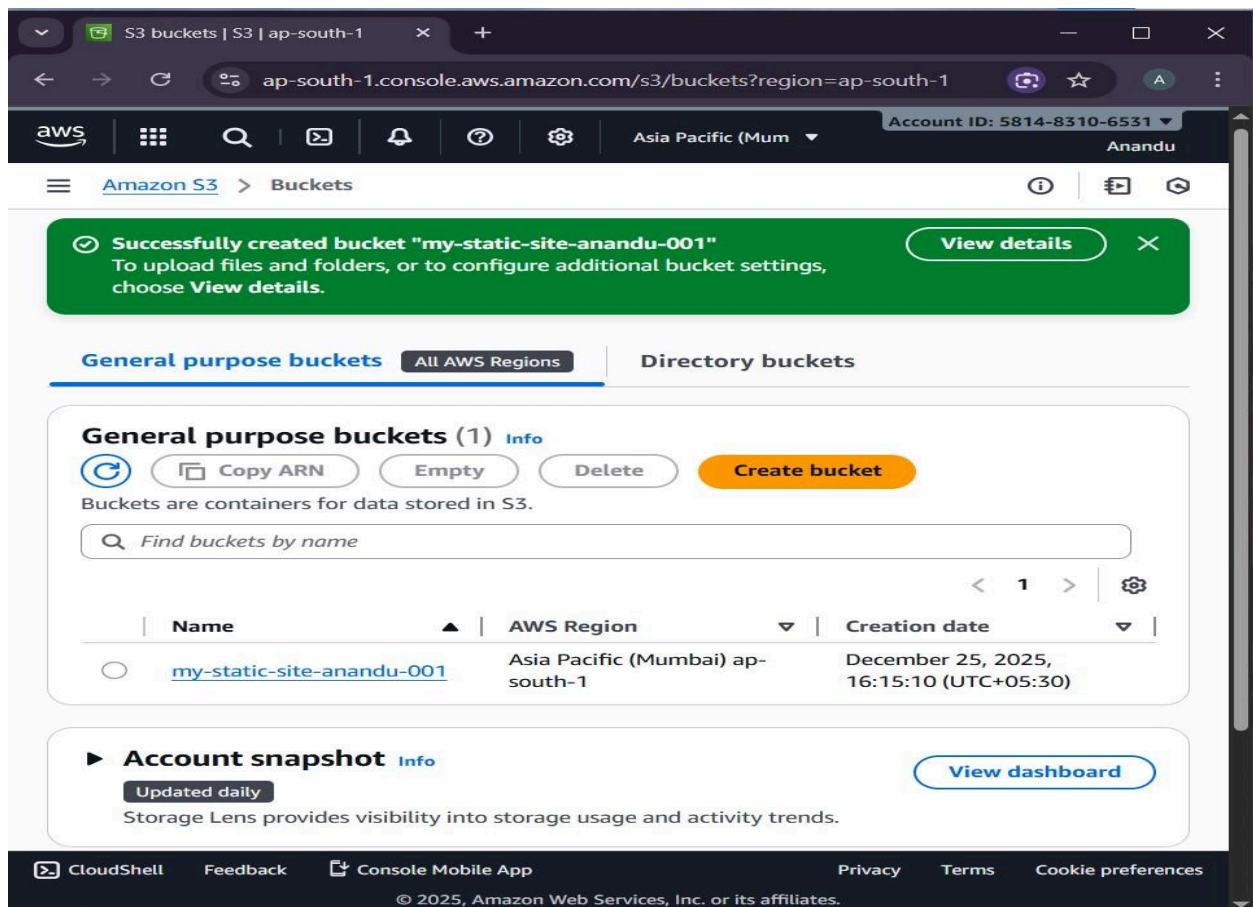
Asia Pacific (Mumbai) – ap-south-1

-

Public Access Configuration:

- Scroll to **Block Public Access**
- Uncheck **Block all public access**
- Acknowledge the warning by ticking **I acknowledge...**

Click **Create bucket**



Outcome:

- ✓ S3 bucket is created successfully.
-

🌐 STEP 2: Enable Static Website Hosting**Meaning:**

This step configures the S3 bucket to behave like a web server and serve web pages.

Procedure:

1. Open the bucket `my-static-site-anandu-001`
2. Go to **Properties**
3. Scroll to **Static website hosting**
4. Click **Edit**
5. Enable **Static website hosting**
6. Select:
 - Hosting type: **Host a static website**

Index document:

`index.html`

-
7. Save changes

Note:

After enabling this option, AWS generates a **Website endpoint URL**.

The screenshot shows the AWS Management Console interface for the bucket 'my-static-site-anandu-001'. A green notification bar at the top states 'Successfully edited static website hosting.' The main section, titled 'Static website hosting', includes an 'Edit' button and a recommendation to use AWS Amplify Hosting. Below this, the 'S3 static website hosting' status is 'Enabled'. The 'Hosting type' is 'Bucket hosting'. The 'Bucket website endpoint' section provides the URL: <http://my-static-site-anandu-001.s3-website.ap-south-1.amazonaws.com>. The footer contains links for CloudShell, Feedback, Console Mobile App, Privacy, Terms, and Cookie preferences, along with the copyright notice '© 2025, Amazon Web Services, Inc. or its affiliates.'

STEP 3: Create and Upload **index.html**

Meaning:

This file represents the homepage of the static website.

File Content (**index.html**):

```
<!DOCTYPE html>

<html lang="en" class="scroll-smooth">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Lumina | Professional Photography Portfolio</title>

  <script src="https://cdn.tailwindcss.com"></script>

  <link rel="preconnect" href="https://fonts.googleapis.com">

  <link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>

  <link
href="https://fonts.googleapis.com/css2?family=Inter:wght@300;400;500;600&
family=Playfair+Display:ital,wght@0,400;0,600;1,400&display=swap"
rel="stylesheet">

  <script>

    tailwind.config = {

      theme: {

        extend: {

          fontFamily: {

            sans: ['Inter', 'sans-serif'],

            serif: ['Playfair Display', 'serif'],

          },

        },

      },

    },
```



```
        colors: {

            gold: {

                50: '#fffaeb',

                100: '#fef0c7',

                200: '#fde08a',

                300: '#fcd34d',

                400: '#fbbf24',

                500: '#f59e0b', // Main Gold

                600: '#d97706',

                700: '#b45309',

                800: '#92400e',

                900: '#78350f',

            }

        }

    }

}

</script>

<style>

    .hero-bg {

        background-image: linear-gradient(rgba(0,0,0,0.5),
        rgba(0,0,0,0.5)), url('images/hero_bg.png');

        background-size: cover;

        background-position: center;
```



```
        background-attachment: fixed;

    }

</style>

</head>

<body class="bg-zinc-950 text-white font-sans antialiased">

    <!-- Navigation -->

    <nav class="fixed w-full z-50 bg-zinc-950/80 backdrop-blur-md border-b
border-white/5 transition-all duration-300">

        <div class="max-w-7xl mx-auto px-6 py-4 flex justify-between
items-center">

            <a href="#" class="text-2xl font-serif font-semibold
tracking-wider hover:text-gold-500 transition-colors">LUMINA</a>

            <div class="hidden md:flex space-x-8 text-sm uppercase
tracking-widest text-zinc-400">

                <a href="#gallery" class="hover:text-white
transition-colors">Gallery</a>

                <a href="#about" class="hover:text-white
transition-colors">About</a>

                <a href="#contact" class="hover:text-white
transition-colors">Contact</a>

            </div>

        </div>

    </nav>

    <!-- Hero Section -->
```



```
<header class="relative h-screen flex items-center justify-center
text-center px-4 hero-bg">

  <div class="z-10 max-w-4xl space-y-6 animate-fade-in-up">

    <h1 class="text-5xl md:text-7xl lg:text-8xl font-serif
font-medium leading-tight tracking-tight">

      Capturing <span class="italic text-gold-500">Life's</span>
<br> Finer Moments

    </h1>

    <p class="text-lg md:text-xl text-zinc-300 font-light
max-w-2xl mx-auto leading-relaxed">

      Specializing in cinematic landscapes, emotive portraits,
and abstract fine art photography.

    </p>

    <div class="pt-8">

      <a href="#gallery" class="inline-block border
border-white/30 bg-white/5 backdrop-blur-sm px-8 py-3 text-sm uppercase
tracking-widest hover:bg-white hover:text-black transition-all
duration-300">

        View Portfolio

      </a>

    </div>

  </div>

  <!-- Scroll Indicator -->

  <div class="absolute bottom-10 left-1/2 -translate-x-1/2
animate-bounce opacity-50">
```



```
        <svg class="w-6 h-6" fill="none" stroke="currentColor"
viewBox="0 0 24 24"><path stroke-linecap="round" stroke-linejoin="round"
stroke-width="2" d="M19 14l-7 7m0 0l-7-7m7 7V3"></path></svg>

    </div>

</header>

<!-- Gallery Section -->

<section id="gallery" class="py-24 bg-zinc-950">

    <div class="max-w-7xl mx-auto px-6">

        <div class="flex flex-col md:flex-row justify-between
items-end mb-16">

            <div>

                <span class="text-gold-500 text-sm uppercase
tracking-widest font-medium block mb-2">Selected Works</span>

                <h2 class="text-4xl md:text-5xl font-serif">Visual
Stories</h2>

            </div>

            <div class="mt-6 md:mt-0">

                <p class="text-zinc-500 max-w-sm text-sm
leading-relaxed text-right md:text-left">

                    A curation of recent projects exploring light,
shadow, and human connection across the globe.

                </p>

            </div>

        </div>

    </div>
```



```

        <!-- Masonry Grid -->

        <div class="grid grid-cols-1 md:grid-cols-2 lg:grid-cols-3
gap-6 auto-rows-[400px]">

            <!-- Landscape: Large Wide Item -->

            <div class="group relative overflow-hidden md:col-span-2
row-span-1 border border-white/5 bg-zinc-900 cursor-pointer">

                <div class="absolute inset-0 bg-gradient-to-t
from-black/80 via-transparent to-transparent opacity-0
group-hover:opacity-100 transition-opacity duration-300 flex flex-col
justify-end p-8">

                    <h3 class="text-2xl font-serif">Golden
Horizon</h3>

                    <p class="text-zinc-400 text-sm">Iceland</p>

                </div>

            </div>

            <!-- Portrait: Tall Item -->

            <div class="group relative overflow-hidden md:col-span-1
lg:row-span-2 border border-white/5 bg-zinc-900 cursor-pointer">

                <div class="absolute inset-0 bg-gradient-to-t
from-black/80 via-transparent to-transparent opacity-0

```



```
group-hover:opacity-100 transition-opacity duration-300 flex flex-col
justify-end p-8">

    <h3 class="text-2xl font-serif">The Artist</h3>

    <p class="text-zinc-400 text-sm">Studio Series</p>

</div>

</div>

<!-- Abstract: Square Item -->

<div class="group relative overflow-hidden border
border-white/5 bg-zinc-900 cursor-pointer">

    <div class="absolute inset-0 bg-gradient-to-t
from-black/80 via-transparent to-transparent opacity-0
group-hover:opacity-100 transition-opacity duration-300 flex flex-col
justify-end p-8">

        <h3 class="text-2xl font-serif">Modern Angles</h3>

        <p class="text-zinc-400 text-sm">Architecture</p>

    </div>

</div>

<!-- Nature: Square Item -->

<div class="group relative overflow-hidden border
border-white/5 bg-zinc-900 cursor-pointer">
```



```
        

        <div class="absolute inset-0 bg-gradient-to-t
from-black/80 via-transparent to-transparent opacity-0
group-hover:opacity-100 transition-opacity duration-300 flex flex-col
justify-end p-8">

            <h3 class="text-2xl font-serif">Morning Dew</h3>

            <p class="text-zinc-400 text-sm">Macro</p>

        </div>

    </div>

</div>

</div>

</section>

<!-- Contact Section -->

<section id="contact" class="py-24 bg-zinc-900 border-t
border-white/5">

    <div class="max-w-4xl mx-auto px-6">

        <div class="text-center mb-16 space-y-4">

            <h2 class="text-4xl font-serif">Let's Create Together</h2>

            <p class="text-zinc-400 font-light">Available for
commissions and collaborations worldwide.</p>

        </div>
```



```
<form class="space-y-8">

  <div class="grid grid-cols-1 md:grid-cols-2 gap-8">

    <div class="space-y-2">

      <label for="name" class="text-xs uppercase
tracking-widest text-zinc-500">Name</label>

      <input type="text" id="name" class="w-full
bg-zinc-950 border border-white/10 p-4 text-white focus:outline-none
focus:border-gold-500 transition-colors" placeholder="John Doe">

    </div>

    <div class="space-y-2">

      <label for="email" class="text-xs uppercase
tracking-widest text-zinc-500">Email</label>

      <input type="email" id="email" class="w-full
bg-zinc-950 border border-white/10 p-4 text-white focus:outline-none
focus:border-gold-500 transition-colors" placeholder="john@example.com">

    </div>

  </div>

  <div class="space-y-2">

    <label for="message" class="text-xs uppercase
tracking-widest text-zinc-500">Message</label>

    <textarea id="message" rows="5" class="w-full
bg-zinc-950 border border-white/10 p-4 text-white focus:outline-none
focus:border-gold-500 transition-colors" placeholder="Tell me about your
project..."></textarea>

  </div>
```



```
        <div class="text-center pt-8">

            <button type="submit" class="bg-gold-500 text-black
font-medium text-sm uppercase tracking-widest px-10 py-4 hover:bg-gold-400
transition-colors">

                Send Message

            </button>

        </div>

    </form>

</div>

</section>


<!-- Footer -->

<footer class="py-12 bg-zinc-950 border-t border-white/5 text-center
text-zinc-600 text-sm">

    <p>&copy; 2024 Lumina Photography. All rights reserved.</p>

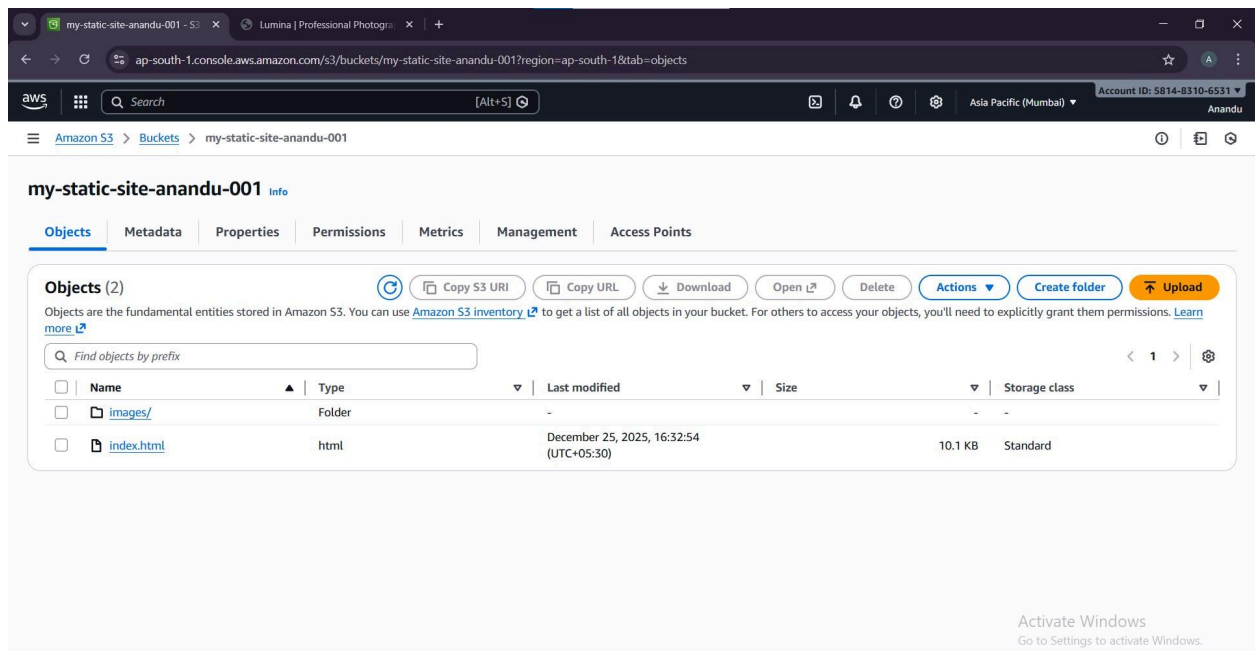
</footer>

</body>

</html>
```

Upload Procedure:

1. Go to **Bucket** → **Objects**
2. Click **Upload**
3. Add file → `index.html`
4. Click **Upload**



Outcome:

✓ The webpage file is uploaded successfully.

🔑 STEP 4: Configure Bucket Permissions (Critical Step)

Meaning:

This step allows public users on the internet to view the website.
Without this configuration, users will receive an **Access Denied** error.

🔑 Disable Block Public Access (Bucket Level)

Procedure:

1. Open the bucket → **Permissions**
2. Locate **Block public access (bucket settings)**
3. Click **Edit**
4. Uncheck **all four options**:
 - Block public access to buckets and objects
 - Block public access through ACLs
 - Block public access through policies
 - Block public access to public ACLs
5. Click **Save changes**
6. Type **confirm** and save

Outcome:

- ✓ The master public-access lock is removed.
-

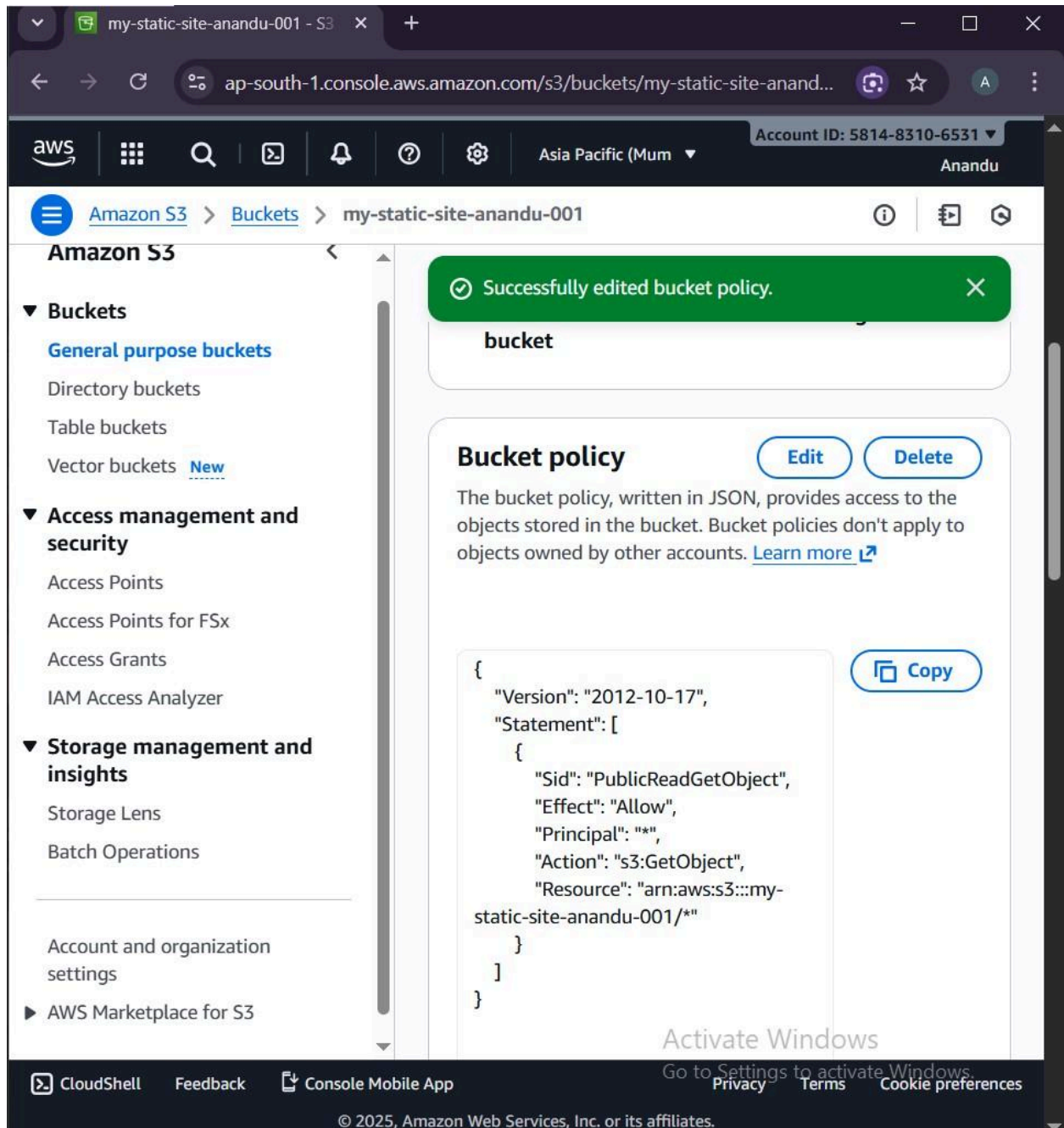
Add Bucket Policy

Procedure:

1. Go to **Permissions** → **Bucket policy**
2. Paste the following policy:


```
{  
  "Version": "2012-10-17",  
  "Statement": [  
    {  
      "Sid": "PublicReadGetObject",  
      "Effect": "Allow",  
      "Principal": "*",  
      "Action": "s3:GetObject",  
      "Resource":  
"arn:aws:s3:::my-static-site-anandu-001/*"  
    }  
  ]  
}
```

3. Save changes



Outcome:

- ✓ The website becomes publicly readable.

Folder Structure Fix (Issue Resolution)

Problem Identified:

Initially, the website files were uploaded inside a folder named `photographer_portfolio`, which caused a `404 NoSuchKey` error.

Correct Bucket Structure:

Bucket

|— `index.html`

|— `images/`

Fix Procedure:

1. Open **Bucket** → **Objects**
2. Open folder → `photographer_portfolio`
3. Select **all files**
4. Click **Actions** → **Move**
5. Set destination to **bucket root**
6. Complete the move
7. Delete the empty `photographer_portfolio` folder

Outcome:

✓ `index.html` and `images/` are now at the root level.

✓ **STEP 5: Verify Website Using Endpoint**

Meaning:

This step confirms that the static website is accessible over the internet.

Procedure:

1. Go to **Properties** → **Static website hosting**

Copy the **Website endpoint**, for example:

`http://my-static-site-anandu-001.s3-website-ap-south-1.
amazonaws.com`

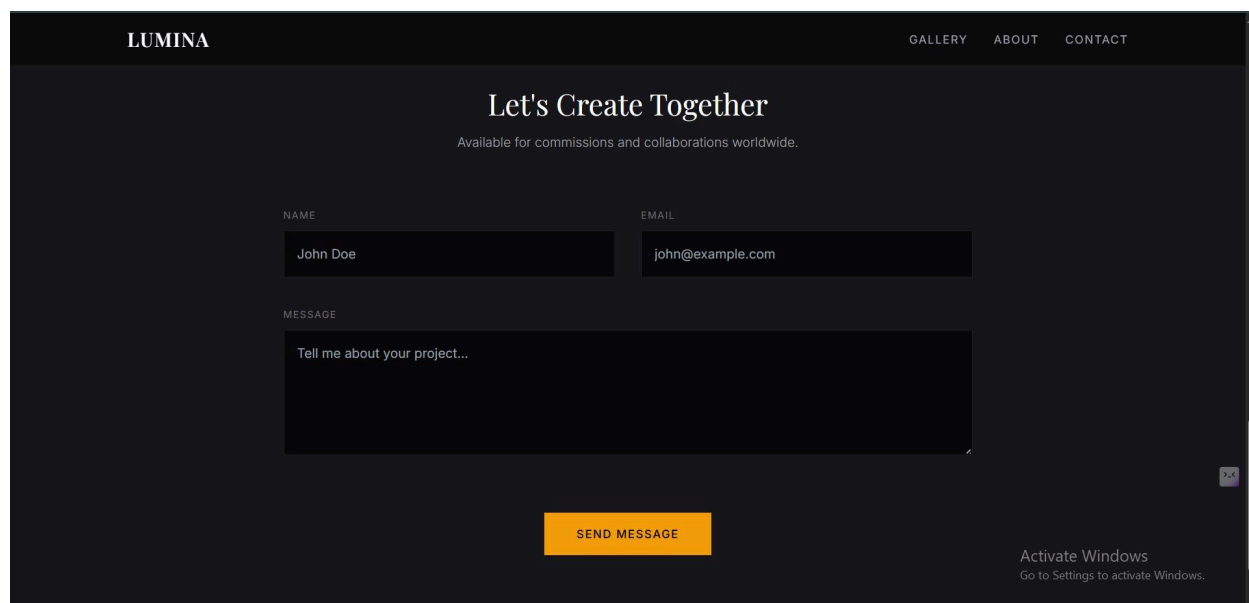
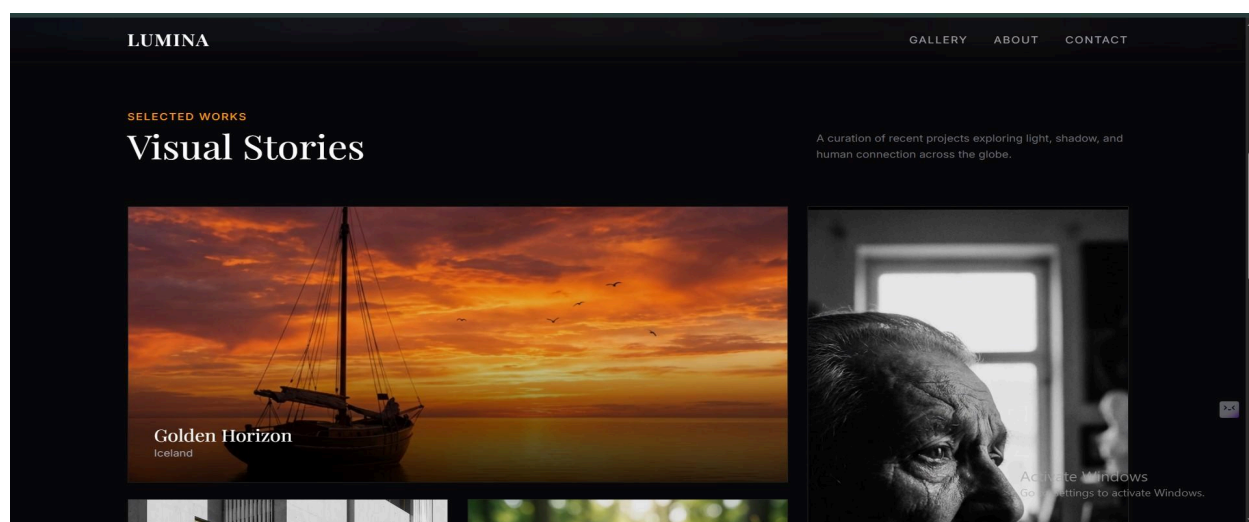
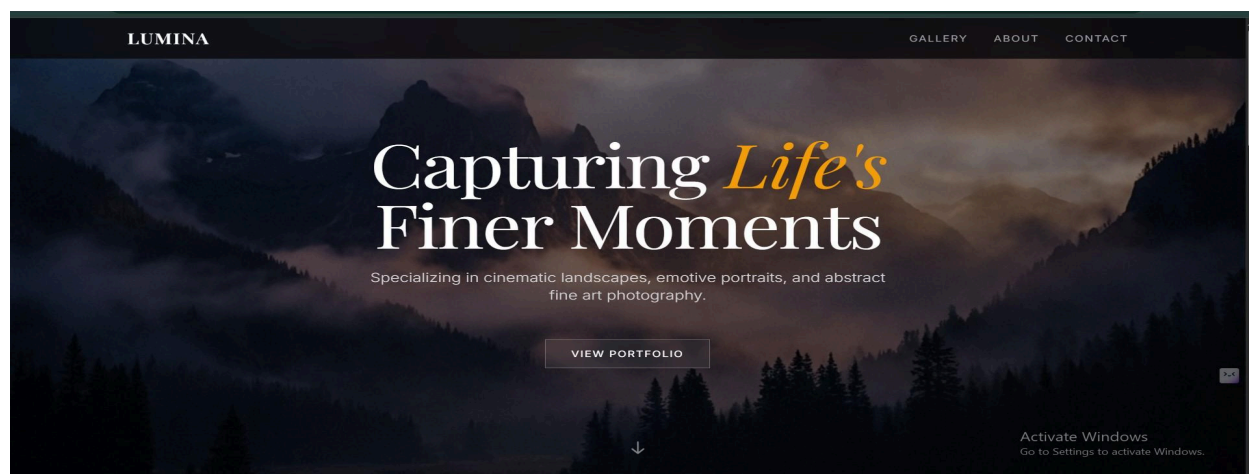
- 2.
3. Paste the URL into a web browser

Result:

The static website loads successfully.

5. Final Result

- Static website successfully hosted on Amazon S3
- Public access configured securely
- Website accessible via S3 website endpoint
- Common configuration issues identified and resolved



6. Learning Outcomes

- Understood Amazon S3 static website hosting
 - Learned how Block Public Access overrides bucket policies
 - Gained experience resolving `404 NoSuchKey` errors
 - Practiced secure public access configuration in AWS
-

7. Conclusion

This project demonstrates a complete and practical implementation of static website hosting using Amazon S3. It highlights real-world AWS configuration steps, common mistakes, and their solutions. The project serves as a strong foundation for further enhancements such as CloudFront integration, HTTPS, and custom domain mapping.