Abstract

In the modern era, cloud-based hosting solutions have become essential for efficient and scalable web services. AWS S3 (Simple Storage Service) provides a reliable and cost-effective solution for hosting static websites. This report explores the architecture and fundamental requirements necessary to deploy a static website using AWS S3. The primary goal of this project is to design and host a three-page static website that includes navigation menus, footers, interactive UI elements, and responsive design.

The static website hosting process involves setting up an S3 bucket, configuring it for web hosting, and managing security permissions to ensure public accessibility while maintaining control over access. Additionally, optional enhancements such as Amazon CloudFront integration for content delivery optimization and AWS Route 53 for domain management are considered.

This report details the methodology followed in website creation, the technical setup involved in hosting on AWS S3, and an evaluation based on assessment rubrics. The assessment criteria focus on website architecture analysis, requirements identification, website content quality, creativity, originality, and overall presentation. Through this project, we demonstrate the practical implementation of static website hosting on AWS S3, highlighting its benefits, limitations, and best practices.

Contents

1. Introduction

The modern web relies heavily on cloud-based hosting solutions for scalability and accessibility. AWS S3 (Simple Storage Service) provides a cost-effective and efficient way to host static websites. This lab focuses on creating a static website, configuring it for hosting on AWS S3, and ensuring an optimal user experience.

Objectives

- To understand the architecture required for static website hosting on AWS S3.

- To develop a three-page static website with essential web components.

- To configure AWS S3 for web hosting with proper security settings.

- To analyze the project using assessment rubrics.

2. Website Architecture Analysis

A static website can be hosted on AWS S3 with a structured approach. The architecture includes the following key components:

2.1. S3 Bucket

- A dedicated S3 bucket is created to store website files.
- The bucket is configured for static website hosting.

2.2. Website Hosting Configuration

- The S3 bucket is enabled to serve as a static web host.
- The index.html file is set as the default entry point.
- An error.html file is configured for handling errors.

2.3. Permissions & Access Control

- The bucket policy is modified to allow public access to website files.
- IAM roles and policies are configured for secure management.

2.4. Optional Enhancements

- **CloudFront Integration:** Enhances content delivery with caching and faster load times.
- **Route 53:** Manages custom domain names for branding.
- **SSL/TLS Security:** Ensures secure data transfer using HTTPS.

3. Basic Requirements Identification

The fundamental requirements for hosting a static website on AWS S3 include:

3.1 Website Files

- HTML, CSS, and JavaScript files form the core of the website.
- Media files (images, videos) enhance the user experience.

3.2 S3 Configuration

- Static website hosting must be enabled in the S3 bucket settings.
- Index and error pages should be correctly assigned.

3.3 Public Access & Security

- Bucket permissions must allow public read access for hosted files.
- Security policies should prevent unauthorized modifications.

3.4 Optional Enhancements

- **CloudFront:** Improves performance by caching content in edge locations.
- **Route 53:** Enables the use of custom domain names.
- **Logging & Monitoring:** Tracks visitor activity using AWS CloudWatch.

4. Website Development

A static website was developed with the following key elements:

4.1 Website Structure

- **Home Page:** Provides an introduction to the website.
- **About Page:** Details information about the website's purpose.
- **Contact Page:** Includes a contact form and relevant details.

4.2 Navigation & Footer

- A consistent navigation bar for seamless user experience.
- A footer with contact information and social media links.

5. Step-by-Step Guide to Hosting on AWS S3

Step 1: Create an S3 Bucket:

- **Log in to the AWS Management Console**
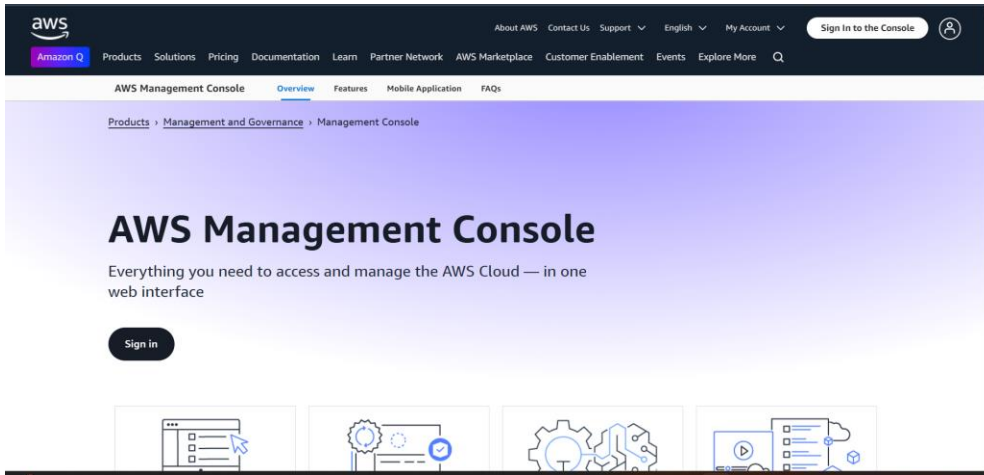
Figure 1

- **Navigate to the S3 service.**
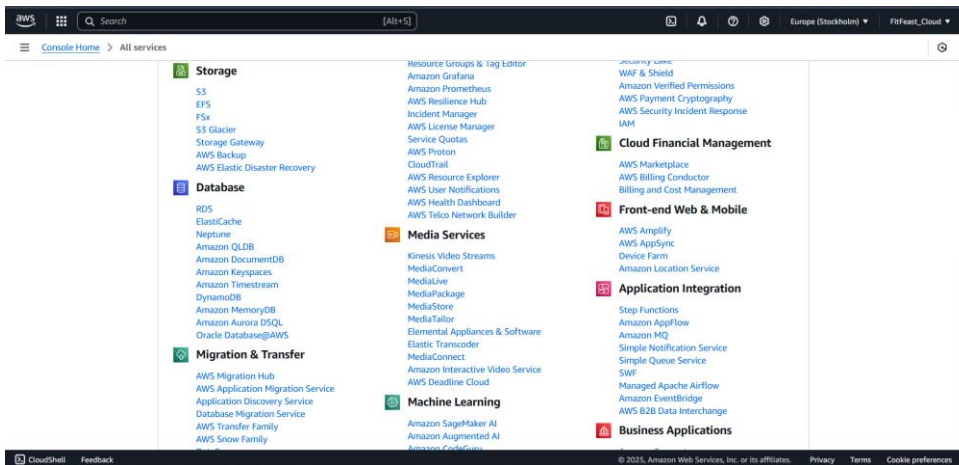
Figure 2
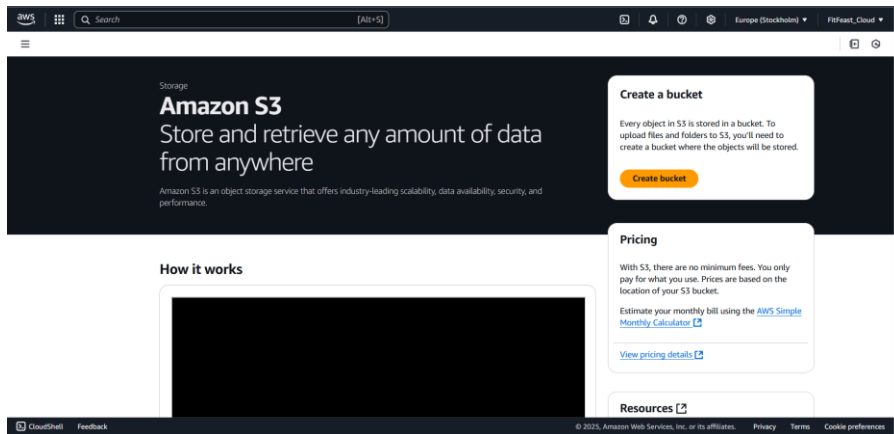
Figure 3

- **Click "Create Bucket" and enter a unique name.**
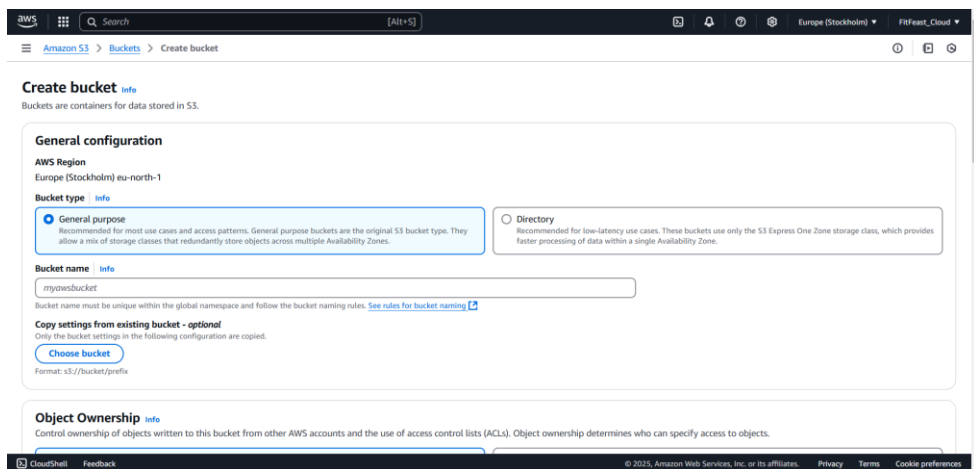
Figure 4
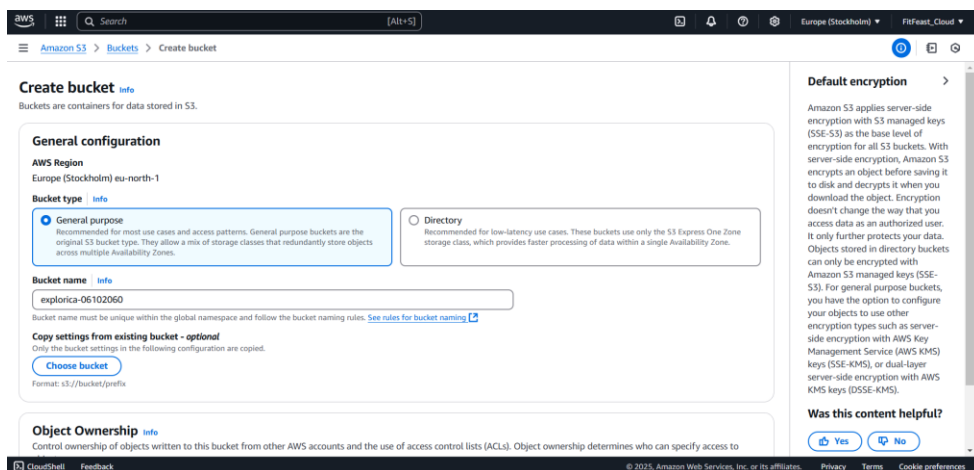
Figure 5

- **Select the appropriate AWS region.**

Figure 6

- **Uncheck "Block all public access" and acknowledge the warning.**
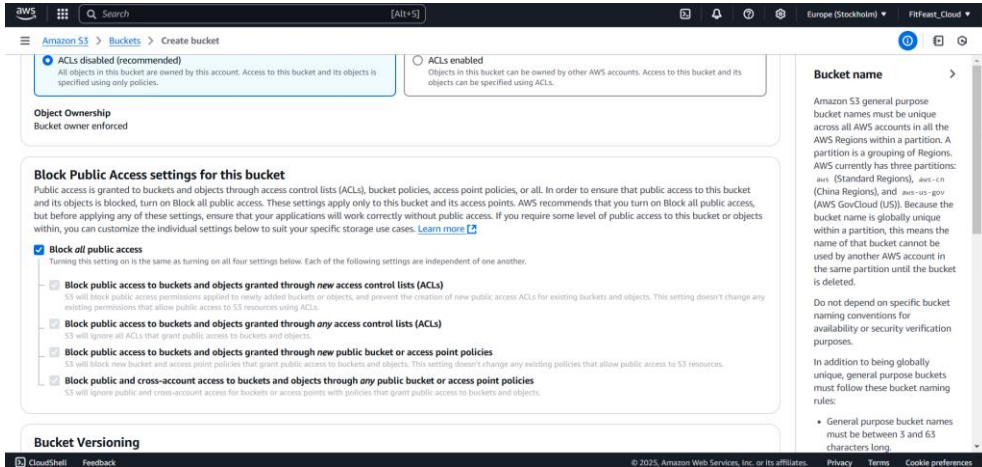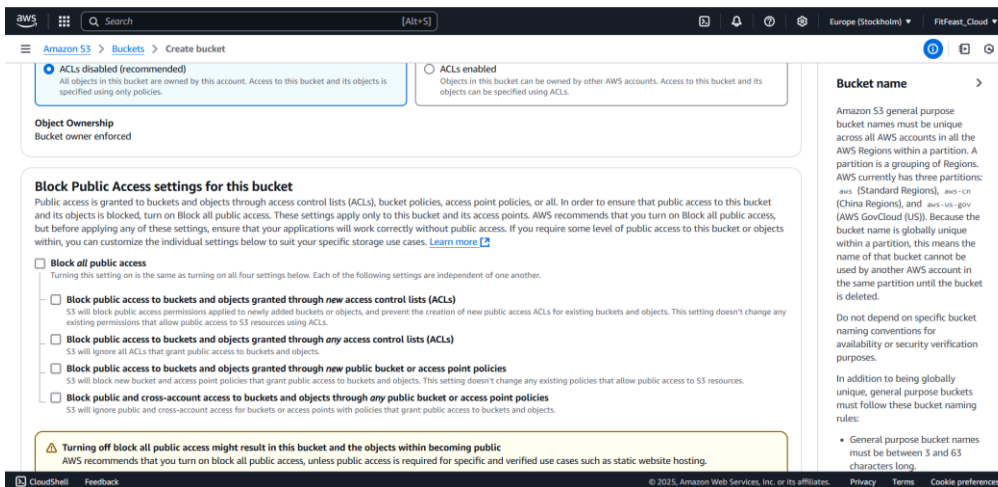

Figure 7
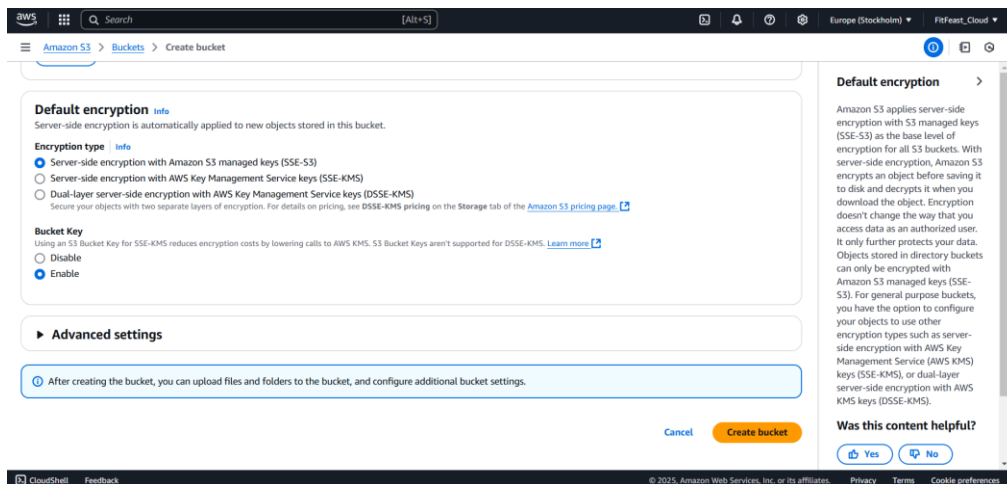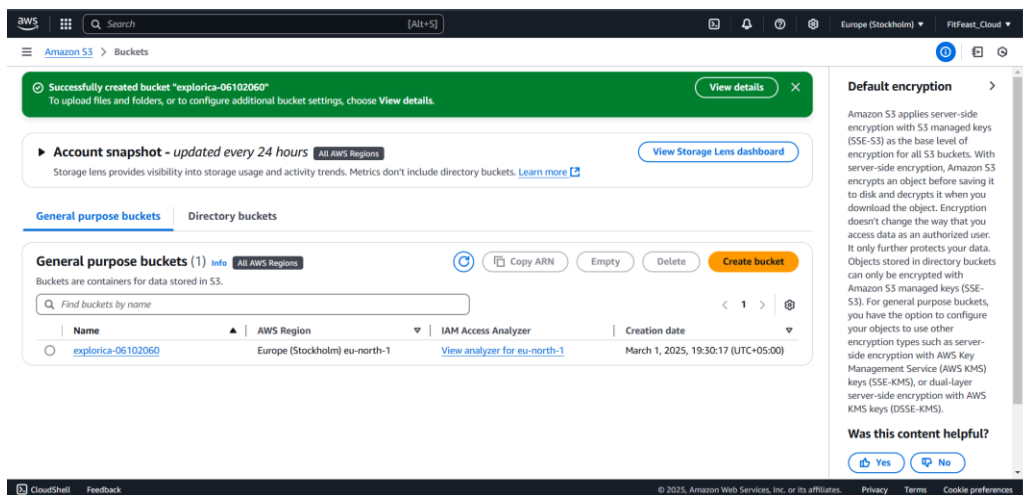

Figure 8

- **Click "Create Bucket."**

Figure 9

Figure 10

Step 2: Upload Website Files

- **Open the created bucket.**
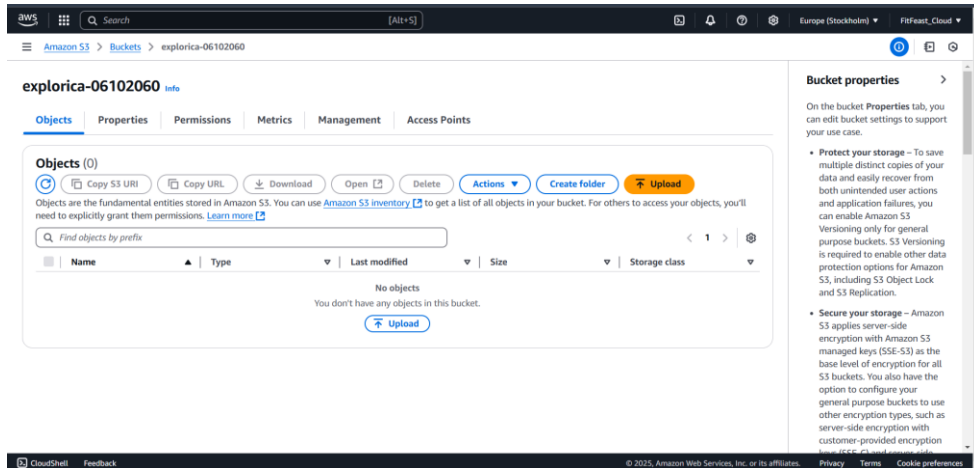
Figure 11

- **Click "Upload" and Add files.**
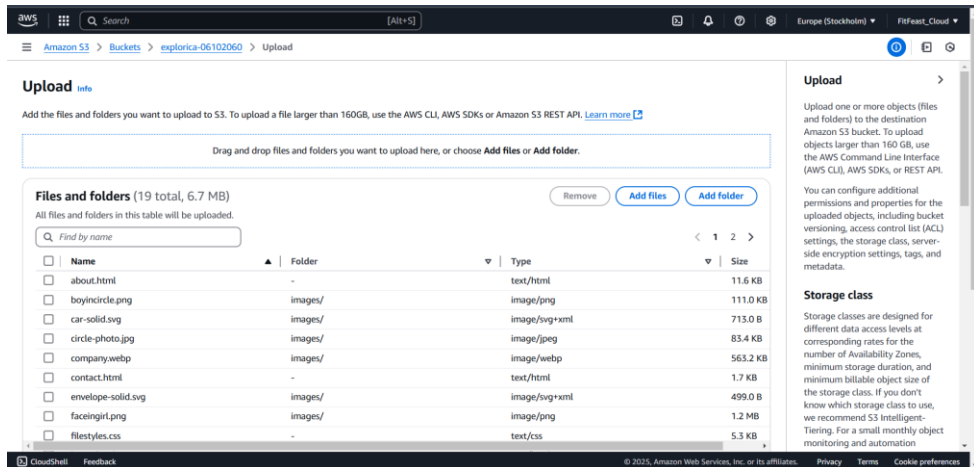
Figure 12

- **Click "Upload" to confirm.**

Figure 13

Figure 14

Step 3: Enable Static Website Hosting

- **Navigate to "Properties" in the S3 bucket.**
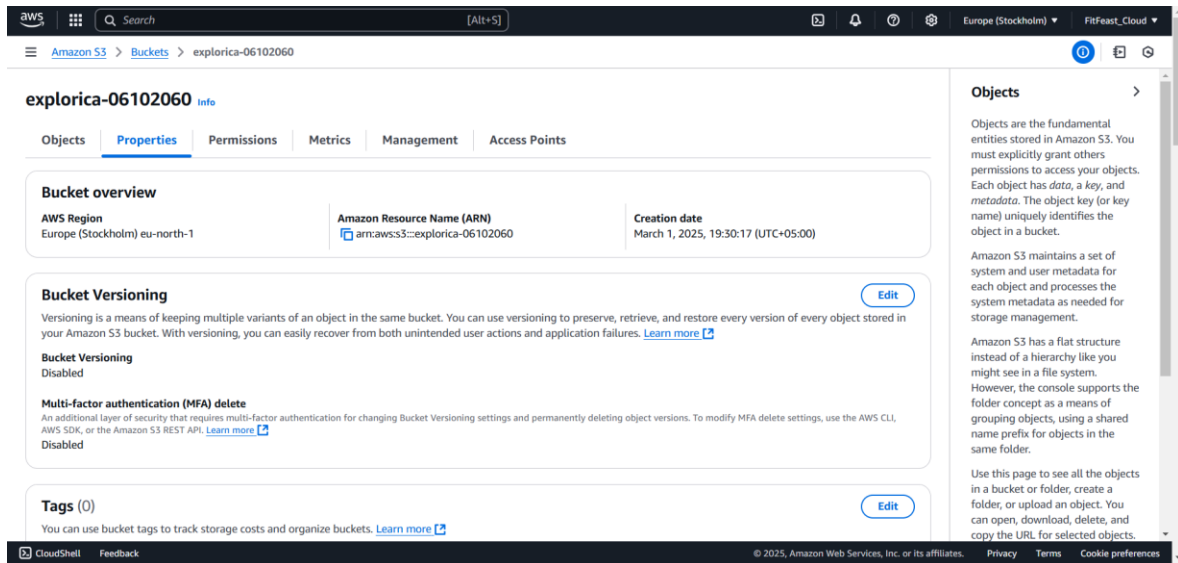
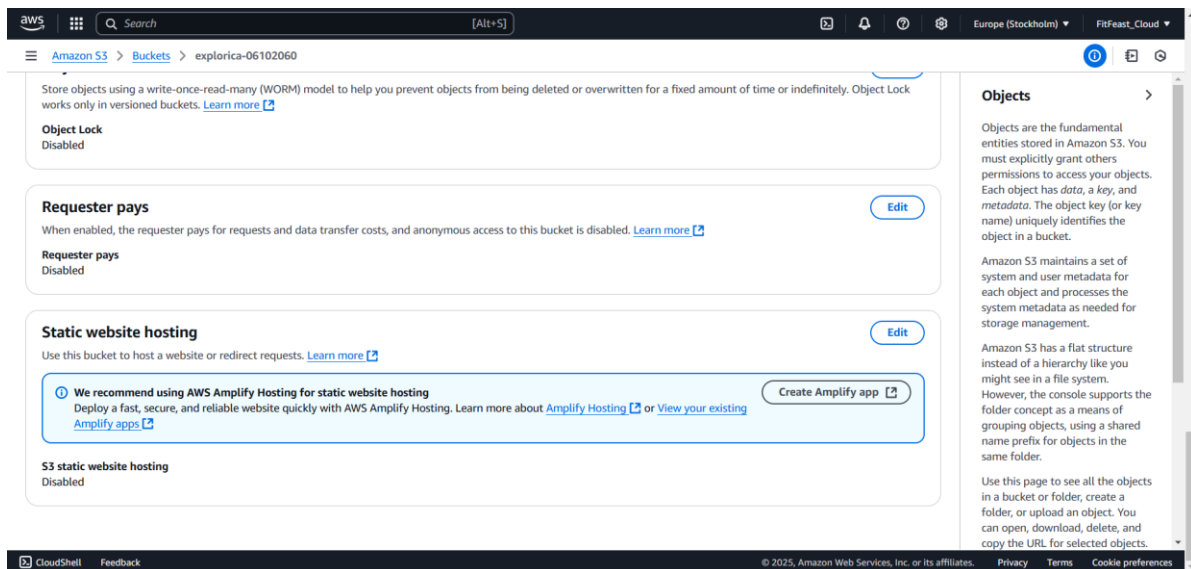*Figure 15*

- **Scroll down and click "Static website hosting."**

Figure 16

- **Select "Enable" and enter the index.html as the default document.**

Figure 17

- **Add an error document(optional)**

Figure 18

- **Save the settings.**

Step 4: Set Public Permissions

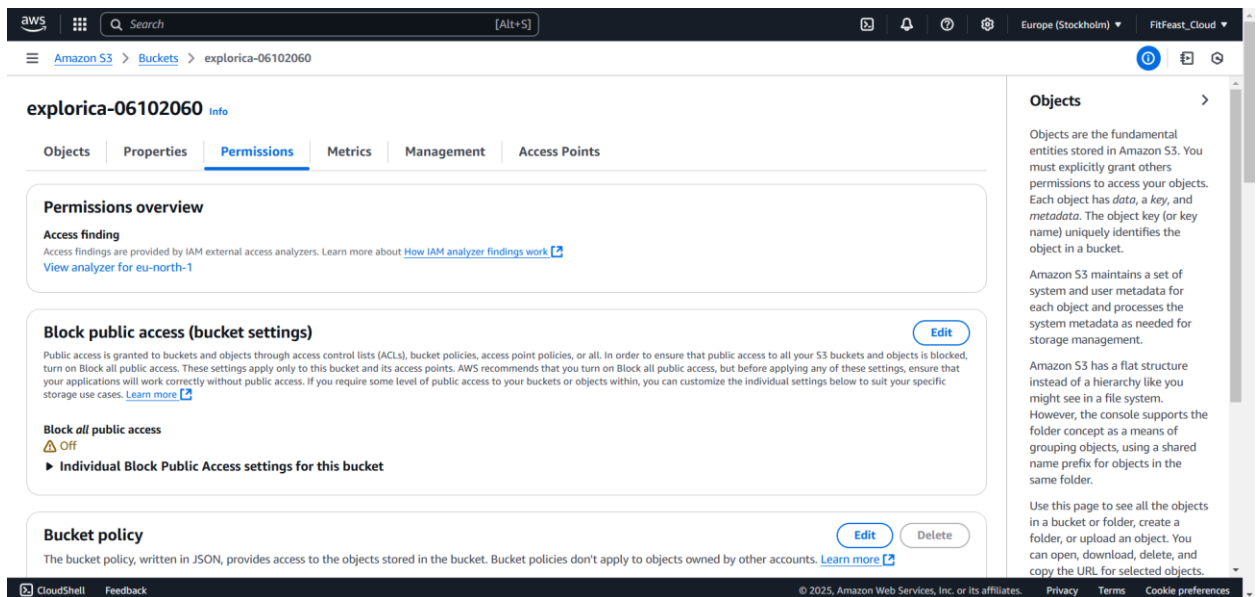- **Navigate to the "Permissions" tab.**

Figure 19

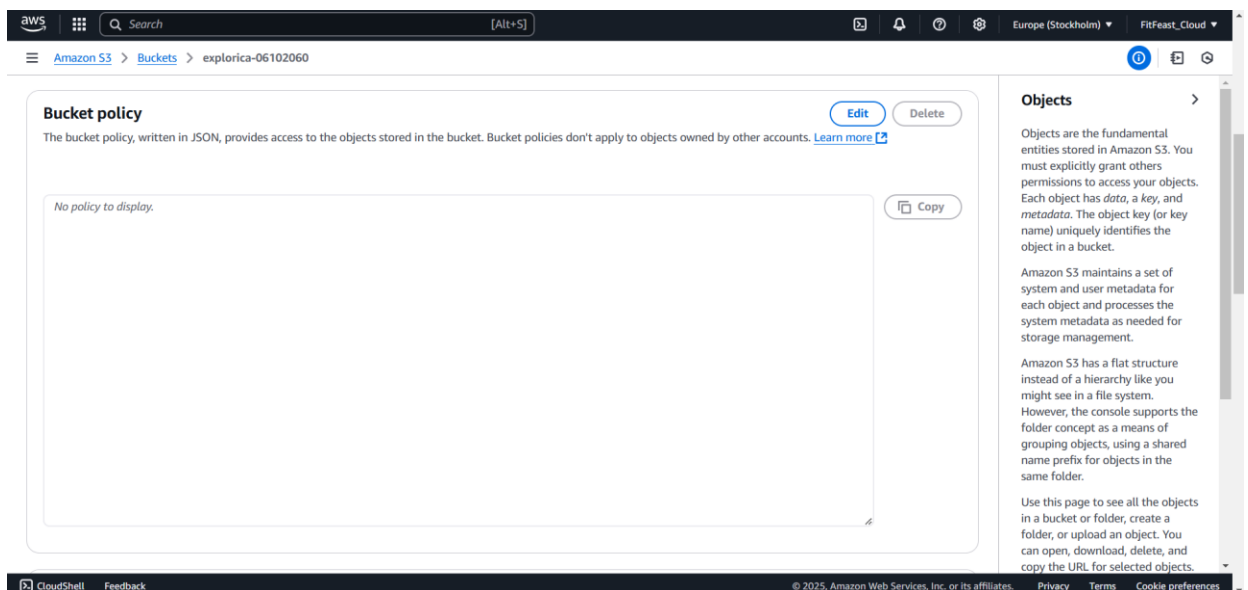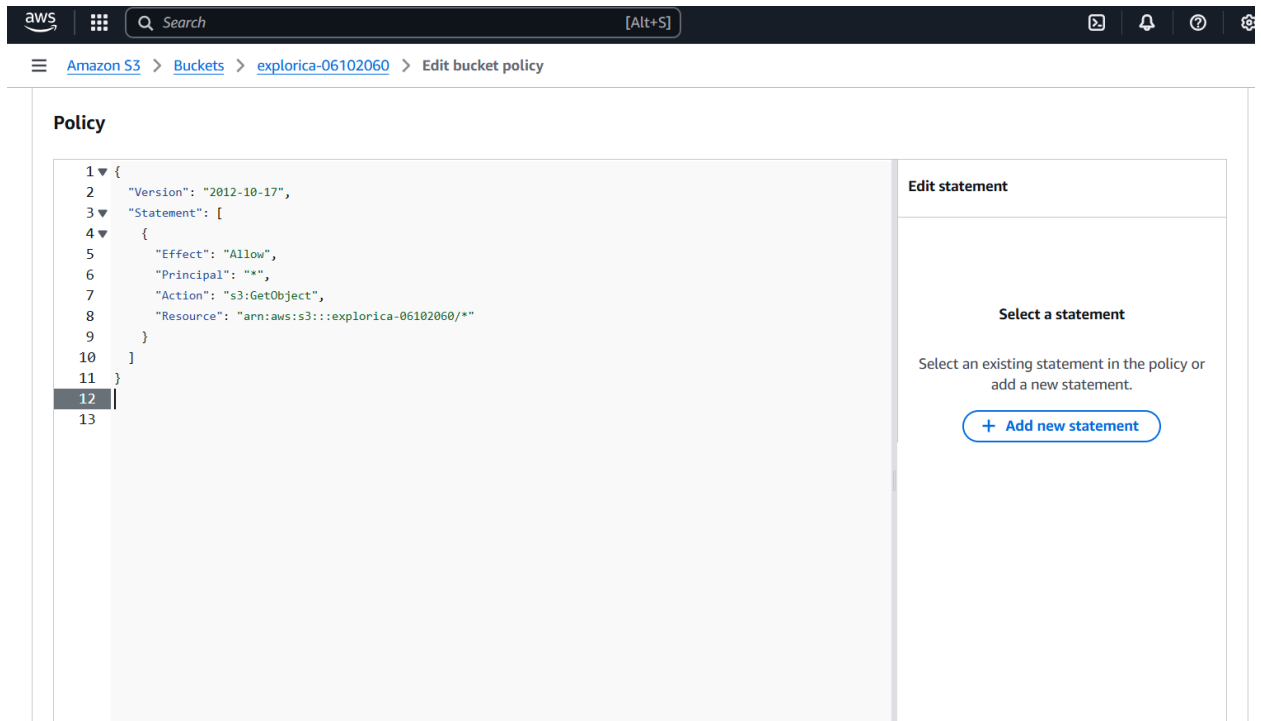- **Click "Bucket Policy" and enter the following policy:**

Figure 20

Figure 21

- **Click "Save."**

Figure 22

Step 5: Access the Hosted Website

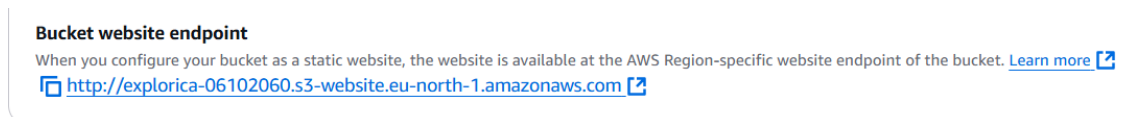- **Copy the "Bucket Website Endpoint" from the S3 settings.**

Figure 23

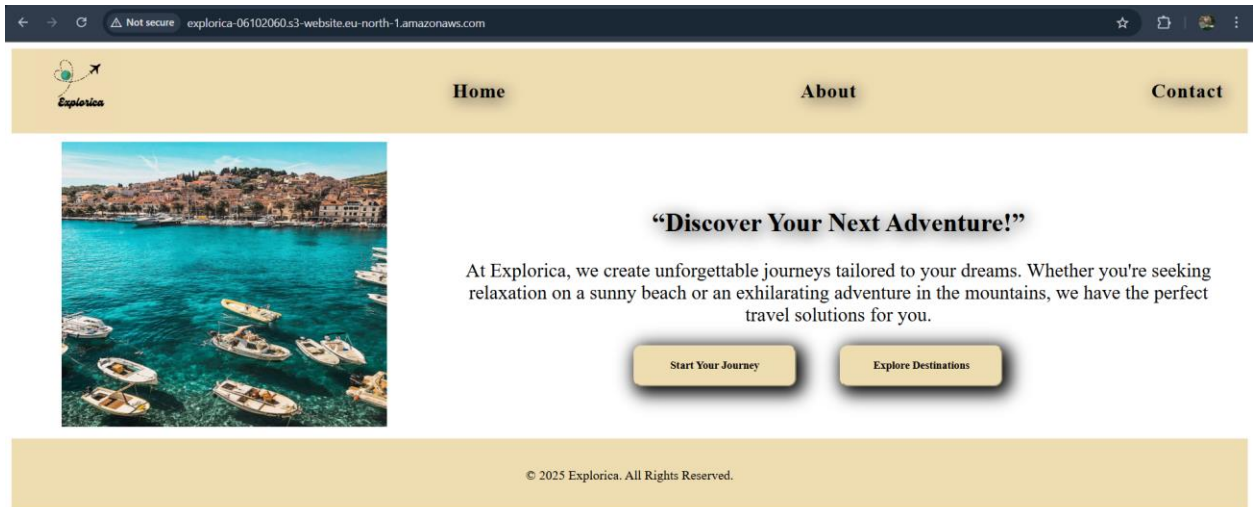- **Paste the URL into a browser to view the website.**
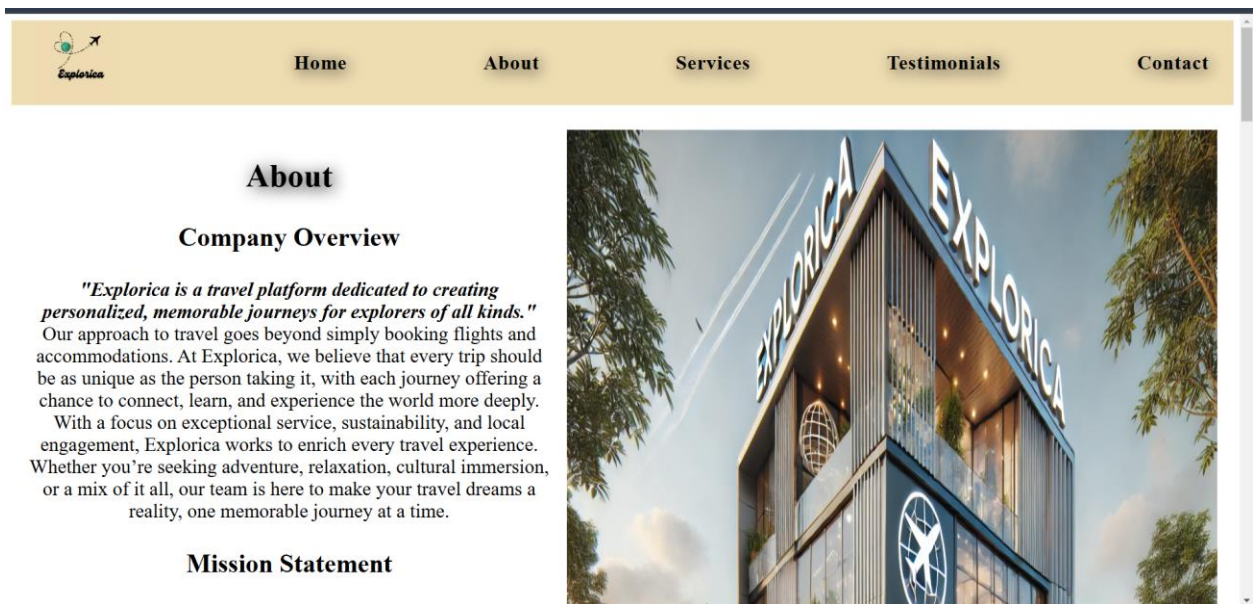

Figure 24
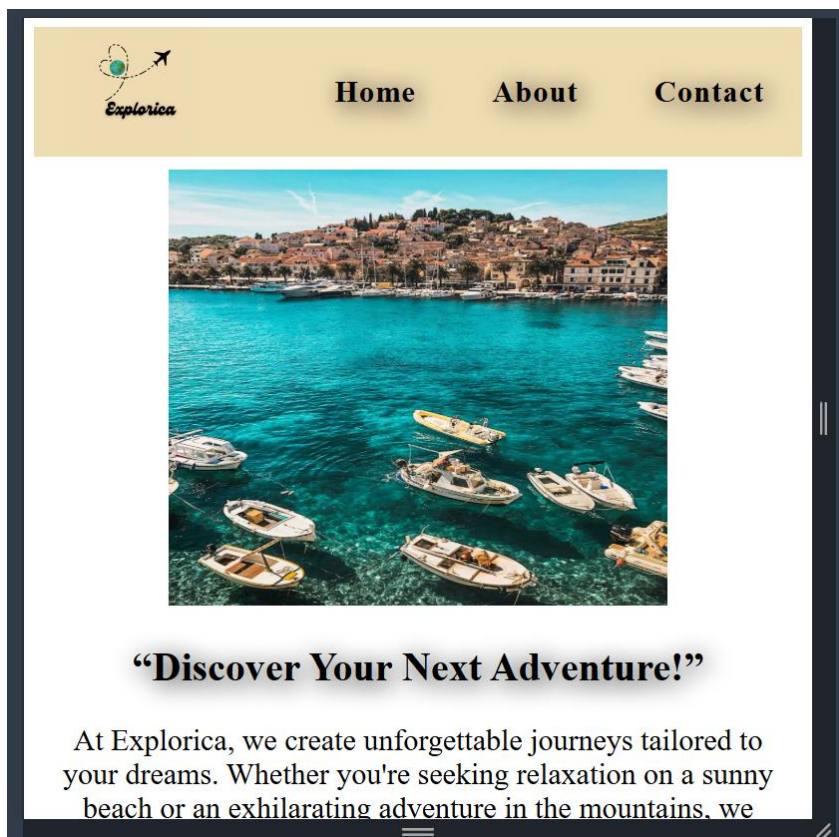

Figure 25

Figure 26

- **Responsiveness**

Figure 27

✈ Flight Booking

Explorica makes booking flights both simple and affordable, connecting you with options for domestic and international travel at competitive prices. Whether you're planning a short getaway or a long-haul adventure, our platform offers a range of flight options tailored to your budget and schedule. With a streamlined booking process, flexible date options, and partnerships with leading airlines, you can quickly secure flights that fit your travel plans. Our goal is to make air travel accessible, stress-free, and cost-effective.

🏠 Accommodation

Enjoy a comfortable stay with our diverse selection of accommodations, including hotels, hostels, vacation rentals, and unique stays. We offer a variety of lodging options to suit every traveler's needs, from luxury hotels to

Figure 28

Testimonials

People's feedback

Anna P

"Explorica made my trip seamless! Highly recommend their services."

John D

"The personalized itinerary was perfect for my family. Thank you, Explorica!"
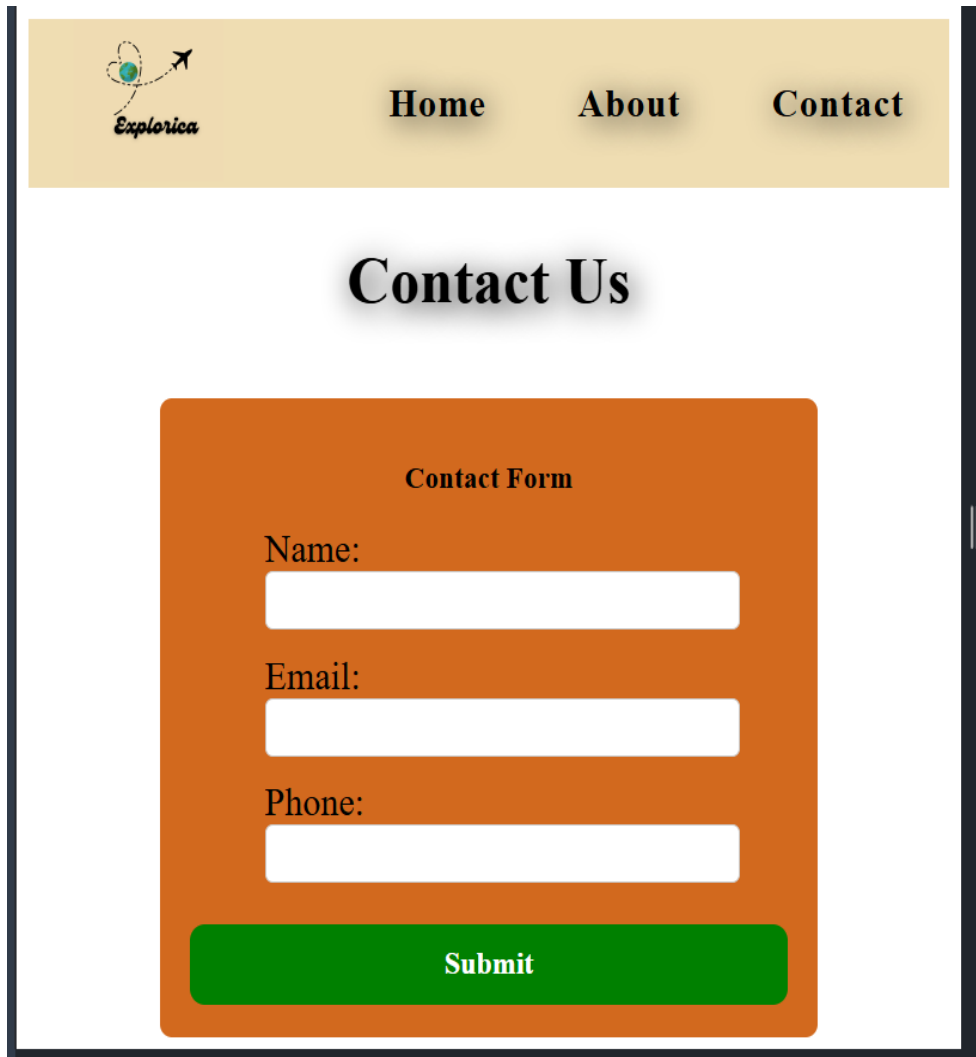
Venyy John

"An unforgettable adventure with Explorica's guided tour!"

Figure 29

Figure 30

5. Conclusion

This lab successfully explored static website hosting using AWS S3. The project covered website development, S3 bucket configuration, public access management, and performance optimization. The final website meets the required assessment criteria and provides a functional and visually appealing static web experience.