Scalable Static Website with S3 + Cloudflare + GitHubActions

Introduction

This project demonstrates the hosting and automated deployment of a static website using Amazon S3,Cloudflare, and GitHub Actions. It provides an end-to-end solution for creating, managing, and delivering a static website with global content delivery and HTTPS encryption.

Abstract

The objective of this project was to design and deploy a cost-efficient and globally accessible static website.The website is hosted on AWS S3 and integrated with Cloudflare for DNS management,caching, and SSL security. GitHub Actions is used to automate deployment directly from a GitHubrepository whenever code is updated.

Tools Used

• AWS S3 – For hosting static website files (HTML, CSS, etc.)
• Cloudflare – For DNS management, CDN caching, and SSL (HTTPS)
• GitHub & GitHub Actions – For source control and automated deployment
• HTML & CSS – For front-end design and styling
• Linux Terminal – For configuration and command-line operations

Steps Involved in Building the Project

1. Created a static website using HTML and CSS in Eclipse IDE and pushed the code to GitHub.
2. Created an Amazon S3 bucket with the same name as the custom domain and enabled static website hosting.
3. Uploaded the website files (index.html and style.css) and set appropriate bucket policies for public access.
4. Configured Cloudflare with the domain (my-static-website-sonal.online) for DNS management and HTTPS.
5. Added a CNAME record in Cloudflare pointing to the S3 website endpoint.
6. Set up GitHub Actions to automatically sync the repository to the S3 bucket on each commit.
7. Verified deployment and accessibility using Cloudflare’s HTTPS-enabled global CDN.

Conclusion

The project successfully demonstrated the integration of AWS S3, Cloudflare, and GitHub Actions for
building a fully automated, secure, and scalable static website. The combination of these tools provides a
cost-effective and globally available hosting solution ideal for small websites, portfolios, and documentation
portals.