**Technical Overview**

**Title: Static Website Hosting on AWS Using Terraform**   
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**Project Abstract: Static Website Deployment with Infrastructure as Code**

This portfolio project demonstrates the end-to-end development and deployment of a **static website**, leveraging **Infrastructure as Code (IaC)** principles for robust, scalable, and automated cloud resource provisioning.

The primary objective was to create a lightweight, performant web presence while showcasing proficiency in both front-end web development and modern cloud infrastructure management using Terraform.

The static website is built with standard web technologies, primarily **index.html** and associated CSS/JavaScript files, ensuring a fast, client-side user experience. This design choice prioritizes simplicity, security, and low operational overhead, making it ideal for content-centric sites, portfolios, or marketing pages that do not require dynamic server-side processing.

**Challenges Faced**

The original plan was to deploy a custom PHP API using Lambda and Docker. However, due to runtime compatibility and bootstrap execution errors, the approach was revised to Task 1. This shift allowed deeper exploration of Terraform’s strengths and AWS S3/CloudFront integrations.

**What I Learned**

* How to use Terraform modules like aws\_s3\_bucket and aws\_cloudfront\_distribution.
* How to apply IAM policies for public-read access and OAC integration with CloudFront.
* How AWS global infrastructure improves performance and security for even simple websites.
* The importance of troubleshooting logs and adapting when serverless solutions fail.

**Improvements & Future Work**

* Add a custom domain using Route 53 and an SSL certificate via ACM.
* Connect a CI/CD pipeline (e.g., GitHub Actions) for automated deploys.
* Add versioning, logging, and backup for the bucket.

**Conclusion**

This project fulfilled Task 1 of the DLBSEPCP01\_E portfolio. It successfully used Terraform and AWS to build a highly available, globally accessible website that demonstrates real-world cloud deployment techniques.