Conception Phase: Cloud Architecture for simple webpage on AWS

In this document, I will outline the planned cloud architecture for hosting a simple, globally accessible website on AWS. The goal is to create a highly available solution with minimal latency, while ensuring automatic scalability.

Solution Overview

- **Amazon S3**: I will store and serve my static website (an HTML "Hello World" page) from an Amazon S3 bucket. S3 offers built-in redundancy and auto-scaling capabilities, making it ideal for a straightforward website without needing server administration.
- **Amazon CloudFront**: Although a simple S3 endpoint is sufficient for hosting static assets, CloudFront adds a global content delivery network (CDN) layer. This reduces latency by caching the content at edge locations around the world, ensuring visitors in any region experience fast load times.
- **Terraform (IaC)**: To make the solution replicable and maintainable, I will use Terraform, a powerful Infrastructure as Code (IaC) tool developed by HashiCorp. Terraform automates resource provisioning, simplifies version control, and remains cloud-agnostic—making it easy to adapt if the project expands or migrates to on-premises, hybrid, or multi-cloud environments.

Since the final product is a simple static page, using **EC2 instances** and a **load balancer** would introduce unnecessary complexity and cost. S3 and CloudFront already provide the necessary scalability, high availability, and global coverage for this type of website.

Regarding the website itself, I plan to keep it minimal by hosting only a "Hello World" HTML page.
To streamline development, I have already set up the AWS CLI, installed Terraform locally, and registered an AWS account. In addition, I have configured IAM access within my local IDE (VS Code), allowing me to provision AWS resources directly from my development environment.

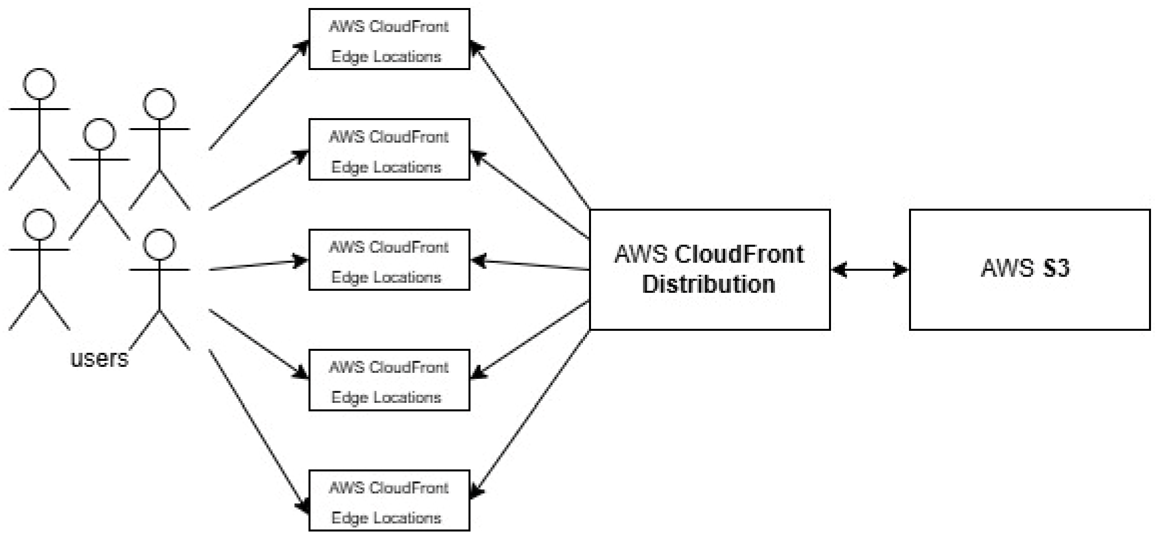
users
AWS CloudFront Edge Locations
AWS CloudFront Edge Locations
AWS CloudFront Edge Locations
AWS CloudFront Edge Locations
AWS CloudFront Edge Locations
AWS CloudFront Distribution
AWS S3

Figure 1: General overview of cloud architecture