Capstone Project: Build and Deploy a Scalable Web App on AWS

Objective

Deploy a complete web application using best practices in security, scalability, and cost optimization.

Requirements

- Multi-AZ VPC with public/private subnets

- ALB + Auto Scaling Group with EC2

- Aurora MySQL DB

- S3 for media storage

- CloudFront + WAF

- CI/CD pipeline with GitHub Actions or Jenkins

- Infrastructure as Code using Terraform

Deliverables

- Terraform code for full stack

- Architecture diagram

- Documentation and screenshots of deployed infrastructure

- Demo of working application (optional)

Evaluation Criteria

- Infrastructure builds without error

- App accessible via Load Balancer

- Uses secure IAM roles, encrypted resources, and logging

- Cost-aware deployment (e.g., use t3 instances, S3 lifecycle policies)