CS 470 Assignment 8-1

Final Reflection

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YouTube URL: https://www.youtube.com/watch?v=LloJZr1UUYQ

Experiences and Strengths

I mastered various skills throughout this course, including full-stack development principles, cloud computing, security and authentication, and DevOps practices. These skills encompass front-end development with Angular, back-end development with Node.js and Express, deploying applications on AWS using S3, Lambda, and API Gateway, and containerization with Docker. I also gained expertise in implementing serverless architectures with AWS Lambda, enhancing resource usage, and reducing operational costs. Additionally, I learned to manage access controls with AWS IAM and developed experience with CI/CD pipelines for automating build, test, and deployment processes. My strengths as a software developer include adaptability, problem-solving, collaboration, attention to detail, and innovative thinking, which prepare me for roles such as Full Stack Developer. I plan to pursue this field, take everything I've learned here, apply it to my challenges, and become a better developer along the way.

Planning for Growth

When planning for the future growth of my web application, I would leverage microservices and serverless architectures for efficiency. By distributing the application into smaller, independent services, I can handle different functions and scale individual components based on demand, improving performance and fault isolation. Serverless solutions like AWS Lambda can handle stateless functions and automatically scale with demand while managing errors effectively. I would use AWS Cost Explorer and other monitoring tools to predict costs. Serverless solutions offer more cost predictability, as I only pay for actual usage, whereas container-based solutions may involve fixed costs for running instances. When considering expansion, microservices provide scalability, fault isolation, independent deployment, and flexibility but increase complexity in managing distributed systems. Serverless solutions offer cost efficiency, automatic scaling, reduced operational overhead, and faster time-to-market but can have cold start latency, limited execution time, and potential vendor lock-in. Elasticity and pay-for-service play crucial roles in decision-making for planned future growth, allowing automatic scaling of resources based on demand and managing costs effectively by paying only for actual resource usage. By applying the knowledge and skills I acquired in this class, I feel I am well-equipped to plan for the future growth of my web application, demonstrating my ability to think ahead and apply complex cloud service concepts to real-world projects.