

Final Reflection

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https://youtu.be/PZVfL1Ie9LU?si=p_EUsIMRmlspfh0r

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This course provided immense hands-on experience in designing, building, and deploying full-stack web applications in the cloud. I developed essential skills in cloud integration, RESTful API development, automated testing, scalable architecture design, and containerization. I also gained experience with serverless technologies, cloud storage, and modern software development practices. These experiences, combined with my problem-solving skills, adaptability, and full-stack knowledge, make me a good fit for positions like Cloud Application Developer, Full-Stack Developer, or DevOps Engineer.

I have also developed my skills in effective project documentation, working in an Agile environment, and version control systems such as Git. This further enables me to work on more complex projects in a professional setting.

I would ensure scalability and efficiency in the web app by using microservices for modular development and serverless architectures like AWS Lambda. AWS Lambda automatically scales according to workload and optimizes cost. AWS Lambda enables a function to run any code without requiring management of the infrastructure, thus providing a perfect fit for applications where the workload fluctuates. Apart from that, S3 buckets would be used for storing and serving data. Native scalability and durability features in S3, besides bucket versioning, offer data reliability and support the delivery of high-performance content.

Error handling and reliability would be handled by redundant storage in S3 and robust serverless workflows. For traffic scaling, auto-scaling features in AWS Lambda ensure that resources expand and contract based on demand. I would analyze the type of workload to determine

whether serverless or containerized solutions are more cost-effective. Serverless is ideal for unpredictable workloads due to its pay-per-use model, while containers are better suited for steady workloads with predictable traffic patterns.

While serverless solutions provide simplicity and cost efficiency, they come with execution time limits and potential latency issues. Microservices offer better modularity and independent scaling, but managing inter-service communication and deployment can add complexity.

Elasticity and pay-for-service models are critical to these decisions, ensuring that resources are provisioned dynamically based on real-time demand, eliminating overprovisioning and reducing unnecessary costs.

This course has prepared me to design and implement scalable, cost-efficient cloud-based applications using technologies such as AWS Lambda and S3. Utilizing microservices, serverless architecture, and robust cloud storage solutions, I will be able to ensure my applications remain flexible, scalable, and reliable while growing. My strategy for growth will revolve around performance optimization with predictable costs for the success of the application in dynamic environments.