Joel Hays

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CS-470

Journal: Final Reflection

This course has been instrumental in helping me achieve my professional goals by providing hands-on experience in developing, testing, and deploying a full stack web application in the cloud. I gained a better understanding of backend development through building APIs and implementing testing processes, which will make me a more marketable candidate in the software development field. Additionally, working with cloud deployment has strengthened my ability to adapt to industry trends, making me more prepared to meet the demands of cloud-native development. My ability to troubleshoot issues during deployment and improve application performance highlights my problem-solving skills and adaptability.

The skills I developed in this course include API design, cloud deployment, and using monitoring tools to ensure application stability. These technical skills complement my strengths as a developer, such as problem-solving, collaboration, and a willingness to learn new technologies. For instance, I excelled at learning how to integrate serverless functions into the application architecture, which demonstrates my ability to adapt to evolving technology. These experiences prepare me for roles like full stack developer, cloud engineer, or DevOps associate, as they require both technical expertise and the ability to think critically about how to improve application scalability and reliability.

Planning for the future growth of my web application involves leveraging cloud technologies like microservices and serverless computing. Microservices would allow me to scale individual components of the application independently, while serverless computing can streamline infrastructure management and reduce costs. For example, user authentication or notification services could be transitioned to AWS Lambda or Azure Functions, which would allow for automated scaling during peak traffic periods. To handle scaling and error management, I would implement centralized logging tools like Amazon CloudWatch to monitor performance and troubleshoot issues in real time.

Cost prediction is another critical factor in planning for growth. Containers provide a predictable cost structure since resources are allocated consistently, whereas serverless costs fluctuate based on usage. For applications with steady traffic, containers might be more cost-effective, but serverless solutions are ideal for handling unpredictable workloads. When evaluating the pros and cons of these approaches, serverless computing offers benefits like infinite scalability and pay-as-you-go pricing, while containers provide greater control over resources but require more management. Elasticity and pay-for-service models also play a key role in scaling decisions. Using autoscaling groups for containers or serverless functions ensures the application can handle user growth efficiently without incurring unnecessary costs.

This course has equipped me with a solid foundation in full stack development and cloud computing. By understanding how to apply microservices, serverless computing, and scalable architecture, I am prepared to develop applications that are both efficient and adaptable to future growth. These experiences will continue to shape my ability to create reliable, scalable applications in the evolving field of cloud-based software development.