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CS470 - Final Reflection

Experiences and Strengths

Throughout the duration of the CS 470 course, I have grown significantly in my understanding of software development and cloud computing. From learning the principles of developing a full stack web application to understanding the complexities of deploying these applications in the cloud, the course has equipped me with a diverse range of skills that will greatly assist in achieving my professional goals.

One of the major skills I have acquired is proficiency in Docker. I am now adept at creating Docker images, managing containers, and using Docker Compose to define multi-service applications. I have also mastered the use of cloud services such as AWS, learning how to create and manage cloud resources, and how to use these resources to host web applications.

As a software developer, my strengths lie in my ability to learn and adapt quickly. This course has given me the opportunity to work with a variety of tools and technologies, each with their own unique challenges. I have proven that I can quickly become proficient with new technologies, which I believe is an essential quality in the ever-changing field of software development.

Given these skills and experiences, I am prepared for roles that involve web development, DevOps, and cloud management.

Planning for Growth

Moving forward, I believe that the application of microservices or serverless architecture can greatly improve the efficiency and scalability of the web application. Microservices would allow for independent scaling of different application components based on demand, while serverless would abstract away server management and allow us to focus on the application code.

In terms of scaling and error handling, I would implement auto-scaling policies and health checks. Auto-scaling would ensure that our resources scale up and down based on demand, while health checks would facilitate quick detection and recovery from errors.

Predicting cost in cloud environments can be complex due to the numerous variables involved. However, generally, serverless can often be more cost predictable as you only pay for the compute time you consume, and there's no charge when your code isn't running.

Regarding pros and cons for expansion, it's important to note that while microservices and serverless can offer great scalability, they can also introduce complexity in terms of monitoring and management. On the other hand, the pay-for-service model of cloud computing provides

cost savings and the ability to invest more in development rather than infrastructure maintenance.

In terms of elasticity and pay-for-service, these principles allow for efficient utilization of resources, cost savings, and the ability to handle unexpected spikes in demand. They play a crucial role in decision making for future growth as they can directly impact the scalability and cost-effectiveness of the application.