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CS 470 Final Reflection

Conference Presentation - SNHU CS 470 Project 2 - YouTube

- **Experiences and Strengths:**
    - What skills have you learned, developed, or mastered in this course to help you become a more marketable candidate in your career field?

This course was my first time developing in a cloud-based environment. Consequentially, I have learned a couple of skills that I believe will make me a more marketable candidate in my career field. I strive to be an engineer in some capacity in my current industry. Being able to develop applications in a diverse array of environments will allow me to be versatile as I find the engineering path for me. The skill of using AWS to develop a serverless application using AWS will be a marketable skill that I intend to lean on as I search for positions. Developing this full stack application has overall increased my confidence as full-stack application developer. I cannot say I feel I have "mastered" anything yet as I feel there is always something to learn. However, I do feel that I have improved my skills developing RESTful API's and I know that this will make me a more marketable candidate in my career field.

- Describe your strengths as a software developer.

When working with full-stack applications, I find that I have an easier time working with the back-end. I would argue that working with noSQL databases has become a strength of mine as I have now developed three applications that use noSQL schemas. Another one of my strengths is my ability to follow directions and find the right documentation. In any language, I use the documentation to understand how the code or framework works and is expected to be used. I have leaned on this skill throughout my education as I study software development. My final strength is my iterative approach to problem solving. I focus on testing to make sure that development is on the right track and I try to break down every problem into smaller more manageable steps.

- Identify the types of roles you are prepared to assume in a new job.

My experience is in Manufacturing and Engineering in a more mechanical setting and the roles I intend to pursue are where computer science and this industry meet. The types of roles that I feel I am prepared for are in automation, data science, and network engineering. I am confident that I can connect systems, extract data from systems, and develop software that can use that data in a capacity that benefits the business.

- **Planning for Growth:**
    - Identify various ways that microservices or serverless may be used to produce efficiencies of management and scale in your web application in the future. Consider the following:
        - How would you handle scale and error handling?

To handle scale I would interact with microservices and serverless differently. For scale with Microservices, I would employ them to utilize container orchestration to scale services. For serverless, I

would plan for the functions to automatically scale in response to requests. I would approach error handling with a similar division. For the microservices I would use circuit breakers or retries whereas for serverless I would use automatic retries and custom error handling where needed.

- How would you predict the cost?

Predicting the cost in a cloud-based environment depends on the chosen architecture. With serverless, cost estimation is generally more straightforward, as you're billed based on actual usage, making it easier to manage and budget expenses.

- What is more cost predictable, containers or serverless?

Containers sometimes require meticulous resource provisioning and monitoring, which can make cost prediction more challenging but still feasible with good planning.

- Explain several pros and cons that would be deciding factors in plans for expansion.

When considering expansion plan, there are several pros and cons to weigh. On the positive side, both microservices and serverless architectures offer agility, scalability, and modularity, which can accelerate development and streamline updates. However, potential downsides include the complexity introduced by microservices' inter-service communication and the challenge of managing costs efficiently in a serverless environment. Careful evaluation of these factors is crucial for informed decisions on expansion.

- What roles do elasticity and pay-for-service play in decision making for planned future growth?

Elasticity and pay-for-service models are pivotal considerations for future growth planning. Elasticity ensures we can efficiently scale resources to match demand, preventing overprovisioning. Simultaneously, the pay-for-service approach aligns with cost-efficiency by allowing us to pay only for the resources we use, which makes it a strategic choice for managing expenses during expansion.