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CS 470 Final Reflection

https://youtu.be/ArRyKmKGuEE

1. **Experiences and Strengths:** Explain how this course will help you in reaching your professional goals.
    a. What skills have you learned, developed, or mastered in this course to help you become a more marketable candidate in your career field?
        i. Throughout this course, I have learned what cloud servers are and how they worked. I also learned how to host a basic website into AWS as well as learn the different services commonly used on the platform.
        ii. My strengths as a software developer are that I can quickly learn new concepts and adapt to new situations.
        iii. The types of roles that I am prepared to assume in a new job are those that require problem solving or teaching new skills to those that would like to learn them.
2. **Planning for Growth:** Synthesize the knowledge you have gathered about cloud services.
    a. Identify various ways that microservices or serverless may be used to produce efficiencies of management and scale in your web application in the future.
        i. How would you handle scale and error handling?
            1. When developing an application to scale, I would handle any errors by reading the error messages provided, utilizing the tools available by the platform used for scaling such as AWS, or try replicating the application on a smaller scale to find the issue.
        ii. How would you predict the cost?
            1. If using a 3rd party platform like AWS to host the application, cost can be easily estimated by using the tools provided. If not, cost can be estimated by analyzing the load currently experienced and using that to determine the cost needed to purchase the resources required for the web application to run such as server hardware. If currently in the planning stages where no application is running and no 3rd party hosting platform is used, the expected user quantity can be used to determine what resources are needed to efficiently handle them which can make cost estimation easier.
        iii. What is more cost predictable, containers, or serverless?
            1. Cost is often associated with the resources required to run an application. That being said, containers would be more cost predictable as you would have more control over resource allocation that you would have with a serverless approach. It is worth noting that a serverless approach will likely be more cheaper due to its pay-per-use model.

b. Explain several pros and cons that would be deciding factors in plans for expansion.
    i. When considering containers for expansion, they excel at resource management which is useful for applications that can be very resource hungry. Any application can become a container and be deployed in any environment. However, they can be more expensive as they need to be constantly running. They can also be more of a hassle to scale as they do not do it automatically. Serverless can effortlessly scale an application whenever needed and they do it automatically. Maintenance is minimized in a serverless architecture and more focus can be driven to improving the application itself. Cost is reduced on a serverless application as you would only pay what you use. Typically, the most common programming languages are only supported by serverless providers which can limit what is developed. Old systems may have a harder time to scale in a serverless environment.
c. What roles do elasticity and pay-for-service play in decision making for planned future growth?
    i. Elasticity refers to the growing or shrinking of computing resources depending on the demand for them. Pay-for-service means that you only pay for what you use. When planning for future growth, these two concepts must be taken into consideration as they determine the cost for running an application. Elasticity determines how much resources are used and pay-for-service use that to determine how much you pay for the consumption of those resources.