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CS 470 Final Reflection

YouTube link: https://youtu.be/9ipmcBZIR-8

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?
  - I learned about migrating a full stack web application to a serverless cloud-based platform, such as Amazon Web Services. AWS is a very popular platform for hosting cloud-based applications and is growing in popularity regularly. I also developed skills in creating lambda functions and using JSON scripts to populate a schemaless database table.
- Describe your strengths as a software developer.
  - My strengths as a software developer consist of developing test cases for code, developing object-oriented code for applications, converting code between different languages, and requirements fulfillment.
- Identify the types of roles you are prepared to assume in a new job.
  - I feel as if I am prepared to take on roles such as Software Engineer, Full-Stack Developer, Web Application Engineer, Front-end or Back-end Developer, and Software Test Engineer.

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?
    - Microservices help with scaling by breaking down an application into smaller services, which allows for each individual services to be scaled and updated independently from other services. Microservices also simplify error handling by allowing developers the flexibility to implement their own custom error handling logic. Serverless computing helps handle scaling by taking the infrastructure overhead out of the hands of the company using its services and automatically scales applications up or down as needed. Error handling with serverless computing is simplified by offering built-in error handling features for developers to make use of, allowing them to focus more on developing code.
  - How would you predict the cost?
    - To successfully predict cost it is important to research the costs of each service over a certain period of time. Then planning how long each service will be needed and by how many developers will help to ensure that costs incurred by using microservices is predictable and can be managed.
  - What is more cost predictable, containers or serverless?

- Serverless computing tends to be more cost predictable because of its pay-for-use model and the automatic scaling that it offers. Automatic scaling can remove the need to look into costs regarding new hardware, as it will automatically scale resources up or down as needed. Furthermore, the pay-for-use model, not a fixed cost, provide a level of granular visibility that can help with understanding how much a team's needs will cost when using microservices.
- Explain several pros and cons that would be deciding factors in plans for expansion.
  - Pros:
    - Some of the pros to expansion that would be deciding factors are increased revenue for the company, a more diverse team of developers, and the potential to break into another field. With expansion comes the high likelihood of increasing the revenue coming into a company with the added customers who have the potential to request more services as expansion grows. When a company needs to expand, that includes the number of developers working on code for the company. A larger team can help lead to a more diverse skillset of developers who can bring new ideas to the table. A more diverse team can also bring varying experience in other fields that could help the company get a start in a new field, which will help with further expansion.
  - Cons:
    - Some of the cons to expansion are the cost of expansion, the possibility of expansion failure due to unstable markets, and a potential inability to

expand resources with customer needs. The cost of expanding operations to meet customer needs can easily outweigh the increased revenue if the company does not make a successful plan and execute it properly to ensure that the cost of expansion is kept to a minimum. Also, markets can become unstable at times, which could lead to customers needing to cut back on costs and services that they purchase. Finally, being unprepared for the increase in resources needed for the higher number of team members and services needed to complete a project can lead to issues and bottlenecking in the expansion process, as well as team members ability to complete tasks and the project as a whole.

- What roles do elasticity and pay-for-service play in decision making for planned future growth?
  - Elasticity plays a very important role in deciding on future growth. It can help to alleviate some of the worry of expanding resources and scaling services to meet the needs of the extra workload that the company would be taking on. It is much easier to expand and grow when the services that are used are able to grow with the company as needed. The pay-for-service model can help with planning future growth by giving the company insight into the costs of the workload that is being taken on. Already having knowledge of how much using each service costs over a set period of time can help to calculate how much cost would go into just using the services, which would make it much easier to know if the planned growth is feasible for the company at a financial standpoint.