CS470 Final Reflection

https://youtu.be/cHjMgalTR_0

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

      As I finish up my bachelor's degree in computer science this final course, CS470 has wrapped up every thing I've learned in the past few years and taught me how to deploy my full stack application onto the web. I was given the opportunity to learn about containerization while using Docker and serverless web deployment using AWS S3 with Lambda and API Gateway.

    - Describe your strengths as a software developer.

      As a new grad it's easy to lose self confidence but I am lucky enough to have family and friends working in the CS field that believe in me and support. My Uncle recently reminded me of the importance of new grads in the work field who can bring knowledge on new technology. As we geeked out talking tech he told me that I knew things that many senior developers didn't know. I've learned a lot over the last few years and I found I love writing code in Java and C++ but getting but my biggest strength is my ability to learn new technology and adapt quickly. The most important thing I feel I've learned is how to do research and find the answers to the challenges I face. In this accelerated, remote program I had to learn to work independently and stay focused with home distractions around me.

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

      I've spent some of my limited free time browsing job listings lately to read the descriptions and learn what opportunities are out there. I love seeing projects through from beginning to end so the role I would like to assume would be a full-stack developer. I've also looked into research and development positions and specialized in software engineering. I'm keeping my options open. As a new grad I'm grateful to most any company willing to take a chance on me. I want to be head buried deep writing code with a team of people who are passionate about what they do. I know finding a job can take time so in the meanwhile, I would like to obtain my own business license and do work for local non-profits. It was suggested to me that I start browsing for contract positions to build up experience and find the niche I really want to specialize in.

- **Planning for Growth:** Synthesize the knowledge you have gathered about cloud services.
    - 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?

As someone who can't afford to set up personal servers, if I launched my own web application, I would most likely use a serverless cloud option which would automatically handle scaling for me. Error handling is a bit trickier as it depends on what is causing the error but after learning about AWS, I see they have microservices to help a developer pinpoint exactly where the problem is occurring. A great way to handle errors with AWS is by creating Lambda functions and state machines. Amazon has some great documentation on how to use Lambda functions for error-handling.

- How would you predict the cost?

  Using containers with a local database, cost is generally fixed. Services like AWS offer pricing calculators as well as Cost optimizing tools to help a developer predict the costs of their application as is upscales or downscales. AWS call cost predicting "forecasting" based on a specified timeline.

- What is more cost predictable, containers or serverless?

  Containers are more cost predicable as they are fixed rates but that does not necessarily make them the cheaper or better option for all projects.

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

  Pros of expanding mean that your business or application is probably successful and therefore can cover the additional costs of upscaling if you're using a serverless solution. If you are using a local server, expansion costs will potentially be too high and you will have to decide if the applications growth can cover the costs long term or if your better option is to stunt the applications growth. No matter which server route you chose scaling will always mean higher expenses but it's a little less risky on the serverless cloud as downscaling is also effortless and doesn't leave you will be outstanding debt on servers and equipment you're not using.

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

  Pay-for-service makes long term planning less risky. If your application goes through a slow spell, then you won't be paying for storage space you aren't using. A seasonal or holiday application is a good example of something that may have more traffic and server needs during a specific time frame and you will only need to pay for those higher needs at that time. During off season your expenses will decrease accordingly with that of your server usage. To run the application locally, you would have to pay for the highest projected server use year-round to make sure your application ran seamlessly during the one or two months it's actually needed.