

CS 470 Final Reflection

Alexis Indick

Southern New Hampshire University, Computer Science Department

CS 470: Full-Stack Development II

Dr. Mohammad Alam

YT Link: https://www.youtube.com/watch?v=0prGxJx3FJ0&ab_channel=Alexisindick

October 22nd, 2023

Experiences and Strengths

This course really helped me to practice my skills with AWS, learn how to use containerization with Docker, orchestration with Docker Compose, how to utilize DynamoDB, and work with MEAN again but to a lesser extent than the previous full-stack class. AWS is especially important these days since many companies are migrating to their cloud services. So, this essentially means that learning AWS was an important skill to have for future employers.

My strengths as a software developer I believe are AWS, since I do have my cloud practitioner certification already, ability to analyze critically since this class was a tad outdated, I really had to analyze where things weren't working, and my last strength is determination. I didn't let the "outdated-ness" of the class deter me from getting to my solutions and worked around the issues.

Thanks to this class, I'm feeling more confident in assuming roles in cloud development and full-stack. Being a cloud developer has been a recent dream of mine, along with full-stack, since I feel cloud development is fun especially with coming up with solutions to customers' issues. I want to be a solutions architect for this reason.

Plan for Growth

When it comes to handling scaling issues, primarily with AWS, services like EC2 and DynamoDB scale automatically. The great thing about the cloud is that auto scaling is available, and you don't have to worry about running out of storage. I personally would just let auto scaling do its job when it comes to scaling issues. Error handling though would be up to me to fix still since the cloud isn't quite that magical.

For calculating the cost when it comes to using the cloud, it's important to remember the "pay-for-use" model. You should also always check the pricing since AWS usually tells on each service's site how much it is to use it. There's also a calculator in AWS that helps you to

calculate potential costs. Between containers and the cloud, containers are much more cost predictable. This is because containers are more for consistent workloads, so you'll have a way easier time guessing the pricing. But this can also mean they're more expensive to handle versus the cloud depending on how much you're running them. The cloud can be predictable, but you usually won't know until you have a consistent workload running or consistently using the calculator.

Pros of the cloud that I consider are worth expanding an application to the cloud:

- Elastic
- Pay-as-you-go
- Auto scaling
- High availability

Elasticity is simultaneously “flexibility”. Since the cloud is elastic, this allows for great expansion especially if recently you've been running out of hard drive space and are sick of having to guess how much storage you need. Pay-as-you-go is great since this ultimately means you have no upfront charges unlike if you had local storage to buy. In the AWS, you only pay for what you use! Auto scaling, which I mentioned before, is another pro of the cloud since you never have to guess how much storage or instances you need. Lastly, being highly available means that even if one server fails, you'll never have to worry about downtime of your running application. There will also be another server helping to keep it running. Though there is always a chance there will be downtime sadly.

Cons of the cloud that can deter people away from using it:

- Downtime
- Latency
- Security & privacy

- Cloud provider lock-in
- Cost

A lot of these contradict what I said were pros earlier, but these are just small issues that can keep people from wanting to migrate their application. Downtime can happen, it's definitely not foolproof 100% of the time. Along with the latency can happen too depending on your internet and if the services are working appropriately. Security and privacy can be issues for some, especially those who do not know how to set up IAM roles and policies. But that's usually why you would want dedicated security people to handle that. A big downside is the fact it's not easy to switch cloud providers. You are usually locked in to the one you chose until you can migrate your stuff to another which can take ages. Lastly, cost can even be an issue since if you are new to the cloud, it's very easy to go over your limit without noticing.

Elasticity and pay-for-service both have a big role in how an application will grow. As your application expands, the more you will pay for the services. But if it shrinks, the less you pay. Elasticity though is a good thing the cloud offers since it assists customers with all their storage needs. Some customers may not know what they need so that's where auto scaling helps to provision the elasticity of the services.