Capston Seminar: Learning Go Programming Language
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CSE 280

For our Merck Process Hierarchy Modeling Capstone Project, our team was required to be proficient in the programming language Go. I have been aware of the rising industry popularity of Go but never got the chance to learn it. For these reasons, in the first couple of sprints, my team and I made it our goal to begin learning Go Lang through online tutorials. Considering the amount of time and effort invested into learning this programming language, I am choosing to write my seminar reflection on this learning experience.

The Go programming language offers improvements over C++ due to its simpler syntax and modern features. The language's built-in safety measures, garbage collection, and type interference are particularly appealing as they allow users to concentrate more on the logic of programs rather than focus on low-level programming i.e. memory management and performance optimization.

Fundamentally, I turned to YouTube to learn the basics of Go Lang. Specifically, the "Go Tutorial (Golang) for Beginners" playlist, which provided a comprehensive overview of the language, covering topics ranging from basic syntax to more advanced concepts like concurrency.

After obtaining a basic introduction, I began implementing Go Lang into our capstone project. This journey started with the "AWS DynamoDB Using Go" YouTube video which provided a hands-on experience. This allowed me to work in parallel with the video and connect to an AWS dynamodb database to create an example table for Movies and populate the database with items. The biggest takeaway from the video was the walkthrough of the DynamoDBCreateItem.go file. This demonstrated how to interact with the DynamoDB API efficiency, struct declarations, function execution, error handling, and item creation.

Building upon these foundational experiences, I proceeded to develop a secondary Go project tailored to our capstone objectives. With the AWS DynamoDB table "Merck" set in place, I crafted a copy of the "DynamoDBCreateItem.go" file but specifically tailored the program to insert mock data relevant to Merck's operational framework which included categories like stages, measures, processes, operations, actions, etc. While I found Go's syntax easy to navigate in this video, I lacked experience with databases which posed a challenge. For this reason, I believe this tutorials provided necessary guidance, allowing me to overcome this hurdle and successfully create an interactive database.

From this experience, I realized that while Go shares similarities with C++, particularly in its syntax and structure, its ease of use and powerful features make it a valuable addition to my skill set. I am grateful to have taken this time to invest in learning Go Lang because it allowed me to bridge the gap between conceptual understanding and real-life application.

Resources
- Why learn go: https://www.youtube.com/watch?v=U2PpMZ7hWpg
- Go Fundamentals:
  https://www.youtube.com/watch?v=etSN4X_fCnM&list=PL4cUxeGkcC9gC88BEo9czgyS72A3doDeM
- Handling Amazon DynamoDB tasks with Go:
  https://www.youtube.com/watch?v=xLoWwQzlcZM&t=1550s