RESTful API Framework: Golang Proof of Concept

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The aim of this project was to develop a RESTful API framework using Go as its foundation. This framework would serve as a bridge to simplify accessing Capital One’s webservices.

The RESTful architecture focuses on providing a simple and uniform methodology of acquiring resources and services through the web.

- The client-server model shifts the focus from how the other side is handling the data to the data itself, reducing tasks for both sides.
- Communication is further streamlined through a stateless protocol. Each request from any client contains all the information necessary to service the request.
- The uniform interface simplifies and decouples the architecture, enabling each part to evolve independently.

Golang (Go) is an open source programming language developed by Google and other contributing members from the open source community. Go emerged as a premier language for systems development.

- Concurrency is built into the language, offering better flexibility and performance for complex applications
- Unit testing is integrated and simple to use
- Scalability is a main focus with multicore and multithreading support

Dependency Management

Through the integration of the GoDep library, the framework is now capable of consolidating external modules and packages to keep everything up to date. Snapshots are kept to make code redistribution even easier.

Aspect Oriented Programming

By wrapping customized functions into the existing logic, we were able to modify the behavior of the framework without directly modifying its code.

Versioning

Custom headers for HTTP requests were made to indicate which version of the resource or service was needed.

In a head-to-head comparison with the industry’s more popular languages, Go rivals its seasoned predecessors in both speed and efficiency.

Not only does Go have an edge in performance, but it is also convenient to use due its readability and writability. Why write an epic if all you need is a haiku?