

Architecture Decision Record: Go programming language

Title: Adoption of Go Programming Language

Status: Accepted

Context

Our organization has been primarily using Java programming language for building web applications. However, we have been experiencing some challenges due to Java's verbosity and the complexity of some frameworks. Also, our team has shown interest in exploring modern programming languages for more efficient and robust development. After conducting research, we have identified Go as a potential solution to the problems we face with Java.

Decision

We will adopt Go programming language for building web applications going forward.

Rationale

1. **Simplicity and readability:** Go is known for its simplicity and concise syntax. This makes it easy to read and write code, reducing the complexity of our development process.
2. **High-performance and scalability:** Go is compiled into machine code that runs natively on the server. This results in faster execution times and better performance compared to interpreted languages like Java. Additionally, Go's concurrency model handles multiple requests simultaneously, making it highly scalable.
3. **Strong community support:** Go has a vibrant community of developers who have contributed to its growth over the years. This means that there are plenty of resources, libraries, and frameworks to help us get started and build robust applications.
4. **Flexibility:** Go can be used for both frontend and backend development. This means that we can leverage its advantages in both areas for our development projects.

Implications

1. **Training:** Our developers will need to undergo training to learn the Go programming language and its nuances.
2. **Experience:** We may face some challenges as we transition from Java to Go. It may take some time for our developers to become proficient with the new language.
3. **Tooling:** We will need to adopt new tools and frameworks that are specific to Go. However, we can leverage existing infrastructure that we have in place to minimize the impact of this change.

4. **Vendor lock-in:** Go is an open-source programming language, and we will not be tied to any vendor or service provider.

Conclusion

The adoption of Go programming language will help us improve our development process and build robust applications. We will need to invest resources in training and tools to support this transition, but we believe that the benefits of this decision outweigh the costs.

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