



SDSU
presents
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GMCS 418

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Concurrent Programming Patterns for Scalable Network Platform Node.js

Abstract

The ever growing demand and usage of web applications is raising new challenges for the web servers to handle huge number of simultaneous requests. Scalability is one of the key features for a web server that enables the efficient handling of concurrent user requests, without impacting the user experience in terms of response time. The conventional programming languages that are based on multi-threading architecture are not able to fulfil the scalability demands and hence led to the development of highly scalable network platforms such as Node.js and GoLang. The purpose of this work is to study the architectures of Node.js, which is Event driven and GoLang, which is Actor based model. The study identifies the limitations of Node.js and presents the exclusive details of various control flow patterns like Promises, Async module, Event listeners and Callbacks, and their usage in improving Node.js limitations. Also, experiments are conducted to analyze the performance of Node.js and GoLang under load conditions for common web applications.

Thesis Committee

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