

An Introduction to Go

Fringe Presentation

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Abstract. Go is a new open-source programming language from a team of Google's developers. It provides a modern garbage-collected runtime that has particular support for concurrency. The pattern for this is based on Hoare's CSP, using channels for synchronisation and communication, and discouraging the direct sharing of variables. Processes are light-weight co-operative threads that the runtime time-slices onto underlying operating system threads; this allows an application's natural concurrency to be expressed as fully as needed by the natural concurrency of the application domain. The presentation provides an overview of Go's main features, covering in particular the unusual interfaces and duck-typing, the reflection and the concurrency. Focussing on concurrency in detail, as an example, a simple web-crawler application is converted step by step to operate concurrently, and at each stage this allows a particular feature of Go's concurrency to be demonstrated.

Keywords. concurrency, language, Go, CSP, light-weight

