‘Go’ faster with data driven Optimizations

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What is the talk about?

- Golang... obviously
- Why do we need to benchmark?
- Introduce some basic benchmarking tools
- Analyzing benchmarking data from call graphs

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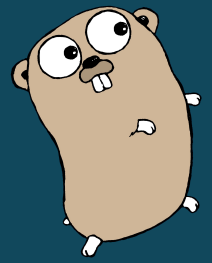
Let’s code !!!



- Let us look at simple in-memory KV store with Get and Put operations
  - Existing Implementation
    - Hmm, I think I can do better than that
  - Modified Implementation
    - Looks good
- How do you prove that the second implementation is better than the first?

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Benchmarking & Profiling to the rescue

- Go testing package helps in automated testing of code
- Functions of form BenchXXX are considered as benchmarks
- These could be run with “go test”
- More interestingly we could profile our code to identify bottlenecks. Yay!!!
- For our code, benchmarks look like this

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How to benchmark and generate call graph

- To run benchmarks and generate a binary and profile information:

```
go test -run=^$ -bench=. -cpuprofile=cpu.out
```

- To generate a call graph:

```
go tool pprof KVStore.test cpu.out
Entering interactive mode (type “help” for commands)
(pprof) web
```

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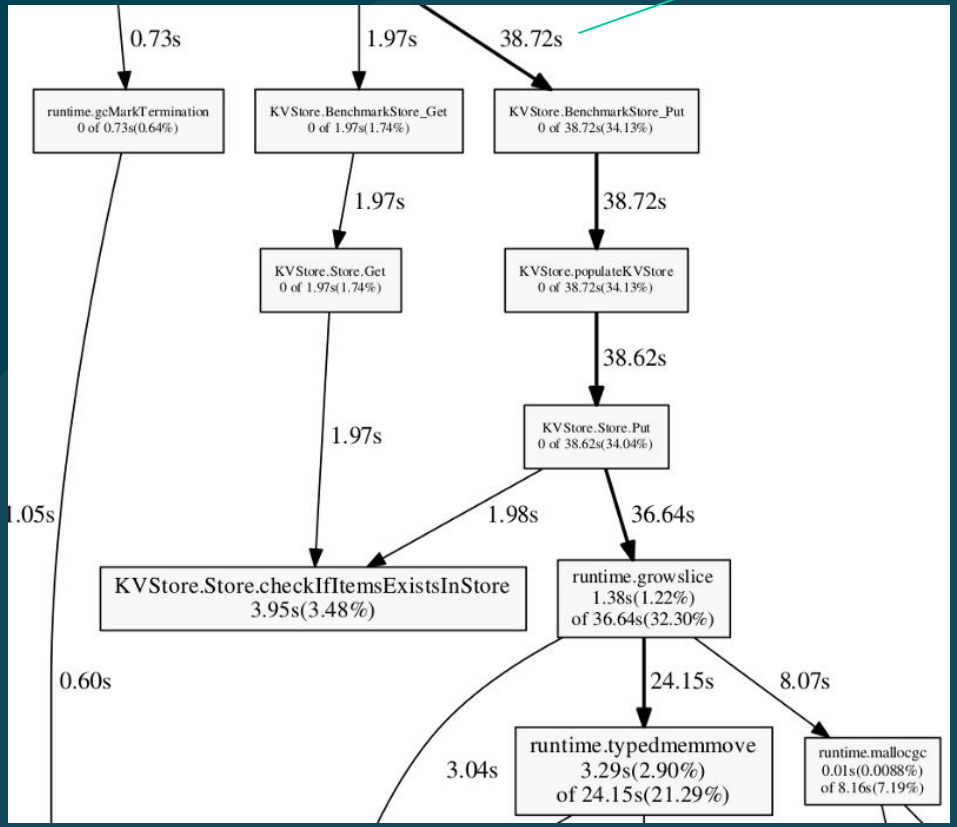
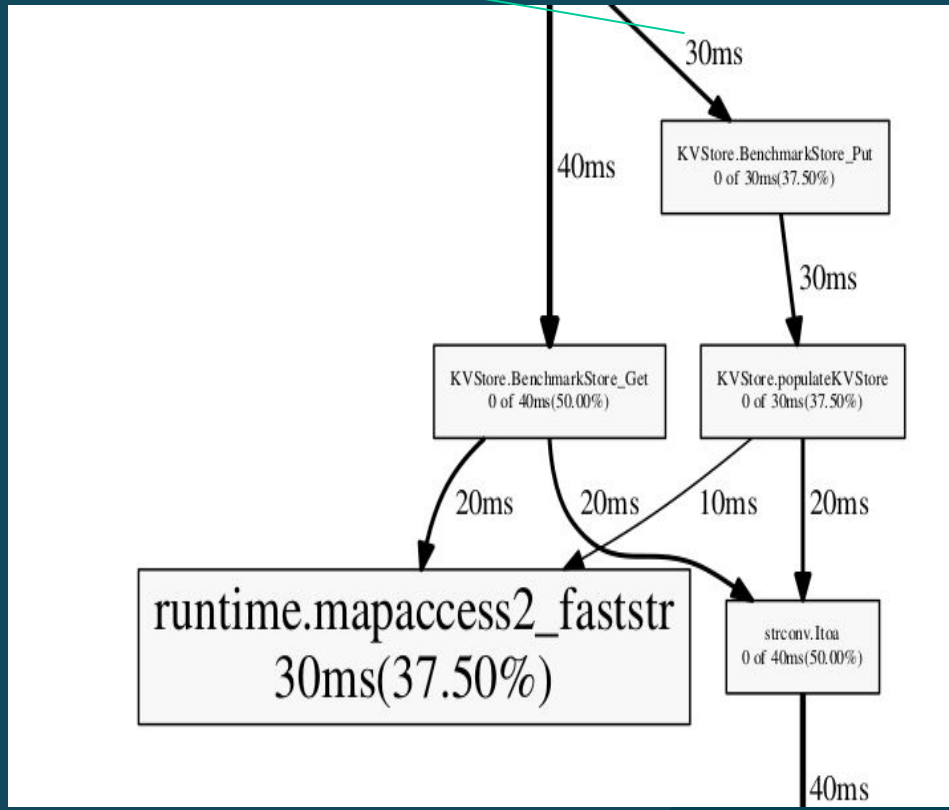
> 1000x improvement





Recap

- Why do we need to benchmark & profile?
- How to benchmark?
- How to analyze call graphs?

Warning:

“Lies, Damned Lies and Benchmarks” - Unknown

Links:

Blog post

https://github.com/ravisantoshgudimetla

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Profiling in Golang

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