

INTRODUCTION TO ELIXIR

JOSE VALIM

- José Valim was a core contributor to Rails
- Author of Devise, Simple Form and the "Crafting Rails 4 Applications" book.
- Created Elixir, a language on top of the Erlang VM.

“I was working on improving Rails performance when working with multi-core systems

The whole experience was quite frustrating as Ruby does not provide the proper tools for solving concurrency problems.

That’s when I started to look at other technologies and I eventually fell in love with the Erlang Virtual Machine.”

— José Valim

<http://www.sitepoint.com/an-interview-with-elixir-creator-jose-valim/>

SAMPLE APPLICATION

<https://github.com/andruby/rails-and-phoenix>

PHOENIX SAMPLE APP

- Elixir syntax is very similar to Ruby.
- Phoenix architecture and concepts are similar to Rails.
- Functional programming is awesome!
- Pattern matching is awesome!
- You will hate immutable data before you love it!

SIMILAR TO RAILS

`rails new --database=postgresql talks`

`mix phoenix.new talks`

`bin/rails generate scaffold Talk title presenter`

`mix phoenix.gen.html Talk talks title presenter`

`add /talks resource to web/router.ex`

`add sample data to db/seeds.rb`

`add sample data to priv/repo/seeds.exs`

`bin/rake db:setup`

`mix ecto.setup`

`bin/rails serve`

`mix phoenix.server`

FASTER THAN RAILS

```
RACK_ENV=production bin/rake db:setup
```

```
RACK_ENV=production bin/rake assets:precompile
```

```
RAILS_SERVE_STATIC_FILES=true RACK_ENV=production  
bundle exec puma -w 4
```

```
wrk -d 20s -c 20 http://localhost:9292/talks
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```
MIX_ENV=prod mix ecto.setup
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```
MIX_ENV=prod PORT=4001 elixir --detached -S mix  
phoenix.server
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```
Running 20s test @ http://localhost:9292/talks
```

```
2 threads and 20 connections
```

Thread Stats	Avg	Stdev	Max	+/-	Stdev
Latency	46.98ms	35.62ms	160.71ms	50.43%	
Req/Sec	223.57	123.59	430.00	62.25%	

```
8933 requests in 20.09s, 23.50MB read
```

```
Requests/sec: 444.58
```

```
Transfer/sec: 1.17MB
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Thread Stats	Avg	Stdev	Max	+/-	Stdev
Latency	8.18ms	2.50ms	25.10ms	69.38%	
Req/Sec	1.23k	54.44	1.38k	72.75%	

```
48891 requests in 20.04s, 190.43MB read
```

```
Requests/sec: 2440.13
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Transfer/sec: 9.50MB
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5.5x throughput

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Running 20s test @ <http://localhost:9292/talks>

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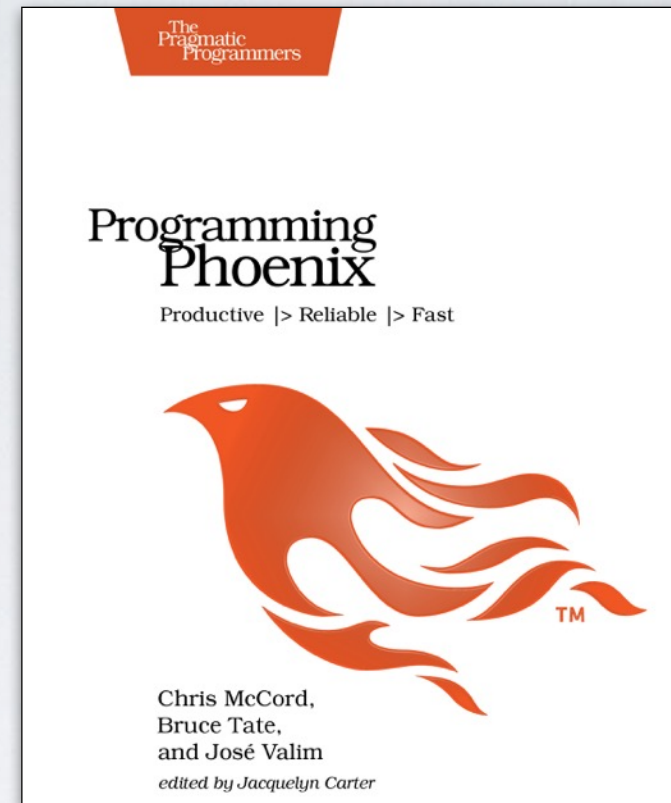
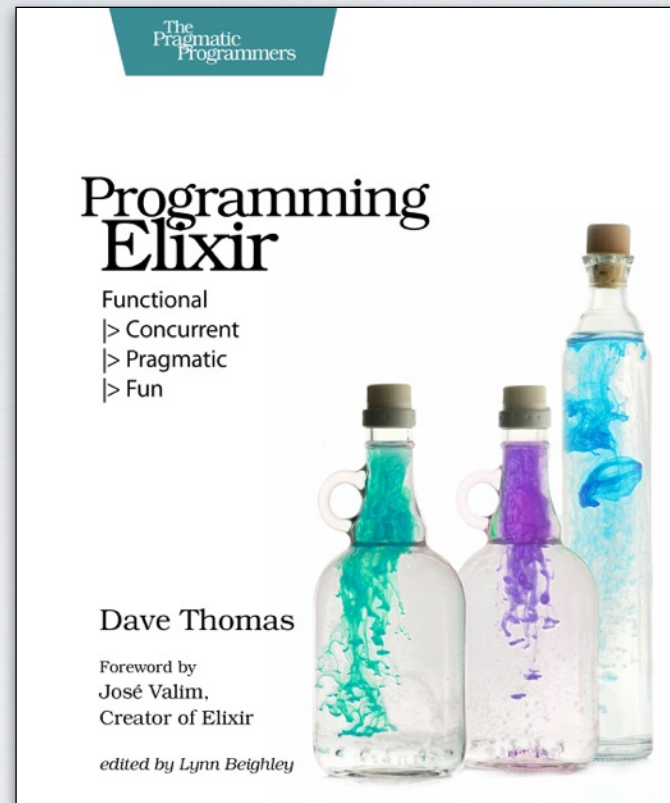
5.5x throughput, 5.7x faster latency

LET'S ADD CHAT

<http://192.168.1.21:4000/talks>

LET'S ADD WEBSOCKETS

- `mix phoenix.gen.channel Room rooms`
- uncomment channel in `user_socket.ex`
- uncomment javascript for joining the room
- add chat display and input html
- add chat javascript to send and receive messages
- handle messages in the phoenix channel and broadcast them back



Thanks

Bubble Post is hiring!

There is an Elixir DevSpace group:
meetup.com/devspace-elixir-study-group/