

# Lattice Core

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<https://github.com/drhuffman12/presentations/tree/master/lattice-core>

**IdeaBytes 2017**

# Lattice Core

## Realtime-first web framework

<https://github.com/drhuffman12/presentations/blob/master/lattice-core/>

LatticeCore.CardGame.mp4

The screenshot displays a web browser window showing a card game interface. The interface includes a header with the game name "mb\_summit\_2017" and a sidebar with statistics: Games: 1, Maximum Subs: 2, Empty Games: 0, Total Subs: 2, Total Events: 14499, and Users: 7266. The main area shows a chat log with messages from Rico and Morris, and a section for the game state, including "Cards Remaining in deck: 47". Below the chat, there is a "GameObserver (events from server's perspective)" section with a table of events.

In/Out	User	WebObject	DOM Target	Action
Out	[Se... CardGa...		["dom" => {"id" => "CardGame-3hrUjXJM-chatname", "attribute" => "value..."}]	
In	Mo... CardGa...	CardGame-3hr...		
Out	[Se... CardGa...		["dom" => {"id" => "ChatRoom-3d0Jqaze-chatname", "attribute" => "value..."}]	
Out	[Se... CardGa...		["dom" => {"id" => "ChatRoom-3d0Jqaze-items", "attribute" => "data-max-..."}]	
In	Mo... CardGa...	ChatRoom-3d0...		
In	Rico CardGa...	ChatRoom-3d0...	["value" => "hi"]	
In	Rico CardGa...	ChatRoom-3d0...	["value" => "hi"]	
Out	[S... CardGa...		["dom" => {"id" => "ChatRoom-3d0Jqaze-items", "value" => "<div class='..."}]	

Below the browser window, a terminal window shows network logs and a command prompt. The logs include a "connected.log" entry and a "Running in test" message. The command prompt shows the command "wrk -c 100 -t 100 -d 60 http://0.0.0.0:3000/cardgame/mb\_summit\_2017" and the output "Running in test @ http://0.0.0.0:3000/cardgame/mb\_summit\_2017".

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# Lattice Core

Realtime-first web framework  
Based on  
Crystal, Kemal, WebSockets,  
Baked File System, etc.

**Jason Landry**

<https://github.com/jasonl99>

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# Lattice Core

Realtime-first web framework

## Server-side:

- **Ruby-like** developer-friendly source code syntax
- **C-like speed**
- **Single compiled application binary**
- **Web assets bundled**
- **Browser session connected to server WebSocket**
- **Cross-platform (WIP)**

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Realtime-first web framework

## Client-side:

- Multiple **users**
- Multiple **content subscriptions** per user session
- **Sessions/WebSockets** tied to content subscribers
- All subscribers' content areas **dynamically updated**

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## Lattice Core

<https://github.com/jasonl99/lattice-core>

## Crystal-lang

<https://crystal-lang.org/>

## Kemal

<http://kemalcr.com/>

## Baked File System

[https://github.com/schovi/baked\\_file\\_system](https://github.com/schovi/baked_file_system)

## Card Game (Example Lattice Core App)

[https://github.com/jasonl99/card\\_game](https://github.com/jasonl99/card_game)

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# Lattice Core

Realtime-first web framework

## Install Git

<https://git-scm.com/>

## Install Crystal

<https://crystal-lang.org/docs/installation/index.html>

## Clone Card Game

`git clone https://github.com/jasonl99/card_game.git`

## Update dependencies

`shards update`

## Compile App

`crystal build --release src/card_game.cr`

## [Optional] Deploy only binary

```
mkdir -p ../elsewhere  
cp card_game ../elsewhere  
cd ../elsewhere  
# ... or to AWS or etc.
```

## Run server binary

`./card_game`

## Browse Web App

`http://0.0.0.0:3000/cardgame/<game_room>`

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## Realtime-first web framework

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The screenshot displays a web browser window showing a card game interface. The interface includes a hand of five cards (Ace of Hearts, King of Hearts, 3 of Spades, 10 of Spades, 4 of Hearts) and a chat log with messages from Rico and Morris. A sidebar shows game statistics: Games: 1, Maximum Subs: 2, Empty Games: 0, Total Subs: 2, Total Events: 14499, Users: 7266. Below the chat, a 'GameObserver' section shows events from the server's perspective, including user actions and game state changes.

The terminal window at the bottom shows network logs and a command prompt. The logs include a 'connected.log' entry and a 'Running in test' message. The command prompt shows the following commands and output:

```
0 Mar 7 00:40 connected.log
2017-03-07.00:40:dhuffman@dhuffman-MacBookPro:~/summit_2017/github/jason199/elsewhere/B:
$ wrk -c 100 -t 100 -d 60 http://0.0.0.0:3000/cardgame/mb_summit_2017
Running in test @ http://0.0.0.0:3000/cardgame/mb_summit_2017
100 threads and 100 connections
```

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# Lattice Core

Realtime-first web framework

Therefore, I think we should take a deeper look at new technologies that are **developer friendly** and **highly performant** like **Lattice-core**, **Kemal**, **Crystal**, and **WebSockets**, so that we can keep our **developers productive** and our **customers' experience zippy**.

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