Chess Corp

⋯ a brief history of web development

Yannick Kirschhoffer

@kirschhoffer

alcibiade@alcibiade.org

Genesis : Online Chess Club

- Limited interactivity
- PHP 4
- Static files backends
- CVS on SourceForge
- Single developer

MKGI Chess Club - chess.mkgi.net

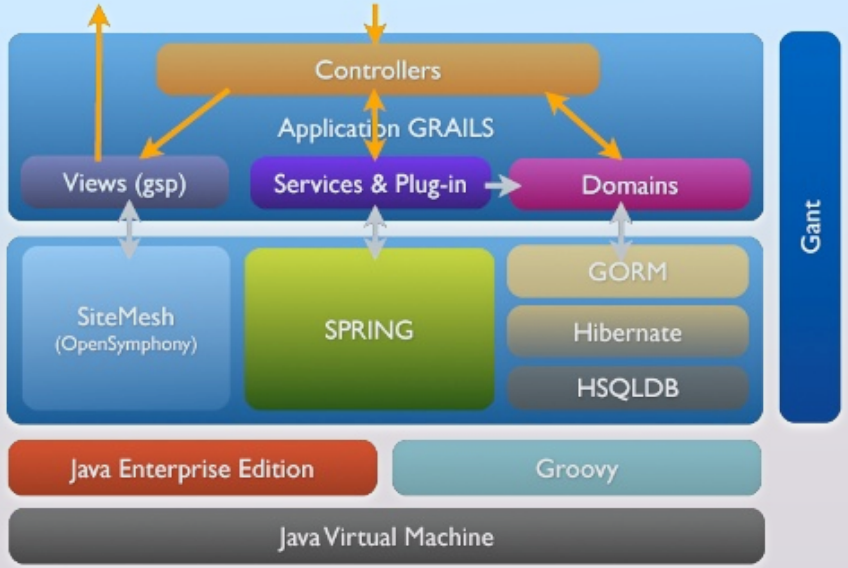
- Fork of « Online Chess Club »
- PHP/MySQL implementation
- Lots of server-side rendering
- Progressive implementation of AJAX and dynamic HTML
- Rules in PHP – Server only
- Since 2005 :
  - 3.000 players
  - 52.000 games
  - 3.700.000 moves

2010 : GWT Implementation

- Pros :
  - Java as a global development platform
  - GWT provides seamless client/server integration
  - Spring used for integration on server-side
- Abandonned because :
  - Compilation and debug
  - Adressability
- But :
  - Java implementation of Chess rules published as a standalone library on Maven central : (org.alcibiade : chess : 1.4.3)
  - Project used as a foundation for customer projects

2014 : Grails

- Pros :
  - Can mix Java and Groovy
  - Uses Spring features so, we are always on friendly shores
  - Scaffolding features
  - Large number of plugins
- Abandonned because :
  - Plugins abstraction is painful when you want direct access to Spring/Java features
  - Spring Data / Spring Boot arrived
  - Upgrades were really painful
  - Rules were again server-only
- But :
  - A nice ChessBoard JS implementation (JQuery plugin) was produced and could be re-used



2015 : Chess Corp

- Switch from SourceForge to GitHub
  - https://github.com/ChessCorp/
- Address both Web and Native targets
- Modularization – Pluggable project architecture :
  - 1 rules module per target architecture :
    - 1 module in Java (backend + Android)
    - 1 module in JavaScript (browser, Node GUI or backend, Swift in the near future?)
  - Standalone UI components
  - Client applications
  - Club Server(s)
  - Assets
- Modules assembled provide a complete online chess club

The ChessCorp Ecosystem

github.com/ChessCorp

chess-rules
npm: chess-rules
bower: chess-rules

Implementation of Chess rules and PGN serialization.

chess-ai-random
npm: chess-ai-random

Basic Chess IA for testing purposes.

chess-cli
npm: chess-cli

Set of command line utilities built for Node.

chess-board
bower: chess-board

Chess Board Web Component

chess-history
bower: chess-history

Interactive history table Web Component

chess-assets

Future:

More AIs

More UI Web Components

JavaScript Module

Java Module

Media Module

Alcibiade Chess
maven: org.alcibiade:chess:jar

Implementation of Chess rules and PGN serialization.

Chess Club
maven: org.chesscorp:chess-club:jar

Complete chess club web application released as an autoexecutable Jar with embedded HTTP server.

Server architecture

- Spring boot
  - API build with Spring Controllers
  - Stateless controllers : Session is persisted in database for authentication purposes only
- Spring Data Repositories
  - Currently JPA
  - De-coupling entities to allow transition to heterogenous backends
  - No string queries
- Java 8 :
  - Use of streams and improved Date/Time (required hacking dependencies to use Hibernate 5)
- Asynchrounous tasks triggerred thru a message bus (initially activemq as embedded broker)
- Server is distributed as standalone jar which includes all UI/Backend/H2

Spring Boot Tip 1 : Ascii Art !

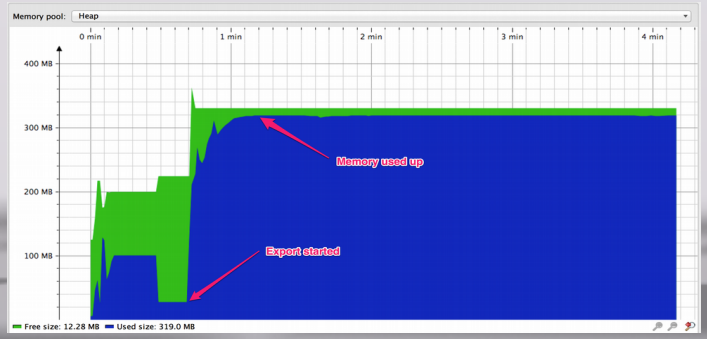
- Ascii banner can be customized :
  - Add banner.txt in the classpath :
    - A funky design in src/main/resources
    - An empty file in src/test/resources
  - Banners may be dynamic (if filtered by maven resources plugin) : use @project.version@ or any other build property

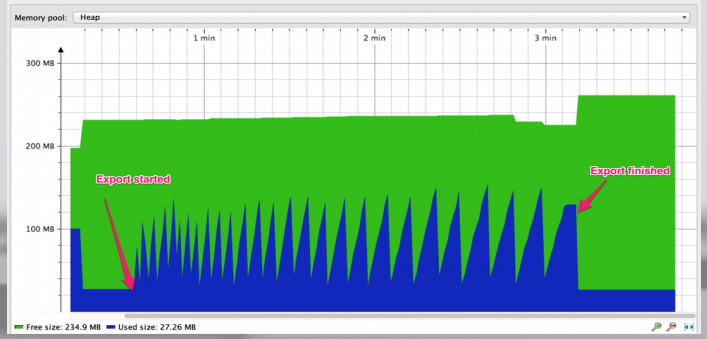
Spring Boot Tip 2 : Swagger easy setup

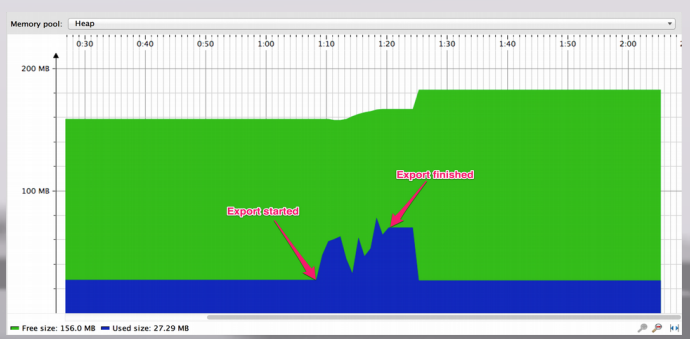
- Achieved by Using SwingFox
- Dynamic introspection of controllers
- Generates Swagger compliant descrption

Tip 3 : Spring Data & Streams

- Repositories can return streams :
  - Efficient on large data sets
  - Start processing while loading
  - No risk of memory overflow

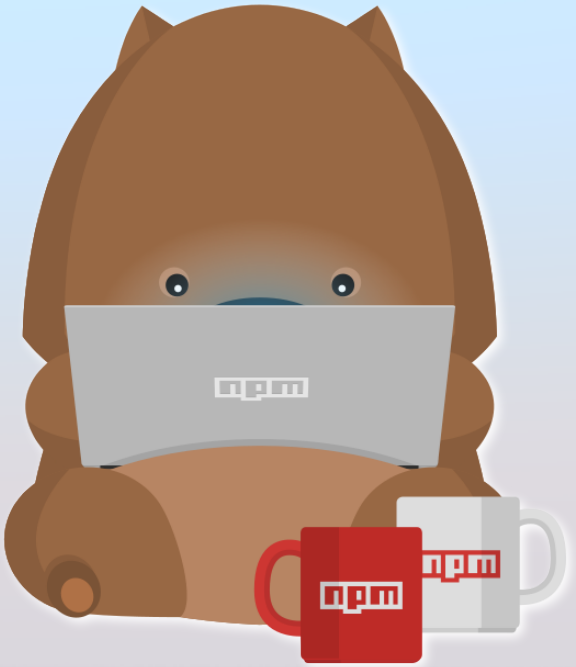






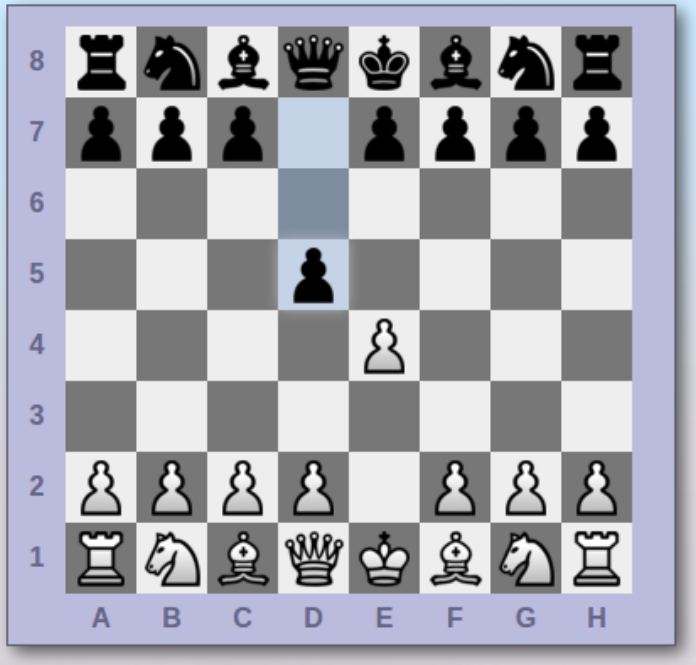
Pre-requisite : chess-rules

- Library provides :
  - Position model
  - Available Moves
  - Move object to/from PGN
  - Calculate move impacts
- Distributed on Npm and Bower



Initial Component : <chess-board />

- Initially developed as Jquery plugin
  - Interface is JavaScript API
- Easily migrated to Polymer
  - Interface is DOM attributes and events



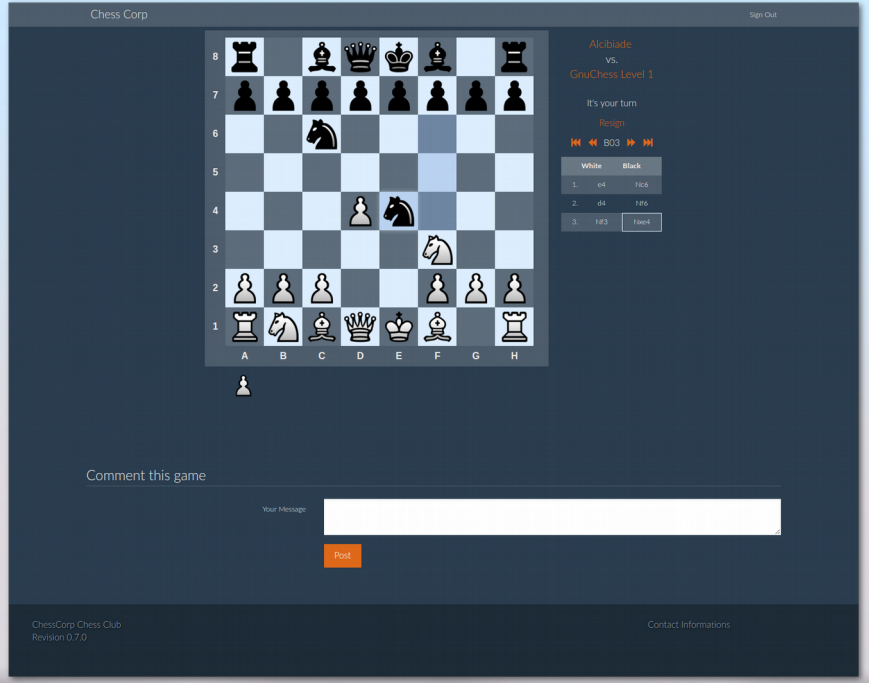
Integration POC : chess-sample-ui

- Try a simple integration of chess-rules, chess-board and chess-ai-random
- Assess the level of external binding

Club UI v1 : Material Design

- Based on a Yeoman scaffolding template
- Whole UI build on the Polymer elements catalog
- Many embedded elements

Club User Interface Version 2 : Bootstrap



- Integration of a Bootstrap CSS
- Dynamic scripts are not available (modals, dropdowns, …) because JQuery can’t be called from the shadow DOM