

Open Source Frameworks (OSF)

Introduction

Master of Science in Engineering (MSE)

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MASTER OF SCIENCE
IN ENGINEERING

Agenda

- Objectives
- Organization & content
- Project theme : gamification
- Evaluation
- Planning

Introduction

14h30 - 15h00

Java EE

15h00 - 15h45

Group work

15h45 ~

Objectives

- Get an overview of the Java Enterprise Edition (**Java EE**) platform.
 - Understand the **core concepts**, **technologies** and **related frameworks**.
-
- Explore **emerging javascript frameworks**, both on the server and client sides.
 - **Identify the distinctive features** of selected frameworks. Be able to **explain** these features and why they are **relevant** in a given context.
 - **Apply the frameworks and build a system**. Validate and **demonstrate** the previously described distinctive features.



Code. A lot.

Organization

Lectures

Java EE overview
Web Services
Spring Framework
Java Message Service

Project

Design
Implementation
Validation
Documentation

Presentations

Domain model
REST API layer
Persistence layer
UI layer

The Gamification Project



What is Gamification?

“Gamification is the use of game-thinking and game mechanics in a non-game context in order to engage users and solve problems.

Gamification is used in applications and processes to improve user engagement, ROI, data quality, timeliness, and learning.”

Examples



433 Reputation

top 44% this month

- +25 Chat application using jms spring and activemq queue
- +5 Is there a way to integrate the S3's ACL with my own user reposi...
- 2 What is dependency injection?
- +5 What version of ember.js should I use for my project?

[view more](#)

foursquare 18

Mat's Badges

These are all the badges you've unlocked. We've listed them in the order in which you've unlocked them (newest first).



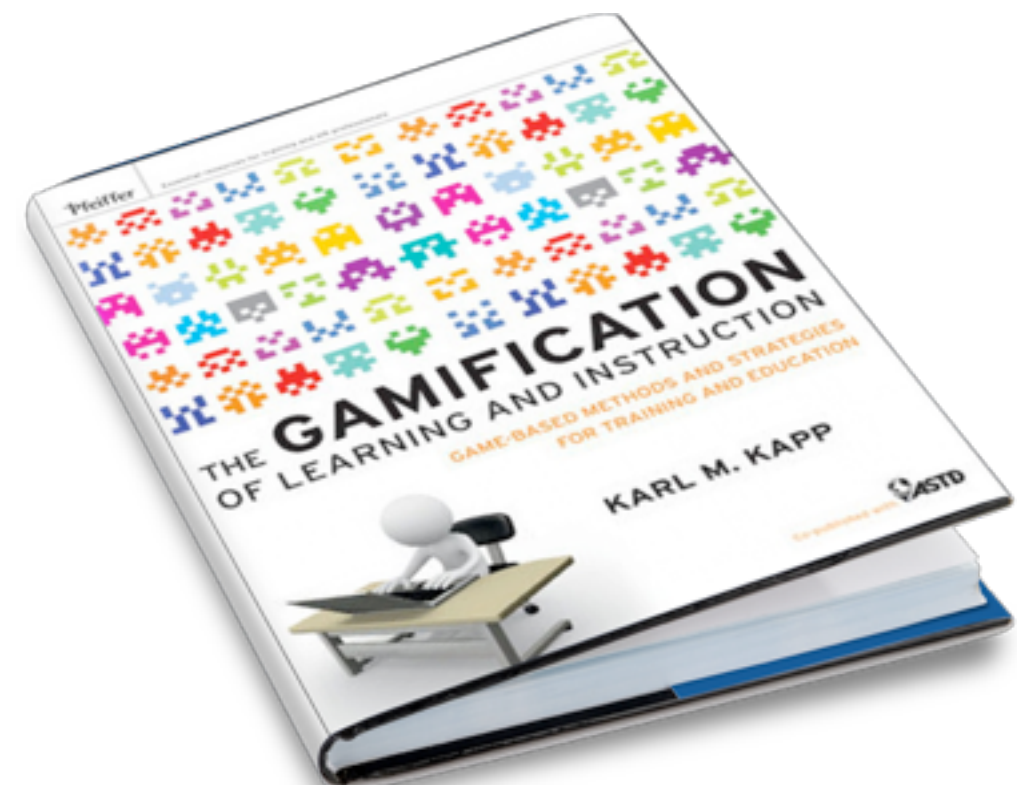
London Calling
February 14, 2012



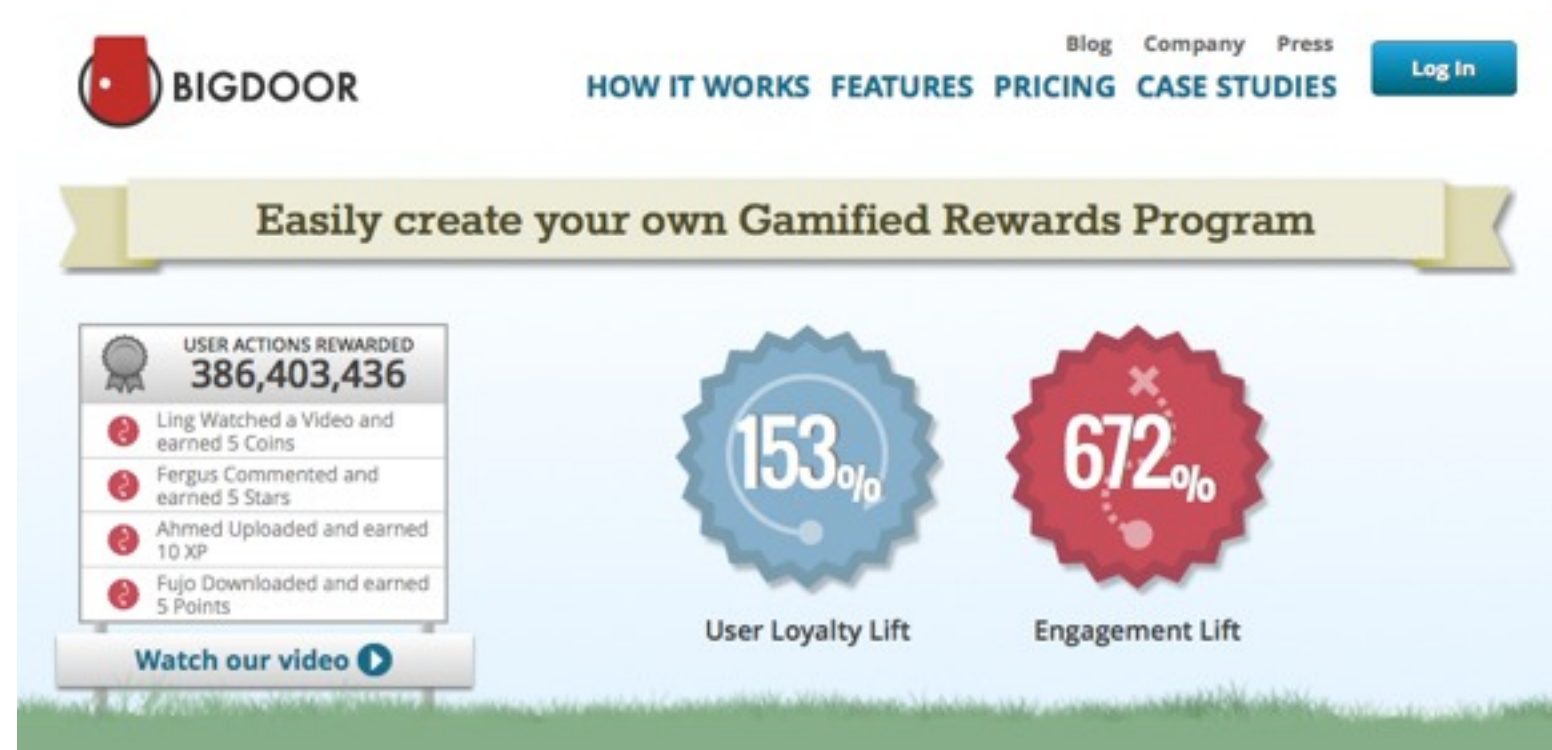
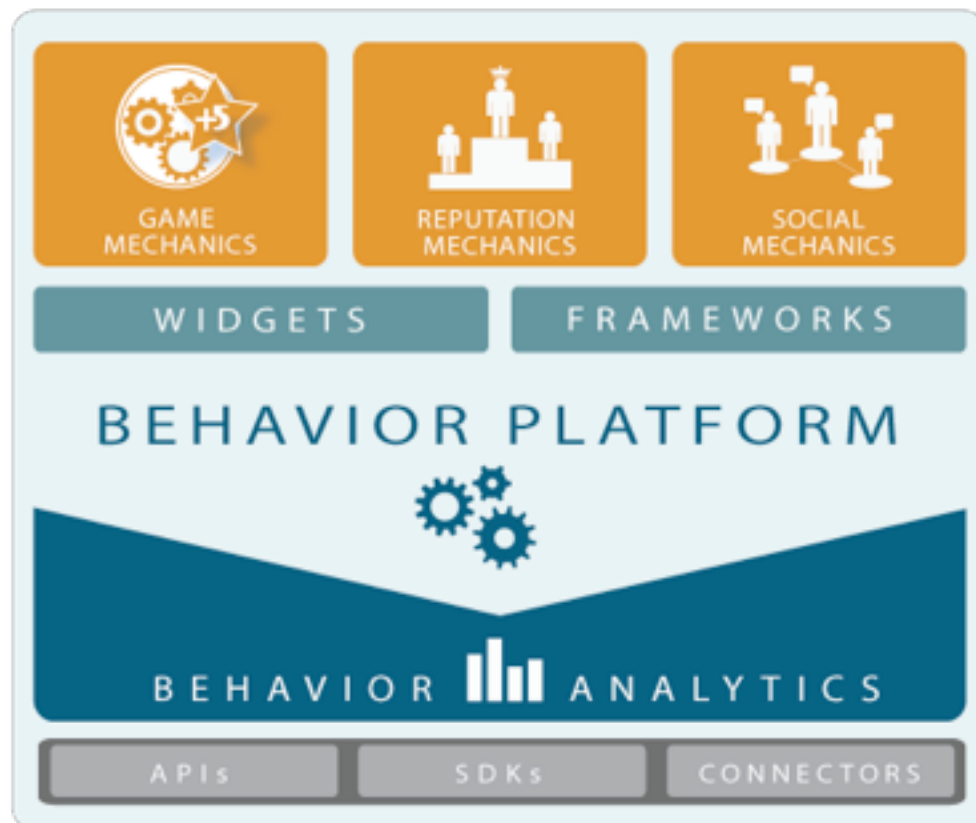
Fresh Brew
January 11, 2012



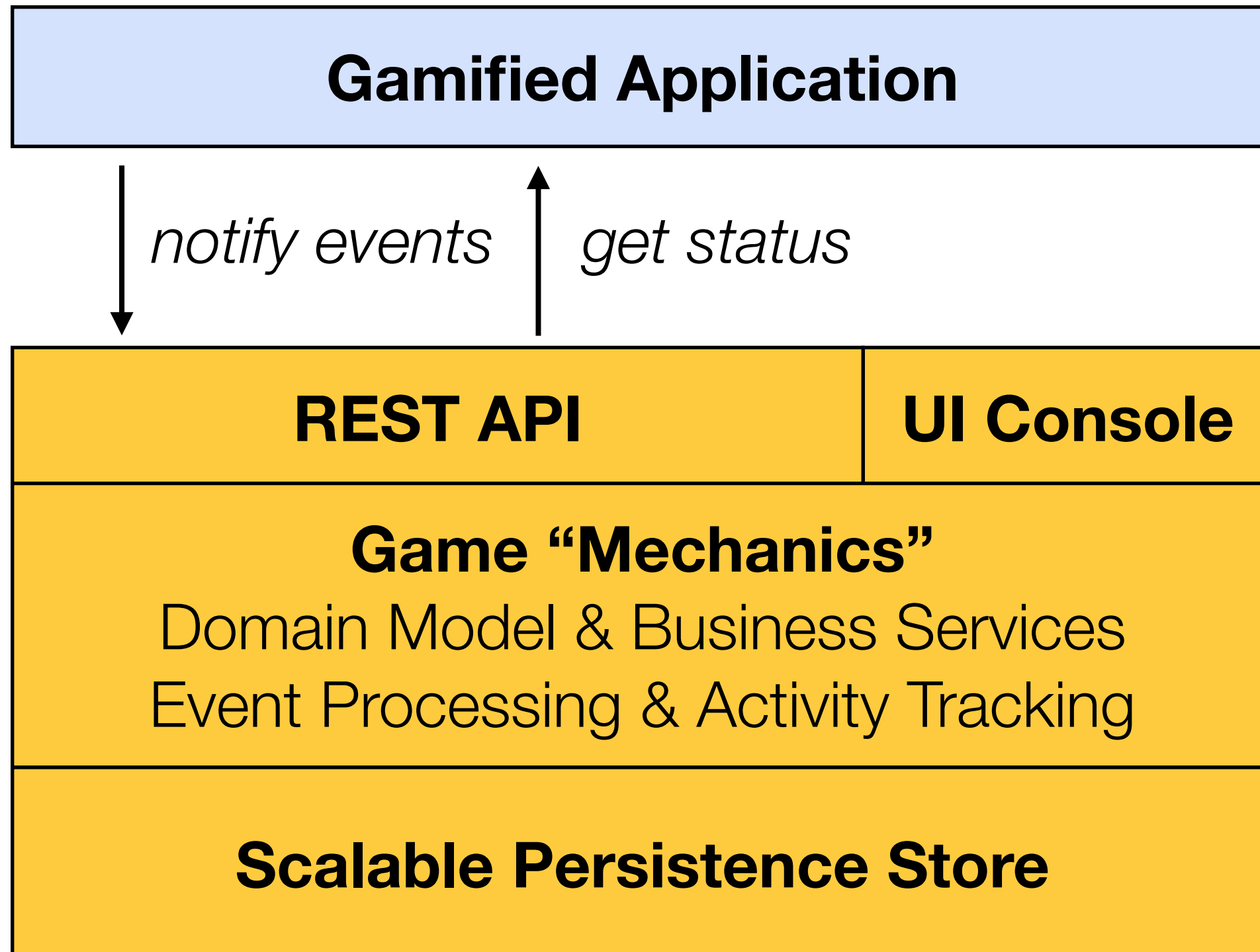
Swarm
October 27, 2011



Gamification Platforms



What is a Gamification Platform?



Your Mission

- **Do some research on gamification**

- Lots of books, articles, videos. Invest time in searching for this information and get inspirations for your work. Do it during the whole semester, and not only at the beginning.
- Share your findings & thoughts (keep references and write summaries, integrate insights in your presentations!!)

- **Design and implement an open source gamification platform**

- Define a set of game mechanics that will be supported.
- Design the REST API that will be used to interact with your platform.
- Design and implement a UI Console to present captured activity and game mechanics, and to manage configuration.

- **Implementation constraints**

- Javascript frameworks will be used in the back-end and in the front-end.
- NoSQL solutions will be used for the persistence layer.

Your Team

The Front-End Expert

The Devops Expert

The API Expert

The Persistence Expert

- Every team member must do tutorials & readings across all architecture tiers (exam!)
- The expert will focus on advanced features and project implementation from day one.
- You need to coordinate tightly and to have regular exchange of information. Everybody must be aware of the overall system.

Evaluation

- **Project (40%)**
 - **Depth** (How much have you studied the framework and grasped the details?)
 - **Breadth** (How many features have you implemented? Did you take care of details and is the result nice and polished?)
 - **Validation** (How have you validated key technical questions? What kind of automated tests have you integrated in your project?)
 - **Packaging** (How easy is it to run and test your project, after a check-out from Github?)
 - **Presentation & documentation** (Did you present key concepts clearly? Did you convince that you have acquired an expertise in the framework that you have used?)
- **Exam (oral, 15 minutes): 60%**
 - You must be able to answer detailed questions about your project (not only the part you have worked on!)
 - You must be able to compare the frameworks your team has used with the frameworks of other teams (every student presentation is exam material! interact with the presenters and take notes!)

Planning

Date	Java EE Frameworks	Gamification Project
20.02.13	Overview + Business Tier (EJB)	Group formation + domain model analysis
27.02.13	Web Services (JAX-RS / JAX-WS)	10' presentation of the domain model + review
06.03.13	Design of the gamification REST API / project setup on Github	
13.03.13	15' presentation of the REST API + 15' discussion / documentation on Github	
20.03.13	Intro to javascript / node.js frameworks	node.js + express.js tutorial
27.03.13	Spring Framework	Implementation of the REST API
03.04.13	<i>Eastern Break</i>	<i>Eastern Break</i>
10.04.13	Persistence Tier (JPA)	NoSQL tutorial + relevance to the project
17.04.13	Project implementation	
24.04.13	Message Oriented Middleware (JMS)	Project implementation
01.05.13	20' presentation of your NoSQL back-end and its role in your project	
08.05.13	Presentation Tier (MVC / Frameworks)	javascript framework tutorial
15.05.13	Project implementation	
22.05.13	Project implementation	
29.05.13	Final Presentations & Demos (30')	

Team 1

Names

bootstrap

ember.js

express.js

node.js

CouchDB | CouchBase

1.

2.

3.

4.

5.

Team 2

Names

bootstrap

meteor.js

express.js

meteor.js

node.js

mongodb

1.

2.

3.

4.

5.

Team 3

Names

bootstrap

socket.io

backbone.js

restify.js

node.js

redis

1.

2.

3.

4.

5.

Team 4

Names

bootstrap

derby.js

derby.js

node.js

mongodb

1.

2.

3.

4.

5.

Team 5

Names

bootstrap

angular.js

restify.js

node.js

riak

1.

2.

3.

4.

5.

Homework for Next Week

- Do initial research on **Gamification**
 - Keep track of your references (articles, books, products, videos, etc.)
 - Come up with a set of “game mechanics”
- Use this research to create a **domain model**. Identify candidate business objects (that are likely to become resources in your REST API) and services.
- To document your model, use a combination of **diagrams** and **textual descriptions**.
- Prepare a **10’ presentation** to describe your domain model. Be ready to be challenged and to challenge the proposals of other groups.