Master Lab Course Web Applications:
Exercise 1 – Technologies

Team 4

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Agenda

akka

jQuery UI

mongoDB

Live demo

akka

- Toolkit for building highly **concurrent** applications
- Allows easy **distribution** and decentralization
- **Event-driven** development model
- No worrying about threads and locks
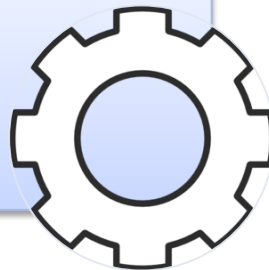- Targeting **JVM** (Java and Scala)

Latest version: 2.0.3
License: Apache v2

akka

Actors

- Akka uses **actors** to achieve concurrency
- An actor is a lightweight **concurrent entity**
- Perform **asynchronous** event-driven message processing

Supervision

- Actors can spawn child actors → **hierarchy**
- Failures are handled by the parent actor (**supervisor**)
- Parents can **restart** or **stop** the child or **escalate** the failure up the hierarchy

jQuery UI

- JavaScript library supporting the creation of web user interfaces

- Depends on **jQuery**

- Contains standard **components** like:

Interactions
• drag and drop,
• sorting, …

Effects
• hide,
• show,
• toggle, …
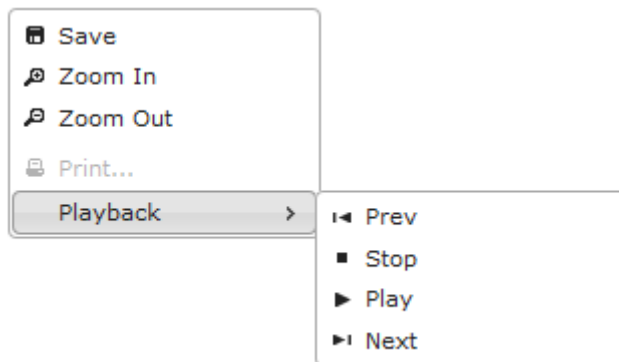
Widgets
• datepicker,
• menu,
• tabs, …

Latest version: 1.9.1
License: MIT, GPL v2

jQuery UI

- Widgets can be **themed**
- Definition of one common theme for all used widgets
- Uses the "**id**" attribute of HTML elements
- Examples (new in v1.9):

Menu

Tooltip

mongoDB

- **Document-oriented** database
- Part of the **NoSQL** Database family
- Stores data in documents with **dynamic** schemas
- Documents are structured in the **BSON** format (similar to **JSON**)
- Focus on high **performance** (no joins, indexing, etc.)
- High availability through **replication**

Latest version: 2.2.1
License: GNU AGPL v3

mongoDB

- **Scalability** is easily achieved by automatic **sharding**
  - Auto-partitioning of data across servers
  - Reads and writes are distributed over shards

- **Queries** allow search by **field**, **range** queries, **regular expression** and can contain **JavaScript** code

- **Drivers** exist for many programming languages (e.g. C, C++, Java, JS, C#, Perl, PHP, Python, Ruby, Scala,

Live demo

Sample web app that
integrates the three technologies

QUESTIONS

References

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