
PLEASE STAND BY

OK lets start, who am I ?

Nayden Gochev

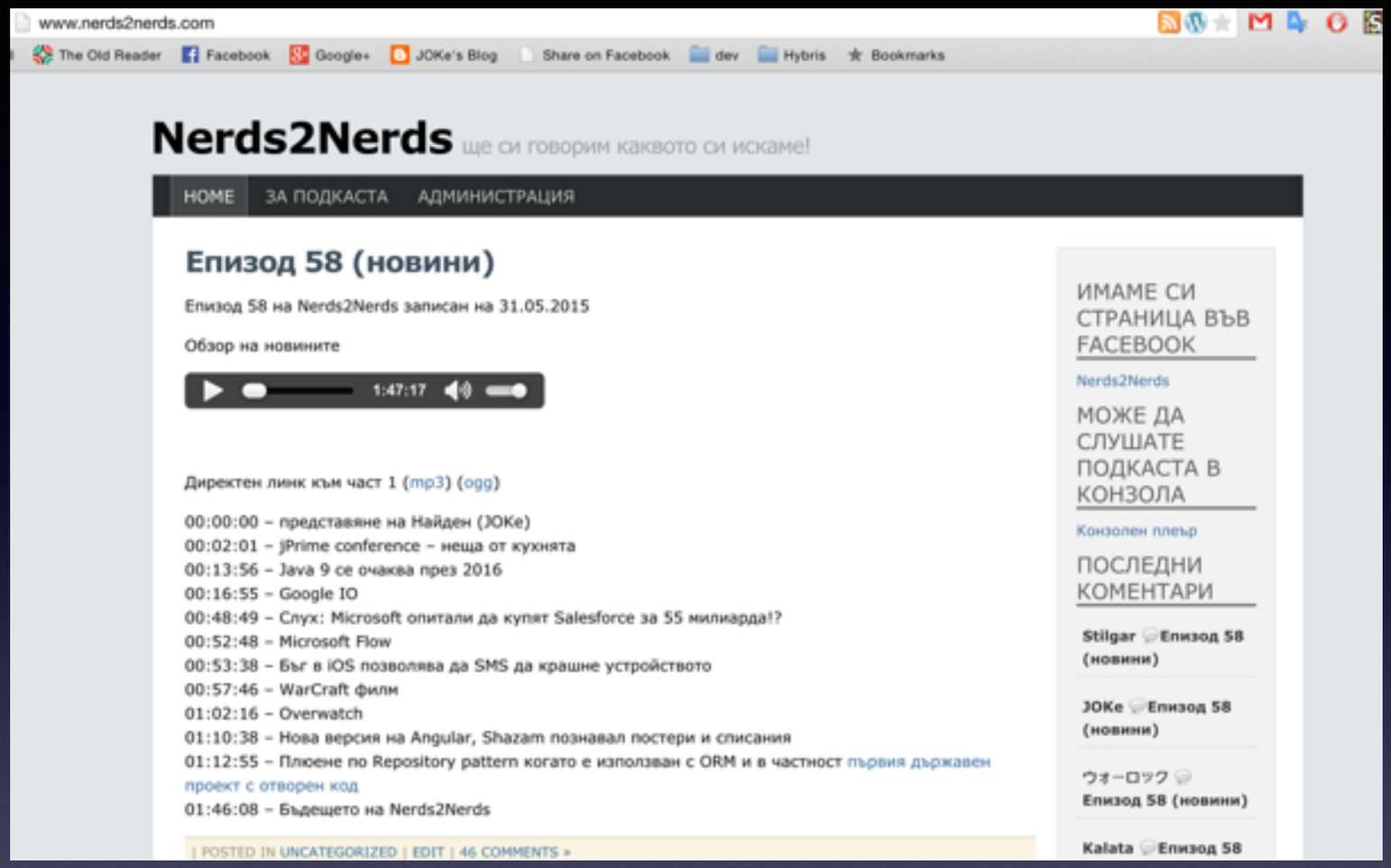
(a.k.a. JOKe)

nerds2nerds description about Nayden

“Java програмист, който държи да не го наричат софтуерен инженер.
Мрази генериран код и вълшебници (за генериране на код) защото е мазохист
и обича да пише всичко на ръка. Слаб е на всякакви игри, но не се отказва да ги играе.
Говори по конференции и преподава в разни академии където обикновено
примерите му тръгват. Не обича Microsoft и кирилицата.
Спорно е кое мрази повече, но вероятно тази омраза идва от 90те години
и продукта FlexType, който създава повече проблеми отколкото решава.
За известно време пише на .NOT (това е версия на .NET разработена от
Microsoft специално за да дразни Найден), но светлините и ефектите
му идват в повече.
Личният му блог може да намерите на http://gochev.org “

nerds2nerds.com

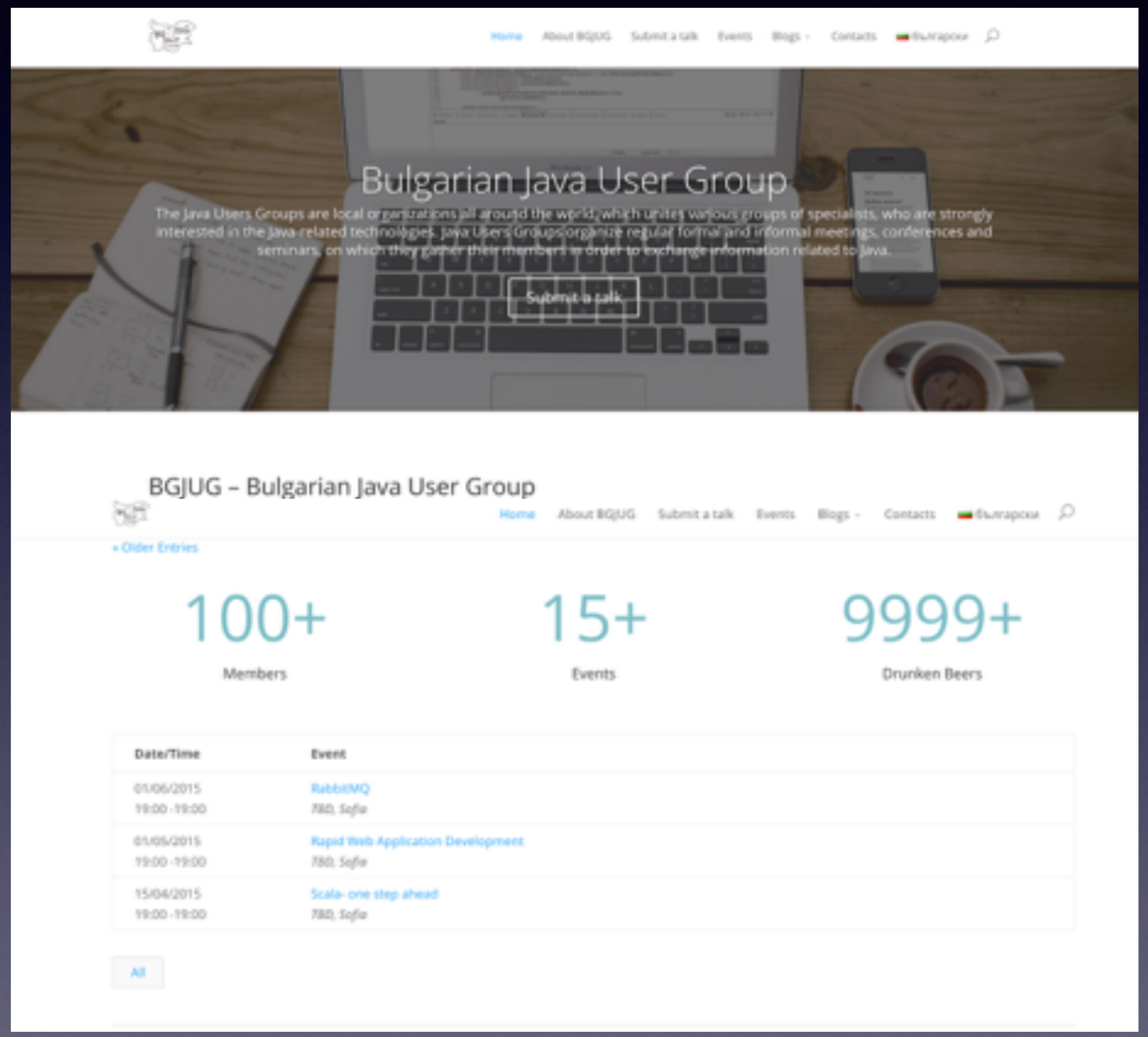
Nerds2Nerds

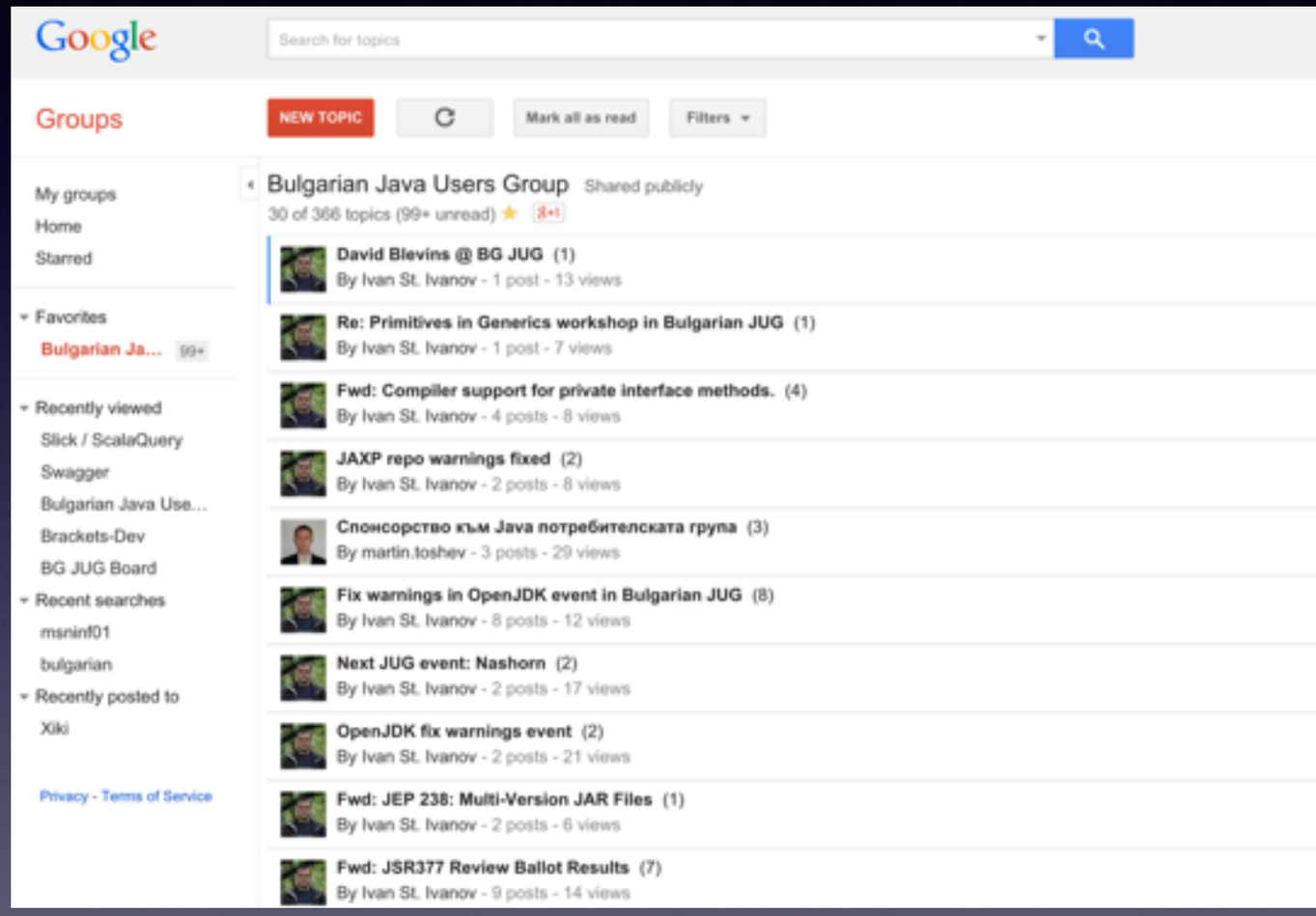


http://nerds2nerds.com

Bulgarian Java User Group

http://java-bg.org





http://groups.google.com/group/bg-jug/

Introduction to Spring and Spring MVC

What is MVC?

but… before that
What is Servlet ?

Servlet

- Version 1.0 was released in 1997 (version 3.1 is released in 2013 as part of Java EE 7)
- A Java servlet is a Java programming language program that extends the capabilities of a server.

Servlet(example)

```
import java.io.IOException;

import javax.servlet.ServletConfig;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

@WebServlet("/ServletLifeCycleExample")
public class ServletLifeCycleExample extends HttpServlet {

    @Override
    public void init(ServletConfig config) throws ServletException {
        super.init(config);
        getServletContext().log("init() called");
    }

    @Override
    protected void service(HttpServletRequest request,
                           HttpServletResponse response)
            throws ServletException, IOException {
        getServletContext().log("service() called");
        response.getWriter().write("Hello world !");
    }

    @Override
    public void destroy() {
```

Demo

OK… what is JSP?

JSP

- JavaServer Pages (JSP) is a technology that helps software developers create dynamically generated web pages based on HTML, XML, or other document types
- Released in 1999

JSP(example)

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html;
charset=UTF-8">
<title>Insert title here</title>
</head>
<body>
    <p>Counting to three:</p>
    <% for (int i=1; i<4; i++) { %>
    <p>
        This number is
        <%= i %>.
    </p>
    <% } %>

    <p>OK.</p>
</body>
</html>
```

Demo

But this is.. hell of an ugly …php like ?!?

Don't panic !
JSTL will save the day

JSTL

- The JavaServer Pages Standard Tag Library (JSTL) is a component of the Java EE Web application development platform.
- It extends the JSP specification by adding a tag library of JSP tags for common tasks such as conditional execution, loops and internationalization.
- Version 1.0 was released in 2002, but major usage started with version 1.2 in 2006

JSP with JSTL(example)

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Insert title here</title>
</head>
<body>
    <p>Counting to three:</p>
    <c:forEach begin="1" end="3" var="i">
        <p>
            This number is ${i}
        </p>
    </c:forEach>

    <p>OK.</p>
</body>
</html>
```

Demo

OK now … MVC ? I think it’s time !
but before that… Model 1 for Web development

Design Models

- Before developing the web applications, we need to have idea about design models. There are two types of programming models (design models)

Model 1

- Servlet and JSP are the main technologies to develop the web applications.

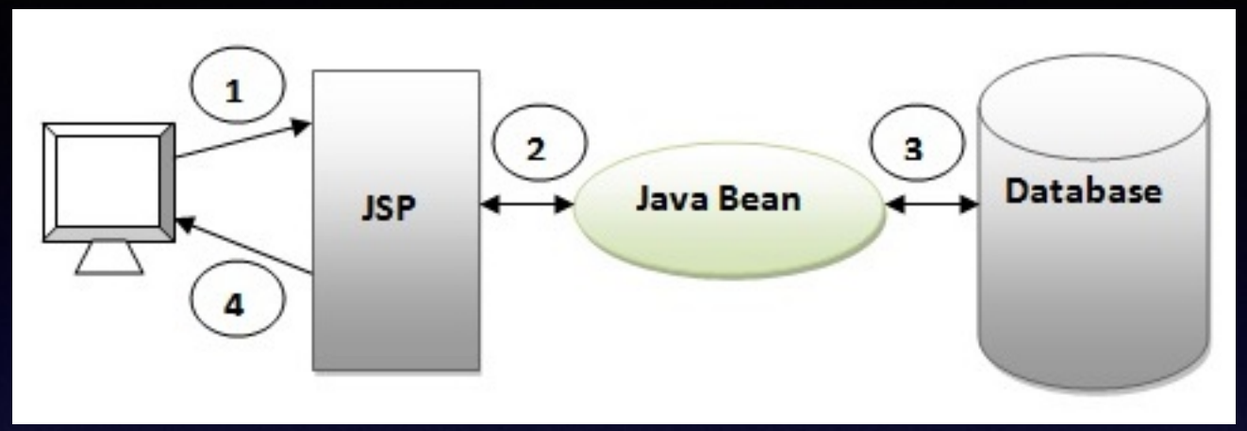
- Servlet was considered superior to CGI. Servlet technology doesn't create process, rather it creates thread to handle request

- Problem in Servlet technology :
  Servlet needs to recompile if any designing code is modified.
  It doesn't provide separation of concern.
  Presentation and Business logic are mixed up.

Model 1

- JSP overcomes almost all the problems of Servlet. It provides better separation of concern, now presentation and business logic can be easily separated.
- You don't need to redeploy the application if JSP page is modified.
- JSP provides support to develop web application using JavaBean, custom tags and JSTL

Model 1



- Browser sends request for the JSP page
- JSP accesses Java Bean and invokes business logic
- Java Bean connects to the database and get/save data
- Response is sent to the browser which is generated by JSP

Model 1

Pros :

- Easy and Quick to develop web application

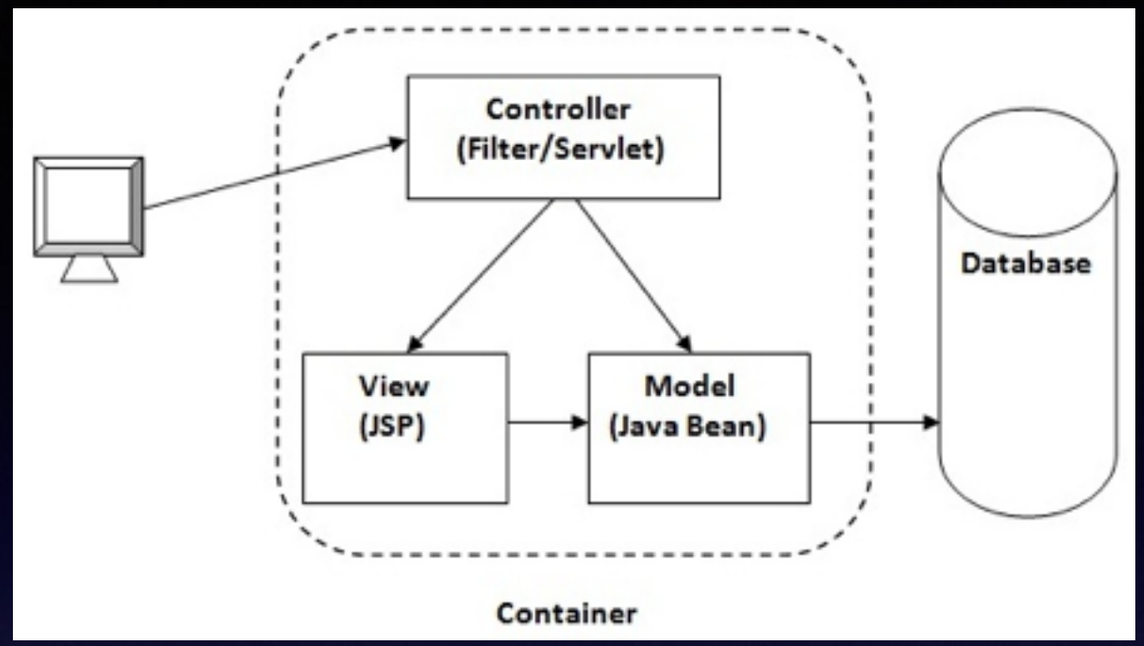
Cons:

- Navigation control is decentralized since every page contains the logic to determine the next page.
  If JSP page name is changed that is referred by other pages, we need to change it in all the pages that leads to the maintenance problem.
- Time consuming sometime :
  You need to spend more time to develop custom tags in JSP. So that we don't need to use scriptlet tag.
- Hard to extend It is better for small applications but not for large applications

Model 2 (MVC)

- Model 2 is based on the MVC (Model View Controller) design pattern.
- Model–view–controller (MVC) is the software architectural pattern for implementing user interfaces.
- The pattern is not NEW !
- Trygve Reenskaug introduced MVC into Smalltalk-76 while visiting Xerox Parc in the 1970s.
- In the 1980s, Jim Althoff and others implemented a version of MVC for the Smalltalk-80

Model 2 (MVC)



- Model - The model represents the state (data) and business logic of the application.
- View - The view module is responsible to display data i.e. it represents the presentation.
- Controller The controller module acts as an interface between view and model.
  It intercepts all the requests i.e. receives input and commands to Model / View to change accordingly.

Model 2

Pros :

- Navigation control is centralized
  Now only controller contains the logic to determine the next page.
- Easy to maintain
- Easy to extend
- Easy to test
- Better separation of concerns

Cons:

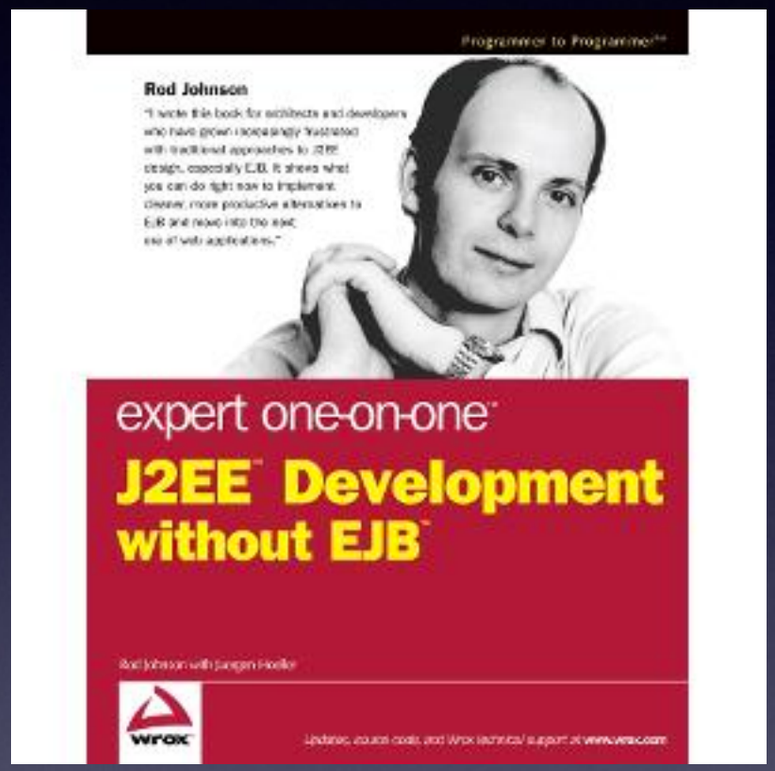
- We need to write the controller code self.
  If we change the controller code,
  we need to recompile the class and redeploy the application.

Demo

OK.. now .. Spring MVC but before that… wtf is Spring ?

In 2002 this book was released (by Rob Johnson) :

In 2004 this book was released (with contribution of Jürgen Höller) :



Spring history

- The first version was written by Rod Johnson and based on examples in the book from 2002.
- The framework was first released under the Apache 2.0 license in June 2003.
- The first milestone release, 1.0, was released in March 2004.

Spring

- Central to the Spring Framework is its inversion of control (IoC) container,
  which provides a consistent means of configuring
  and managing Java objects using reflection.
- The container is responsible for managing
  object lifecycles of specific objects:
  creating these objects, calling their initialization methods, and configuring these objects by wiring them together.
- Objects created by the container are also called managed objects beans.

Spring (example)

Spring MVC (example)

Contacts

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