

# EISTI 2008-2009 – TD/TP de Java EE – Séance 5

## Architecture MVC et JavaBeans

### 1 : Amélioration de l'application *transport* (séance4)

Cf. cours

### 2 : Comparaison des approches de partage de Beans

#### 1.1 : Request

##### **Bean :**

```
package coreservlets;
public class NumberBean {
    private double num = 0;
    public NumberBean(double number) {
        setNumber(number);
    }
    public double getNumber() {
        return(num);
    }
    public void setNumber(double number) {
        num = number;
    }
}
```

##### **Servlet :**

```
public class RandomNumberServlet extends HttpServlet {
    public void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        NumberBean bean =
            RanUtils.getRandomNum(request.getParameter("range"));
        request.setAttribute("randomNum", bean);
        String address = "/WEB-INF/mvc-sharing/RandomNum.jsp";
        RequestDispatcher dispatcher =
            request.getRequestDispatcher(address);
        dispatcher.forward(request, response);
    }
}
```

### **Business logic :**

```
public class RanUtils {
    public static NumberBean getRandomNum(String rangeString) {
        double range;
        try {
            range = Double.parseDouble(rangeString);
        } catch (Exception e) {
            range = 10.0;
        }
        return(new NumberBean(Math.random() * range));
    }
}
```

### **web.xml :**

```
...
<servlet>
    <servlet-name>RandomNumberServlet</servlet-name>
    <servlet-class>
        coreservlets.RandomNumberServlet
    </servlet-class>
</servlet>
<servlet-mapping>
    <servlet-name>RandomNumberServlet</servlet-name>
    <url-pattern>/random-number</url-pattern>
</servlet-mapping>
...
```

### **Formulaire :**

```
...
<fieldset>
    <legend>Random Number</legend>
    <form action="/random-number">
        Range: <input type="text" name="range"><br/>
        <input type="submit" value="Show Number">
    </form>
</fieldset>
...
```

### **JSP 1.2 :**

```
...
<BODY>
<jsp:useBean id="randomNum"
    type="coreservlets.NumberBean"
    scope="request" />
```

```
<H2>Random Number:
<jsp:getProperty name="randomNum"
    property="number" />
</H2>
</BODY></HTML>
```

### **JSP 2.0 :**

```
...
<BODY>
<H2>Random Number: ${randomNum.number}</H2>
</BODY></HTML>
```

## **1.2 : Session**

### **Bean :**

```
public class NameBean implements Serializable {
    private String firstName = "Missing first name";
    private String lastName = "Missing last name";

    public NameBean(String firstName, String lastName) {
        setFirstName(firstName);
        setLastName(lastName);
    }

    public String getFirstName() {
        return(firstName);
    }

    public void setFirstName(String firstName) {
        if (!isMissing(firstName)) {
            this.firstName = firstName;
        }
    }

    ... // getLastName, setLastName

    private boolean isMissing(String value) {
        return((value == null) || (value.trim().equals("")));
    }
}
```

## ***Servlet :***

```
public class RegistrationServlet extends HttpServlet {
    public void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        HttpSession session = request.getSession();
        NameBean nameBean =
            (NameBean)session.getAttribute("nameBean");
        if (nameBean == null) {
            String firstName = request.getParameter("firstName");
            String lastName = request.getParameter("lastName");
            nameBean = new NameBean(firstName, lastName);
            session.setAttribute("nameBean", nameBean);
        }
        String address = "/WEB-INF/mvc-sharing/ShowName.jsp";
        RequestDispatcher dispatcher =
            request.getRequestDispatcher(address);
        dispatcher.forward(request, response);
    }
}
```

## ***JSP 1.2 :***

```
...
<BODY>
<H1>Thanks for Registering</H1>
<jsp:useBean id="nameBean"
    type="coreservlets.NameBean"
    scope="session" />
<H2>First Name:
<jsp:getProperty name="nameBean"
    property="firstName" /></H2>
<H2>Last Name:
<jsp:getProperty name="nameBean"
    property="lastName" /></H2>
</BODY></HTML>
```

## ***JSP 2.0 :***

```
...
<BODY>
<H1>Thanks for Registering</H1>
<H2>First Name: ${nameBean.firstName}</H2>
<H2>Last Name: ${nameBean.lastName}</H2>
</BODY></HTML>
```

## 1.3 : ServletContext

### **Bean :**

```
package coreservlets;
import java.math.BigInteger;

public class PrimeBean {
    private BigInteger prime;

    public PrimeBean(String lengthString) {
        int length = 150;
        try {
            length = Integer.parseInt(lengthString);
        } catch (NumberFormatException nfe) {}
        setPrime(Primes.nextPrime(Primes.random(length)));
    }

    public BigInteger getPrime() {
        return(prime);
    }
    ...
}
```

### **Servlet :**

```
public class PrimeServlet extends HttpServlet {
    public void doGet(HttpServletRequest request,
        HttpServletResponse response)
        throws ServletException, IOException {
        String length = request.getParameter("primeLength");
        ServletContext context = getServletContext();
        synchronized(this) {
            if ((context.getAttribute("primeBean") == null) ||
                (length != null)) {
                PrimeBean primeBean = new PrimeBean(length);
                context.setAttribute("primeBean", primeBean);
            }
            String address =
                "/WEB-INF/mvc-sharing/ShowPrime.jsp";
            RequestDispatcher dispatcher =
                request.getRequestDispatcher(address);
            dispatcher.forward(request, response);
        }
    }
}
```

### **JSP 1.2 :**

...

```
<BODY>
<H1>A Prime Number</H1>
<jsp:useBean id="primeBean"
    type="coreservlets.PrimeBean"
    scope="application" />
<jsp:getProperty name="primeBean"
    property="prime" />
</BODY></HTML>
```

### **JSP 2.0 :**

...

```
<BODY>
<H1>A Prime Number</H1>
${primeBean.prime}
</BODY></HTML>
```