

TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN  
KHOA CÔNG NGHỆ THÔNG TIN

# MVC 2 & APACHE TILES

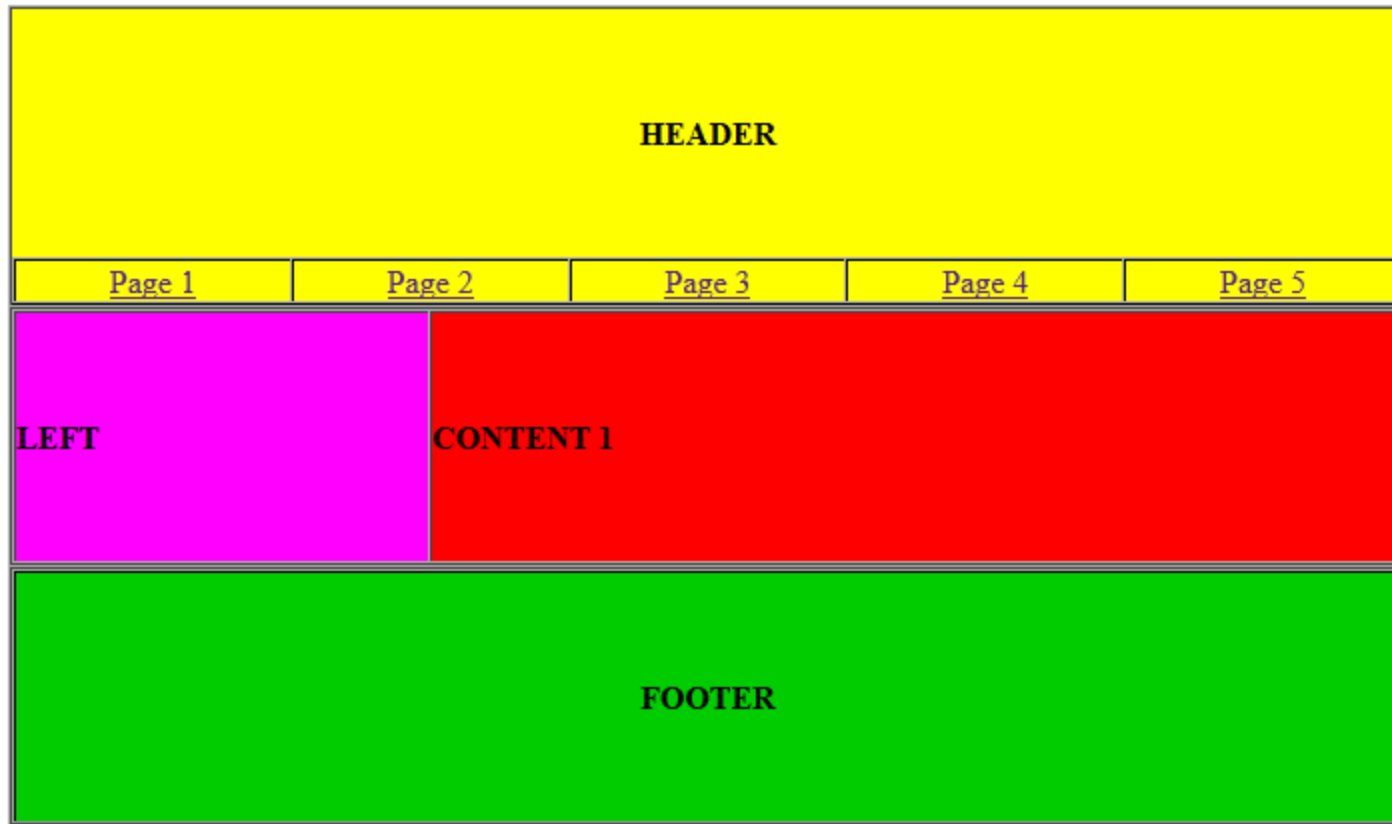
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# Nội dung trình bày

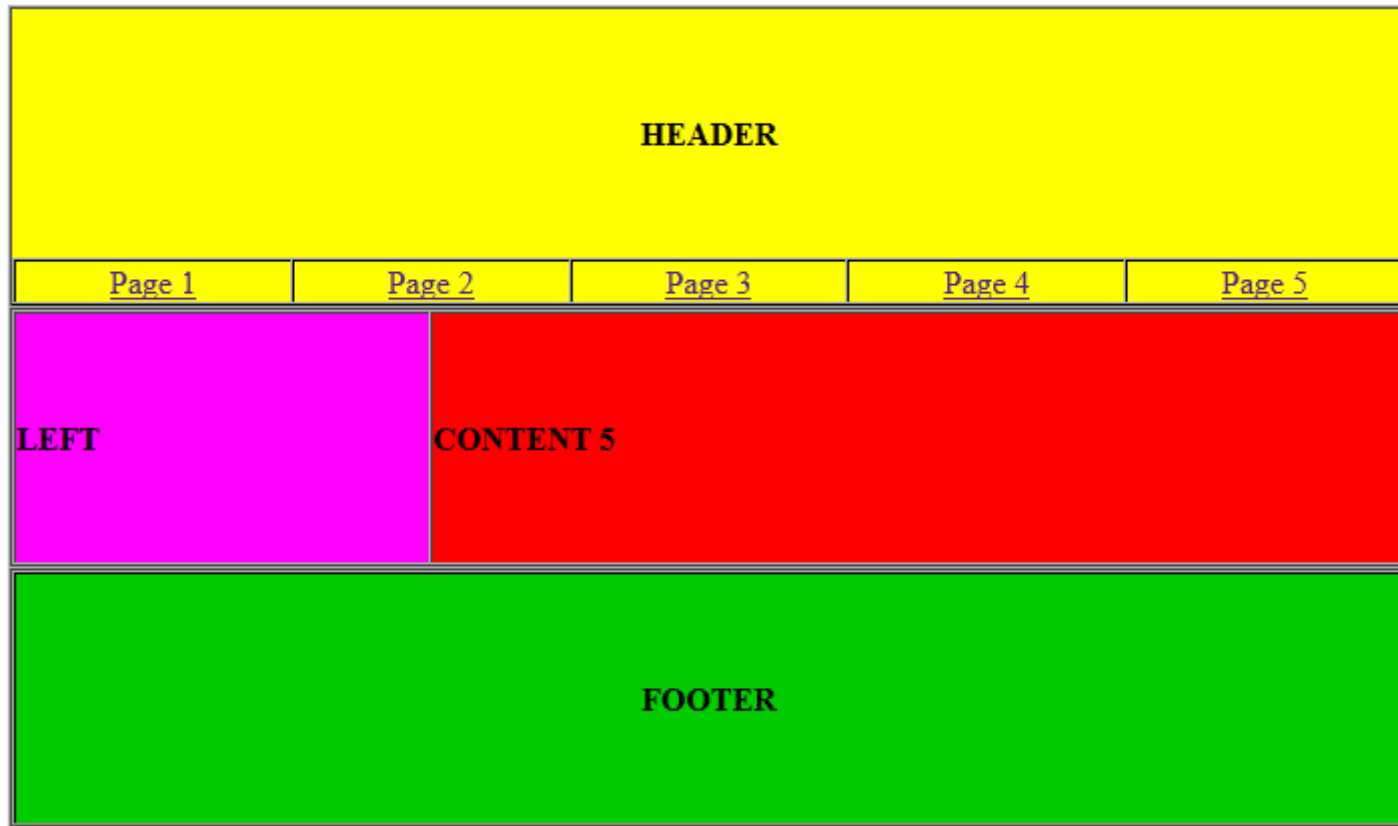
- **Simple Master Page**
- **Apache Tiles**

# SIMPLE MASTER PAGE

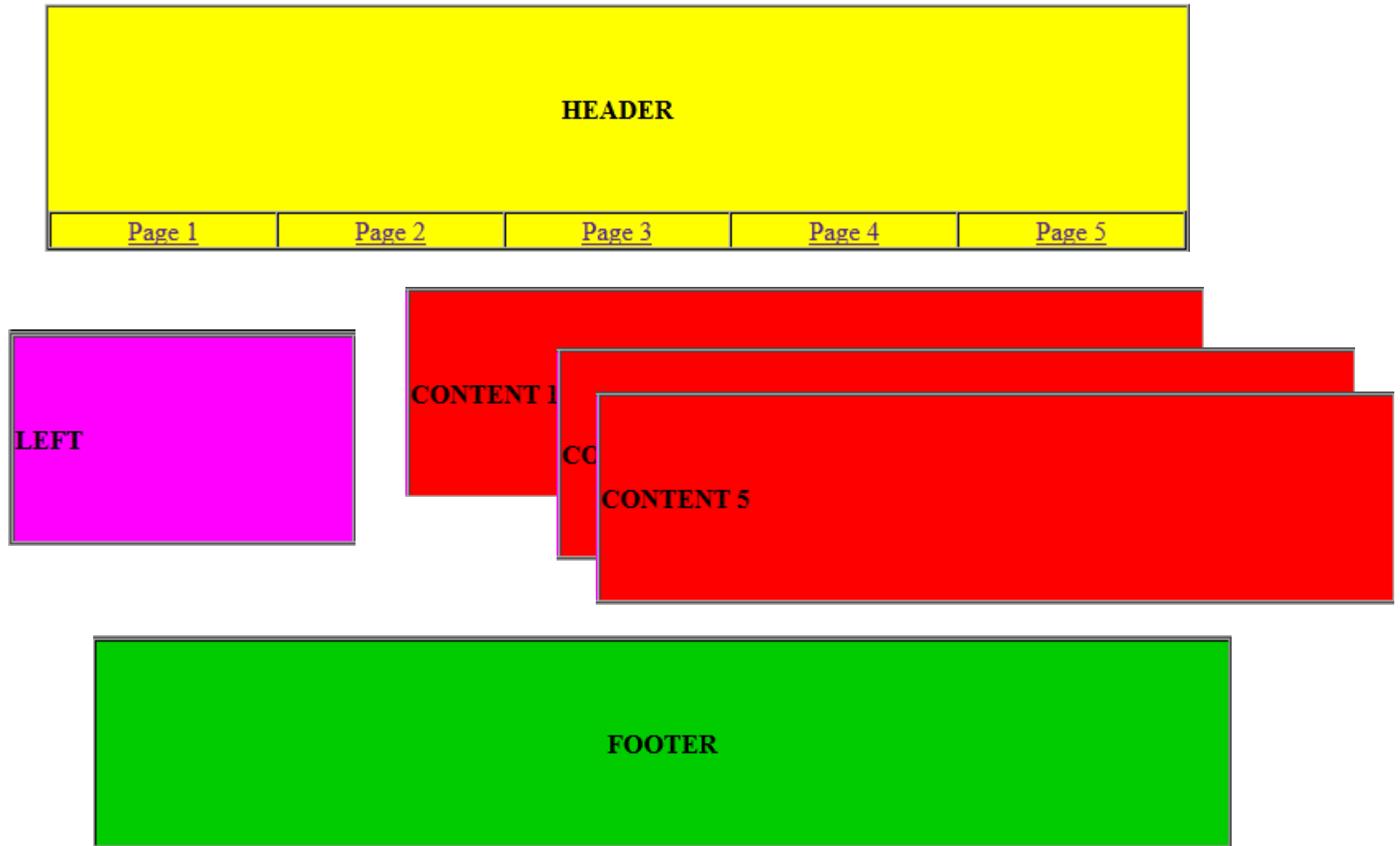
# Master Page



# Master Page



# Master Page



# Master Page

Header.jsp

Left.jsp

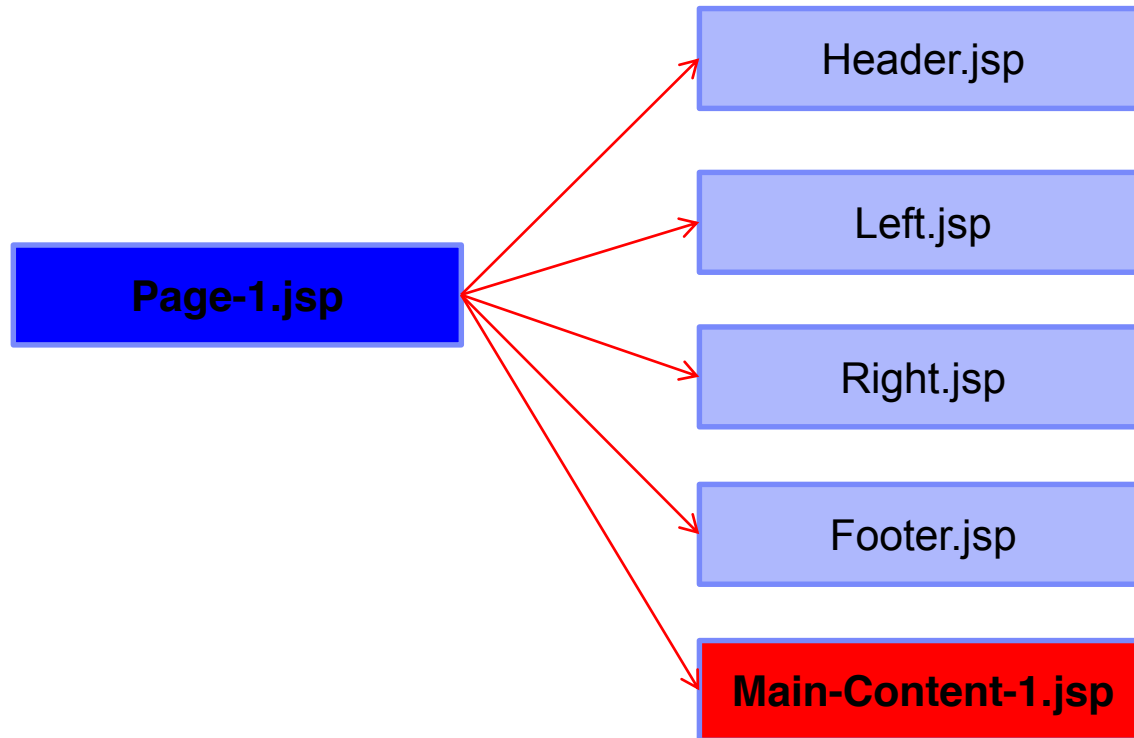
Right.jsp

Footer.jsp

**Main-Content-1.jsp**

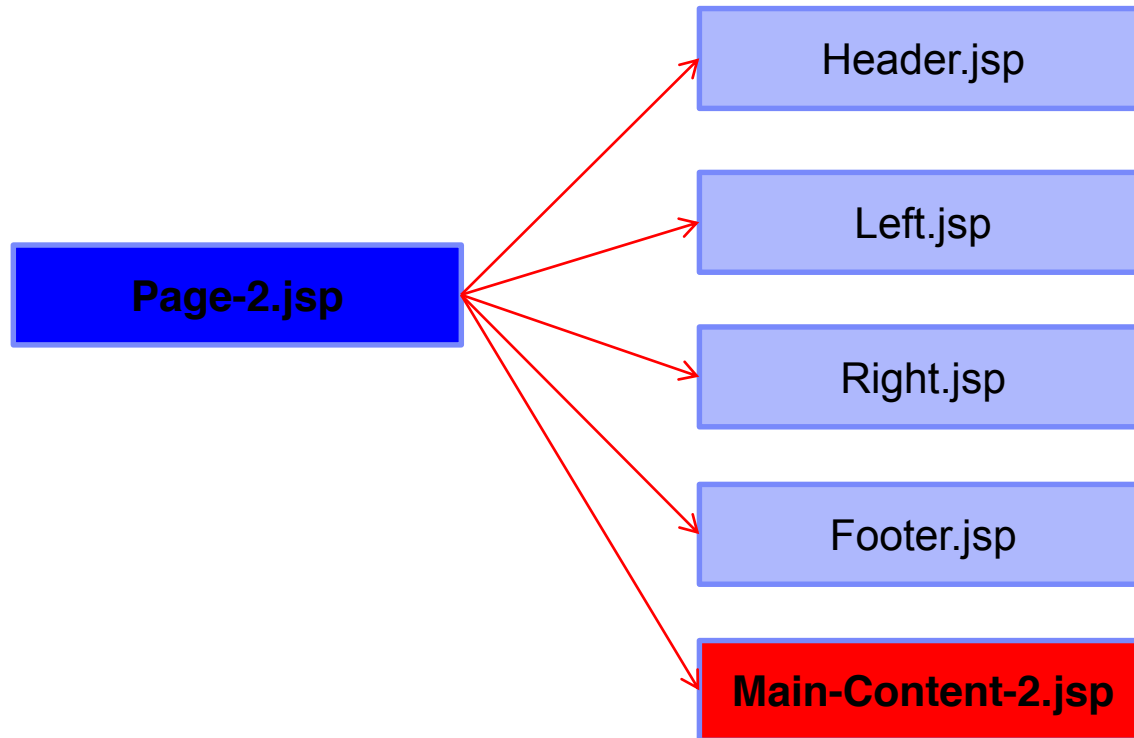
**Main-Content-2.jsp**

# Master Page





# Master Page



# Master Page – Header.jsp

```
1 <table width="100%" border="0"  
2     cellspacing="0" cellpadding="0"  
3     bgcolor="#0000FF">  
4     <tr>  
5         <td align="center">  
6             <p>&nbsp;</p>  
7             <p>  
8                 <strong>Header</strong>  
9             </p>  
10            <p>&nbsp;</p>  
11        </td>  
12    </tr>  
13 </table>
```

# Master Page – Left.jsp

```
1 <table width="100%" border="0" cellspacing="0"  
2     cellpadding="0" bgcolor="#33FF00">  
3     <tr>  
4         <td align="center">  
5             <p>&nbsp;</p>  
6             <p>&nbsp;</p>  
7             <p>  
8                 <strong>Left</strong>  
9             </p>  
10            <p>&nbsp;</p>  
11            <p>&nbsp;</p>  
12        </td>  
13    </tr>  
14 </table>
```

# Master Page – Right.jsp

```
1 <table width="100%" border="0" cellspacing="0"
2     cellpadding="0" bgcolor="#00FFFF">
3     <tr>
4         <td align="center">
5             <p>&nbsp;</p>
6             <p>&nbsp;</p>
7             <p>
8                 <strong>Right</strong>
9             </p>
10            <p>&nbsp;</p>
11            <p>&nbsp;</p>
12        </td>
13    </tr>
14 </table>
```

# Master Page – Footer.jsp

```
1 <table width="100%" border="0" align="center"  
2 cellpadding="0" cellspacing="0" bgcolor="#FFFF00">  
3   <tr>  
4     <td align="center">  
5       <p>&nbsp;</p>  
6       <p>  
7         <strong>Footer</strong>  
8       </p>  
9       <p>&nbsp;</p>  
10    </td>  
11  </tr>  
12 </table>
```

# Master Page – Main-Content-1.jsp

```
1 <table width="100%" border="0" cellspacing="0"
2     cellpadding="0" bgcolor="#FF0000">
3     <tr>
4         <td align="center">
5             <p>&nbsp;</p>
6             <p>&nbsp;</p>
7             <p>
8                 <strong>Main-Content-1</strong>
9             </p>
10            <p>&nbsp;</p>
11            <p>&nbsp;</p>
12        </td>
13    </tr>
14 </table>
```

# Master Page – Main-Content-2.jsp

```
1 <table width="100%" border="0" cellspacing="0"  
2     cellpadding="0" bgcolor="#FF0000">  
3     <tr>  
4         <td align="center">  
5             <p>&nbsp;</p>  
6             <p>&nbsp;</p>  
7             <p>  
8                 <strong>Main-Content-1</strong>  
9             </p>  
10            <p>&nbsp;</p>  
11            <p>&nbsp;</p>  
12        </td>  
13    </tr>  
14 </table>
```

# Master Page

**Page-1.jsp**

**Page-2.jsp**





# Master Page – Page-1.jsp

```
1 <html>
2   <head>
3     <meta http-equiv="Content-Type" content="text/html;
4 charset=UTF-8">
5     <title>Page-1</title>
6   </head>
7   <body>
8     <table width="600" border="1" align="center"
9       cellpadding="0" cellspacing="0">
10      <!--Header.jsp-->
11      <!--Left.jsp & Main-Content-1.jsp & Right.jsp-->
12      <!--Footer.jsp-->
13    </table>
14  </body>
15</html>
```

# Master Page Model 1 – Page-1.jsp

```
1 <!--Header.jsp-->
2 <tr>
3     <td align="center">
4         <jsp:include page="subs/Header.jsp"/>
5     </td>
6 </tr>
```

# Master Page Model 1 – Page-1.jsp

```
1  <!--Left.jsp & Main-Content-1.jsp & Right.jsp-->
2  <tr>
3      <td>
4          <table width="100%" border="1">
5              <tr>
6                  <td width="20%" align="center" valign="top">
7                      <jsp:include page="subs/Left.jsp"/>
8                  </td>
9                  <td align="center" valign="top">
10                     <jsp:include page="subs/Main-Content-1.jsp"/>
11                 </td>
12                 <td width="20%" align="center" valign="top">
13                     <jsp:include page="subs/Right.jsp"/>
14                 </td>
15             </tr>
16         </table>
17     </td>
18 </tr>
```

# Master Page – Page-1.jsp

```
1 <!--Footer.jsp-->
2 <tr>
3     <td align="center">
4         <jsp:include page="subs/Footer.jsp"/>
5     </td>
6 </tr>
```

# Master Page – Page-2.jsp

```
1 <html>
2   <head>
3     <meta http-equiv="Content-Type" content="text/html;
4 charset=UTF-8">
5     <title>Page-2</title>
6   </head>
7   <body>
8     <table width="600" border="1" align="center"
9       cellpadding="0" cellspacing="0">
10      <!--Header.jsp-->
11      <!--Left.jsp & Main-Content-1.jsp & Right.jsp-->
12      <!--Footer.jsp-->
13    </table>
14  </body>
15</html>
```

# Master Page Model 1 – Page-2.jsp

```
1 <!--Header.jsp-->
2 <tr>
3     <td align="center">
4         <jsp:include page="subs/Header.jsp"/>
5     </td>
6 </tr>
```

# Master Page Model 1 – Page-2.jsp

```
1  <!--Left.jsp & Main-Content-1.jsp & Right.jsp-->
2  <tr>
3      <td>
4          <table width="100%" border="1">
5              <tr>
6                  <td width="20%" align="center" valign="top">
7                      <jsp:include page="subs/Left.jsp"/>
8                  </td>
9                  <td align="center" valign="top">
10                     <jsp:include page="subs/Main-Content-2.jsp"/>
11                 </td>
12                 <td width="20%" align="center" valign="top">
13                     <jsp:include page="subs/Right.jsp"/>
14                 </td>
15             </tr>
16         </table>
17     </td>
18 </tr>
```

# Master Page – Page-2.jsp

```
1 <!--Footer.jsp-->
2 <tr>
3     <td align="center">
4         <jsp:include page="subs/Footer.jsp"/>
5     </td>
6 </tr>
```



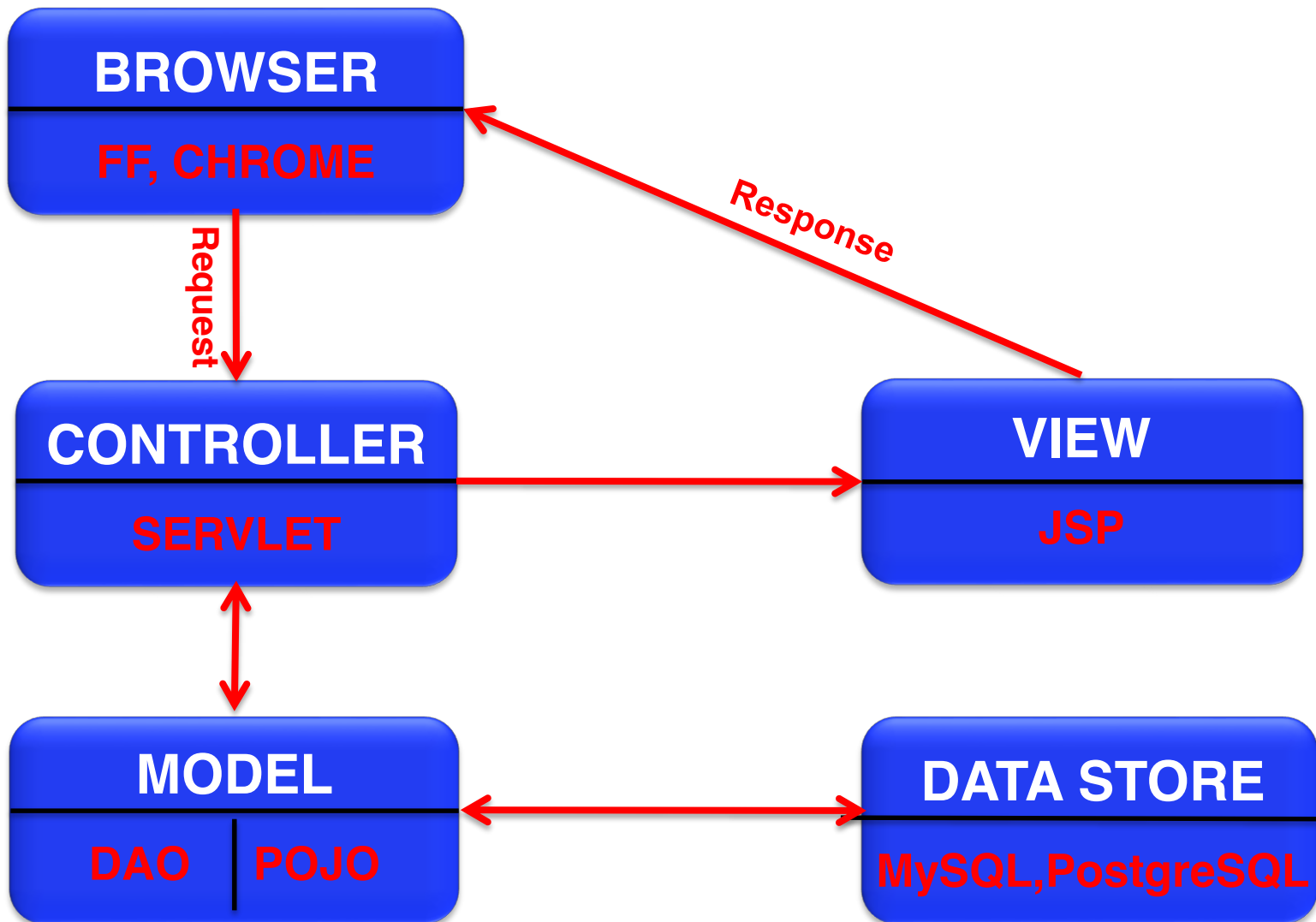
# Master Page Model 1

```
1  <!--Left.jsp & Main-Content-1.jsp & Right.jsp-->
2  <tr><td>
3      <table width="100%" border="1">
4          <tr>
5              <td width="20%" align="center" valign="top">
6                  <jsp:include page="subs/Left.jsp"/>
7              </td>
8              <td align="center" valign="top">
9                  <jsp:include page="
10                     <%=request.getParameter("MainContent") %>
11                     "/>
12              </td>
13              <td width="20%" align="center" valign="top">
14                  <jsp:include page="subs/Right.jsp"/>
15              </td>
16          </tr>
17      </table>
18 </td></tr>
```

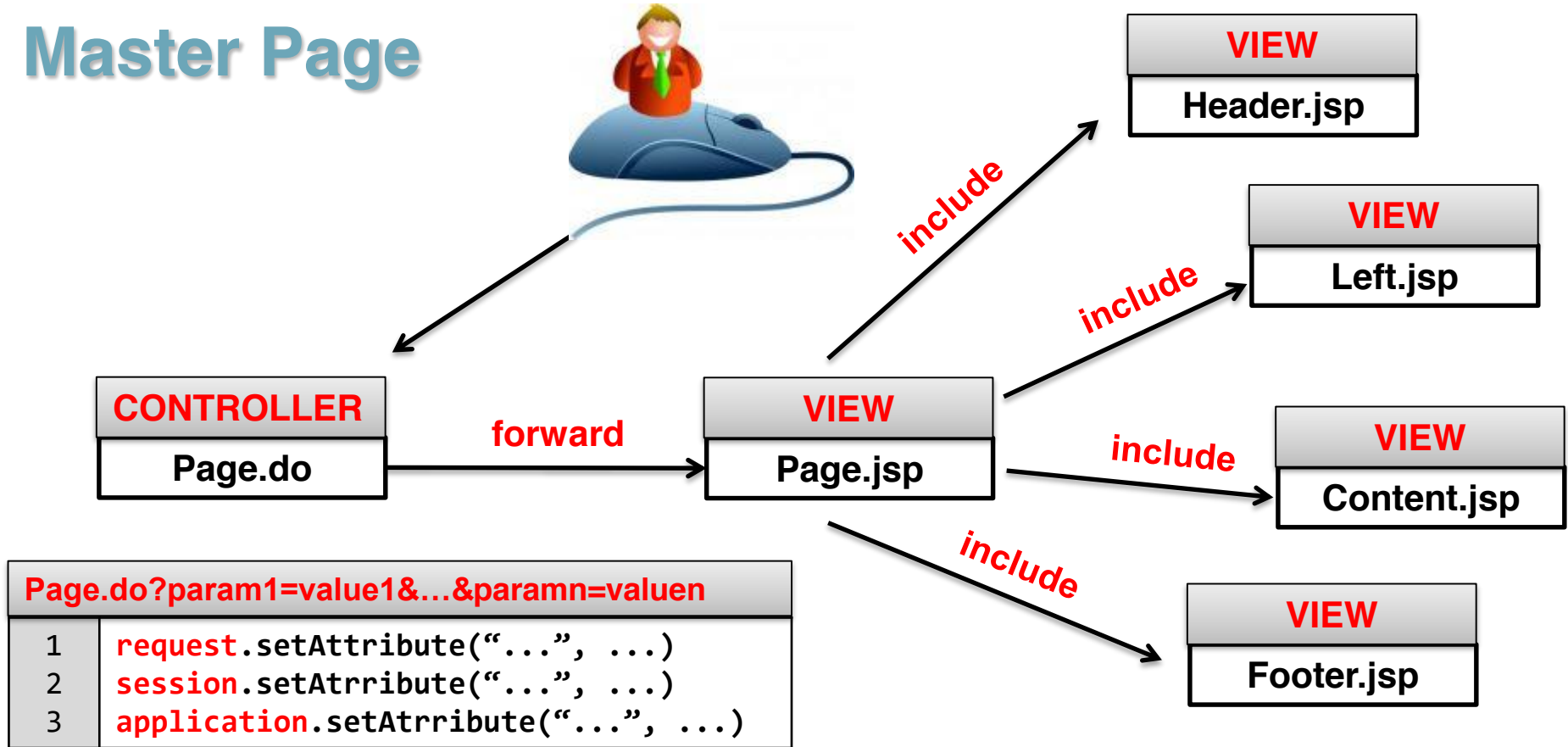
# Master Page Model 1

- Page 1
  - <http://localhost/BookOnline/index.jsp?MainContent=Main-Content-Page-1.jsp>
- Page 2
  - <http://localhost/BookOnline/index.jsp?MainContent=Main-Content-Page-2.jsp>
- Page n:
  - <http://localhost/BookOnline/index.jsp?MainContent=Main-Content-Page-n.jsp>

# MVC 2



# Master Page



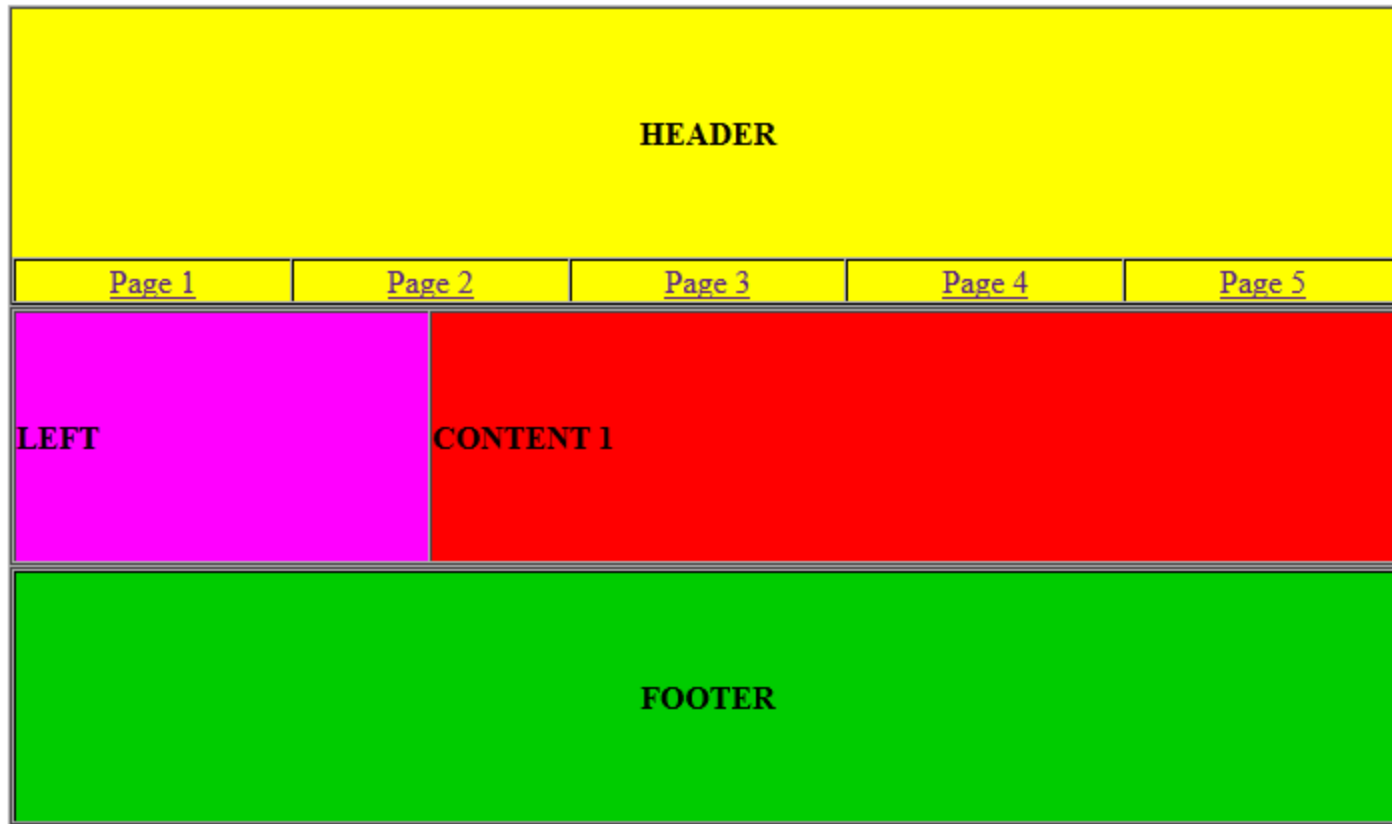
Page.jsp, Header.jsp, Left.jsp, Content.jsp, Footer.jsp	
1	<code>\${param.param1}, . . ., \${param.paramn}</code>
2	<code>\${requestScope. . .}</code>
3	<code>\${sessionScope. . .}</code>
4	<code>\${applicationScope. . .}</code>

# Simple Master Page

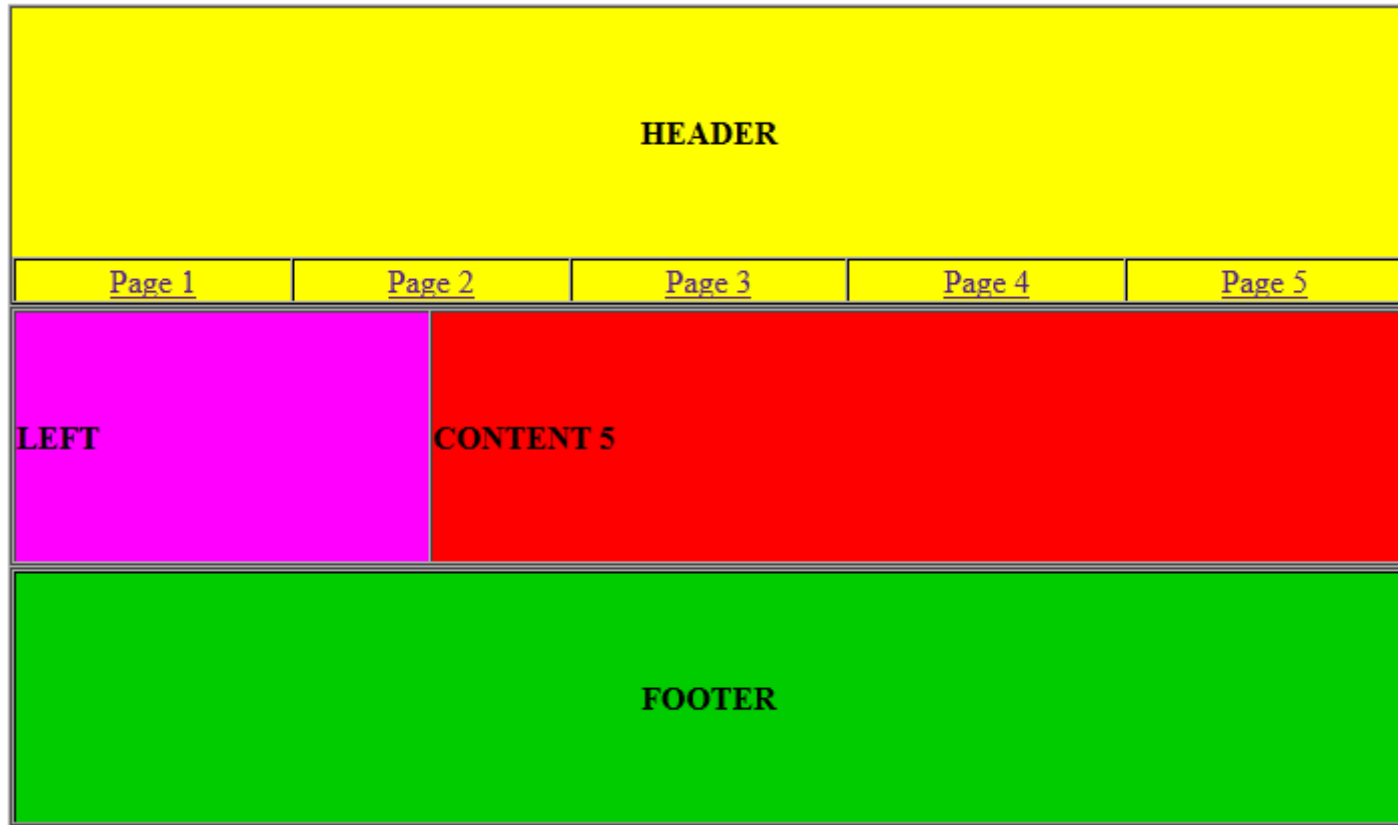


# APACHE TILES

# Master Page

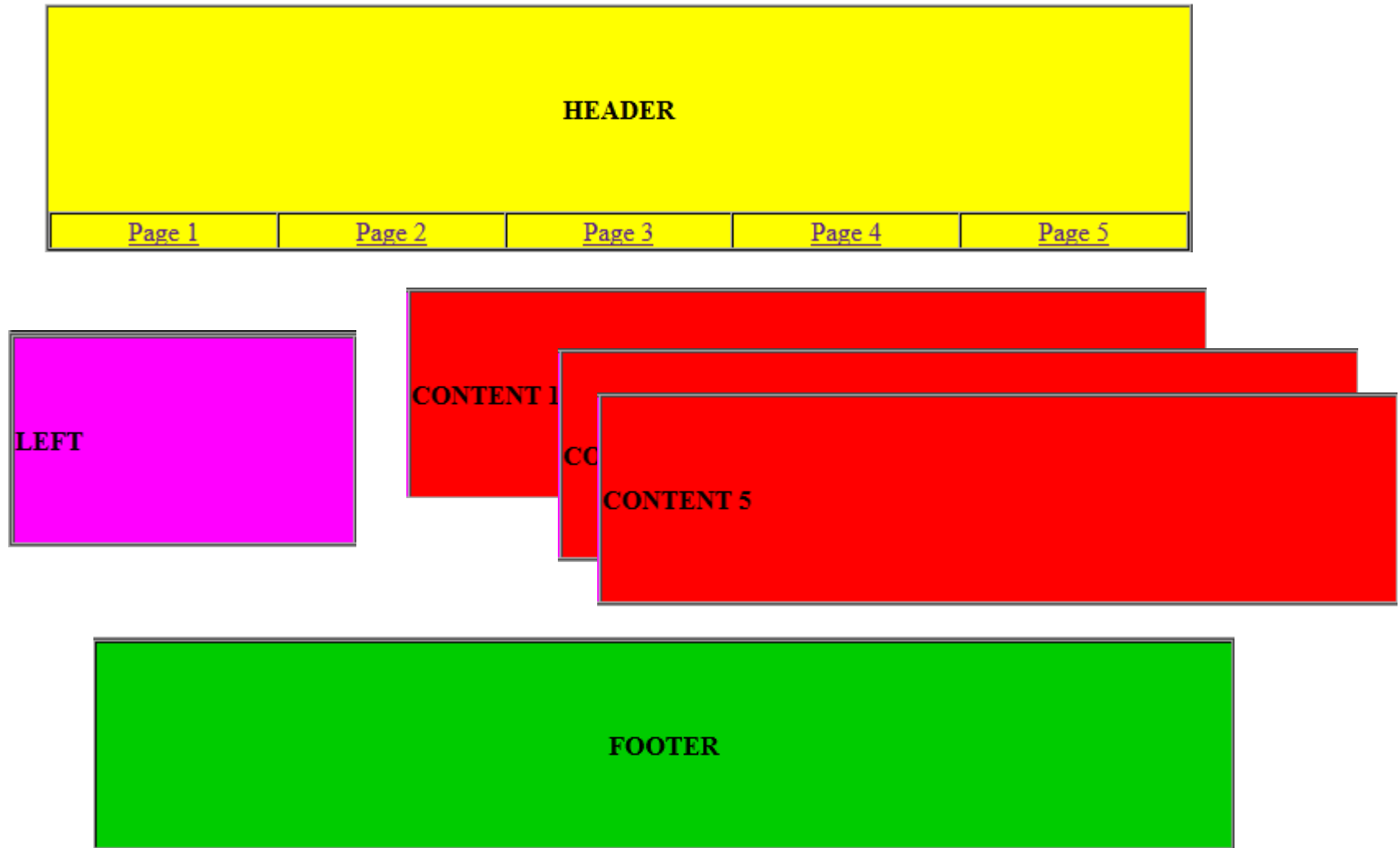


# Master Page

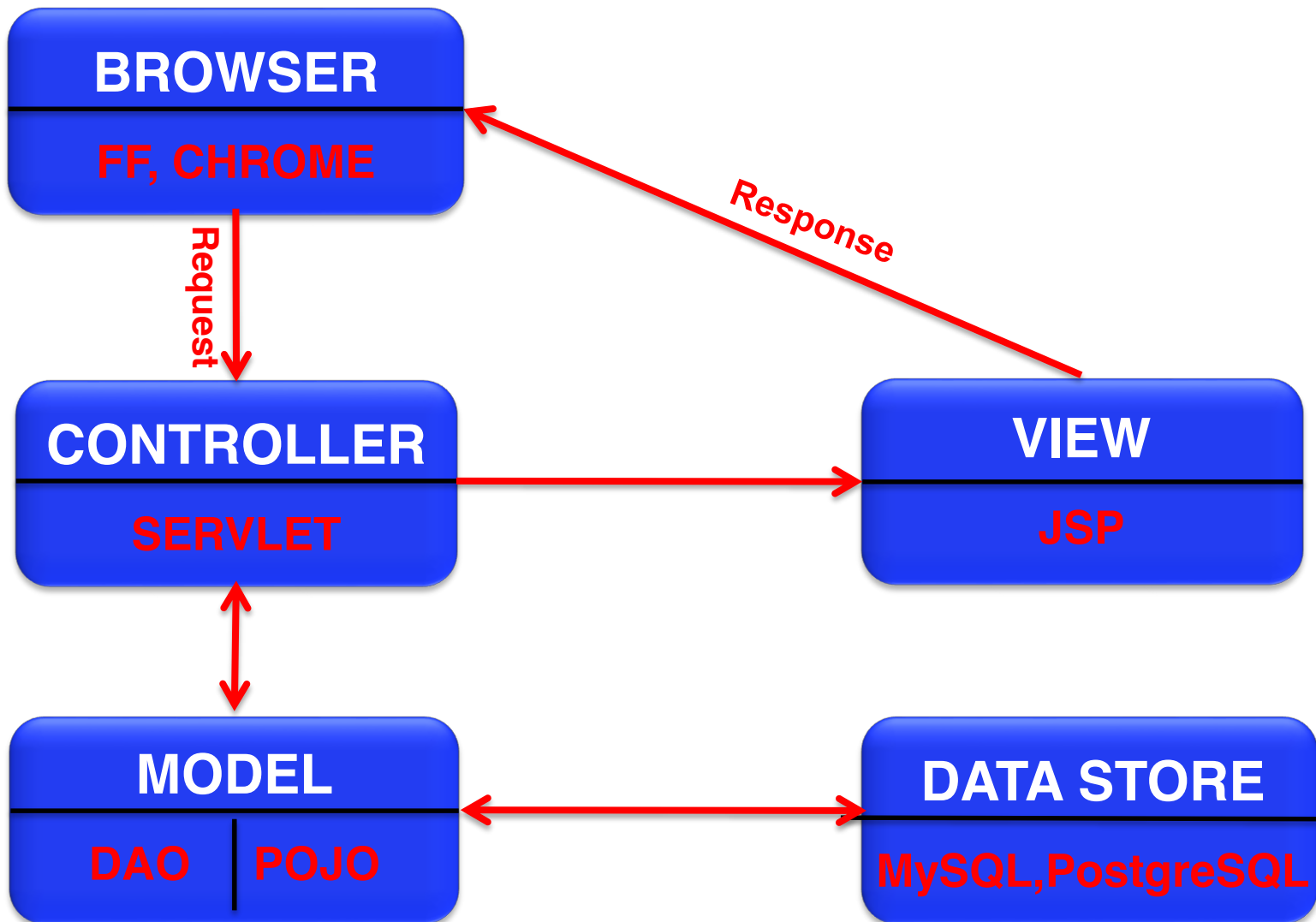




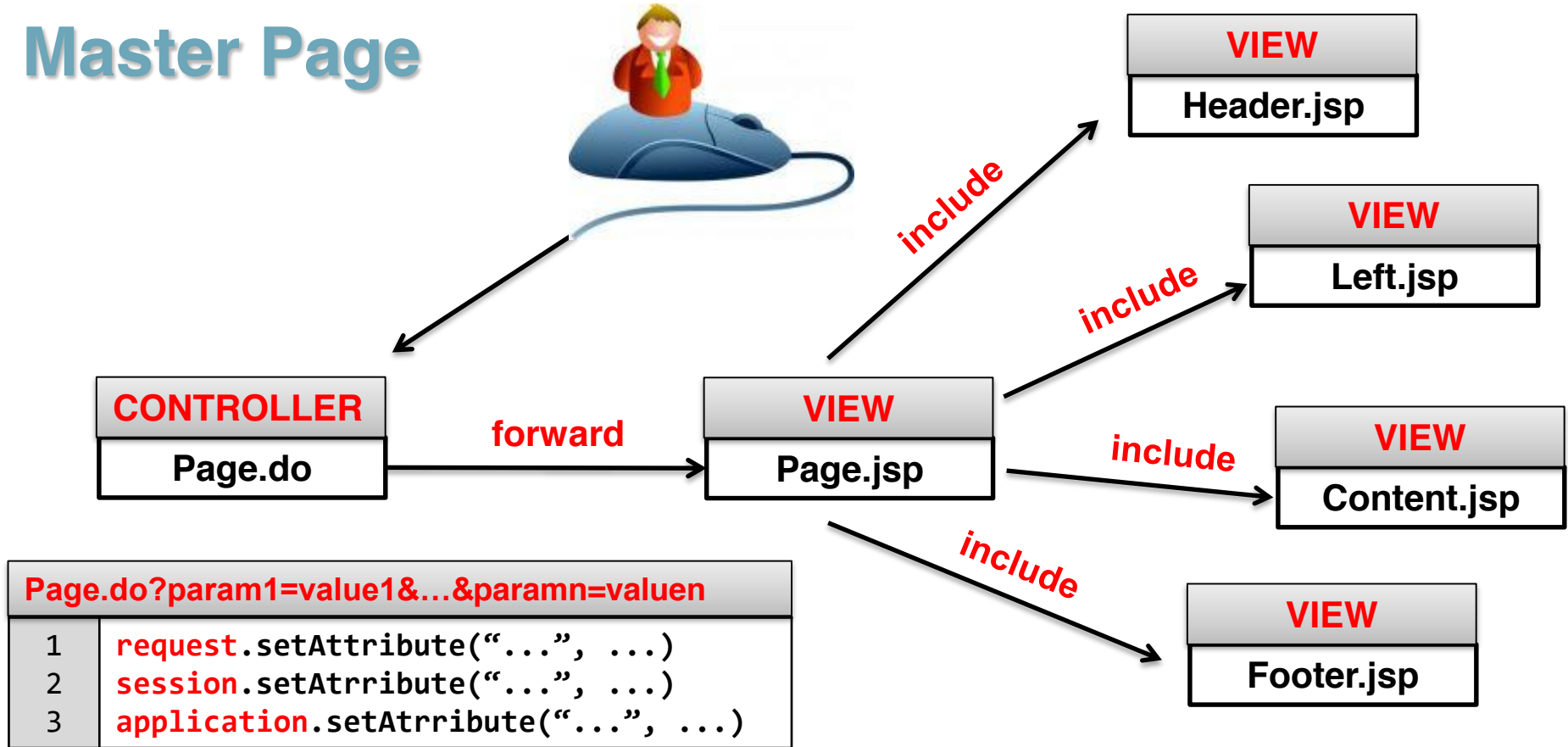
# Master Page



# MVC 2



# Master Page



## Page.jsp, Header.jsp, Left.jsp, Content.jsp, Footer.jsp

1	<code>\${param.param1}, . . ., \${param.paramn}</code>
2	<code>\${requestScope. . .}</code>
3	<code>\${sessionScope. . .}</code>
4	<code>\${applicationScope. . .}</code>

# Chuẩn bị Apache Tiles

- Download Tiles 2.2.2

<http://www.apache.org/dyn/closer.cgi/tiles/v2.2.2/tiles-2.2.2-bin.zip>

# Chuẩn bị Apache Tiles

- Chép các thư viện sau vào thư mục WEB-INF/lib
  - commons-beanutils-1.8.0.jar
  - commons-digester-2.0.jar
  - jcl-over-slf4j-1.5.8.jar
  - slf4j-api-1.5.8.jar, slf4j-jdk14-1.5.8.jar
  - tiles-api-2.2.2.jar, tiles-compatible-2.2.2.jar
  - tiles-core-2.2.2.jar, tiles-jsp-2.2.2.jar
  - tiles-servlet-2.2.2.jar, tiles-template-2.2.2.jar
  - tiles-servlet-wildcard-2.2.2.jar
- Project > Libraries > Add JAR/Folder > WEB-INF/lib

# Tổ chức website - Cách 1

## ■ Web Pages

### — page

- Header.jsp, Left.jsp, Footer.jsp
- Content1.jsp,..., Content5.jsp

### — template

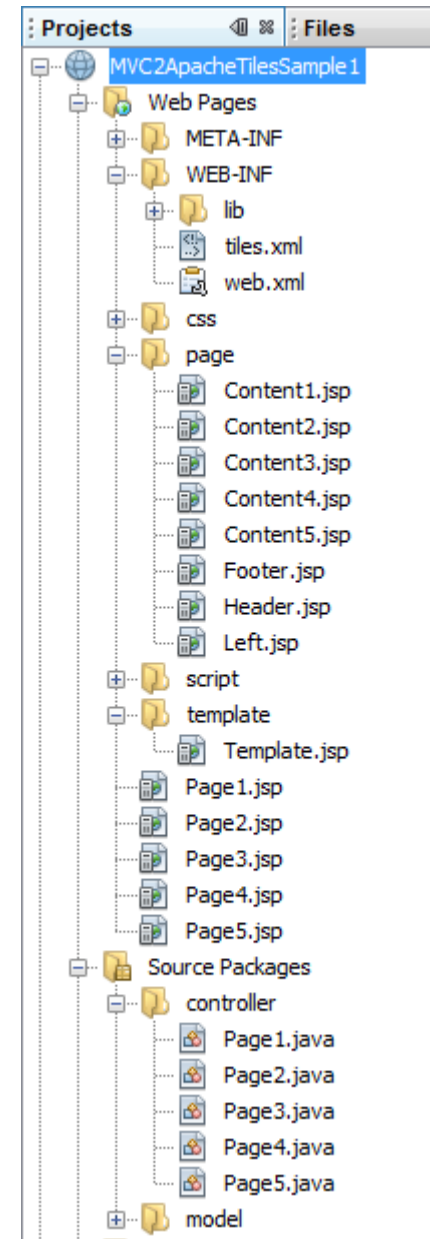
- Template.jsp

### — Page1.jsp, ..., Page5.jsp

## ■ Source Packages

### — Controller

- Page1.do, . . . , Page5.do



# Template.jsp

```
1  <%@taglib prefix="tiles" uri="http://tiles.apache.org/tags-tiles"%>
2  <html>
3      <head>
4          <title>
5              <tiles:insertAttribute name="title"/>
6          </title>
7      </head>
8      <body>
9          . . .
10         <tiles:insertAttribute name="header"/>
11         . . .
12         <tiles:insertAttribute name="left"/>
13         . . .
14         <tiles:insertAttribute name="content"/>
15         . . .
16         <tiles:insertAttribute name="footer"/>
17         . . .
18     </body>
19 </html>
```

# Cấu hình Tiles trong web.xml

```
1 <web-app>
2   . . .
3   <context-param>
4     <param-name>
5       org.apache.tiles.definition.
6         DefinitionsFactory.DEFINITIONS_CONFIG
7     </param-name>
8     <param-value>/WEB-INF/tiles.xml</param-value>
9   </context-param>
10  <listener>
11    <listener-class>
12      org.apache.tiles.web.startup.TilesListener
13    </listener-class>
14  </listener>
15 </web-app>
```



# Định nghĩa tiles.xml trong WEB-INF

```
1 <tiles-definitions>
2   <definition name="Page" template="/template/Template.jsp">
3     <put-attribute name="title" value="Page" />
4     <put-attribute name="header" value="/page/Header.jsp" />
5     <put-attribute name="left" value="/page/Left.jsp" />
6     <put-attribute name="footer" value="/page/Footer.jsp" />
7   </definition>
8   <definition name="Page1" extends="Page">
9     <put-attribute name="title" value="Page 1" />
10    <put-attribute name="content" value="/page/Content1.jsp"/>
11  </definition>
12  . . .
13  <definition name="Page5" extends="Page">
14    <put-attribute name="title" value="Page 5" />
15    <put-attribute name="content" value="/page/Content5.jsp"/>
16  </definition>
17 </tiles-definitions>
```

# Page1.jsp, . . ., Page5.jsp

## Page1.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page1"/>
```

## Page2.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page2"/>
```

. . .

## Page5.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page5"/>
```

# Page1.do, . . ., Page5.do

## Page1.do

```
1 String view = "Page1.jsp";
2 RequestDispatcher rd = request.getRequestDispatcher(view);
3 rd.forward(request, response);
```

## Page2.do

```
1 String view = "Page2.jsp";
2 RequestDispatcher rd = request.getRequestDispatcher(view);
3 rd.forward(request, response);
```

...

## Page5.do

```
1 String view = "Page5.jsp";
2 RequestDispatcher rd = request.getRequestDispatcher(view);
3 rd.forward(request, response);
```

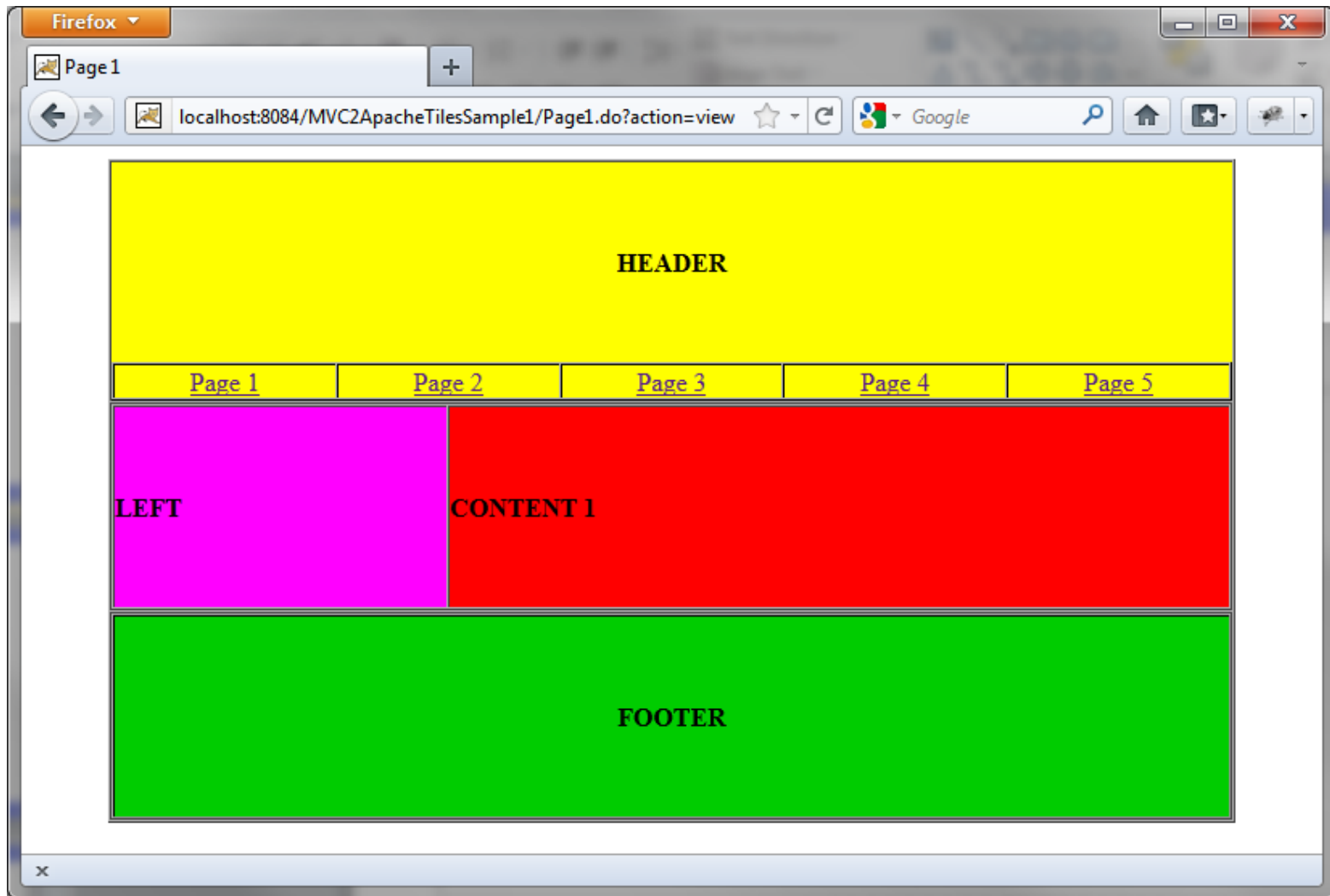
# Cấu hình web.xml

```
1 <web-app>
2   . . .
3   <welcome-file-list>
4     <welcome-file>Page1.do</welcome-file>
5   </welcome-file-list>
6   . . .
7 </web-app>
```

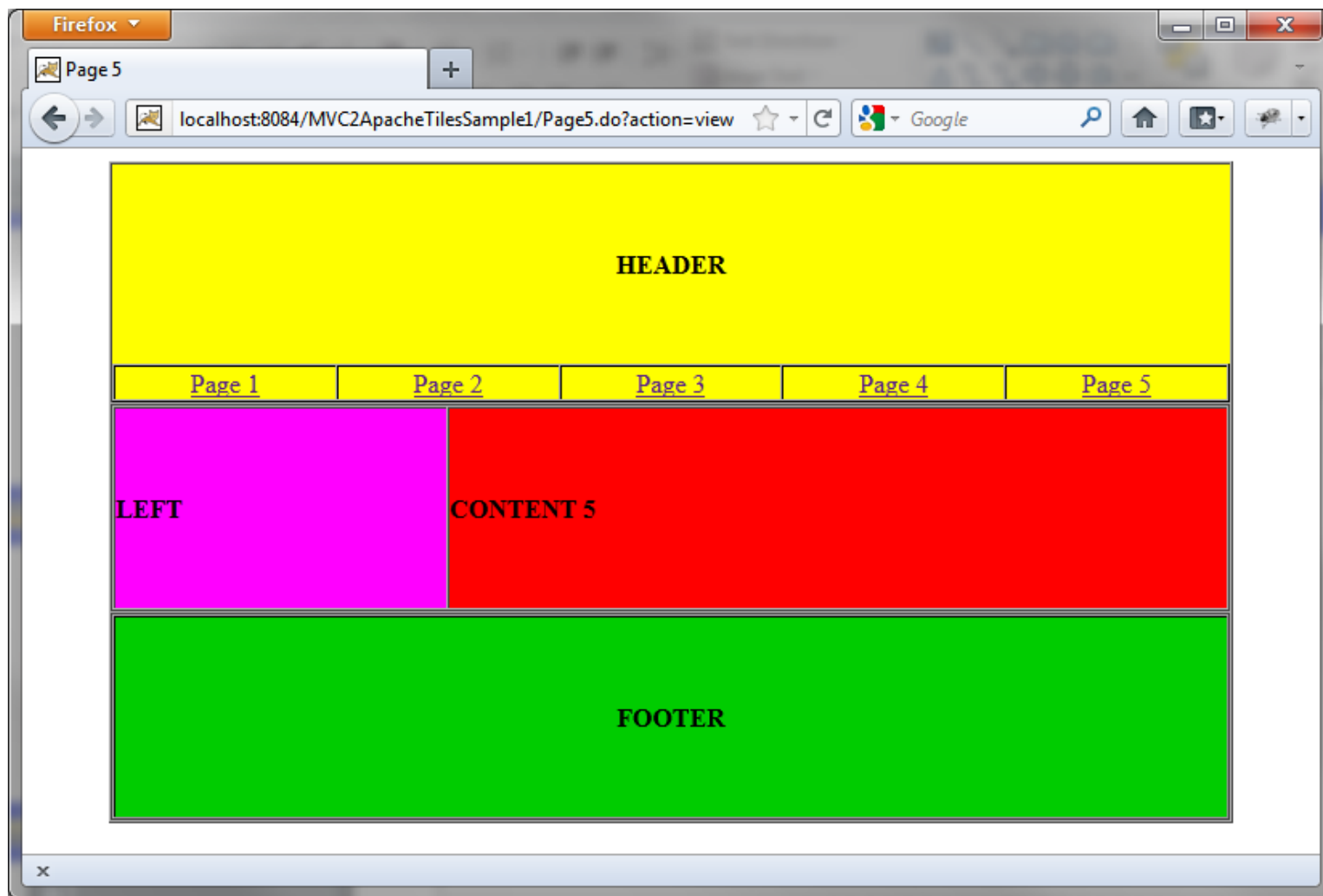
# Điều chỉnh các liên kết của các trang

1	<code>&lt;a href="Page1.do?action=view"&gt;Page 1&lt;/a&gt;</code>
2	<code>. . .</code>
3	<code>&lt;a href="Page2.do?action=view"&gt;Page 2&lt;/a&gt;</code>
4	<code>. . .</code>
5	<code>&lt;a href="Page3.do?action=view"&gt;Page 3&lt;/a&gt;</code>
6	<code>. . .</code>
7	
8	<code>&lt;a href="Page4.do?action=view"&gt;Page 4&lt;/a&gt;</code>
9	
10	<code>. . .</code>
11	<code>&lt;a href="Page5.do?action=view"&gt;Pag 5&lt;/a&gt;</code>
12	<code>. . .</code>

# Thử nghiệm



# Thử nghiệm



# Apache Tiles





# Page1.jsp, . . ., Page5.jsp

## Page1.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page1"/>
```

## Page2.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page2"/>
```

. . .

## Page5.jsp

```
1 <%@taglib prefix="tiles"  
2         uri="http://tiles.apache.org/tags-tiles" %>  
3 <tiles:insertDefinition name="Page5"/>
```

# Page1.jsp, . . ., Page5.jsp

- Khó khăn

- `<tiles:insertDefinition name="Page1"/>`

- . . .

- `<tiles:insertDefinition name="Page5"/>`

- Chỉ khác nhau **name** ở mỗi trang

- **Phải tạo rất nhiều trang**

- Cách khắc phục

- `<tiles:insertDefinition name="${page}"/>`

# Tổ chức website - Cách 2

## ■ Web Pages

### — page

- Header.jsp, Left.jsp, Footer.jsp
- Content1.jsp,..., Content5.jsp

### — template

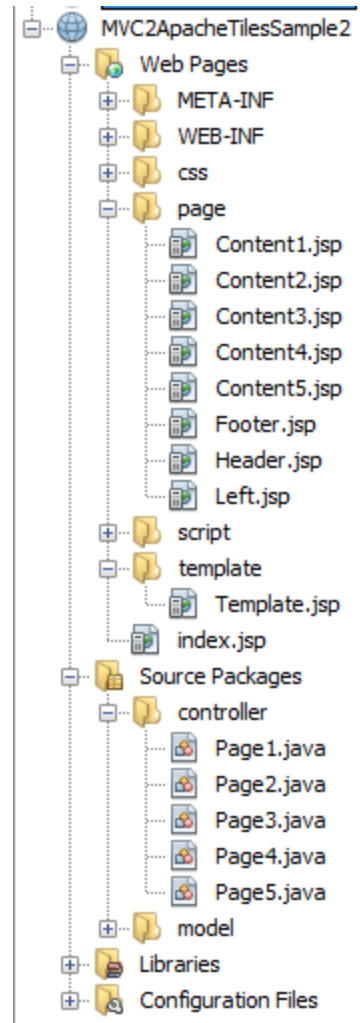
- Template.jsp

### — index.jsp

## ■ Source Packages

### — Controller

- Page1.do, . . . , Page5.do



# index.jsp

## index.jsp

1	<code>&lt;%@taglib prefix="tiles"</code>
2	<code>uri="http://tiles.apache.org/tags-tiles" %&gt;</code>
3	<code>&lt;tiles:insertDefinition name="\${page}"/&gt;</code>

# Page1.do, . . ., Page5.do

## Page1.do

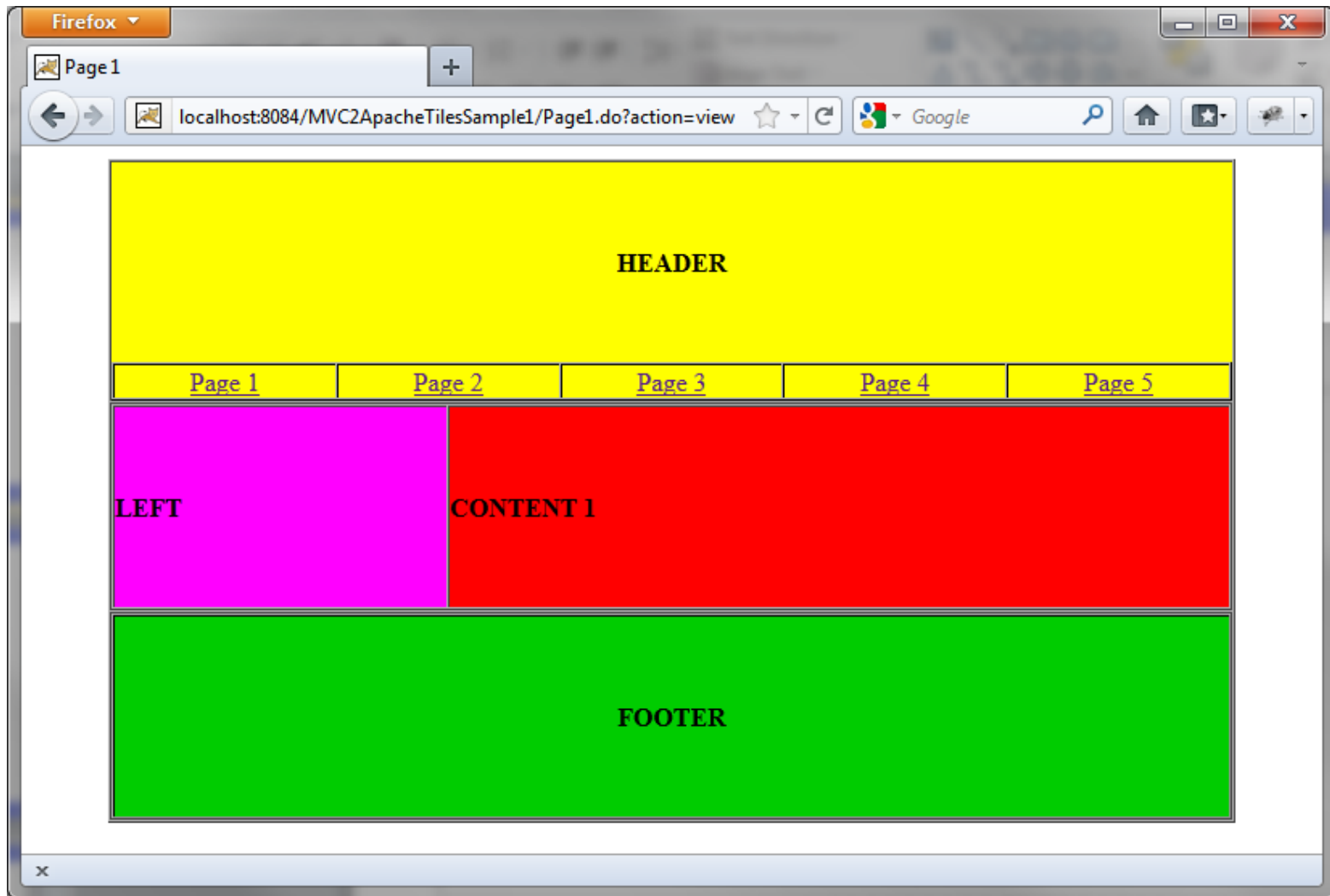
```
1 String view = "index.jsp";
2 request.setAttribute("page", "Page1");
3 RequestDispatcher rd = request.getRequestDispatcher(view);
4 rd.forward(request, response);
```

...

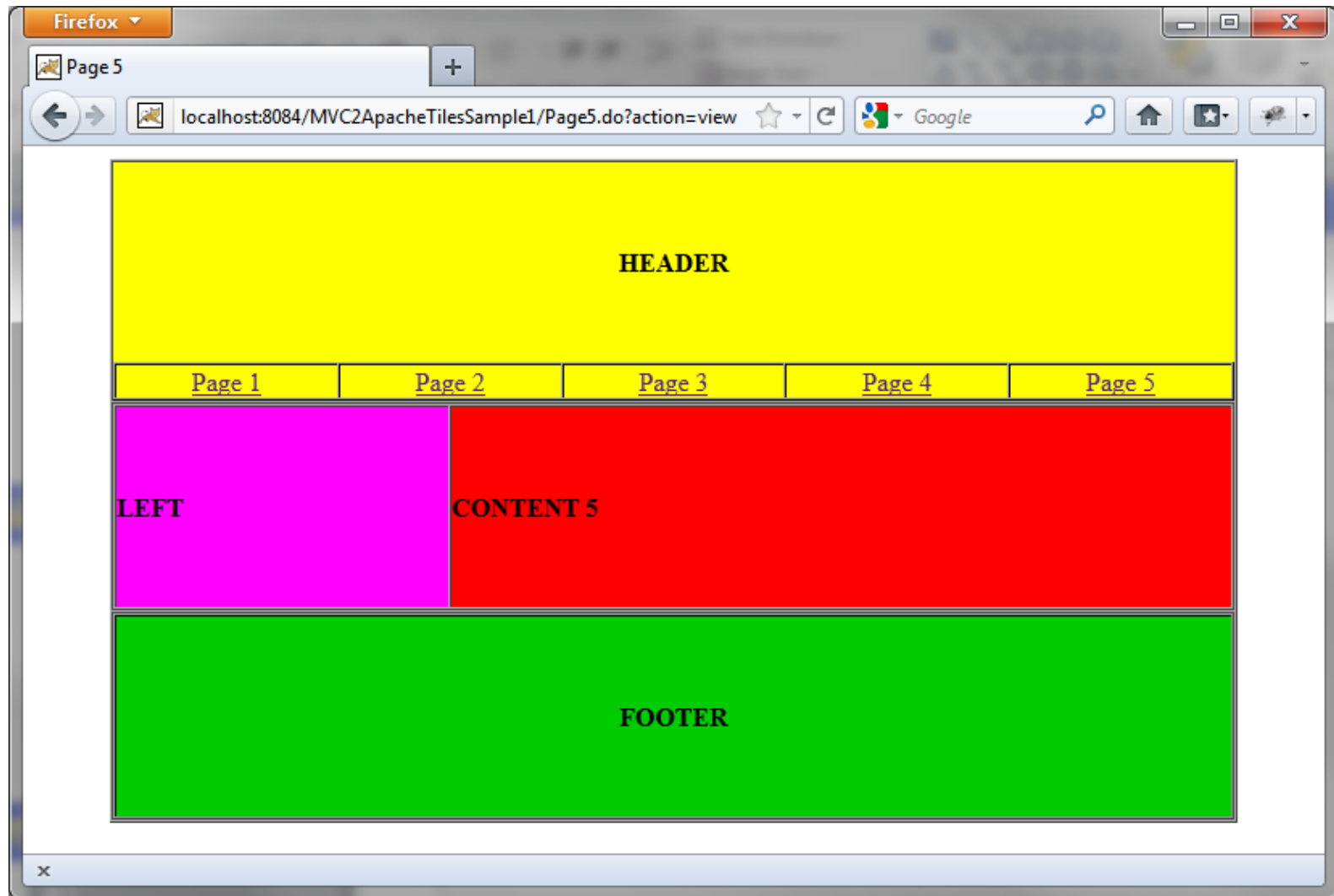
## Page5.do

```
1 String view = "index.jsp";
2 request.setAttribute("page", "Page5");
3 RequestDispatcher rd = request.getRequestDispatcher(view);
4 rd.forward(request, response);
```

# Thử nghiệm



# Thử nghiệm



# Apache Tiles







# HỎI VÀ ĐÁP