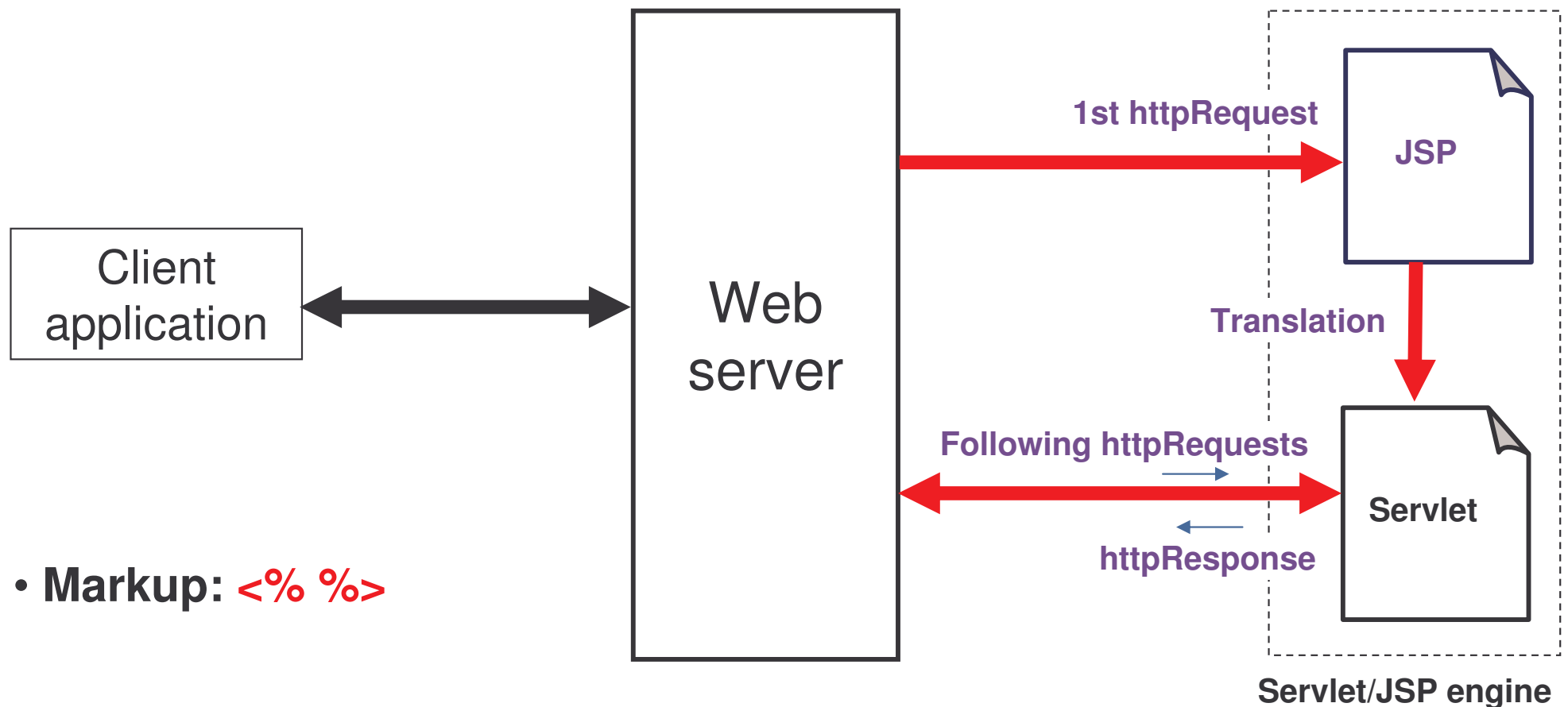# JSP

- **Java Server Pages: Java code embedded in HTML page executed at the server side**

- **Translated into servlet by the container since the 1st access**

Client application ⟷ Web server

Web server → **1st httpRequest** → JSP

JSP → **Translation** → Servlet

Web server ⟷ **Following httpRequests** / **httpResponse** → Servlet

Servlet/JSP engine

- **Markup: <% %>**

- **Material: JSWDK JSP engine, examples rar file**

Container

Folder

Started with the server

TABLE DES FACTORIELLES

1! = 1
2! = 2
3! = 6
4! = 24
5! = 120
6! = 720
7! = 5040
8! = 40320
9! = 362880

http://localhost:8080/Factorial.jsp

```
<HTML>
    <BODY>
        <H2> FACTORIAL TABLE </H2>
        <%    int i, fact;
              for (i = 1, fact = 1; i < 10; i++, fact *= i) out.print(i + "! = " + fact + "<BR>");
        %>
    </BODY>
</HTML>
```

```html
<HTML>
    <BODY>
        <! -- Instance variable: initialization at page instanciation and persistance -->
                <%! int count = 0; %>
        <! -- Instance method: linked to the page -->
                <%! int getCount() { return ++count; } %>
        <! -- Alternative to out.print() -->
                <H2> Visitor <%= getCount() %></H2>
        <! -- Local variable: initialization at each invokation -->
        <%          int number = 1;
                    int hazard;
        %>
        <H3> Today's draw </H3>
        <H4> Draw number <%= number++ %> </H4>
        <%          for (int i = 0; i < 6; i++) {          hazard = (int) (Math.random()*50);
                                                           out.println(hazard);

                    }
        %>
        <H4> Draw number <%= number++ %> </H4>
        <%          for (int i = 0; i < 6; i++) {          hazard = (int) (Math.random()*50);
                                                           out.println(hazard);

                    }
        %>
    </BODY>
</HTML>
```

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http://localhost:8080/Lotto.jsp
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Visitor 7

Today's draw

Draw number 1

36 4 42 40 33 20

Draw number 2

30 9 33 2 37 20

http://localhost:8080/Lotto.jsp

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```html
<HTML>
    <BODY>
            <! -- JSP to load in case of error -->
                <%@ page errorPage="PokerError.jsp" %>
                <H2> IF YOU GET 6, YOU WIN! </H2>
                <%          int hazard, i;
                            for (i = 0; i < 6; i++) {   hazard = (int) (Math.random()*5);
                                                        out.println(30/hazard);

                            }
                %>

    </BODY>
</HTML>
```
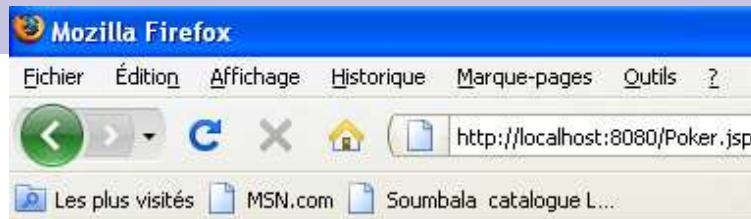
http://localhost:8080/Poker.jsp

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http://localhost:8080/Poker.jsp

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IF YOU GET 6, YOU WIN!

10 30 10 10 10 7

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http://localhost:8080/Poker.jsp

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An error has occured:

/ by zero

```html
<HTML>
    <BODY>
            <! -- This is an error page -->
            <%@ page isErrorPage="true" %>
            <H3> An error has occured: </H3>
            <%=exception.getMessage() %>
    </BODY>
</HTML>
```

PokerError.jsp

```
<HTML><BODY>
        <! -- API importation -->
                <%@ page import="java.io.*" %>
        <! -- The page can be concurrently sollicitated (default value) or not -->
                <%@ page isThreadSafe="true" %>
        <! -- Form inclusion -->
                <H1> GAMING SPACE </H1>
                <FORM ACTION="http://localhost:8080/Control.jsp" METHOD=POST>
                        Login    <INPUT TYPE="text" NAME="log"> <P>
                        Password <INPUT TYPE="password" NAME="pwd"> <P>
                        <INPUT TYPE=SUBMIT VALUE="Send">
                        <INPUT TYPE=RESET VALUE="Cancel">
                </FORM>
</BODY></HTML>
```

http://localhost:8080/Connection.jsp

Mozilla Firefox

Fichier Édition Affichage Historique Marque-pages Outils ?

http://localhost:8080/Connection.jsp

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GAMING SPACE

Login

Password

Send   Cancel

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```
<HTML><BODY>
        <! -- Get data from form -->
                <%        if ((request.getParameter("log").equals("anonymous")) &&
                          (request.getParameter("pwd").equals("sesame"))) {
                %>
                                <jsp:forward page="Lotto.jsp" />
                <%        } else {      %>
                                <jsp:forward page="ConnectionError.jsp" />
                <%        }            %>
</BODY></HTML>
```
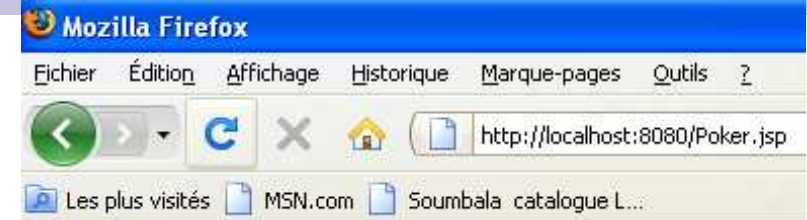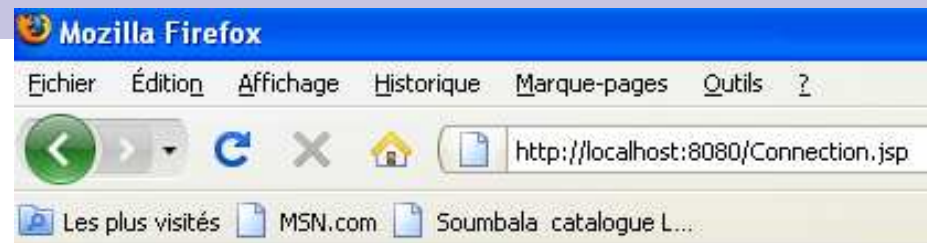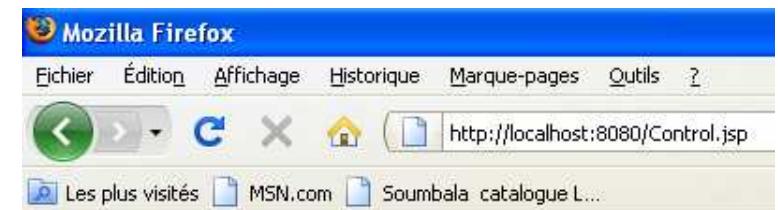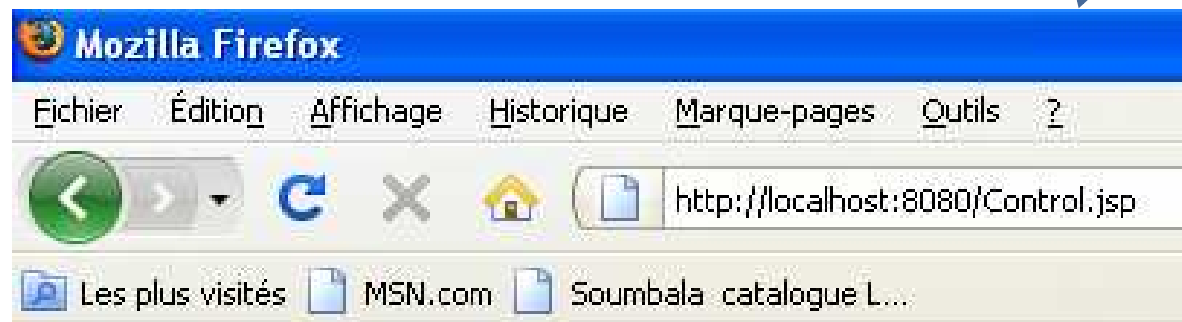
Control.jsp

Mozilla Firefox

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http://localhost:8080/Control.jsp

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You're too young! Come back in few years!

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http://localhost:8080/Control.jsp

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Visitor 9

Today's draw

Draw number 1

23 45 44 7 37 18

Draw number 2

31 11 43 19 48 48

http://localhost:8080/Shoping.jsp

```jsp
<HTML><BODY>
        <%!    class Caddy {          int reference;
                                      int purchase;
                                      public Caddy(int num) {          reference =num;
                                                                       purchase = 0;
                                      }
                                      public int getReference() { return reference; }
                                      public int getPurchase() { return purchase; }
                                      public void morePurchase() { purchase++; }

               }
        %>
        <%! int num = 0;%>
        <% Caddy myCaddy = (Caddy) session.getValue("shoping");
            if (myCaddy != null) {
                    out.println("Welcome dear customer #" + myCaddy.getReference());
                    out.println("You have " + myCaddy.getPurchase() + " items in your caddy");
                    myCaddy.morePurchase();
            } else {
                    out.println("Welcome! You're a new customer");
                    myCaddy = new Caddy(++num);
                    session.putValue("shoping", myCaddy);
            }
        %>
</BODY></HTML>
```
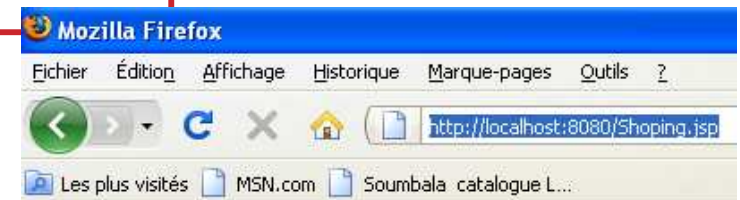
Mozilla Firefox — Fichier Édition Affichage Historique Marque-pages Outils ?
http://localhost:8080/Shoping.jsp
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Welcome! You're a new customer

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http://localhost:8080/Shoping.jsp
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Welcome dear customer #2 You have 2 items in your caddy

- **Loading a Bean:**
  ```
  <jsp:useBean id="identifier" class="bean" />
  ```

- **Loading and casting:**
  ```
  <jsp:useBean id="identifier" class="bean" type= "newClass" />
  ```

- **Getting an attribute:**
  ```
  <jsp:getProperty name="identifier" property="attribute" />
  ```

- **Setting an attribute:**
  ```
  <jsp:setProperty name="identifier" property="attribute" value="data"/>
  ```
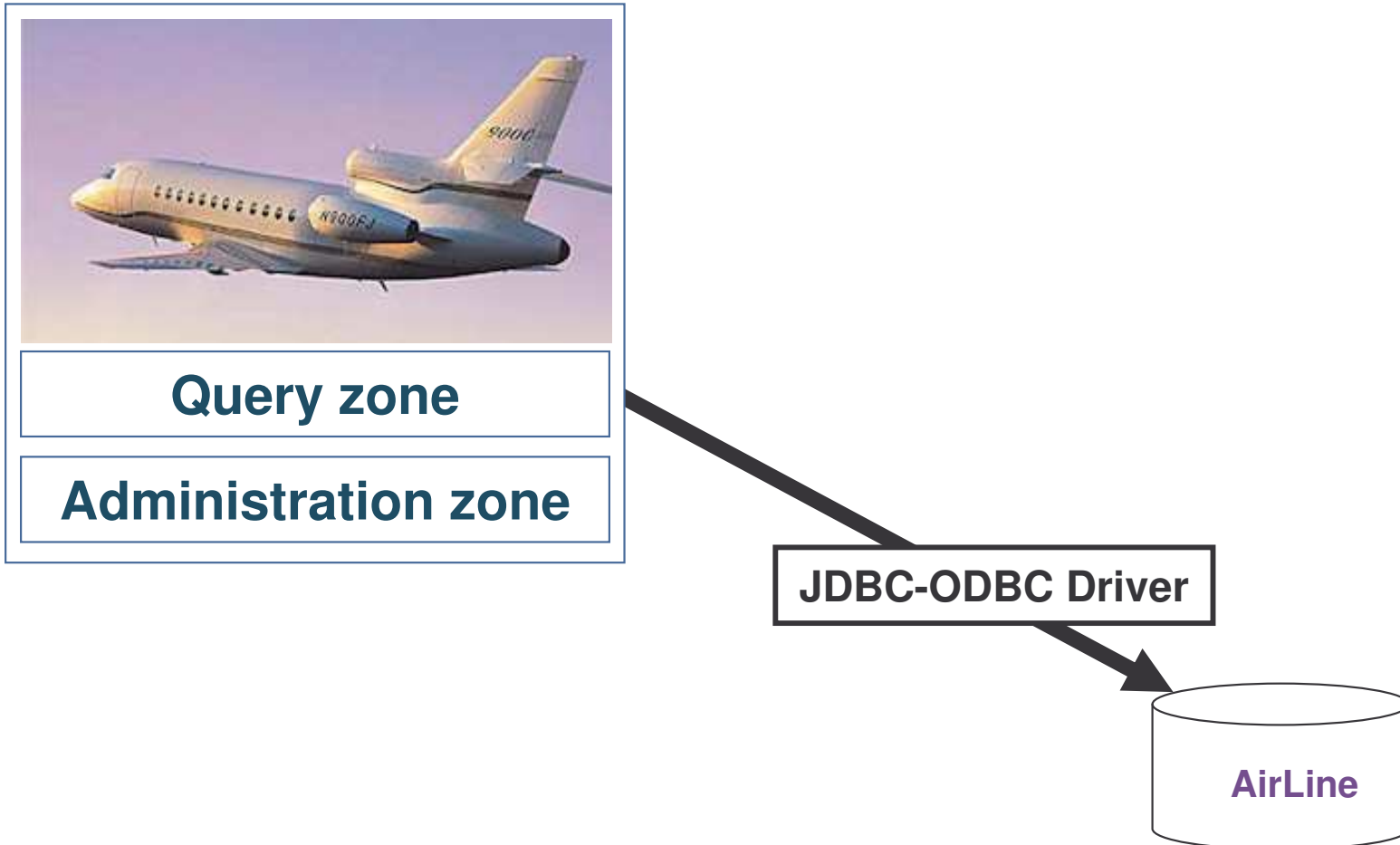
- **Setting an attribute using a parameter:**
  ```
  <jsp:setProperty name="identifier" property="attribute"
  value="<%=request.getParameter("field")%>"/>
  ```
  or
  ```
  <jsp:setProperty name='identifier" property="attribute" param="field"/>
  ```

- **Setting all attributes (same names as parameters):**
  ```
  <jsp:setProperty name="identifier" property="*"/>
  ```

M. K. Traoré

- **Airline: on line company management**

Query zone

Administration zone

JDBC-ODBC Driver

AirLine

- **Code available here: former airline database**
- **Deliverables: management JSP and servlets**

M. K. Traoré

- **Three improvements:**

- **System administration requires authentication (login & password):**
  - **table creation (name) and deletion**
  - **field creation (name, data type, primary key or not) and deletion**
  - **record adding and suppression**
- **Any user must be allowed to query the system:**
  - **dynamic listing of existing tables**
  - **dynamic listing of existing fields**
  - **dynamic construction of queries**
- **A user-friendly interface is expected:**
  - **JSP and servlets organization: front servlet, displaying JSPs**
  - **minimal navigation during queries and updating**