DEZVOLTAREA APLICATIILOR WEB

CURS 3

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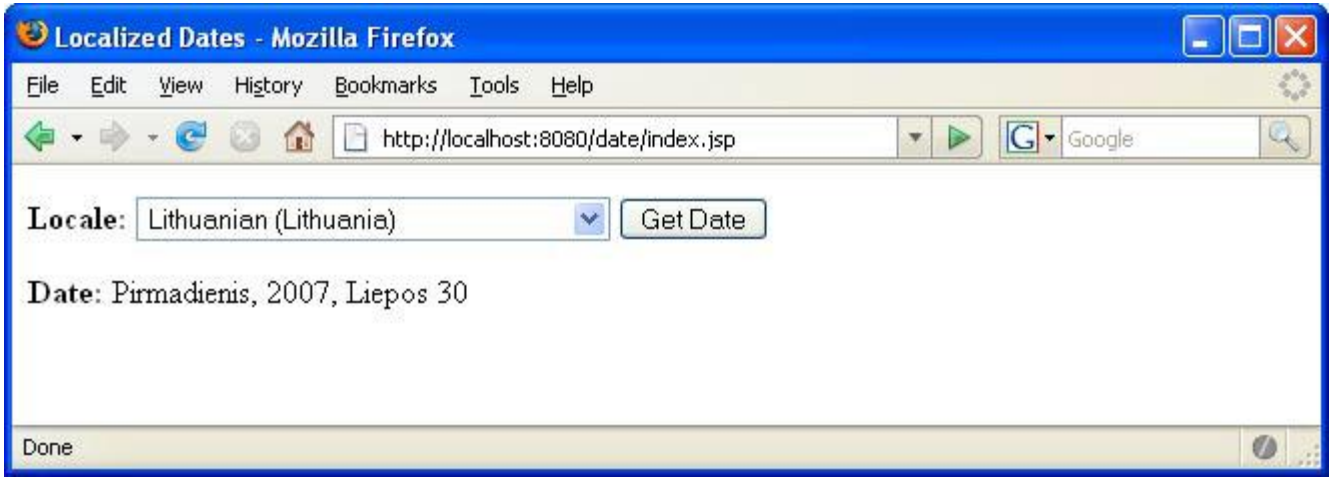
SUPORT DE CURS

- suport (The Java EE 5Tutorial)
  - Capitolul 5 – JavaServer Pages Technology

Ce este o pagina JSP?

- Definitie: O pagina JSP este un document de tip text care contine doua tipuri de date: statice, exprimate in orice format textual (precum HTML, SVG,WML, and XML), si elemente JSP, care construiesc continut dinamic.
  - extensie recomandata: `.jsp`
  - fragment JSP: `.jspf`

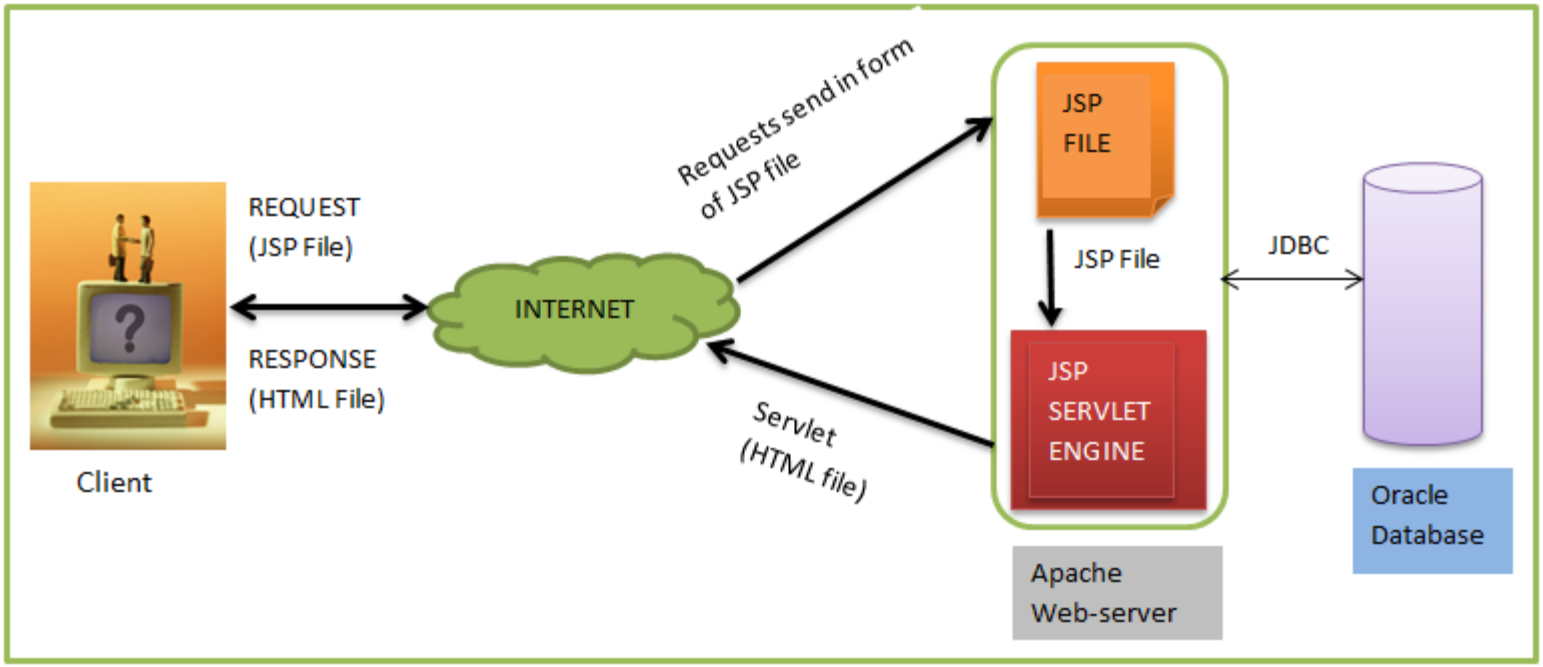


O simpla pagina JSP

```
<%@ page contentType="text/html; charset=UTF-8"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
<%@ taglib uri="/WEB-INF/functions.tld" prefix="f"%>

<html>
<head>
<title>Localized Dates</title>
</head>
<body bgcolor="white">

    <jsp:useBean id="locales" scope="application" class="mypkg.MyLocales" />

    <form name="localeForm" action="index.jsp" method="post">

        <c:set var="selectedLocaleString" value="${param.locale}" />
        <c:set var="selectedFlag" value="${!empty selectedLocaleString}" />
        <b>Locale:</b> <select name=locale>
            <c:forEach var="localeString" items="${locales.localeNames}">
                <c:choose>
                    <c:when test="${selectedFlag}">
                        <c:choose>
                            <c:when test="${f:equals(selectedLocaleString,localeString)}">
                                <option selected>${localeString}</option>
                            </c:when>
                            <c:otherwise>
                                <option>${localeString}</option>
                            </c:otherwise>
                        </c:choose>
                    </c:when>
                    <c:otherwise>
                        <option>${localeString}</option>
                    </c:otherwise>
                </c:choose>
            </c:forEach>
        </select> <input type="submit" name="Submit" value="Get Date">
    </form>

    <c:if test="${selectedFlag}">
        <jsp:setProperty name="locales" property="selectedLocaleString" value="${selectedLocaleString}" />
        <jsp:useBean id="date" class="mypkg.MyDate" />
        <jsp:setProperty name="date" property="locale" value="${locales.selectedLocale}" />
        <b>Date: </b>${date.date}
</c:if>
```

Ciclul de viata al unei pagini JSP

- Traducere si compilare
- Executie



Ciclul de viata al unei pagini JSP

- Traducere si compilare
  - date statice -> output catre stream
  - elemente JSP
    - directive – controlul traducerii in servlet
    - elemente de scripting – cod Java ce va fi inserat in servlet
    - expresii EL – parametrii catre evaluatorul expresiilor JSP
    - jsp:[set|get]Property – metode JavaBean
    - jsp:[include|forward] – convertite in invocari catre Servlet API
    - jsp:plugin - convertit in markup specific de browser
    - taguri custom – apeluri catre tag handler-ul care implementeaza tagurile custom

CICLUL DE VIATA AL UNEI PAGINI JSP

- Execution
  - Buffering
    - `<%@ page buffer="none|xxxkb" %>`
  - Tratarea erorilor in JSP Page Errors
    - `<%@ page errorPage="file-name" %>`
    - `<%@ page isErrorPage="true" %>`
    - javax.servlet.jsp.ErrorData
      - `${pageContext.errorData.statusCode}`
      - `${pageContext.errorData.throwable}`
      - `${pageContext.errorData.throwable.cause}`

CREATING STATIC CONTENT

- orice format bazat pe text
  - HTML
  - WML
  - XHTML
  - XML
- directiva `page` cu atributul `contentType`
  - `<%@ page contentType="text/vnd.wap.wml"%>`

- Folosirea obiectelor in pagini JSP
  - obiecte implicite
    - page, request, session, application
  - obiecte specifice aplicatiilor
    - componente JavaBean
  - obiecte partajate
    - componente web acceseaza simultan obiecte stocate in contextul web
    - componente web acceseaza simultan obiecte stocate intr-o sesiune

COMPONENTE JAVABEAN

- Java class + design conventions = JavaBeans
- o propietate = variabila acesibila prin:
  - `PropertyClass getProperty() { ... }`
  - `setProperty(PropertyClass pc) { ... }`
  - creare si folosire in JSP
    - `<jsp:useBean id="beanName" class="fully-qualified-classname" scope="scope"/>`
    - `<jsp:useBean id="beanName" class="fully-qualified-classname" scope="scope">`
      `<jsp:setProperty .../>`
      `</jsp:useBean>`

```
EX:
<jsp:useBean id="cart" class="demo.ShoppingCart" scope="session">
    <jsp:setProperty property="user" value="john.smith" />
</jsp:useBean>
```

COMPONENTE JAVBEAN

- salvarea valorilor in atributele componentelor JavaBean
- presupunem
  - “beanName” = numele desemnat prin atributul “id” al tagului <jsp:useBean/>
  - componenta JavaBean are o metoda “setPropName”
  - “paramName” este un parametru din obiectul request

- salvarea valorilor in atributele componentelor JavaBean

Value Source	Element Syntax
String constant	`<jsp:setProperty name="beanName" property="propName" value="string-constant"/>`
Request parameter	`<jsp:setProperty name="beanName" property="propName" param="paramName"/>`
Request parameter name that matches bean property	`<jsp:setProperty name="beanName" property="propName"/>` `<jsp:setProperty name="beanName" property="*"/>`

Expression	`<jsp:setProperty name="beanName" property="propName" value="expression"/>`
	`<jsp:setProperty name="beanName" property="propName">`
	`<jsp:attribute name="value">`
	`expression`
	`</jsp:attribute>`
	`</jsp:setProperty>`

COMPONENTE JAVBEAN

- citirea valorilor din atributele componentelor JavaBean
  - expresii EL
    - `${bookDB.bookDetails.title}`
  - <jsp:getProperty>
    - `<jsp:getProperty name="beanName" property="propName"/>`

Unified Expression Language

- Unified EL
  - JSP2.0 + JSF

```
<c:if test="${sessionScope.cart.numberOfItems > 0}">
...
</c:if>
```

  - evaluare imediata: ${expr}
    - read (rvalue)
    - `<fmt:formatNumber value="${sessionScope.cart.total}"/>`
  - evaluare amanata: #{expr}
    - read/write (lvalue)
    - `<h:inputText id="name" value="#{customer.name}" />`

Unified Expression Language

- expresii de tip valoare / metoda
  - expresii valoare
    - referinte catre obiecte
      - JavaBeans, Collections, Enumerations, Implicit objects
    - referinte catre proprietatile obiectelor
      - ${customer.name} sau ${customer["name"]}
      - JavaBean: get<Property>()
      - array sau List:
        - ${customer.orders[1]}
        - ${customer.orders.socks} // daca socks evaluat ca int
      - Map: ${customer.orders["socks"]}

Unified Expression Language

- expresii de tip valoare / metoda – 2
  - expresii valoare
    - operatii aritmaetice sau literali
      - `${"literal"}`
      - `${customer.age + 20}`
      - `${true}`
      - `${57}`
    - literali uEL
      - Boolean: true si false
      - Integer: ca in Java
      - Floating point: ca in Java
      - String: " sau '; " escaped \", ’ is escaped as \’, and \ is escaped as \\
      - Null: null
  - metode
    - `<some:tag value="#{bean.method}"/>`

Unified Expression Language

- dezactivarea evaluarii expresiilor
- rezolvarea expresiilor
  - ValueExpression class – defineste o expresie de valoare
  - MethodExpression class – defineste o expresie de metoda
  - ELResolver class - defineste mecanismul de rezolvarea expresiilor
  - ELResolver implementations – implementari de ELResolver pentru anumite tipuri de obiecte sau proprietati: ArrayELResolver, BeanELResolver, ListELResolver, MapELResolver, ResourceBundleELResolver
  - obiect ELContext – salveaza statusul rezolutiei EL, referinte catre ELResolvers si continte obiecte de tip context (JspContext)

Unified Expression Language

- obiecte implicite
  - pageContext
    - servletContext
    - session
    - request
    - response
  - adiacente
    - param
    - paramValues
    - header
    - headerValues
    - cookie
    - initParam
- accesarea variabilelor salvate intr-un scop
  - pageScope
  - requestScope
  - sessionScope
  - applicationScope

JSP – REUTILIZAREA CONTINUTULUI

- Preluarea informațiilor din cereri (Requests)
  - directiva `include`
    - la traducerea in servlet
    - continut static sau alta pagina JSP
    - `<%@ include file="banner.jspf" %>`
  - preludes si codas
    - include-uri implcite (
    - definirea de gruprui
  - elementul `jsp:inclu`
    - la executia paginii JS
    - continut static sau al
      - static = continu
      - dinamic = reque
    - `<jsp:include page=`

```
<jsp-config>
  <jsp-property-group>
    <display-name>bookstore2</display-name>
    <url-pattern>/books/*</url-pattern>
    <el-ignored>false</el-ignored>
    <scripting-invalid>false</scripting-invalid>
    <is-xml>false</is-xml>
    <include-prelude>/template/preludeTagLib.jspf</include-prelude>
    <include-prelude>/template/preludeErrorPage.jspf</include-prelude>
    <include-prelude>/template/prelude.jspf</include-prelude>
    <include-coda>/template/coda.jspf</include-coda>
  </jsp-property-group>

  <jsp-property-group>
    <display-name>bookstore2</display-name>
    <url-pattern>/error/*</url-pattern>
    <el-ignored>false</el-ignored>
    <scripting-invalid>false</scripting-invalid>
    <is-xml>false</is-xml>
    <include-prelude>/template/preludeTagLib.jspf</include-prelude>
    <include-prelude>/template/prelude.jspf</include-prelude>
    <include-coda>/template/coda.jspf</include-coda>
  </jsp-property-group>
</jsp-config>
```

JSP – TRANSFERUL CONTROLULUI

- <jsp:forward page="/main.jsp" />
  - daca s-au trimis date va esua cu `IllegalStateException`
  - elementul jsp:param
    - folosit pentru `jsp:forward` si pentru `jsp:include`
    - `<jsp:param name="param1" value="value1"/>`
- includerea unui applet
  - elementul `jsp:plugin`
    - genereaza HTML specific browserului (<object> sau <embed>)

Unified Expression Language

- August 2005
- By Ryan Lubke, Jennifer Ball, Pierre Delisle
- sinteza asupra modificarilor aduse de catre Unified EL

Cuvinte cheie

- JSP
- Unified EL
- include
- JavaBean
- proprietate

Resurse utile

- http://www.oracle.com/technetwork/java/javaee/jsp/index.html
- http://www.oracle.com/technetwork/java/index.html
- http://www.oracle.com/technetwork/java/unifiedel-139263.html