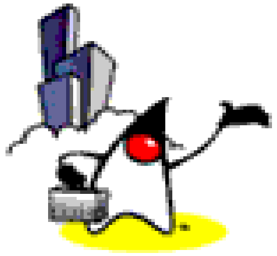
Using JSF
Tag Libraries

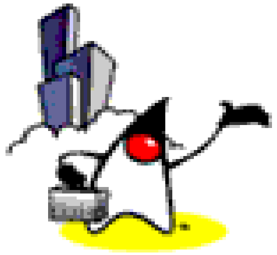


Two Tag Libraries

- jsf_core
  - Defines other JSF related tags
  - Independent of any rendering technology
- html_basic
  - Defines tags for representing common HTML user interface components
- JSP page need to declare them

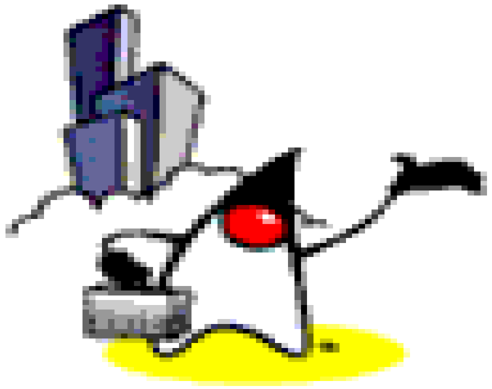
```
<%@ taglib uri="http://java.sun.com/jsf/html/" prefix="h" %>
<%@ taglib uri="http://java.sun.com/jsf/core/" prefix="f" %>
```

Using Core Tags



Types of Core Tags

- Event handling tags
- Attribute configuration tag
- Data conversion tags
- Facet tag
- Localization tag
- Parameter substitution tag
- Tags for representing items in a list
- Container tag
- Validator tags
- Output tag
- Container for form tags



Using Core Tags
Event Handling Tags

Event Handling Tags and Attributes

- <f:actionListener> or actionListener attribute
  - Registers an action listener on a component
- <f:valueChangeListener> or valueChangeListener attribute
  - Registers a value-change listener on a parent component
- <f:phaseListener>
  - Registers a PhaseListener instance on a UIViewRoot component

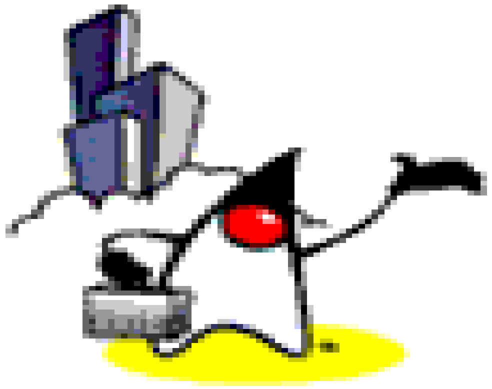
Example: actionListener attribute in chooseLocale.jsp (carstore)

```
<h:commandButton id="NAmerica" action="storeFront"
                value="#{bundle.english}"
                actionListener="#{carstore.chooseLocaleFromLink}">
</h:commandButton>
```

Example: <f:valueChangeListener> in customerInfo.jsp (carstore)

```
<h:inputText  id="firstName" value="#{customer.firstName}"
  required="true">
  <f:valueChangeListener type="carstore.FirstNameChanged" />
</h:inputText>
```

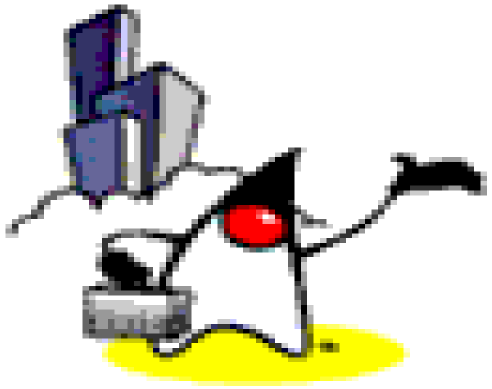
- *carstore* is a pacakge
- *FirstNameChanged* is a class that implements ValueChangeListener interace



Using Core Tags
Attribute Configuration Tag

Attribute Configuration Tag

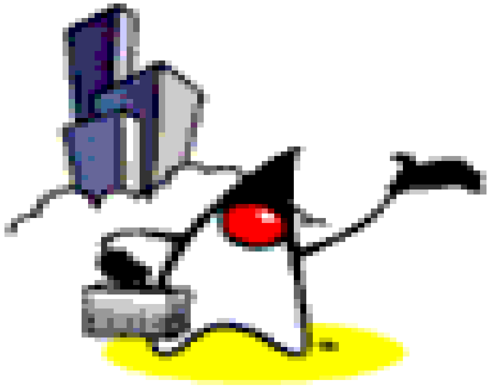
- <f:attribute>
  - Adds configurable attributes (key/value pairs) to a parent components



Using Core Tags
Data Conversion Tag

Data Conversion Tags

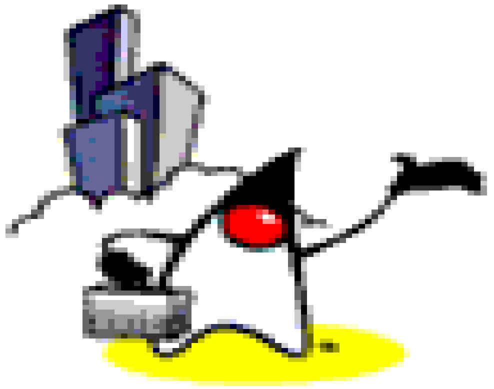
- <f:converter>
  - Registers an arbitrary converter on the parent component
- <f:convertDateTime>
  - Registers a DateTime converter instance on the parent component
- <f:convertNumber>
  - Registers a Number converter instance on the parent component



Using Core Tags
Facet Tag

Facet Tag

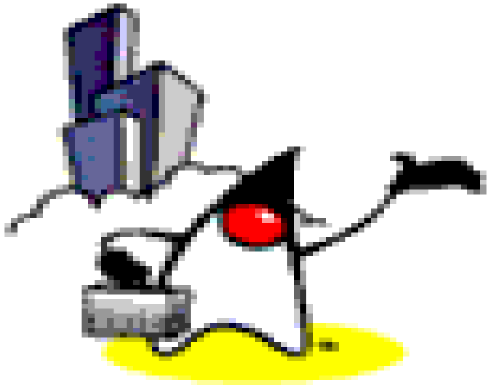
- <f:facet>
  - Signifies a nested component that has a special relationship to its enclosing tag



Using Core Tags
LocalizationTag

Localization Tag

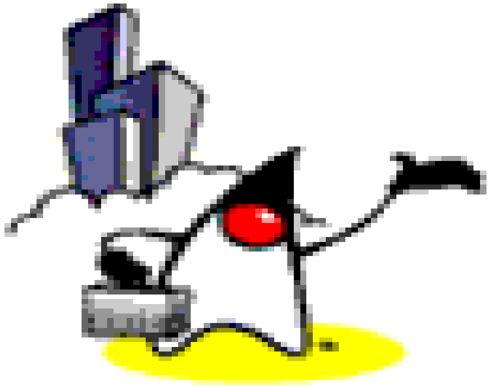
- <f:loadbundle>
  - Loads a resource bundle, stores properties as a Map



Using Core Tags
Parameter Substitution Tag

Parameter Substitution Tag

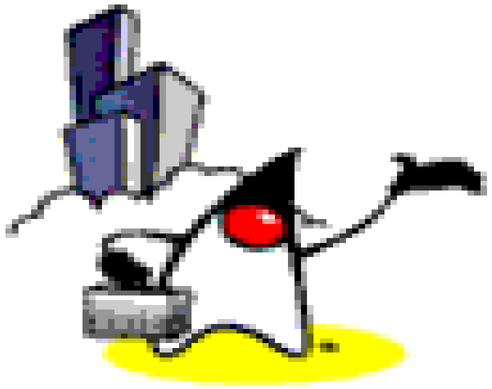
- <f:parameter>
  - Substitutes parameters into a MessageFormat instance and to add query string name/value pairs to a URL



Using Core Tags
Tags for Representing Items in a List

Tags for Representing Items in a List

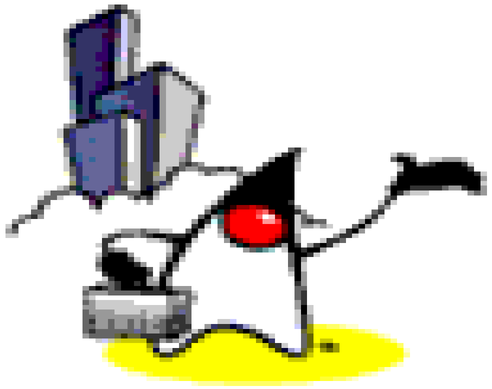
- <f:selectItem>
  - Represents one item in a list of items in a UISelectOne or UISelectMany component
- <f:selectItems>
  - Represents a set of items in a UISelectOne or UISelectMany component



Using Core Tags
Container Tag

Container Tag

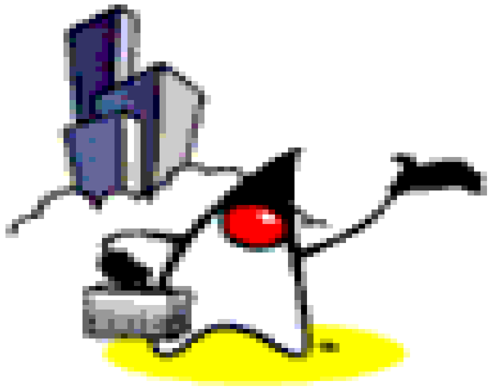
- <f:subview>
  - Contains all JavaServer Faces tags in a page that is included in another JavaServer Faces page



Using Core Tags
Validator Tags

Validator Tags

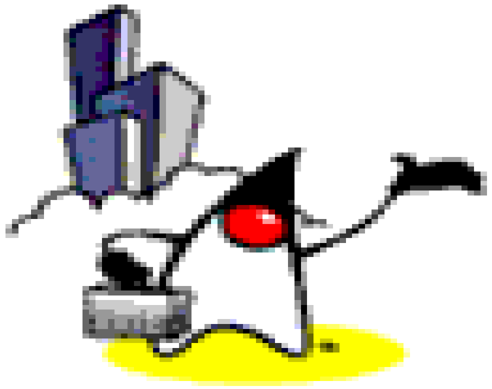
- <f:validateDoubleRange>
  - Registers a DoubleRangeValidator on a component
- <f:validateLength>
  - Registers a LengthValidator on a component
- <f:validateLongRange>
  - Registers a LongRangeValidator on a component
- <f:validator>
  - Registers a custom Validator on a component



Using Core Tags
Output Tags

Output Tags

- <f:verbatim>
  - Generates a UIOutput component that gets its content from the body of this tag



Using Core Tags
Container for Form Tags

<f:view> element

- Represents UIViewRoot component
- All component tags on the page must be enclosed in the view tag

```
<f:view>
  ... other faces tags, possibly mixed with other
   content ...
</f:view>
```

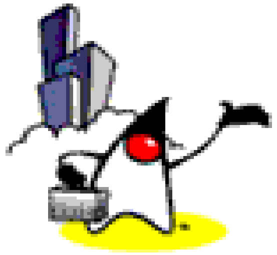
- Optional locale attribute
  - Overrides the Locale stored in the UIViewRoot

Nested View's

- Use <f:subview> element in order to include a JSF page inside another JSP page

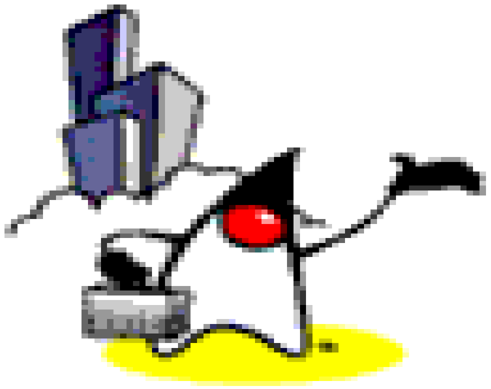
```
<f:subview>
  jsp:include page="theNestedPage.jsp"
<f:subview>
```

Using HTML Tags



HTML Tags

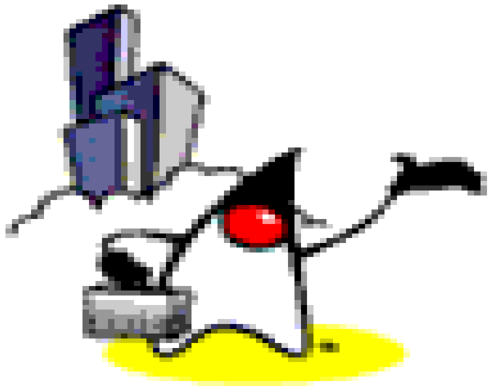
- Used to control display data or accept data from the user
- Common attributes
  - id: uniquely identifies the component
  - value: identifies an external data source mapped to the component's value
  - binding: identifies a bean property mapped to the component instance



Using HTML Tags
UIForm & <h:form>

UIForm & <h:form> tag

- UIForm UI component
  - An input form with child components representing data that is either presented to the user or submitted with the form
- Encloses all of the controls that display or collect data from the user
- Include HTML markup to layout the controls on the page
  - <h:form> tag itself does not perform any layout



Using HTML Tags
UICommand & <h:commandButton>

UICommand & <h:commandButton>

- UICommand component performs an action (submit requests) when it is activated
  - No need to use onchange to force form submits with value change events
- Most common renderers are Button and Link

UICommand & <h:commandButton>

- Additional attributes
  - action:
    - is either a logical outcome String or a JSF EL expression that points to a bean method that returns a logical outcome String
    - In either case, the logical outcome String is used by the navigation system to determine what page to access when the *UICommand* component is activated
  - actionListener:
    - is a JSF EL expression that points to a bean method that processes an *ActionEvent* fired by the *UICommand* component

Example1: <h:commandButton> from carDetail.jsp

```
<h:commandButton action="#{carstore.buyCurrentCar}"
                 value="#{bundle.buy}" />
```

- action attribute
  - references a method on the CarStore backing bean that performs some processing and returns an outcome
  - outcome is passed to the default NavigationHandler, which matches the outcome against a set of navigation rules defined in the application configuration file.
- value attribute
  - references the localized message for the button's label
  - bundle part of the expression refers to the ResourceBundle that contains a set of localized messages

Example1: buyCurrentCar() method of CarStore.java

```
public class CarStore extends Object {
   ...
   public String buyCurrentCar() {
     getCurrentModel().getCurrentPrice();
     return "confirmChoices";
   }
   ...
}
```

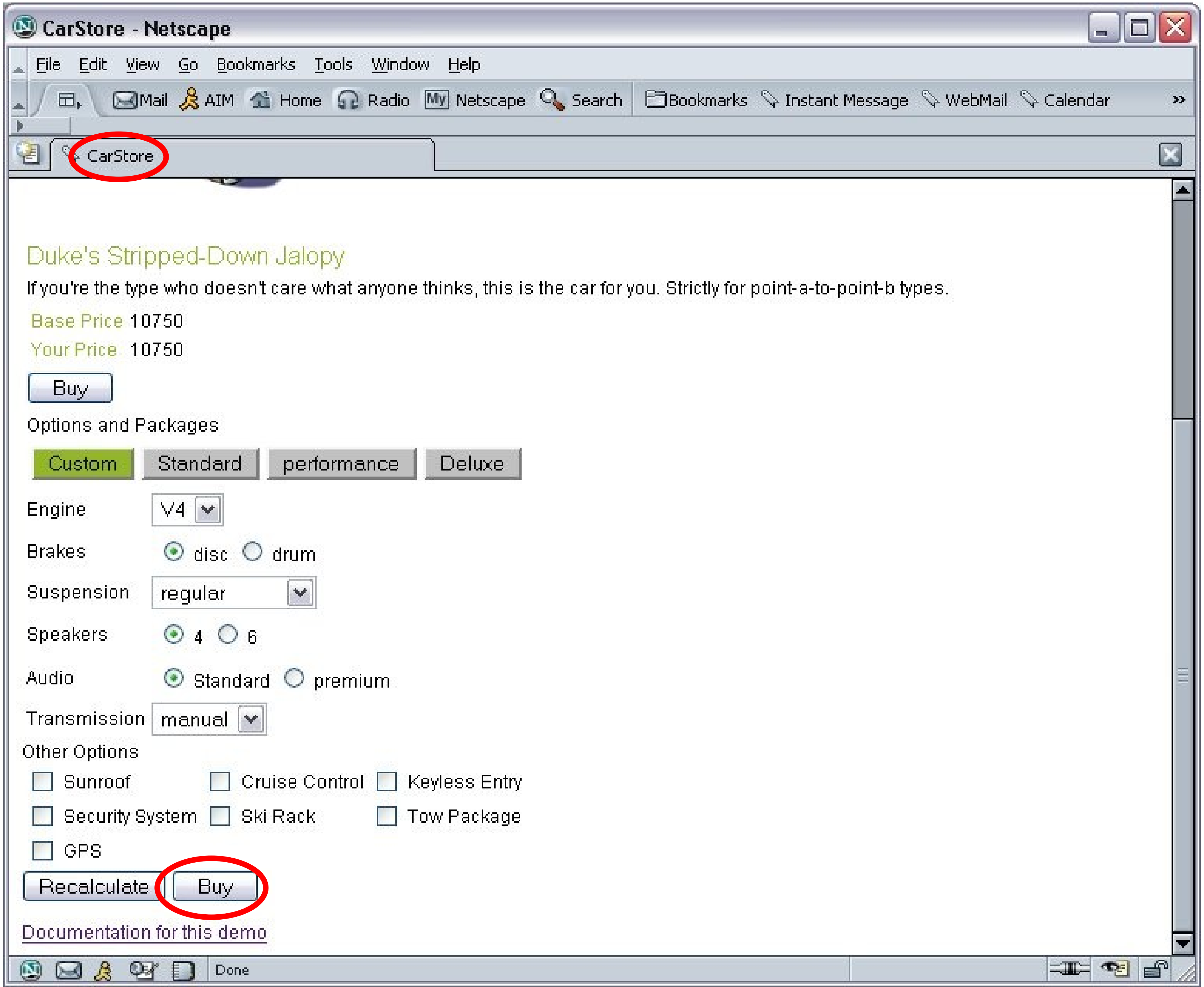
Example1: Navigation rule for “conformChoices” in faces-config.xml

```
<navigation-rule>
  <from-view-id>/carDetail.jsp</from-view-id>
  <navigation-case>
    <description>
      Any action that returns "confirmChoices" on
      carDetail.jsp should cause navigation to
      confirmChoices.jsp
    </description>
    <from-outcome>confirmChoices</from-outcome>
    <to-view-id>/confirmChoices.jsp</to-view-id>
  </navigation-case>
</navigation-rule>
```

Example1: Resources.properties file of carstore

```
sunroofLabel=Sunroof
cruiseLabel=Cruise Control
keylessLabel=Keyless Entry
securityLabel=Security System
skiRackLabel=Ski Rack
towPkgLabel=Tow Package
gpsLabel=GPS
buy=Buy
back=Back
buyLabel=Thanks for stopping by!
```

carDetail.jsp


CarStore - Netscape
File Edit View Go Bookmarks Tools Window Help
Mail AIM Home Radio Netscape Search Bookmarks Instant Message WebMail Calendar
CarStore

Duke's Stripped-Down Jalopy

If you're the type who doesn't care what anyone thinks, this is the car for you. Strictly for point-a-to-point-b types.

Base Price	10750
Your Price	10750

Buy

Options and Packages

Custom | Standard | performance | Deluxe

Engine	V4
Brakes	[✓ disc] drum
Suspension	regular
Speakers	[✓ 4] 6
Audio	[✓ Standard] premium
Transmission	manual

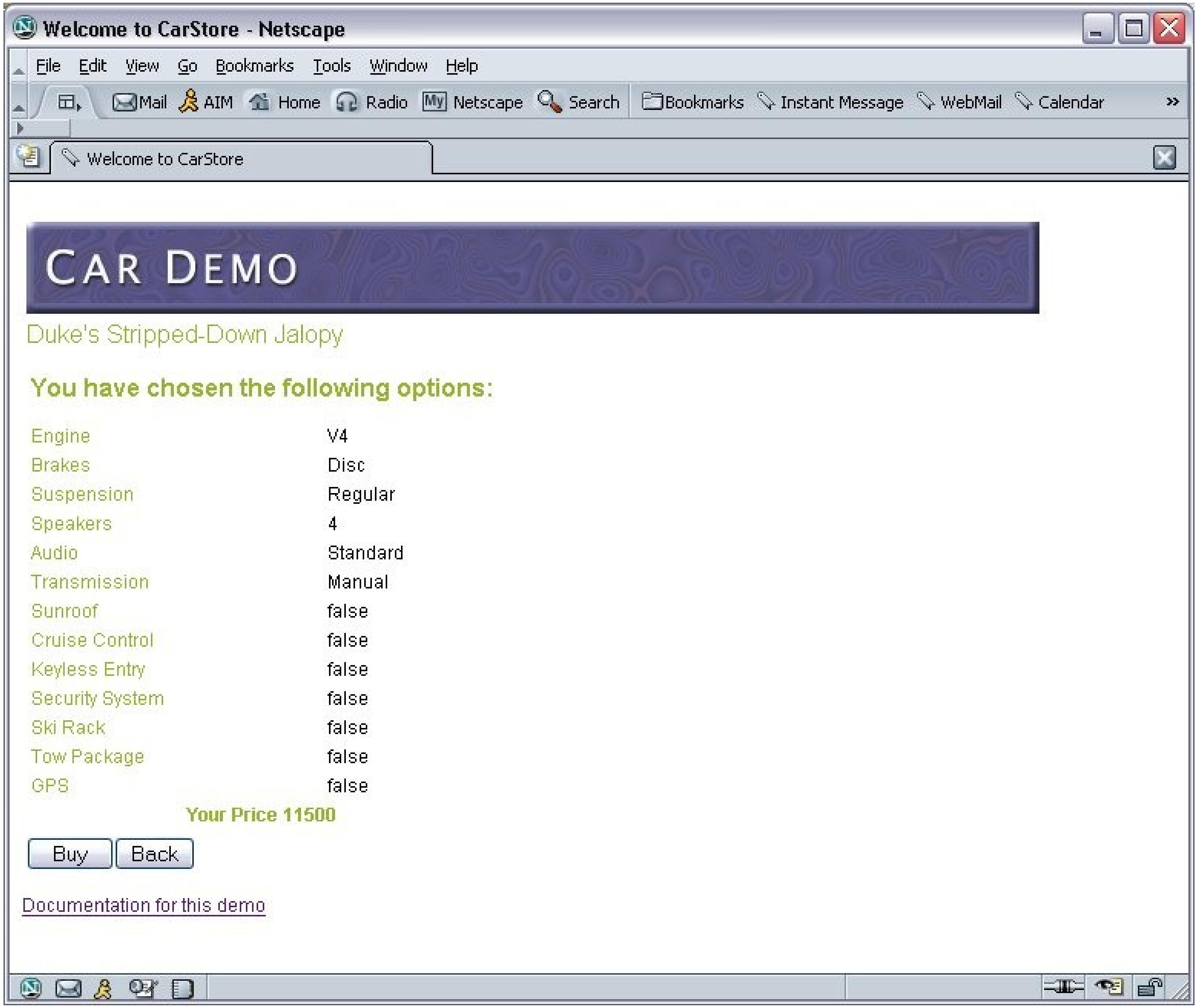
Other Options

☐ Sunroof ☐ Cruise Control ☐ Keyless Entry
☐ Security System ☐ Ski Rack ☐ Tow Package
☐ GPS

Recalculate Buy

Documentation for this demo

confirmChoices.jsp


Welcome to CarStore - Netscape
File Edit View Go Bookmarks Tools Window Help
Mail AIM Home Radio Netscape Search Bookmarks Instant Message WebMail Calendar
Welcome to CarStore
CAR DEMO

Duke's Stripped-Down Jalopy

You have chosen the following options:

Engine	V4
Brakes	Disc
Suspension	Regular
Speakers	4
Audio	Standard
Transmission	Manual
Sunroof	false
Cruise Control	false
Keyless Entry	false
Security System	false
Ski Rack	false
Tow Package	false
GPS	false

Your Price 11500

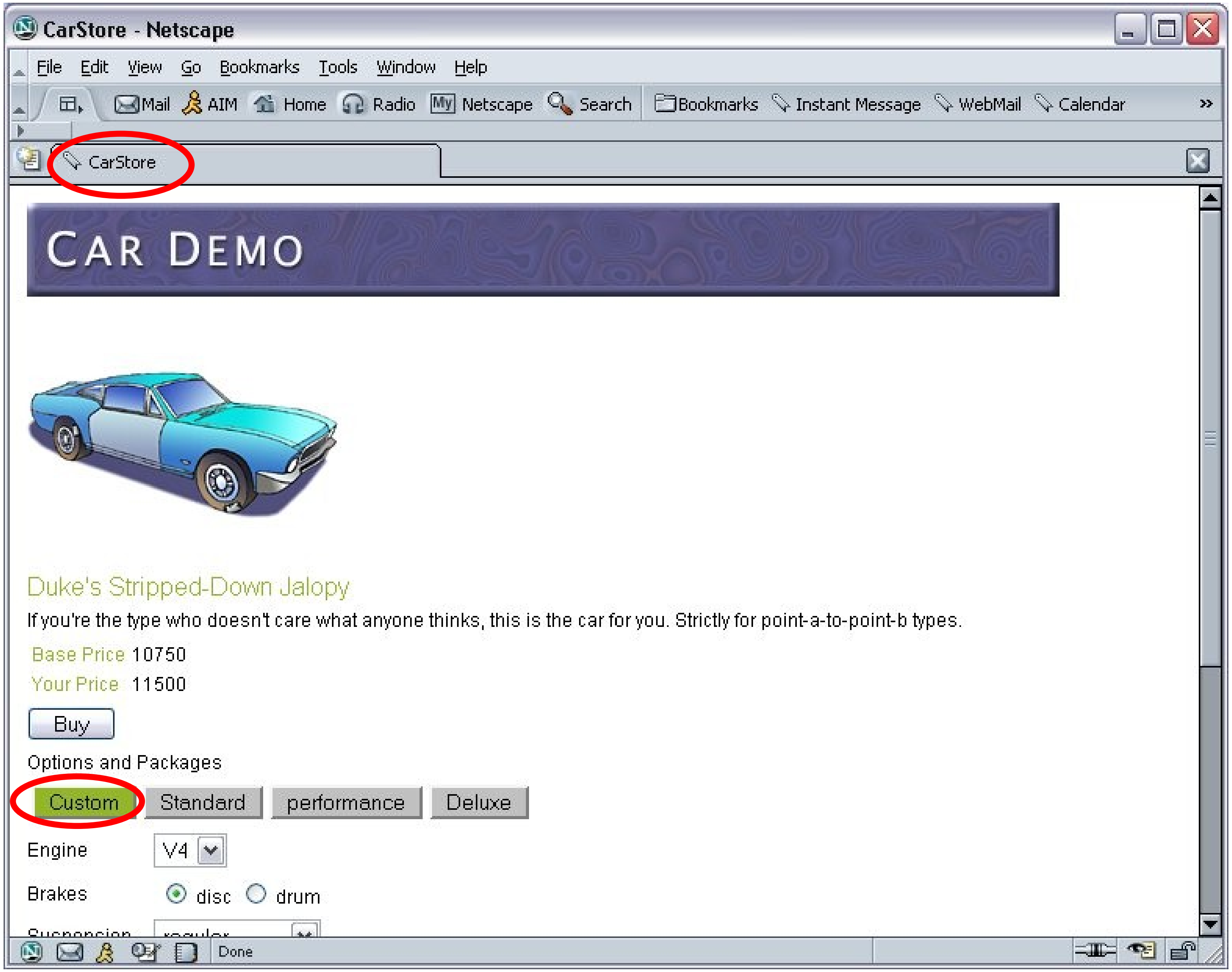
Documentation for this demo

Example2: <h:commandButton> from optionsPanel.jsp

```
<h:commandButton
    id="Custom"
    value="#{bundle.Custom}"
    styleClass="#{carstore.customizers.Custom.buttonStyle}"
    actionListener="#{carstore.choosePackage}" />
```

- optionsPanel.jsp is “include'd” inside carDetails.jsp

optionsPanel.jsp


CarStore - Netscape
File Edit View Go Bookmarks Tools Window Help
Mail AIM Home Radio Netscape Search Bookmarks Instant Message WebMail Calendar
CarStore
CAR DEMO
Done

Duke's Stripped-Down Jalopy

If you're the type who doesn't care what anyone thinks, this is the car for you. Strictly for point-a-to-point-b types.

Base Price	10750
Your Price	11500

Buy

Options and Packages

Custom Standard performance Deluxe

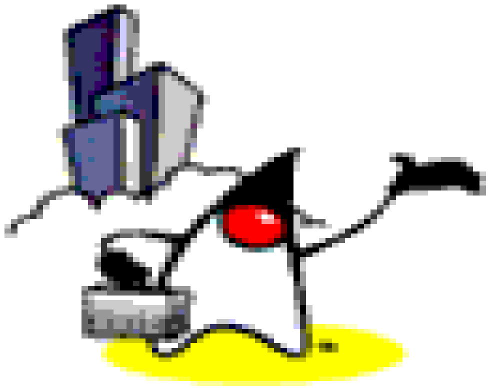
Engine	V4
Brakes	[✓ disc] drum
Suspension	regular

Example2: choosePackage() method of CarStore.java

```
public class CarStore extends Object {
   ...
   public void choosePackage(ActionEvent event) {
      String packageName = event.getComponent().getId();
      choosePackage(packageName);
   }
   public void choosePackage(String packageName) {
       // Business logic processing
   }
   ...
}
```

action vs. actionListener

- action
  - Designed for business logic
  - Participate in navigation handling
- actionListener
  - Receives ActionEvent object as a parameter
  - Handles user interface logic
  - Does not participate in navigation



Using HTML Tags
UIInput & UIOutput

UIInput & UIOutput Components

- *UIInput* component displays a value to a user and allows the user to modify this data
  - The most common example is a text field
- *UIOutput* component displays data that cannot be modified
  - The most common example is a label
- Conversions can occur
- Both *UIInput* and *UIOutput* components can be rendered in several different ways

UIInput Component and Renderer Combinations

- inputHidden
  - Allows a page author to include a hidden variable in a page
- inputSecret
  - Accepts one line of text with no spaces and displays it as a set of asterisks as it is typed
- inputText
  - Accepts a text string of one line
- inputTextarea
  - Accepts multiple lines of text

UIOutput Component and Renderer Combinations

- outputLabel
  - Displays a nested component as a label for a specified input field
- outputLink
  - Display an <a href > tag that links to another page without generating an ActionEvent
- outputMessage
  - Displays a localized message
- outputText
  - Displays a text string of one line

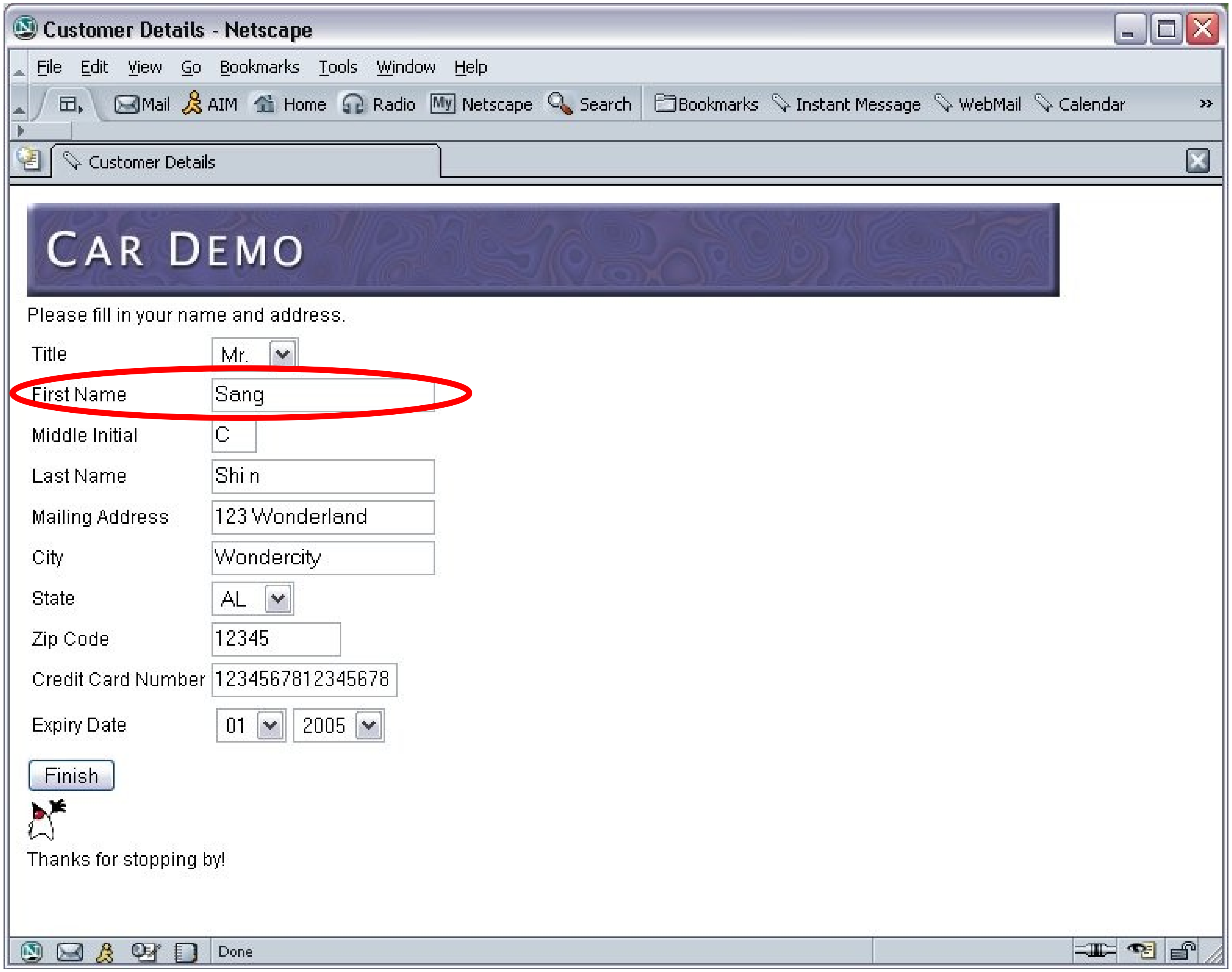
Attributes of <h:inputText> and <h:outputText>

- id
- value
- converter
- validator
  - JSF EL expression pointing to a backing-bean method that performs validation on the component's data
- valueChangeListener
  - a JSF EL expression that points to a backing-bean method that handles the event of entering a value in this component

Example: <h:inputText> in customerInfo.jsp

- `<h:inputText  value="#{customer.lastName}" />`

customerInfo.jsp

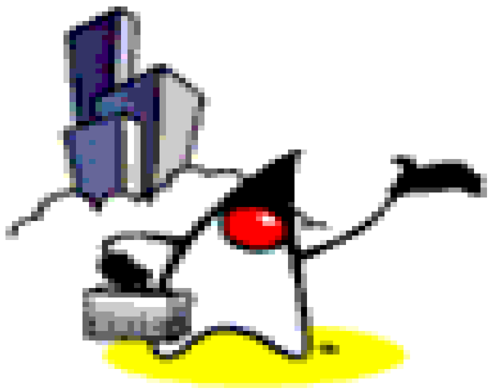

Customer Details - Netscape
File Edit View Go Bookmarks Tools Window Help
Mail AIM Home Radio Netscape Search Bookmarks Instant Message WebMail Calendar
Customer Details
CAR DEMO
Done

Please fill in your name and address.

Title	Mr.
First Name	Sang
Middle Initial	C
Last Name	Shi n
Mailing Address	123 Wonderland
City	Wondercity
State	AL
Zip Code	12345
Credit Card Number	1234567812345678
Expiry Date	01 2005

Finish

Thanks for stopping by!



Using HTML Tags
UIPanel
<h:panelGrid> &
<h:panelGroup>

UIPanel Component

- Is used as a layout container for its children
- Must have the number of rows predetermined

UIIPanelComponent and Renderer Combinations

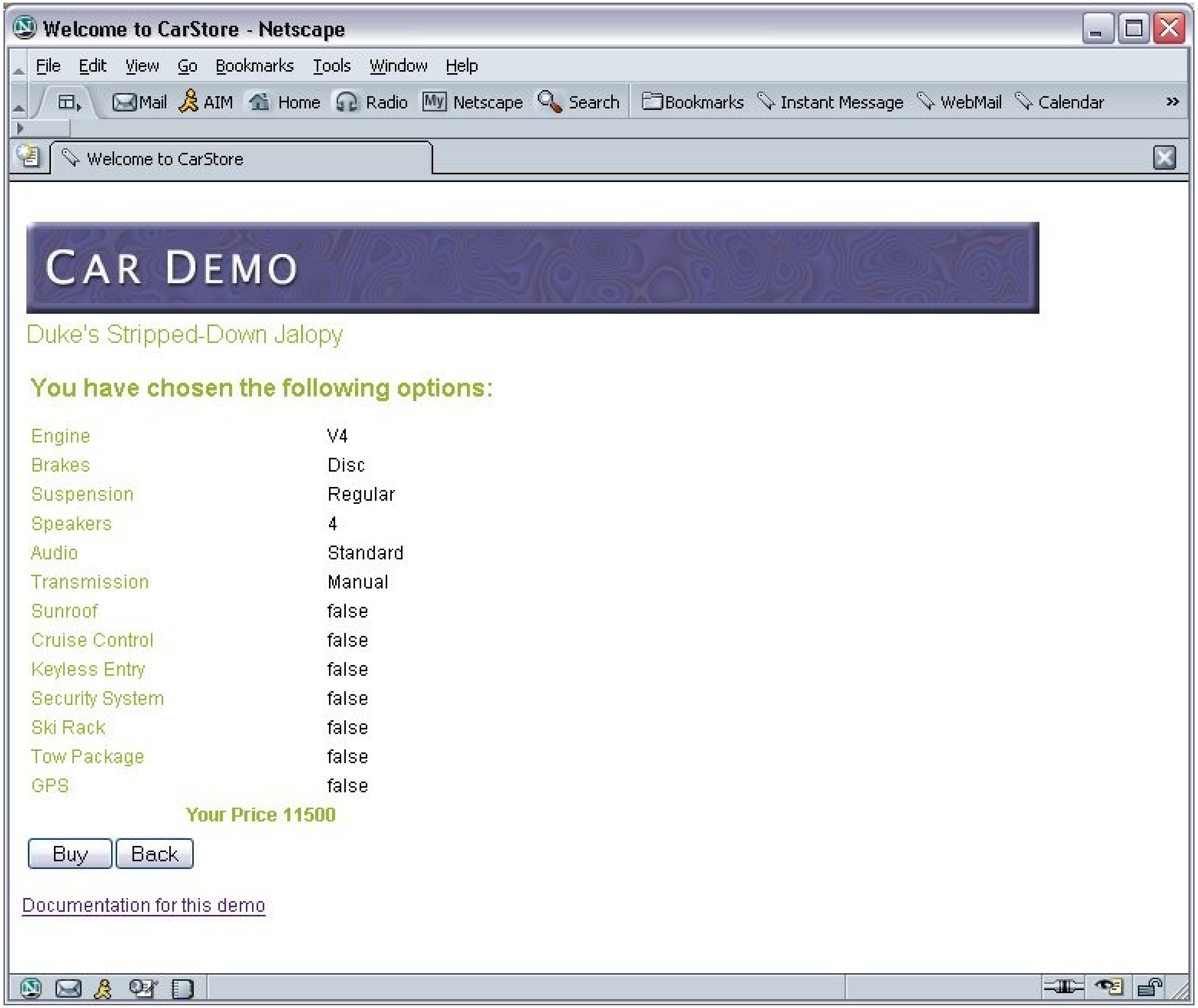
- panelGrid
  - Displays a HTML table
  - Used to display entire table
  - Render attributes are
    - columnClasses, columns, footerClass, headerClass, panelClass, rowClasses
- panelGroup
  - Groups a set of components under one parent
  - Used to represent rows in the tables

confirmChoices.jsp

```
<h:panelGrid columns="2"  footerClass="subtitle"
   headerClass="subtitlebig" styleClass="medium"
     columnClasses="subtitle,medium">

    <f:facet name="header">
      <h:outputText  value="#{bundle.buyTitle}" />
    </f:facet>
    <h:outputText value="#{bundle.Engine}" />
    <h:outputText value="#{carstore.currentModel.attributes.engine}"  />
    <h:outputText value="#{bundle.Brakes}" />
     ...
    <f:facet name="footer">
     <h:panelGroup>
        <h:outputText  value="#{bundle.yourPriceLabel}"  />
        &nbsp;
        <h:outputText  value="#{carstore.currentModel.currentPrice}" />
     </h:panelGroup>
    </f:facet>
    ...
</h:panelGrid>
```

confirmChoices.jsp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Security System	false
Ski Rack	false
Tow Package	false
GPS	false

Your Price 11500

Documentation for this demo

Questions?