

Wstęp - Prosta aplikacja internetowa w technologii Java EE 5

**Programowanie
komponentowe 1**

Przykład 1- Wykonanie prostej aplikacji internetowej w technologii JavaEE w środowisku Netbeans 5.5 z wykorzystaniem narzędzia typu RAPID – Visual Web Pack

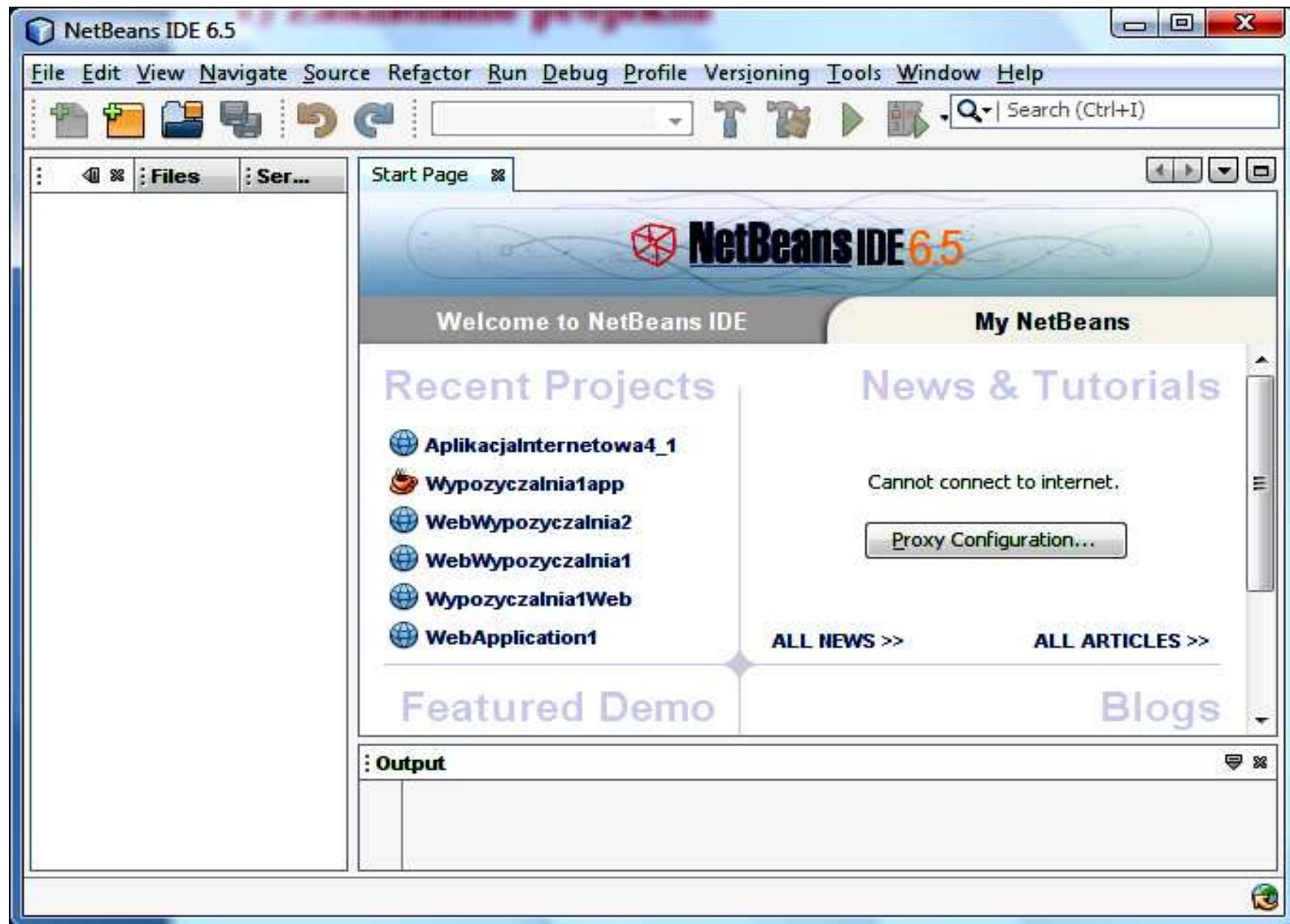
Czynności podstawowe – pierwsza iteracja

- 1) Zakładanie projektu**
- 2) Zaprojektowanie strony: komponenty Label, TextField, Button, StaticText, MessageGroup**
- 3) Dodanie nowych właściwości elementom strony**
- 4) Uruchomienie aplikacji**

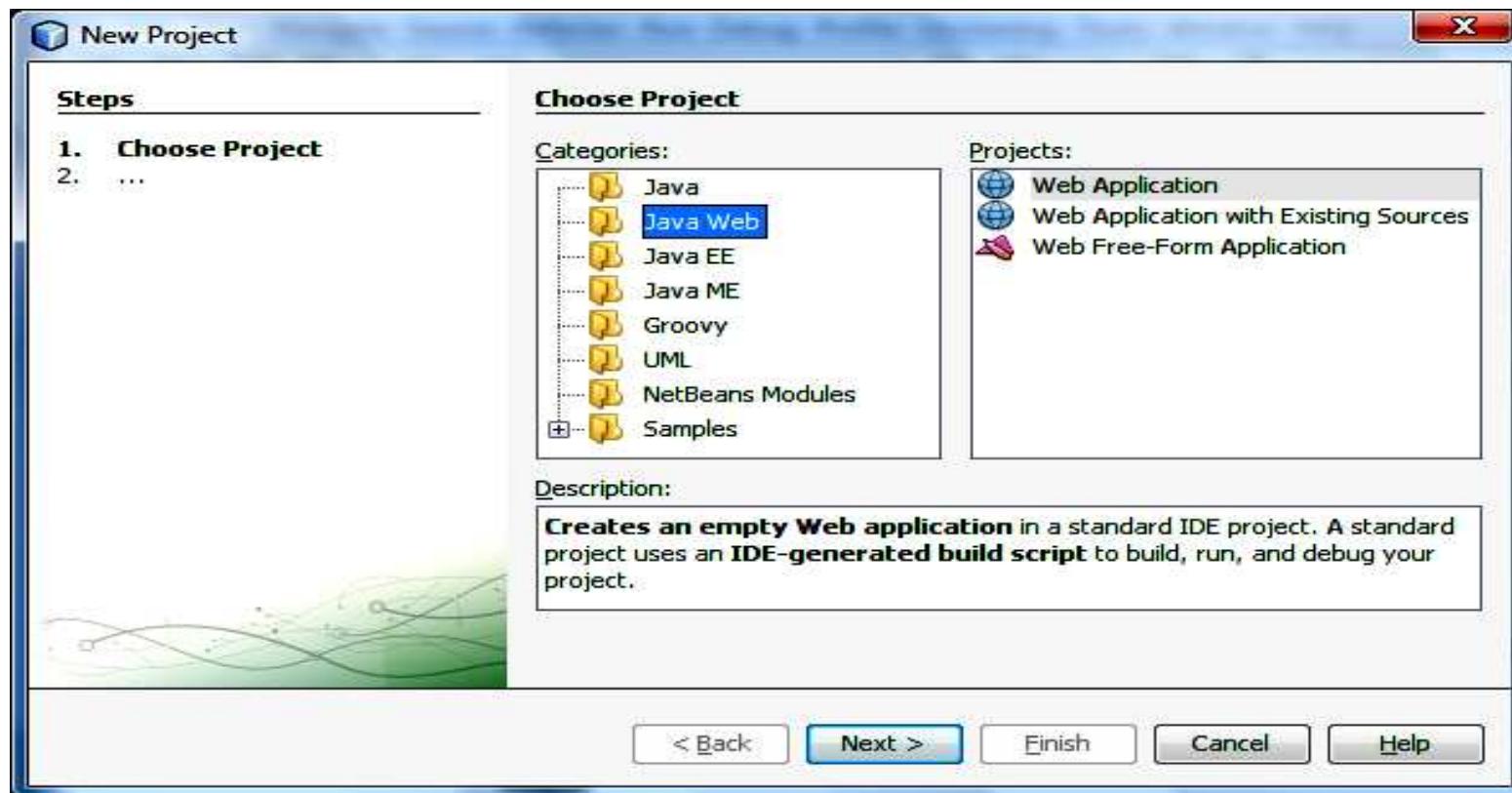
Czynności dodatkowe – druga iteracja

- 5) Zastąpienie elementu typu TextField elementem typu DropDownList**
- 6) Powiązanie elementu typu DropDownList z tabelą bazy danych**
- 7) Dodanie nowych właściwości elementom strony**
- 8) Uruchomienie aplikacji**
- 9) Uzupełnienia aplikacji**

1) Zakładanie projektu



1. Z głównego menu wybierz opcję **File > New Project**.
2. W **New Project**, wybierz Java Web listy kategorii (**Categories**) i wybierz **Web Application** z listy projektów (**Projects**).
3. Kliknij **Next**.
4. Nazwij projekt **AplikacjaInternetowa1 (Project Name)** i wybierz katalog (**Browse dla Project Location**) i kliknij **Next**.
5. Wybierz **Visual Web JavaServer Faces** i kliknij **Finish**
6. Pojawi się strona www (**Page1**) w oknie **Visual Designer**.



 New Web Application X

Steps

1. Choose Project
- 2. Name and Location**
3. Server and Settings
4. Frameworks

Name and Location

Project Name:

Project Location: Browse...

Project Folder:

Use Dedicated Folder for Storing Libraries
 Set as Main Project

Different users and projects can share the same compilation libraries (see Help for details).

< Back Next > Finish Cancel Help



New Web Application



Steps

1. Choose Project
2. Name and Location
- 3. Server and Settings**
4. Frameworks

Server and Settings

Add to Enterprise Application: <None>

Server:

GlassFish V2

Add...

Use dedicated library folder for server JAR files

Java EE Version: Java EE 5

Context Path: /AplikacjaInternetowa1

< Back

Next >

Finish

Cancel

Help

New Web Application

Steps

1. Choose Project
2. Name and Location
3. Server and Settings
4. **Frameworks**

Frameworks

Select the frameworks you want to use in your web application.

Visual Web JavaServer Faces

Spring Web MVC 2.5

JavaServer Faces

Struts 1.2.9

Hibernate 3.2.5

Visual Web JavaServer Faces Configuration

Default Java Package:

JSF Servlet Name:

Servlet URL Mapping:

Validate XML Verify Objects

< Back Next > **Finish** Cancel Help

AplikacjaInternetowa1 - NetBeans IDE 6.5

File Edit View Navigate Source Refactor Run Debug Profile Versioning Tools Window Help

Search (Ctrl+I)

Start Page Page1

Design JSP Java Any Size

Design your page by dragging components from the Palette.

Define a component's behavior by adding code: Either double-click component or right-click the component and choose its event hand

Page layout is currently set to Grid Layout, which positions components at specific x and y coordinates. If you would like to use flow layout, which positions components left to right and top to bottom, change the Page Layout property to Flow Layout.

Palette

Woodstock Basic

- Label
- Static Text
- Text Field
- Text Area
- Button
- Hyperlink

Page1 - Properties

General

id Page1

Appearance

Page1

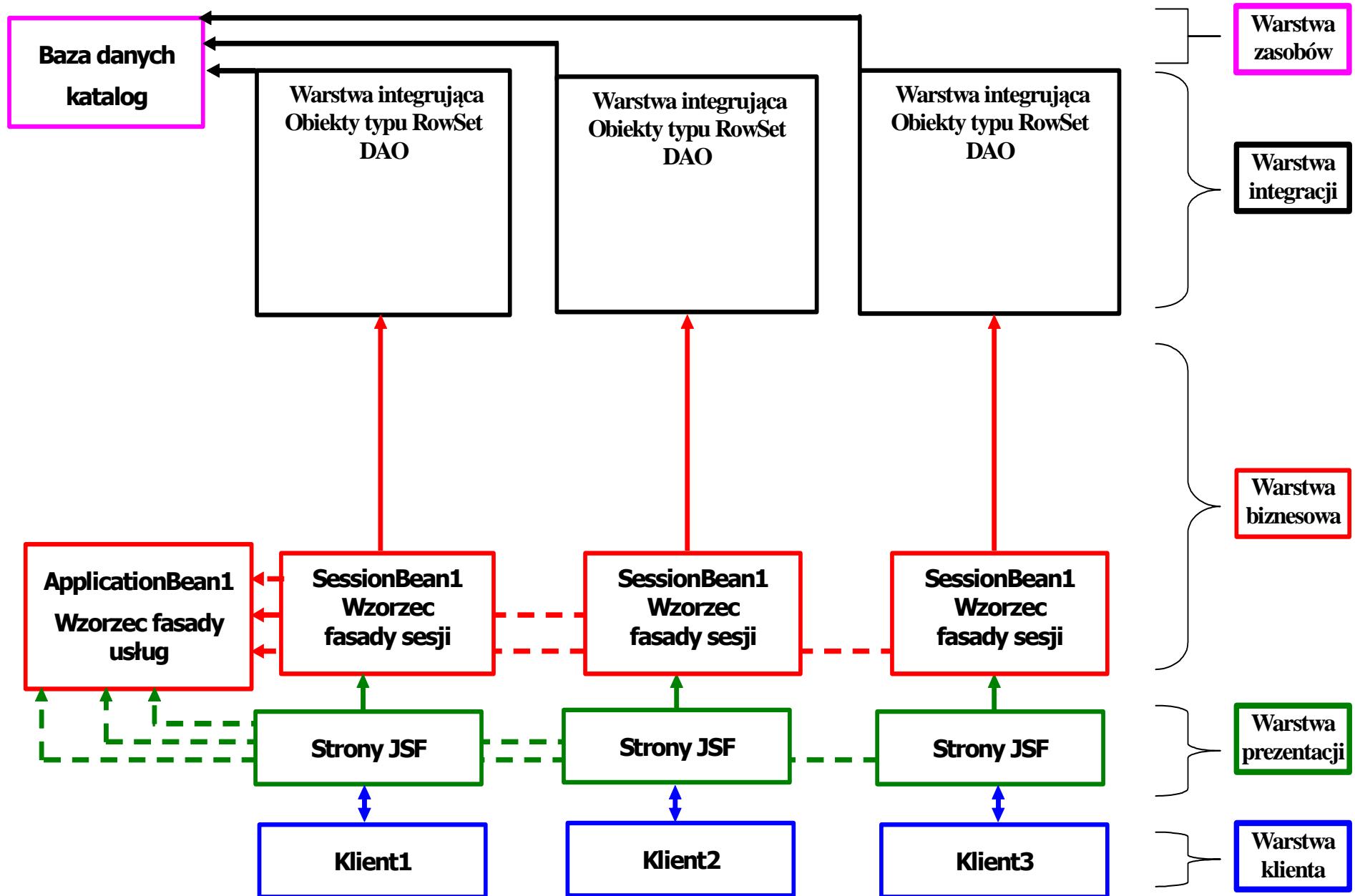
Page1 (request)

Output Tasks

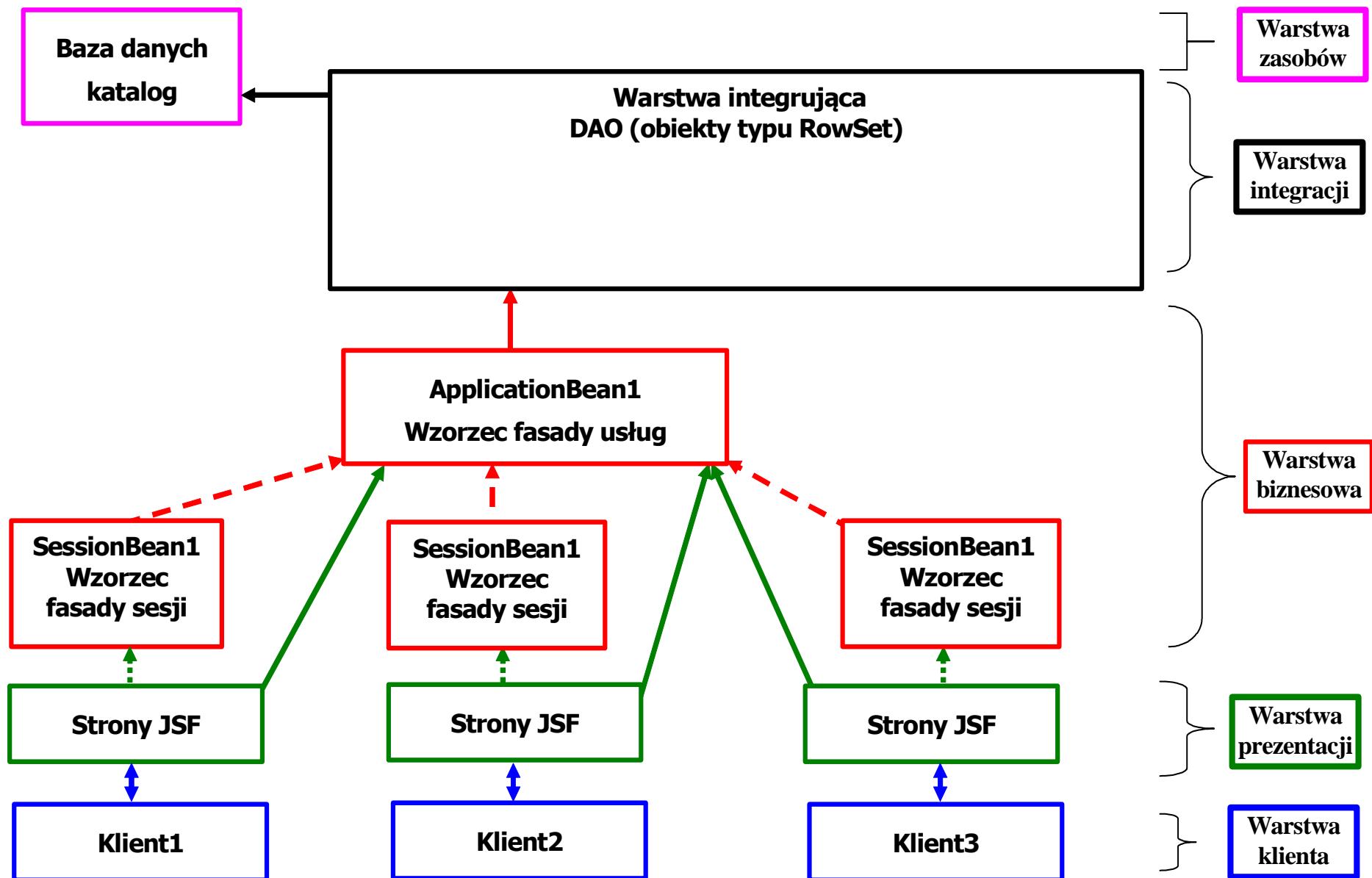
Page1 - Navigator

Page1 RequestBean1 SessionBean1 ApplicationBean1

Architektura aplikacji pięciowarstwowej (przykład z wykładu 5 - punkt 4)- linie przerywane oznaczają powiązania nie wykorzystane w aplikacji

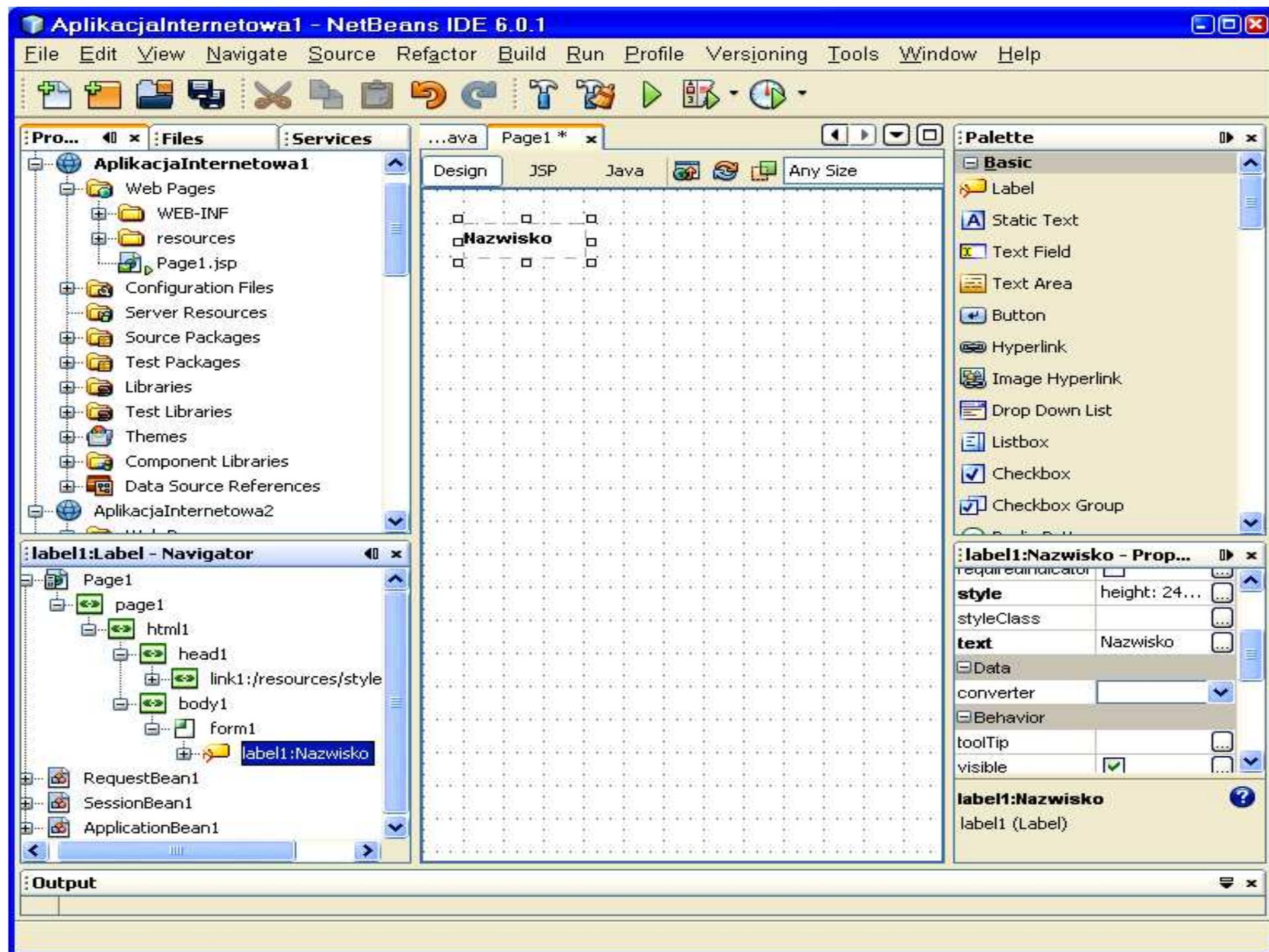


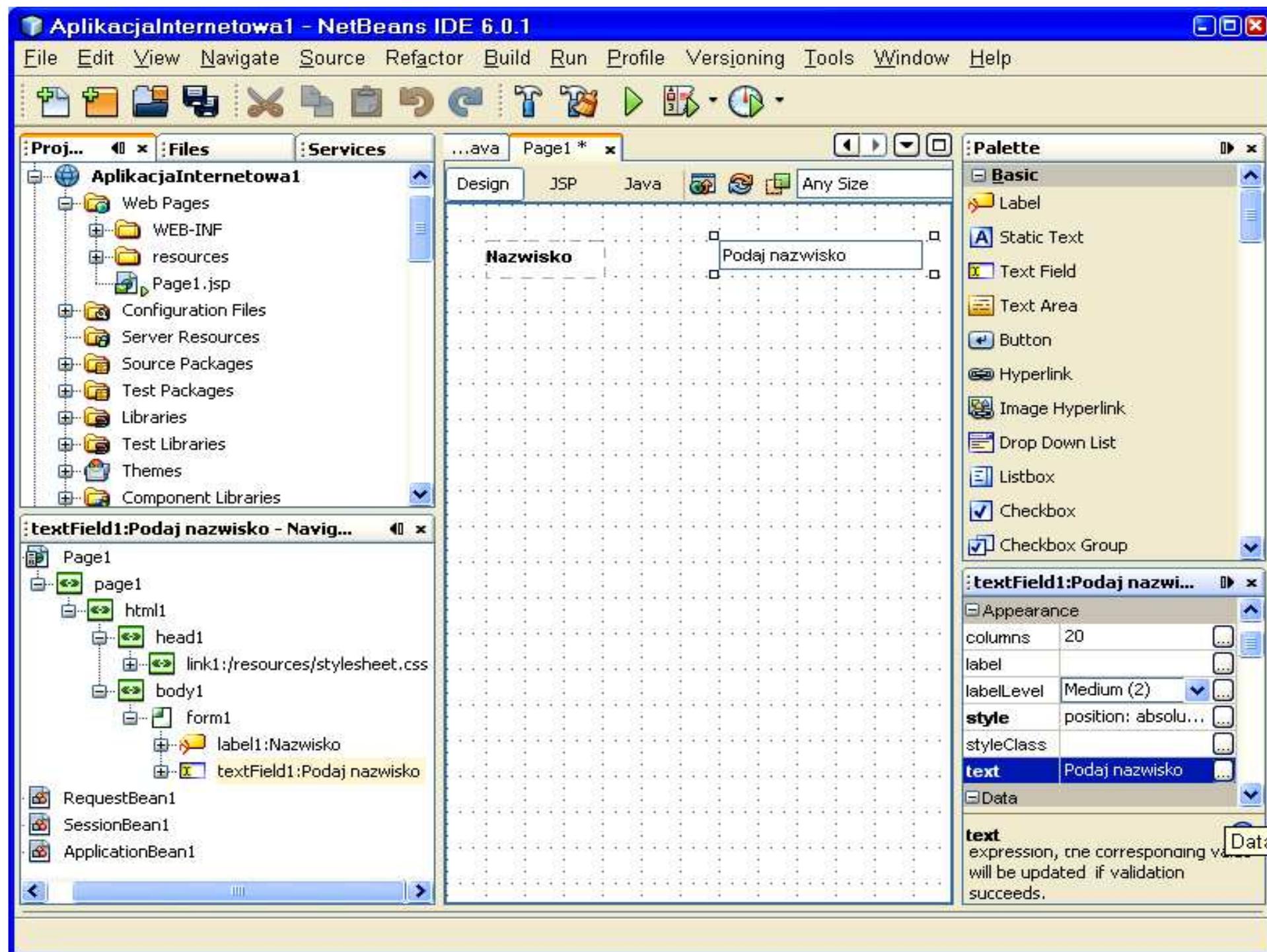
Architektura aplikacji pięciowarstwowej (przykład z wykładu 6 – punkt 4)- linie przerywane oznaczają powiązania nie wykorzystane w aplikacji



2) Projektowanie strony w sposób wizualny

1. Ustaw Paletę komponentów – wybierz **Window > Palette** i przewiń na obszar komponentów typu **Woodstock Basic**
2. Przeciągnij komponent typu **Label** na stronę **Page1** ustawionej w trybie **Visual Design**
3. W **Properties** wpisz we właściwości **text** słowo **Nazwisko:**, to samo można zrobić bezpośrednio na elemencie klikając prawym klawiszem na obszarze elementu i wybierając z wyskakującego menu opcję edycji
4. Przeciągnij z **Palety** komponent typu **Text Field** i poóż go z prawej strony komponentu typu **Label** i wpisz słowa **Podaj nazwisko** wg sposobu z p.2. Naciśnij **Ctrl-Shift-Drag** na komponencie **Label** i przeciągnij na komponent typu **Text Field** w celu powiązania tych komponentów
5. Przeciągnij z **Palety** komponent typu **Button** i poóż go z prawej strony komponentu typu **TextField**, wpisz na nim słowa: **Dzień dobry** wg sposobu z p.2
6. Przeciągnij z Palety komponent typu **StaticText** i poóż go poniżej komponentu typu **Label**
7. Przeciągnij z **Palety** komponent typu **Message Group** i poóż go poniżej komponentu typu **TextField** – służy on przeglądarce do wyświetlania komunikatów o błędach
8. Na belce narzędziowej okna edycji strony kliknij na JSP – pojawi okno edycji pliku typu **JavaServer Pages (JSP)**
9. Ustaw dla strony **Page1** właściwość **Title** na **Dzień dobry, Web** w oknie **Properties**. Będzie to tytuł umieszczony w oknie przeglądarki
10. Należy na każdy z komponentów kliknąć prawym klawiszem myszy i na wyskakującym menu kliknąć na pozycję **Add Binding Attribute** – spowoduje to wygenerowanie kodu Javy w pliku Page1.java, reprezentujący te komponenty





Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Proj... Files Services

...ge1 SessionBean1.java Page1 * Design JSP Java Any Size

Nazwisko Podaj nazwisko Dzień dobry

button1:Dzień dobry - Navigator

Page1 page1 html1 head1 link1:/resources/stylesheet.css body1 form1 label1:Nazwisko textField1:Podaj nazwisko button1:Dzień dobry

RequestBean1 SessionBean1 ApplicationBean1

Palette Basic Label Static Text Text Field Text Area Button Hyperlink Image Hyperlink Drop Down List Listbox Checkbox Checkbox Group

button1:Dzień do... Appearance escape imageURL mini noTextPadd primary style height: 2... styleClass text Dzień dobry

style the outermost HTML element when this component is rendered.

Design JSP Java Any Size

Nazwisko Podaj nazwisko Dzień dobry

button1:Dzień dobry - Navigator

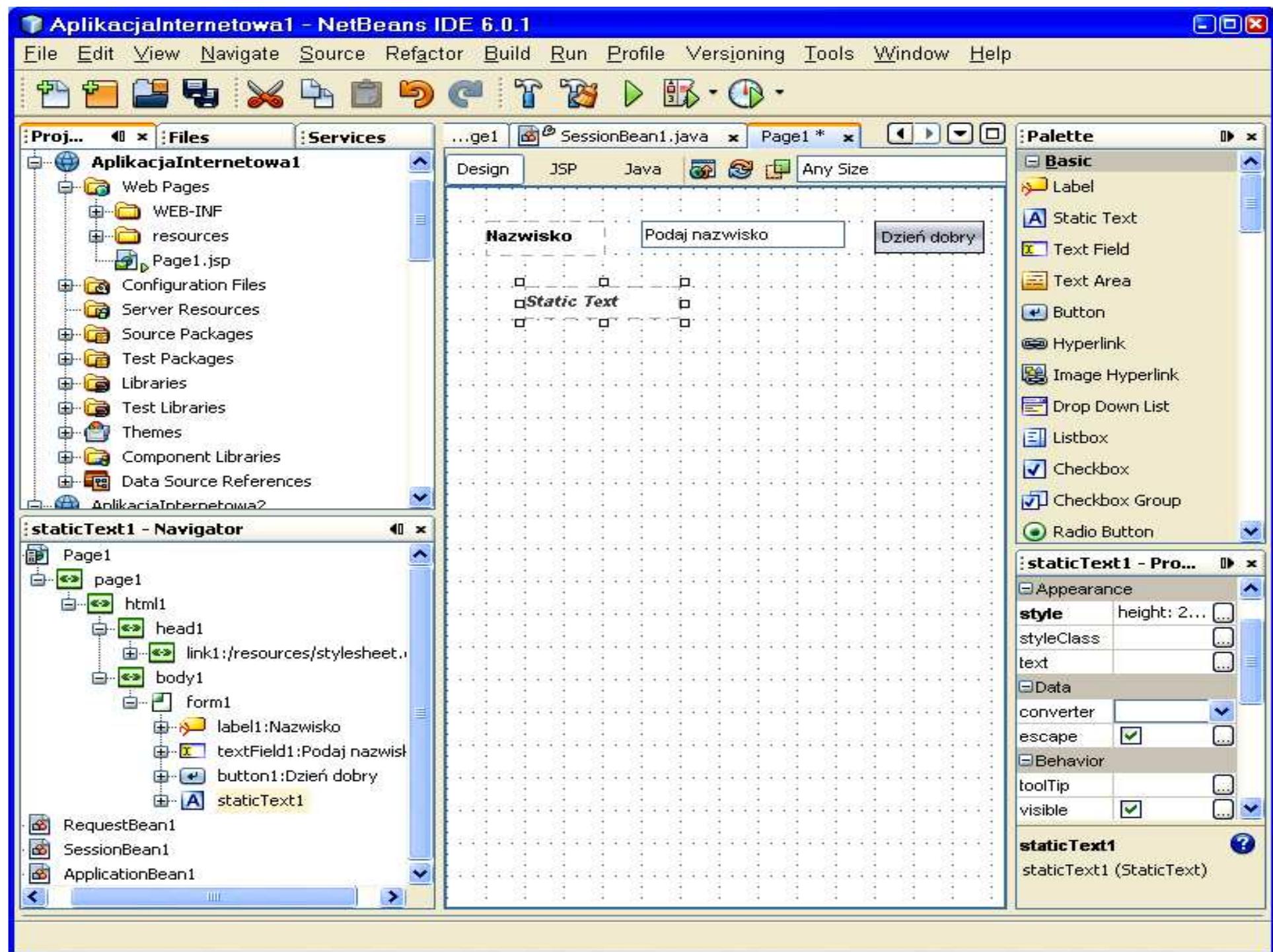
Page1 page1 html1 head1 link1:/resources/stylesheet.css body1 form1 label1:Nazwisko textField1:Podaj nazwisko button1:Dzień dobry

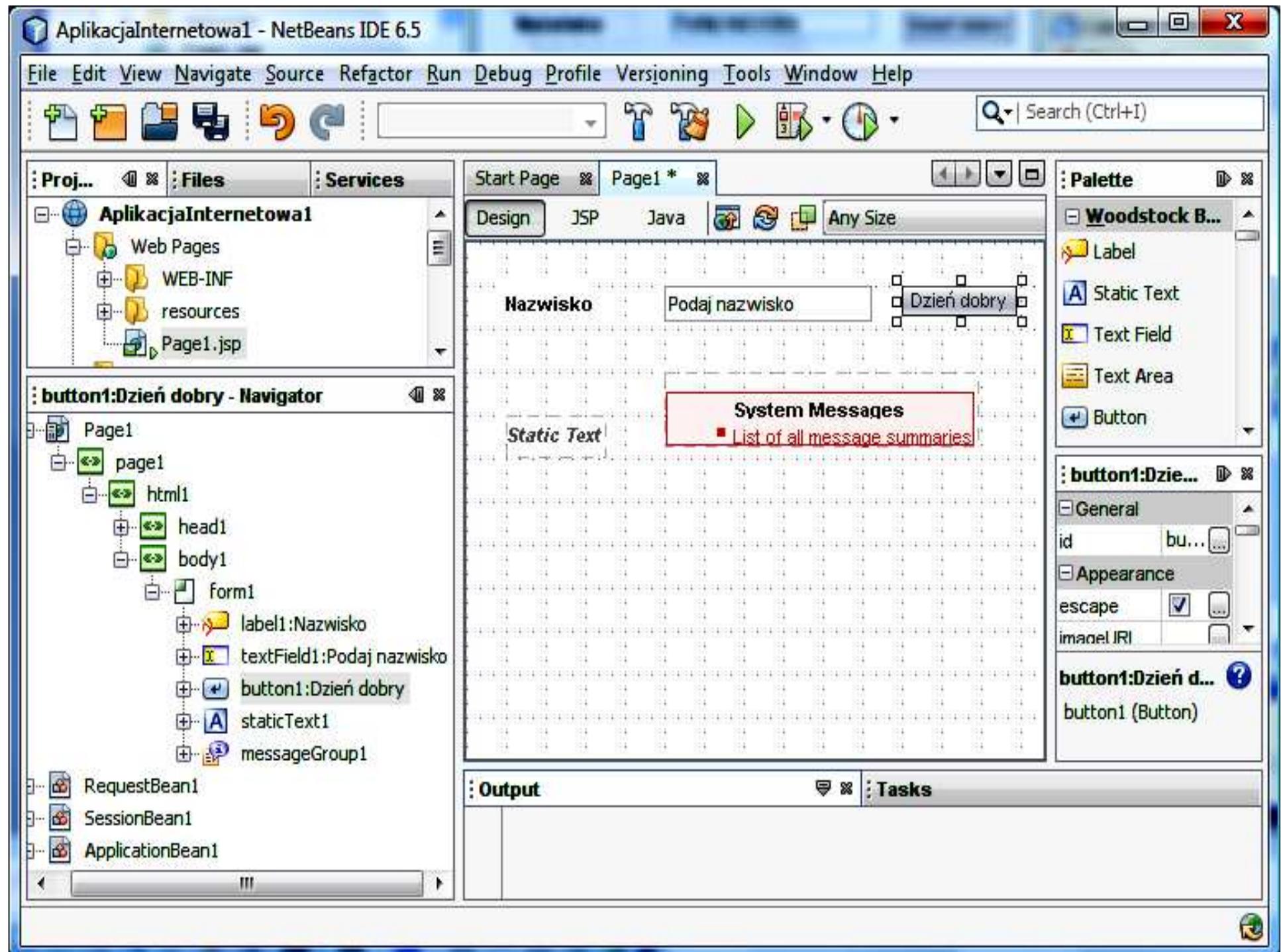
RequestBean1 SessionBean1 ApplicationBean1

Palette Basic Label Static Text Text Field Text Area Button Hyperlink Image Hyperlink Drop Down List Listbox Checkbox Checkbox Group

button1:Dzień do... Appearance escape imageURL mini noTextPadd primary style height: 2... styleClass text Dzień dobry

style the outermost HTML element when this component is rendered.





AplikacjaInternetowa1 - NetBeans IDE 6.5

File Edit View Navigate Source Refactor Run Debug Profile Versioning Tools Window Help

Search (Ctrl+I)

Proj... Files Services

Start Page Page1 * Page1 * Design JSP Java Any Size

Nazwisko

Edit Java Source
Bind to Data...
Add
Property Bindings...
Add Binding Attribute
Edit JSP Source
Edit Label Text
Select Parent
Edit Event Handler
Set Initial Focus
Virtual Forms...
Snap to Grid
Bring to Front
Send to Back
Customize
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Delete
Preview in Browser...
Refresh
Target Browser Window
Page Navigation

label1:Nazwisko - Navigator

Page1
RequestBean1
SessionBean1
ApplicationBean1

Output

Palette

- Woodstock Basic**
 - Label
 - Static Text
 - Text Field
 - Text Area
 - Button
 - Hyperlink
 - Image Hyperlink
 - Drop Down List
 - Listbox
 - Checkbox
 - Checkbox Group
 - Radio Button
 - Radio Button Group
 - Image
 - Table
 - Table Column
 - Table Row Group
 - Password Field
 - Hidden Field
 - Calendar
 - File Upload
 - Tree
 - Tree Node
 - Anchor
 - Message
 - Message Group
- Woodstock Layout**
 - Grid Panel
 - Group Panel
 - Layout Panel
 - Page Separator
 - Tab Set
 - Tab
 - Page Fragment Box
 - Page Alert
 - Property Sheet
 - Property Sheet Section
 - Property
 - Form
- Woodstock Composite**
 - Alert
 - Add Remove
 - Breadcrumbs
 - Inline Help
 - Progress Bar
 - Common Tasks Section
 - Common Tasks Group
 - Common Task
 - Bubble Help
 - Accordion
 - AccordionTab
 - Menu
- Validators**
 - Double Range Validator
 - Length Validator
 - Long Range Validator
- Converters**
 - Big Decimal Converter
 - Big Integer Converter
 - Boolean Converter
 - Byte Converter
 - Calendar Converter
 - Character Converter

label1:Nazwisko - Properties

General

id: label1

label1:Nazwisko

label1 (Label)

Tasks

PL

22:26

Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page x Page1 x Page1 x SessionBean1.java x Page1 * x

Design JSP Java

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <!--
3     Document      : Page1
4     Created on   : 2008-02-29, 20:56:35
5     Author        : ZK
6 -->
7 <jsp:root version="2.1" xmlns:f="http://java.sun.com/jsf/core" xmlns:h="http://java.sun.com/jsf/html" xmlns:ui="http://java.sun.com/jsf/facelets" xmlns:webuijsf="http://www.sun.com/webuijsf">
8     <jsp:directive.page contentType="text/html;charset=UTF-8" pageEncoding="UTF-8"/>
9     <f:view>
10        <webuijsf:page binding="#{Page1.page1}" id="page1">
11            <webuijsf:html binding="#{Page1.html1}" id="html1">
12                <webuijsf:head binding="#{Page1.head1}" id="head1">
13                    <webuijsf:link binding="#{Page1.link1}" id="link1" url="/resources/stylesheet.css"/>
14                </webuijsf:head>
15                <webuijsf:body binding="#{Page1.body1}" id="body1" style="-rave-layout: grid">
16                    <webuijsf:form binding="#{Page1.form1}" id="form1">
17                        <webuijsf:label binding="#{Page1.label1}" id="label1" style="height: 24px; left: 24px; top: 120px; width: 120px;" type="button">Label1</webuijsf:label>
18                        <webuijsf:textField binding="#{Page1.textField1}" id="textField1" style="left: 120px; top: 120px; width: 120px;" type="text">Text Field</webuijsf:textField>
19                        <webuijsf:button binding="#{Page1.button1}" id="button1" style="height: 24px; left: 120px; top: 120px; width: 120px;" type="button">Button1</webuijsf:button>
20                        <webuijsf:staticText binding="#{Page1.staticText1}" id="staticText1" style="height: 24px; left: 120px; top: 120px; width: 120px;" type="text">Static Text</webuijsf:staticText>
21                        <webuijsf:messageGroup binding="#{Page1.messageGroup1}" id="messageGroup1" style="position: absolute; left: 120px; top: 120px; width: 120px;" type="group"></webuijsf:messageGroup>
22                    </webuijsf:form>
23                </webuijsf:body>
24            </webuijsf:html>
25        </webuijsf:page>
26    </f:view>
27 </jsp:root>
```

3) Dodanie nowych właściwości elementom strony

Obsługa zdarzeń

- 1.** Z belki narzędziowej edytora strony **Page1** należy wybrać opcje **Design** w celu przełączenia się do trybu **Visual Designer**.
- 2.** Należy podwójnie kliknąć na komponent typu **Button**.
- 3.** Po kliknięciu pojawi się okno edycji dla pliku Java z klasą dziedziczącą od klasy **AbstractPageBean** w miejscu metody **button1_action()**
- 4.** Należy wpisać do jej ciała następujące instrukcje

String name = (String)textField1.getText();

//pobranie z pola wejściowego tekstowego typu TextField wpisane słowa

staticText1.setText("Dzień dobry, " + name + "!");

// i wyświetlenie ich w polu typu StaticText po naciśnięciu klawisza typu Button

i naciśnij **Alt+Shift+F** w celu uaktualnienia kodu

Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page x Page1 x Page1 x SessionBean1.java x Page1 * x

Design JSP Java

6 package aplikacjainternetowa1;

7

8

9 import com.sun.rave.web.ui.appbase.AbstractPageBean;

10 import com.sun.webui.jsf.component.Body;

11 import com.sun.webui.jsf.component.Button;

12 import com.sun.webui.jsf.component.Form;

13 import com.sun.webui.jsf.component.Head;

14 import com.sun.webui.jsf.component.Html;

15 import com.sun.webui.jsf.component.Label;

16 import com.sun.webui.jsf.component.Link;

17 import com.sun.webui.jsf.component.MessageGroup;

18 import com.sun.webui.jsf.component.Page;

19 import com.sun.webui.jsf.component.StaticText;

20 import com.sun.webui.jsf.component.TextField;

21 import javax.faces.FacesException;

22

23 /**

24 * <p>Page bean that corresponds to a similarly named JSP pa-

25 * class contains component definitions (and initialization -

26 * all components that you have defined on this page, as well

27 * lifecycle methods and event handlers where you may add be-

28 * to respond to incoming events.</p>

29 *

30 * @author ZK

31 */

32 public class Page1 extends AbstractPageBean {

33 Managed Component Definition|

1:1 INS

Files Serv...

Applikacjainternetowa1

Web Pages

WEB-INF

resources

Page1.jsp

Configuration Files

Server Resources

Source Packages

Test Packages

Libraries

Test Libraries

Themes

Component Libraries

Data Source References

Page1.java - Navigator

Members View

Page1 :: AbstractPageBean

_init()

page1 : Page

getPage1() : Page

setPage1(Page p)

html1 : Html

getHtml1() : Html

setHtml1(Html h)

head1 : Head

getHead1() : Head

setHead1(Head h)

Palette

Database First

Database Last

Database Next

Database Previous

Set Value from Database

Update Database

Primary Key Method

Database Append Row

Database Delete Row

Application Data

Retrieve Value from Session

Store Value in Session

Retrieve Value from Application

Store Value in Application

Retrieve Value from Request

Store Value in Request

Web App Functions

Send Email

Log Messages

Java Basics

Array Iterator

For Loop

While Loop

Try Catch Exception

Get JavaBean Property

AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page x Page1 x Page1 x SessionBean1.java x Page1* x

Design JSP Java

```
public class Page1 extends AbstractPageBean {
    // <editor-fold defaultstate="collapsed" desc="Managed Component Initialization">
    /**
     * Automatically managed component initialization. This method is automatically generated, so any user-defined code here is subject to being replaced.
     */
    private void _init() throws Exception {
        private Page page1 = new Page();
    }

    public Page getPage1() {
        return page1;
    }

    public void setPage1(Page p) {
        this.page1 = p;
    }

    private Html html1 = new Html();

    public Html getHtml1() {
        return html1;
    }

    public void setHtml1(Html h) {
        this.html1 = h;
    }
}
```

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Files Serv...

ApplikacjaInternetowa1

- Web Pages
 - WEB-INF
 - resources
 - Page1.jsp
- Configuration Files
- Server Resources
- Source Packages
- Test Packages
- Libraries
- Test Libraries
- Themes
- Component Libraries
- Data Source References

Page1.java - Navigator

Members View

- Page1 :: AbstractPageBean
 - _init()
 - page1 : Page
 - getPage1() : Page
 - setPage1(Page p)
 - html1 : Html
 - getHtml1() : Html
 - setHtml1(Html h)
 - head1 : Head
 - getHead1() : Head
 - setHead1(Head h)

Palette

- Database First
- Database Last
- Database Next
- Database Previous
- Set Value from Database
- Update Database
- Primary Key Method
- Database Append Row
- Database Delete Row
- Application Data**
- Retrieve Value from Session
- Store Value in Session
- Retrieve Value from Application
- Store Value in Application
- Retrieve Value from Request
- Store Value in Request
- Web App Functions**
- Send Email
- Log Messages
- Java Basics**
- Array Iterator
- For Loop
- While Loop
- Try Catch Exception
- Get JavaBean Property

AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

The screenshot shows the NetBeans IDE interface with the following details:

- Projects:** A tree view showing projects like "AplikacjaInternetowa1" and "AplikacjaInternetowa2".
- Files:** A sidebar showing files such as "Page1.jsp", "Baza", "Desktop4", etc.
- Navigator:** A sidebar showing navigation items like "Start Page" and "Page1 *".
- Toolbar:** Standard NetBeans toolbar with icons for file operations, search, and run.
- Code Editor:** The main editor pane displays Java code for "Proba4.java".

```
private Head head1 = new Head();  
public Head getHead1() {  
    return head1;  
}  
public void setHead1(Head h) {  
    this.head1 = h;  
}  
private Link link1 = new Link();  
public Link getLink1() {  
    return link1;  
}  
public void setLink1(Link l) {  
    this.link1 = l;  
}  
private Body body1 = new Body();  
public Body getBody1() {  
    return body1;  
}  
public void setBody1(Body b) {  
    this.body1 = b;  
}
```
- Palette:** A tool window on the right containing various Java components and database-related functions.
- Output:** A bottom pane showing the output of the build process.

Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Files Serv...
Aplikacjainternetowa1
Web Pages WEB-INF resources Page1.jsp
Configuration Files Server Resources Source Packages Test Packages Libraries Test Libraries Themes Component Libraries

Start Page x Page1 x Page1 x SessionBean1.java x Page1 * x

Design JSP Java

```
private Form form1 = new Form();  
  
public Form getForm1() {  
    return form1;  
}  
  
public void setForm1(Form f) {  
    this.form1 = f;  
}  
  
private Label label1 = new Label();  
  
public Label getLabel1() {  
    return label1;  
}  
  
public void setLabel1(Label l) {  
    this.label1 = l;  
}  
  
private TextField textField1 = new TextField();  
  
public TextField getTextField1() {  
    return textField1;  
}  
  
public void setTextField1(TextField tf) {  
    this.textField1 = tf;  
}
```

Page1.java - Navigator

Members View
head1 : Head
getHead1() : Head
setHead1(Head h)
link1 : Link
getLink1() : Link
setLink1(Link l)
body1 : Body
getBody1() : Body
setBody1(Body b)
form1 : Form

Palette Database First
Database Last
Database Next
Database Previous
Set Value from Database
Update Database
Primary Key Method
Database Append Row
Database Delete Row
Application Data
Retrieve Value from Session
Store Value in Session
Retrieve Value from Application
Store Value in Application
Retrieve Value from Request
Store Value in Request
Web App Functions
Send Email
Log Messages
Java Basics
Array Iterator
For Loop
While Loop
Try Catch Exception

Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Files Serv...

ApplikacjaInternetowa: Web Pages WEB-INF resources Page1.jsp Configuration Files Server Resources Source Packages Test Packages Libraries Test Libraries Themes Component Libraries

Start Page x Page1 x Page1 x SessionBean1.java x Page1 * x

Design JSP Java

```
private Button button1 = new Button();  
  
public Button getButton1() {  
    return button1;  
}  
  
public void setButton1(Button b) {  
    this.button1 = b;  
}  
  
private StaticText staticText1 = new StaticText();  
  
public StaticText getStaticText1() {  
    return staticText1;  
}  
  
public void setStaticText1(StaticText st) {  
    this.staticText1 = st;  
}  
  
private MessageGroup messageGroup1 = new MessageGroup();  
  
public MessageGroup getMessageGroup1() {  
    return messageGroup1;  
}  
  
public void setMessageGroup1(MessageGroup mg) {  
    this.messageGroup1 = mg;  
}
```

Page1.java - Navigator

Members View

- getTextField1() : TextField
- setTextField1(TextField tf)
- button1 : Button
- getButton1() : Button
- setButton1(Button b)
- staticText1 : StaticText
- getStaticText1() : StaticText
- setStaticText1(StaticText st)
- messageGroup1 : MessageGrc
- getMessageGroup1() : Messag

Palette Database First Database Last Database Next Database Previous Set Value from Database Update Database Primary Key Method Database Append Row Database Delete Row Application Data Retrieve Value from Session Store Value in Session Retrieve Value from Application Store Value in Application Retrieve Value from Request Store Value in Request Web App Functions Send Email Log Messages Java Basics Array Iterator Iterates through an ArrayList While Loop Try Catch Exception

117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 140:1 INS

AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Files Serv... Start Page x Page1 x Page1 x SessionBean1.java x Page1 * x

Design JSP Java

149 public Page1() {
150 }
151 /**...*/
152 @Override
164 public void init() {
165 // Perform initializations inherited from our superclass
166 super.init();
167 // Perform application initialization that must complete
168 // *before* managed components are initialized
169 // TODO - add your own initialization code here
170
171 // <editor-fold defaultstate="collapsed" desc="Managed Co:
172 // Initialize automatically managed components
173 // *Note* - this logic should NOT be modified
174 try {
175 _init();
176 } catch (Exception e) {
177 log("Page1 Initialization Failure", e);
178 throw e instanceof FacesException ? (FacesException)
179 }
180 // </editor-fold>
181 // Perform application initialization that must complete
182 // *after* managed components are initialized
183 // TODO - add your own initialization code here
184 }

177:6 INS

Palette Database First Database Last Database Next Database Previous Set Value from Database Update Database Primary Key Method Database Append Row Database Delete Row Application Data Retrieve Value from Session Store Value in Session Retrieve Value from Application Store Value in Application Retrieve Value from Request Store Value in Request Web App Functions Send Email Log Messages Java Basics Array Iterator For Loop While Loop Try Catch Exception

ApplikacjaInternetowa1 Web Pages WEB-INF resources Page1.jsp Configuration Files Server Resources Source Packages Test Packages Libraries Test Libraries Themes Component Libraries

Page1.java - Navigator Members View
getButton1() : Button
setButton1(Button b)
staticText1 : StaticText
getStaticText1() : StaticText
setStaticText1(StaticText st)
messageGroup1 : MessageGrc
getMessageGroup1() : MessageGrc
setMessageGroup1(MessageGrc)
Page1()
init()

The screenshot shows a Java IDE interface with the following components:

- Toolbar:** Standard file operations like Open, Save, Print, Find, etc.
- Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Build, Run, Profile, Versioning, Tools, Window, Help.
- Project Explorer:** Shows the project structure under "ApplikacjaInternetowa".
- Navigator:** Shows the members of the current class, including methods like getMessageGroup1(), setMessageGroup1(), Page1(), init(), preprocess(), prerender(), destroy(), getSessionBean1(), getRequestBean1(), getApplicationBean1(), afterApplyRequestValues(), afterInvokeApplication(), and afterDbsrcDbsrcEvent.
- Code Editor:** Displays the Java code for SessionBean1.java. The code includes annotations for callback methods: @Override for preprocess() and prerender(), and @Override for destroy(). The code is annotated with Javadoc-style comments describing the purpose of each method.
- Toolbars:** A horizontal toolbar above the code editor with various icons for navigation and selection.
- Right-hand pane:** Shows a list of database-related components or tables.

```
186     /**
187      * <p>Callback method that is called after the component tree has been
188      * restored, but before any event processing takes place. This method
189      * will <strong>only</strong> be called on a postback request that
190      * is processing a form submit. Customize this method to allocate
191      * resources that will be required in your event handlers.</p>
192      */
193
194     @Override
195     public void preprocess() {
196
197         /**
198          * <p>Callback method that is called just before rendering takes place.
199          * This method will <strong>only</strong> be called for the page that
200          * will actually be rendered (and not, for example, on a page that
201          * handled a postback and then navigated to a different page). Customize
202          * this method to allocate resources that will be required for rendering
203          * this page.</p>
204
205     @Override
206     public void prerender() {
207
208         /**
209          * <p>Callback method that is called after rendering is completed for
210          * this request, if <code>init()</code> was called (regardless of whether
211          * or not this was the page that was actually rendered). Customize this
212          * method to release resources acquired in the <code>init()</code>,
213          * <code>preprocess()</code>, or <code>prerender()</code> methods (or
214          * acquired during execution of an event handler).</p>
215
216     @Override
217     public void destroy() { }
```

AplikacjaInternetowa - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Files Serv...
AplikacjaInternetowa
Web Pages
WEB-INF
resources
Page1.jsp
Configuration Files
Server Resources
Source Packages
Test Packages
Libraries
Test Libraries
Themes
Component Libraries

Start Page Page1 Page1 SessionBean1.java Page1 *
Design JSP Java

217 /**
218 * <p>Return a reference to the scoped data bean.</p>
219 *
220 * @return reference to the scoped data bean
221 */
222 protected SessionBean1 getSessionBean1() {
223 return (SessionBean1) getBean("SessionBean1");
224 }
225 /**
226 * <p>Return a reference to the scoped data bean.</p>
227 *
228 * @return reference to the scoped data bean
229 */
230 protected RequestBean1 getRequestBean1() {
231 return (RequestBean1) getBean("RequestBean1");
232 }
233 /**
234 * <p>Return a reference to the scoped data bean.</p>
235 *
236 * @return reference to the scoped data bean
237 */
238 protected ApplicationBean1 getApplicationBean1() {
239 return (ApplicationBean1) getBean("ApplicationBean1");
240 }
241 }

216:37 INS

Datab Datab Datab Datab Set Va Updat Primar Datab Datab Ap... Retriev Store Retriev Store Retriev Store We... Send I Log M Ja... Array For Lc While

```
217     /**  
218        * <p>Return a reference to the scoped data bean.</p>  
219        *  
220        * @return reference to the scoped data bean  
221        */  
222     protected SessionBean1 getSessionBean1() {  
223        return (SessionBean1) getBean("SessionBean1");  
224     }  
225     /**  
226        * <p>Return a reference to the scoped data bean.</p>  
227        *  
228        * @return reference to the scoped data bean  
229        */  
230     protected RequestBean1 getRequestBean1() {  
231        return (RequestBean1) getBean("RequestBean1");  
232     }  
233     /**  
234        * <p>Return a reference to the scoped data bean.</p>  
235        *  
236        * @return reference to the scoped data bean  
237        */  
238     protected ApplicationBean1 getApplicationBean1() {  
239        return (ApplicationBean1) getBean("ApplicationBean1");  
240     }  
241 }
```

AplikacjaInternetowa - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page x Page1 * x

Design JSP Java

```
225     /**
226      * <p>Return a reference to the scoped data bean.</p>
227      *
228      * @return reference to the scoped data bean
229      */
230     protected RequestBean1 getRequestBean1() {
231         return (RequestBean1) getBean("RequestBean1");
232     }
233     /**
234      * <p>Return a reference to the scoped data bean.</p>
235      *
236      * @return reference to the scoped data bean
237      */
238     protected ApplicationBean1 getApplicationBean1() {
239         return (ApplicationBean1) getBean("ApplicationBean1");
240     }
241
242     public String button1_action() {
243         // TODO: Process the action. Return value is a navigation
244         // case name where null will return to the same page.
245         String name = (String)textField1.getText();
246         //pobranie z pola wejściowego tekstuwowego typu TextField wpisane :
247         staticText1.setText("Dzień dobry, " + name + "!");
248         return null;
249     }

```

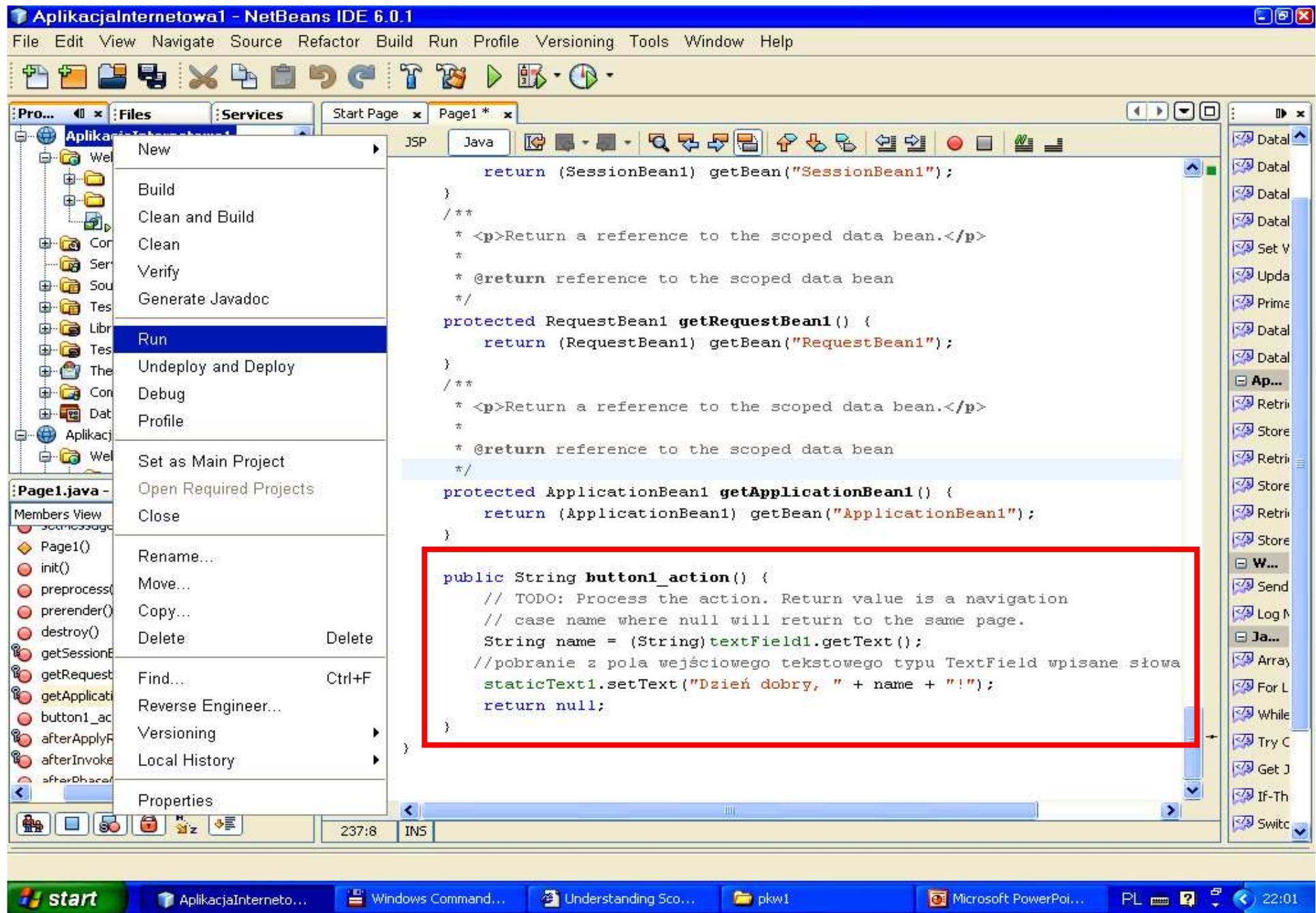
Members View

- Page1()
- init()
- preprocess()
- prerender()
- destroy()
- getSession()
- getRequest()
- getApplication()
- button1_action()

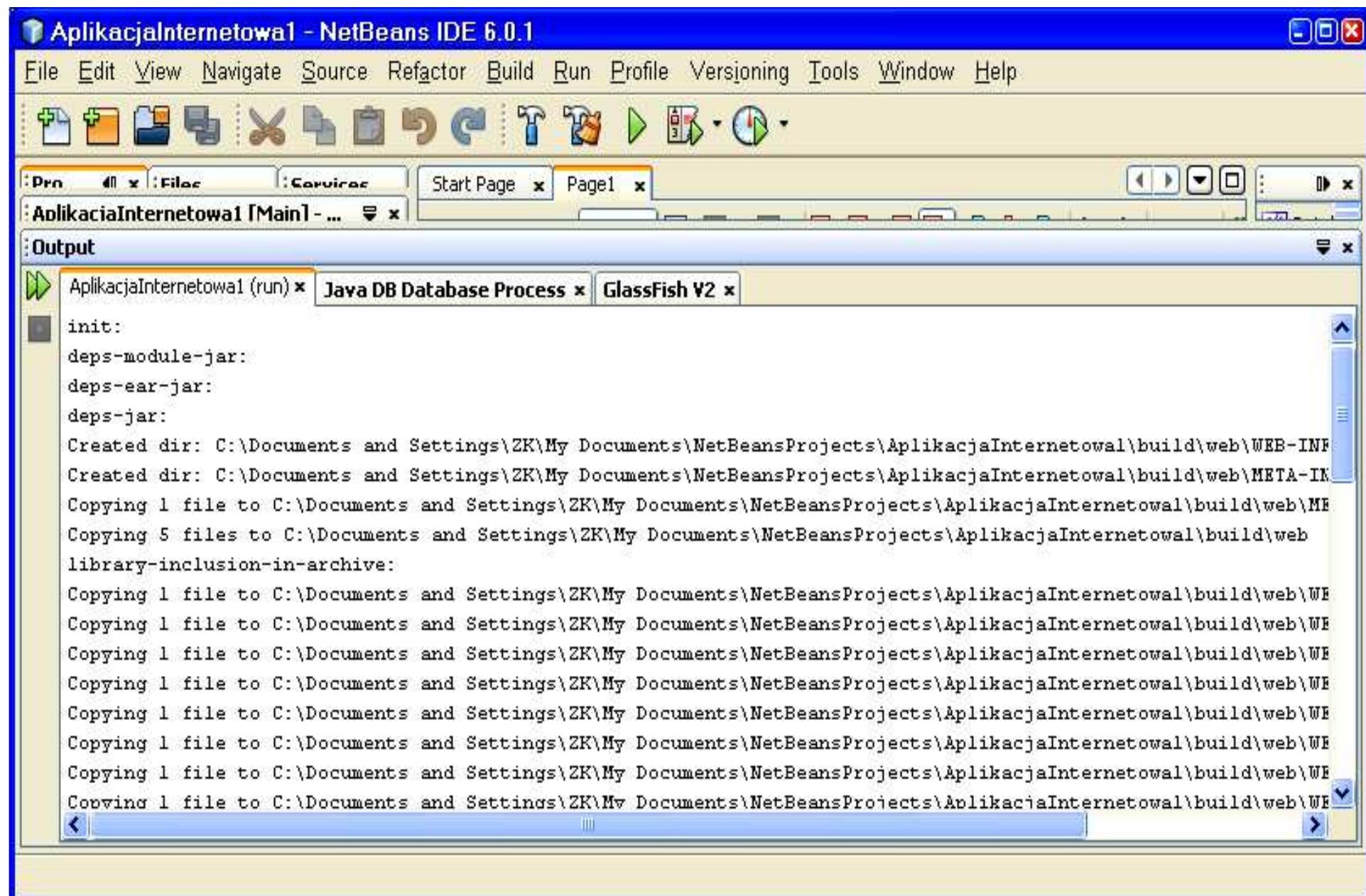
Datal

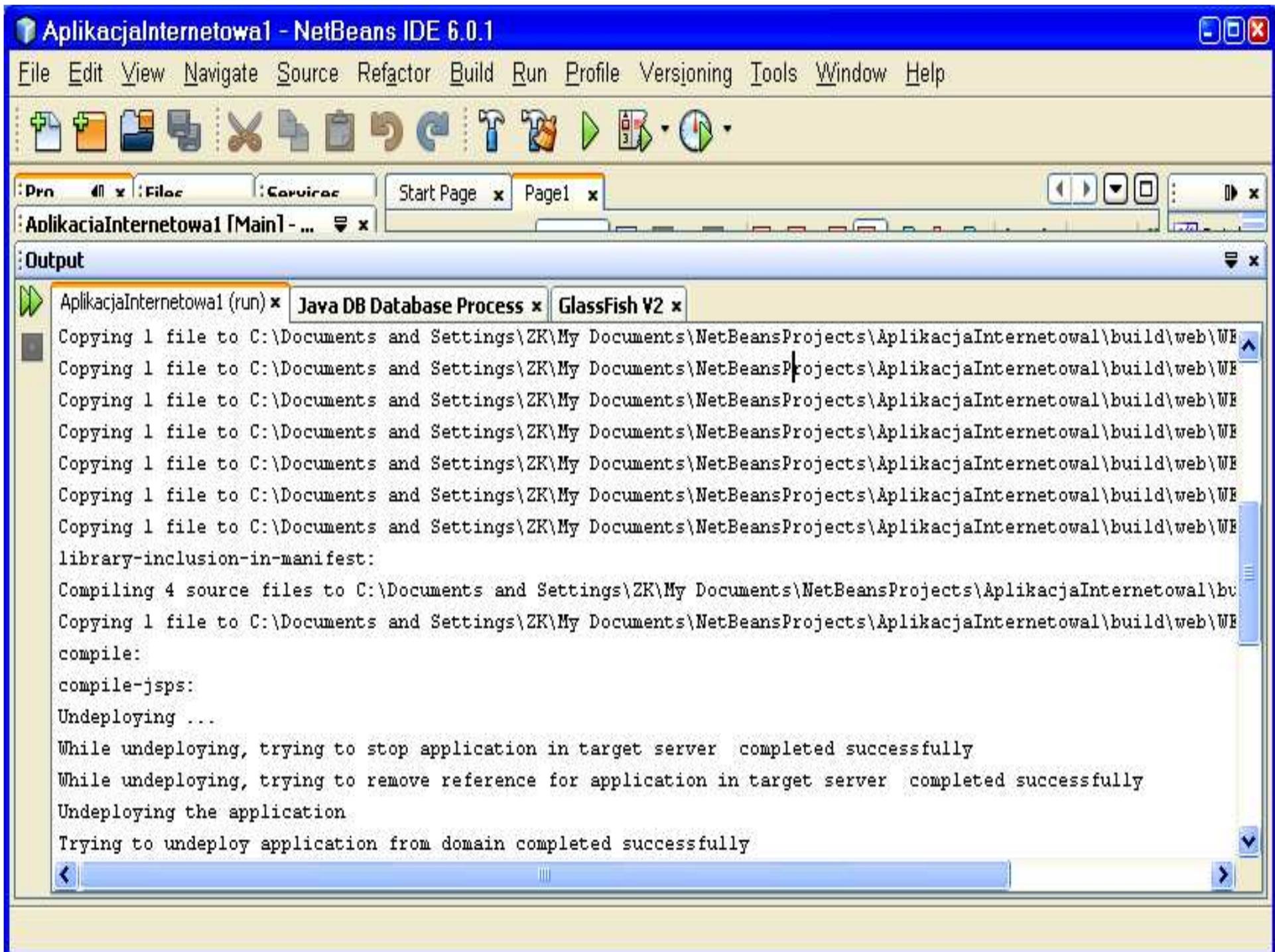
- Datal
- Datal
- Datal
- Datal
- Set V
- Upda
- Prime
- Datal
- Datal
- Ap...
- Retri
- Store
- Retri
- Store
- Retri
- Store
- W...
- Send
- Log N
- Ja...
- Array
- For L
- While

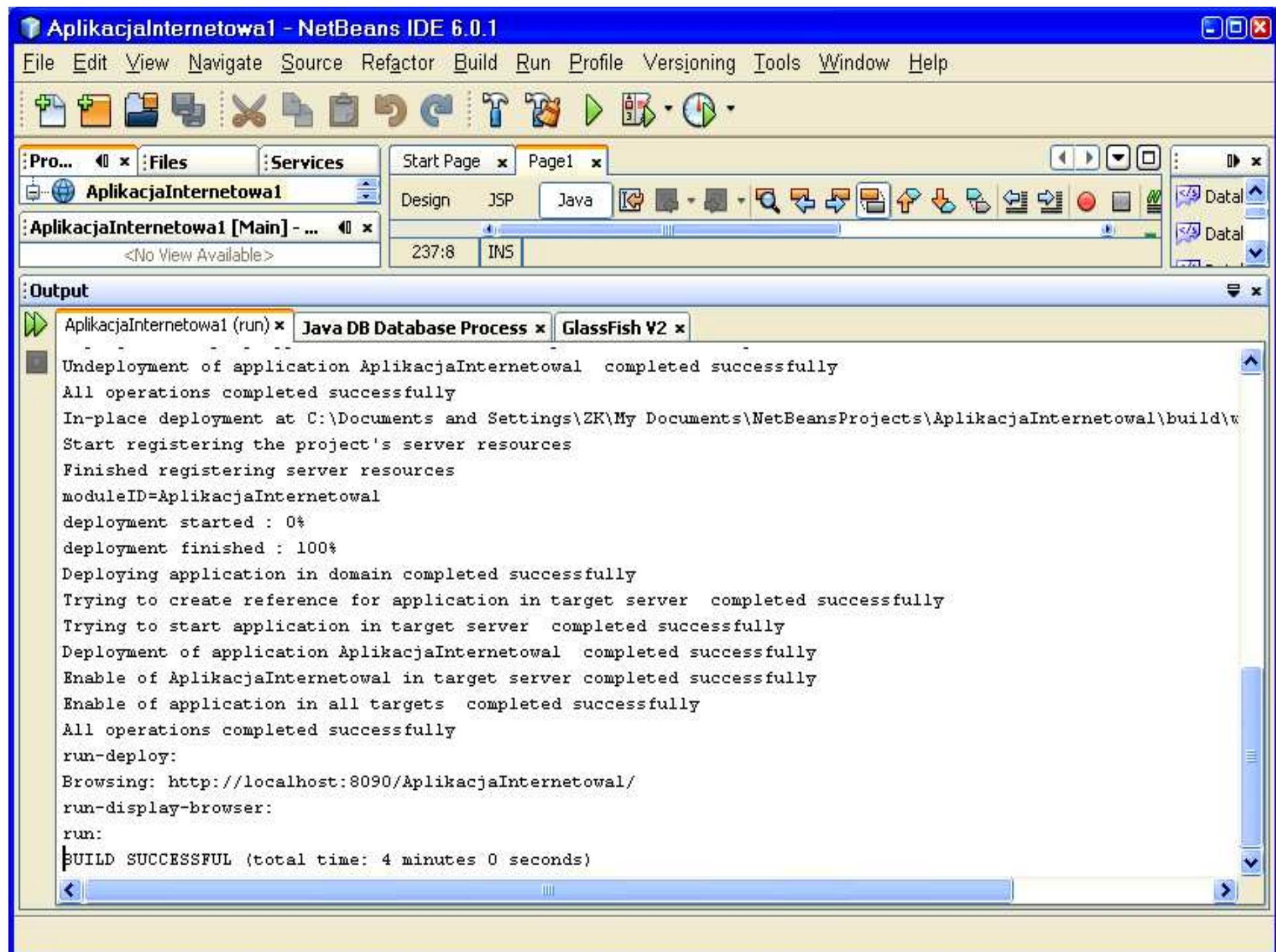
4) Definiowanie metody button1_action()



5) Uruchomienie aplikacji (Kliknij prawym klawiszem myszy w oknie Project na nazwę projektu, w ukazanym oknie uruchom kolejno **Build Project, Deploy Project, Run Project**)







AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page x Page1 x

Design JSP Java

223 return (SessionBean1) getBean("SessionBean1");

224 }

225 /**

226 * <p>Return a reference to the scoped data bean.</p>

227 *

228 * @return reference to the scoped data bean

229 */

230 protected RequestBean1 getRequestBean1() {

237:8 INS

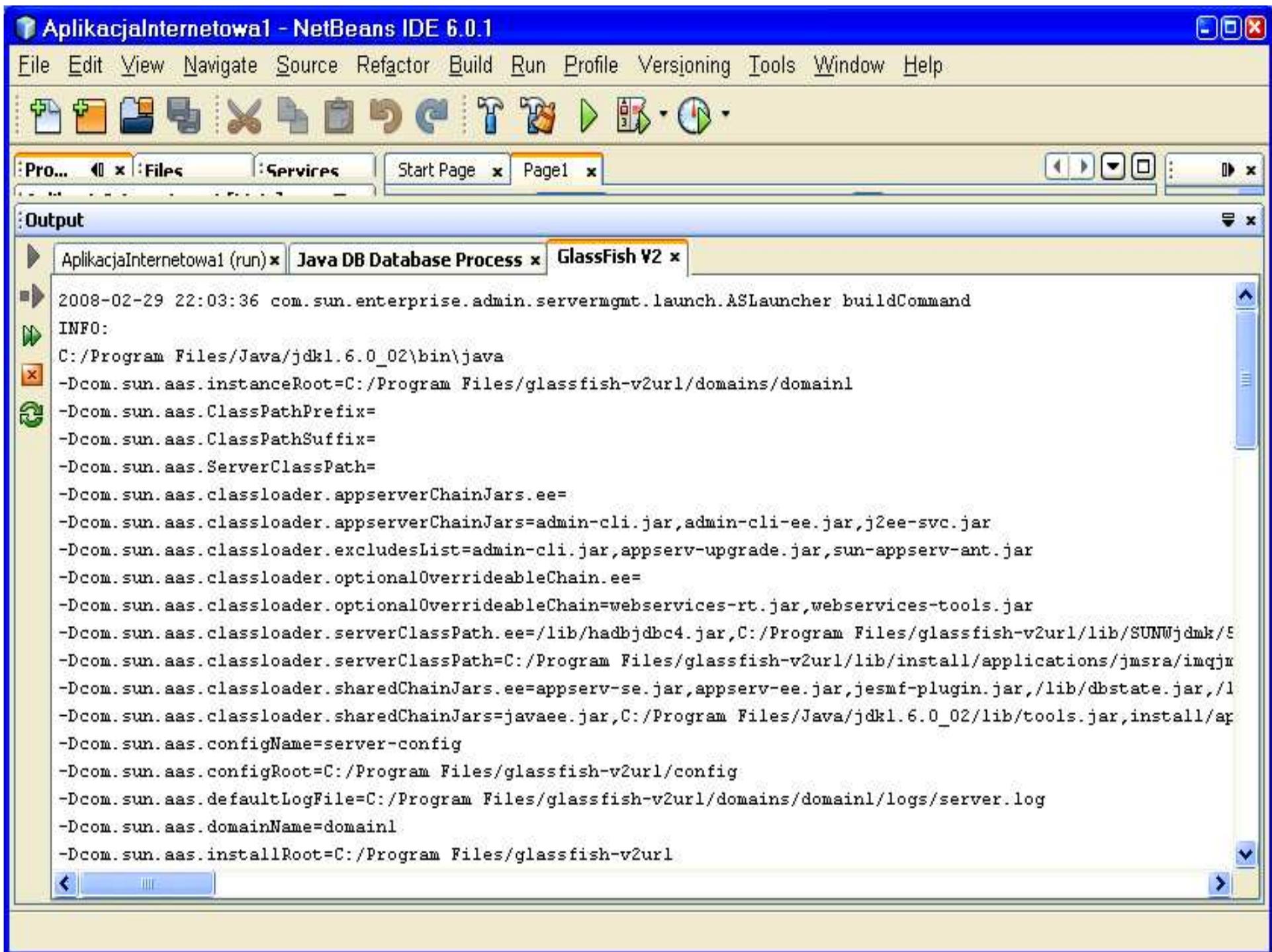
Datal Datal Datal Datal Set V Upda Prima Datal Datal

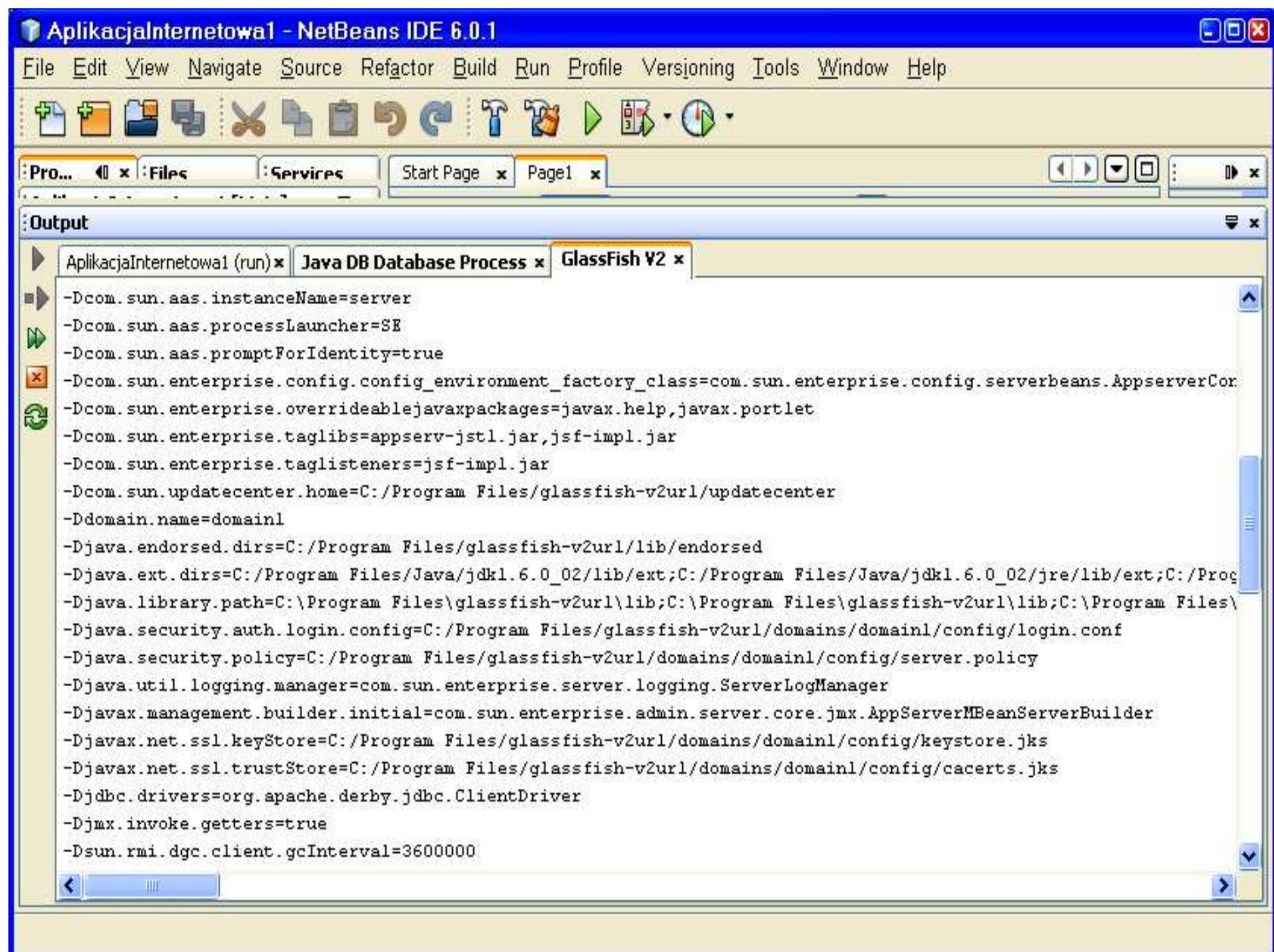
<No View Available>

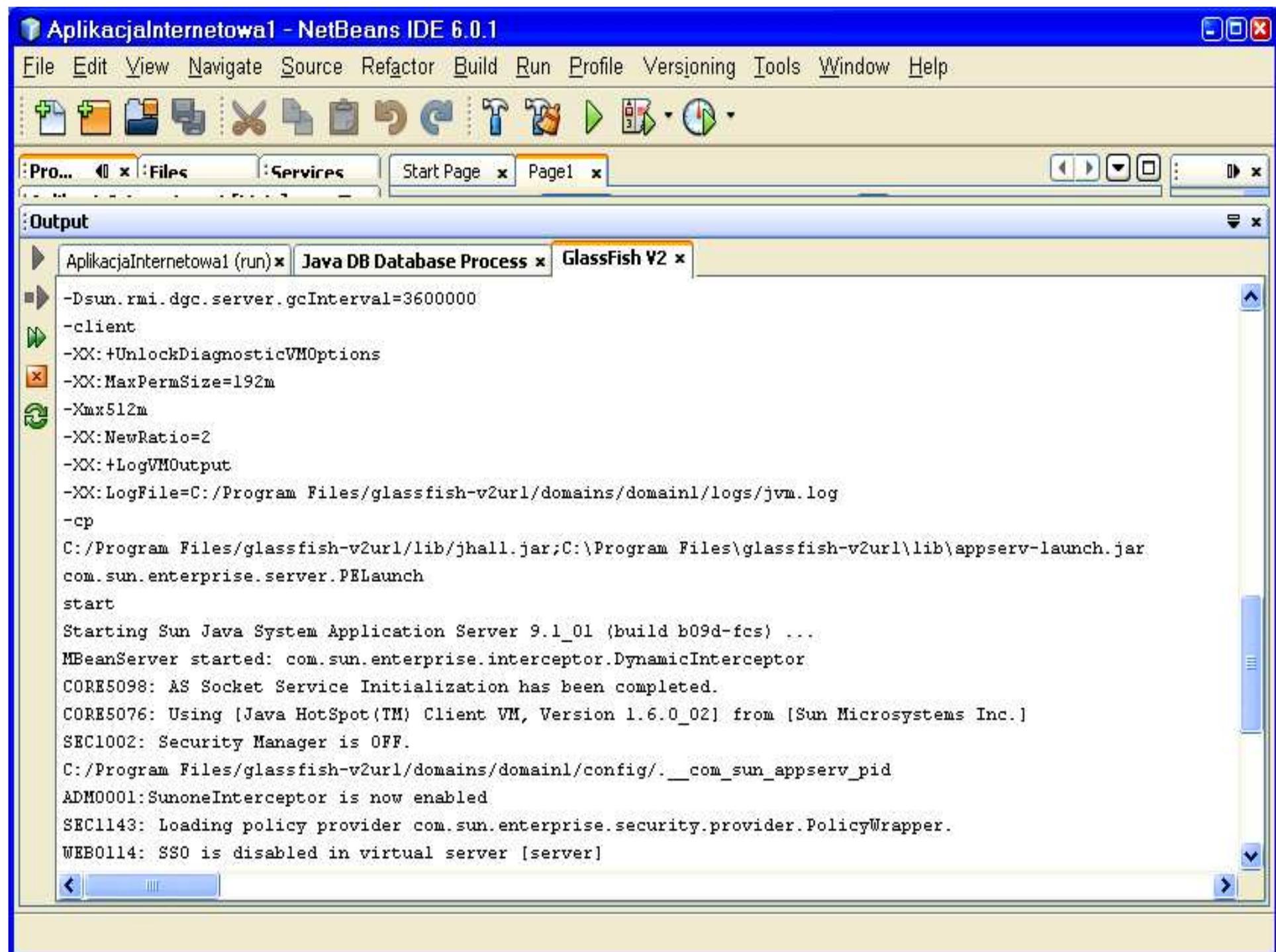
Output

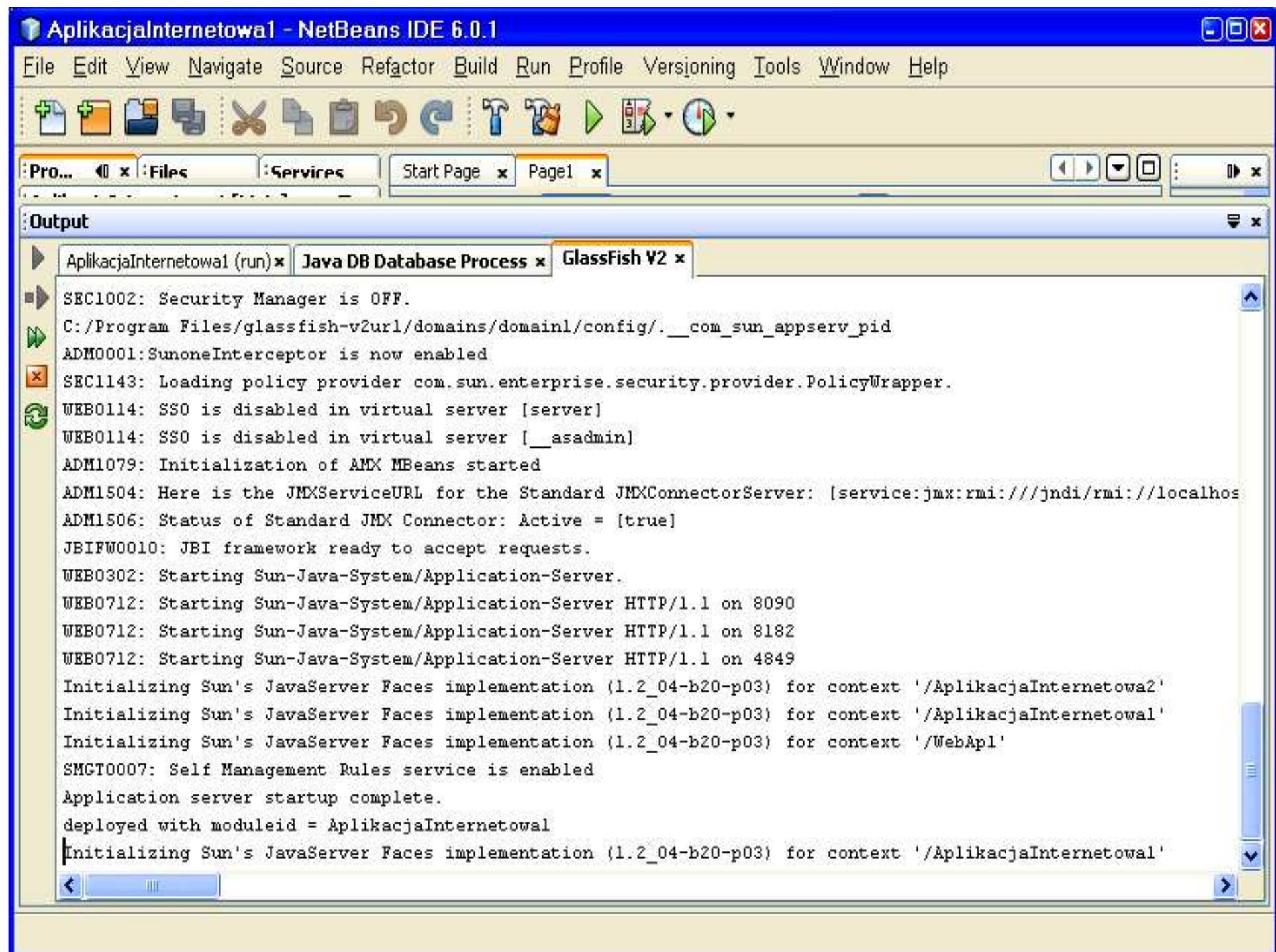
ApplikacjaInternetowa1 (run) x Java DB Database Process x GlassFish V2 x

ser sieciowy Apache Derby - 10.2.2.1 - (538595) uruchomiony i gotowy do zaakceptowania połączeń na porcie 1527 w 2008-02-









NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Pro... Files Services Start Page Page1

Page1.java - Navigator Design JSP Java Data

HTTP Monitor

All Records

- Current Records
 - GET AplikacjaInternetowa1 22:06 29.02.08]
 - GET AplikacjaInternetowa1 22:06 29.02.08]
 - GET suntheme.js 22:07 29.02.08]
 - GET suntheme.js 22:07 29.02.08]
 - GET suntheme.js 22:07 29.02.08]
 - GET stylesheet.css 22:07 29.02.08]
 - GET stylesheet.css 22:07 29.02.08]
 - GET bg_gradient.gif 22:07 29.02.08]
 - GET bg_gradient.gif 22:07 29.02.08]
- Saved Records

Request Cookies Session Context Client and Server Headers

Request

Request URI	/AplikacjaInternetowa1/
Method	GET
Query string	
Protocol	HTTP/1.1
Client IP address	127.0.0.1
Scheme	http
HTTP exit status (as set by servlet)	Could not be determined

There was no query string

Request attributes before the request

com.sun.enterprise.http.sessionTracker	org.apache.coyote.tomcat5.SessionTracker@c56236
--	---

Request attributes after the request

javax.faces.webapp.PAGECONTEXT_COUNTER	1
com.sun.faces.extensions.avatar.LINKED/com_sun_faces_ajax.js	true
com.sun.faces.taglib_jsf_core_VIEWTAG_STACK	[]
com.sun.faces.renderKitImplForRequest	com.sun.faces.renderkit.RenderKitFactoryImpl@19e2380
com.sun.faces.managedBeanStack	[]
javax.servlet.jsp.jstl.fmt.locale.request	pl_PL
com.sun.faces.INVOCATION_PATH	/faces
javax.faces.webapp.GLOBAL_ID VIEW	{html1=com.sun.webui.jsf.component.HtmlTag@9a94b3, page1=com.sun....}
com.sun.enterprise.http.sessionTracker	org.apache.coyote.tomcat5.SessionTracker@c56236
com.sun.faces.ExternalContextImpl	com.sun.faces.context.ExternalContextImpl@dcbf25
com.sun.faces.extensions.avatar.LINKED/prototype.js	true
com.sun.webui.jsf.theme.THEME	com.sun.webui.theme.ResourceBundleTheme@188f0f7
com.sun.faces.taglib_jsf_core_PRE_VIEW_LOADBUNDLES_LIST	[]

Output

AplikacjaInternetowa1 (run) x Java DB Database Process x GlassFish V2 x

Undeploying ...

While undeploying, trying to stop application in target server completed successfully

While undeploying, trying to remove reference for application in target server completed successfully





6) Zastąpienie elementu typu TextField elementem typu DropDownList

Należy wykonać kopię projektu za pomocą opcji Copy wybranej z wyskakującego menu, po kliknięciu prawym klawiszem myszy na nazwę projektu w zakładce Project.

- 1.** Po przejściu do trybu **Design** dla strony **Page1** należy usunąć komponent typu **TextField** (kliknąć na elemencie prawym klawiszem myszy i wybrać z wyskakującego menu opcję **Delete**)
- 2.** Przeciągnąć z Palety komponent typu **DropDownList** i położyć na miejscu usuniętego elementu typu **TextField**.
- 3.** W oknie **Navigator** pojawił się komponent **dropDown1** oraz obiekt typu **dropDown1DefaultOptions** jako właściwość **items** komponentu typu **DropDownList**
- 4.** Naciśnij **Ctrl-Shift-Drag** na komponencie **Label** i przeciągnij na komponent typu **DropDownList** w celu powiązania tych komponentów (pojawi się w okienku Properties dla komponentu typu Label właściwość **for** ustawiona na **dropDown1**)

AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Start Page Page1

Design JSP Java

Nazwisko Podaj nazwisko

Static Text

System Message
List of all messages

Edit Java Source
Auto-Submit on Change
Bind to Data...
Add
Property Bindings...
Edit JSP Source
Edit Inline
Select Parent
Edit Event Handler
Set Initial Focus
Configure Virtual Forms...
Snap to Grid
Bring to Front
Send to Back
Customize
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Delete Delete

RequestBean1
SessionBean1
ApplicationBean1

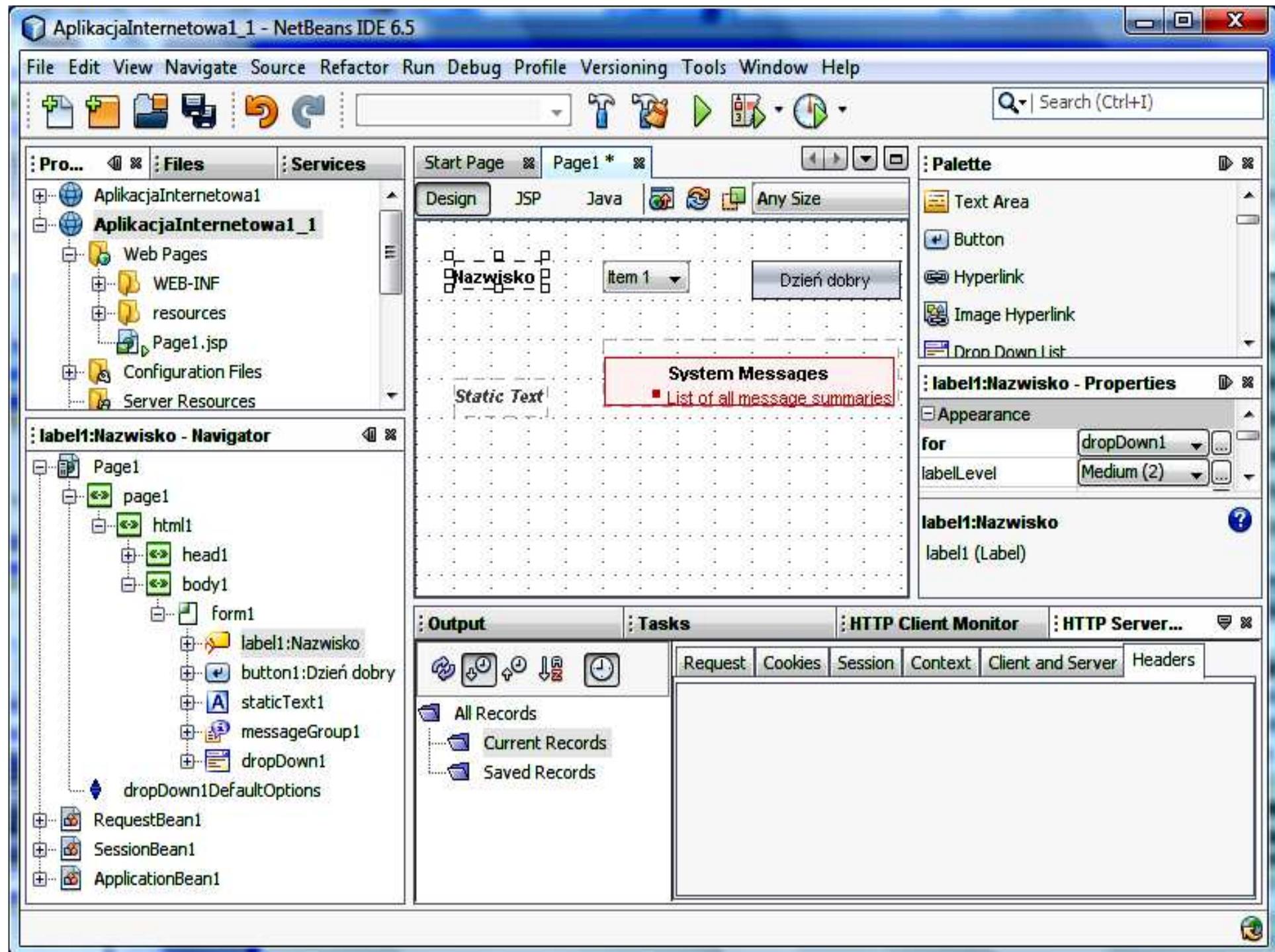
Output

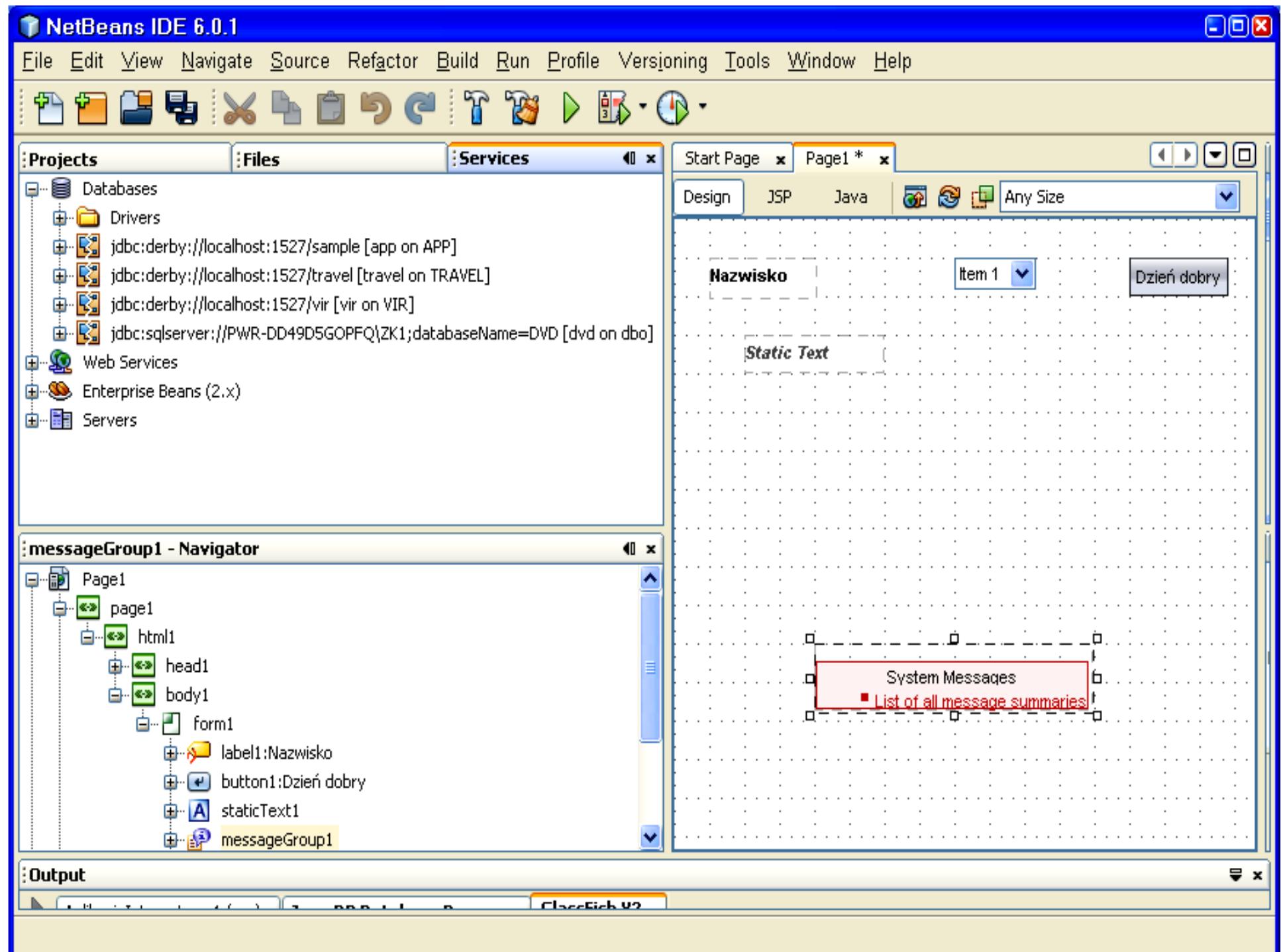
ClassEdit v2

Text Text Button HyperLink Image DropDown ListBox CheckBox RadioButton ImageTable

Appearence columns label labelLevel style styleClass text Data converter required textF... textField1 (TextField)

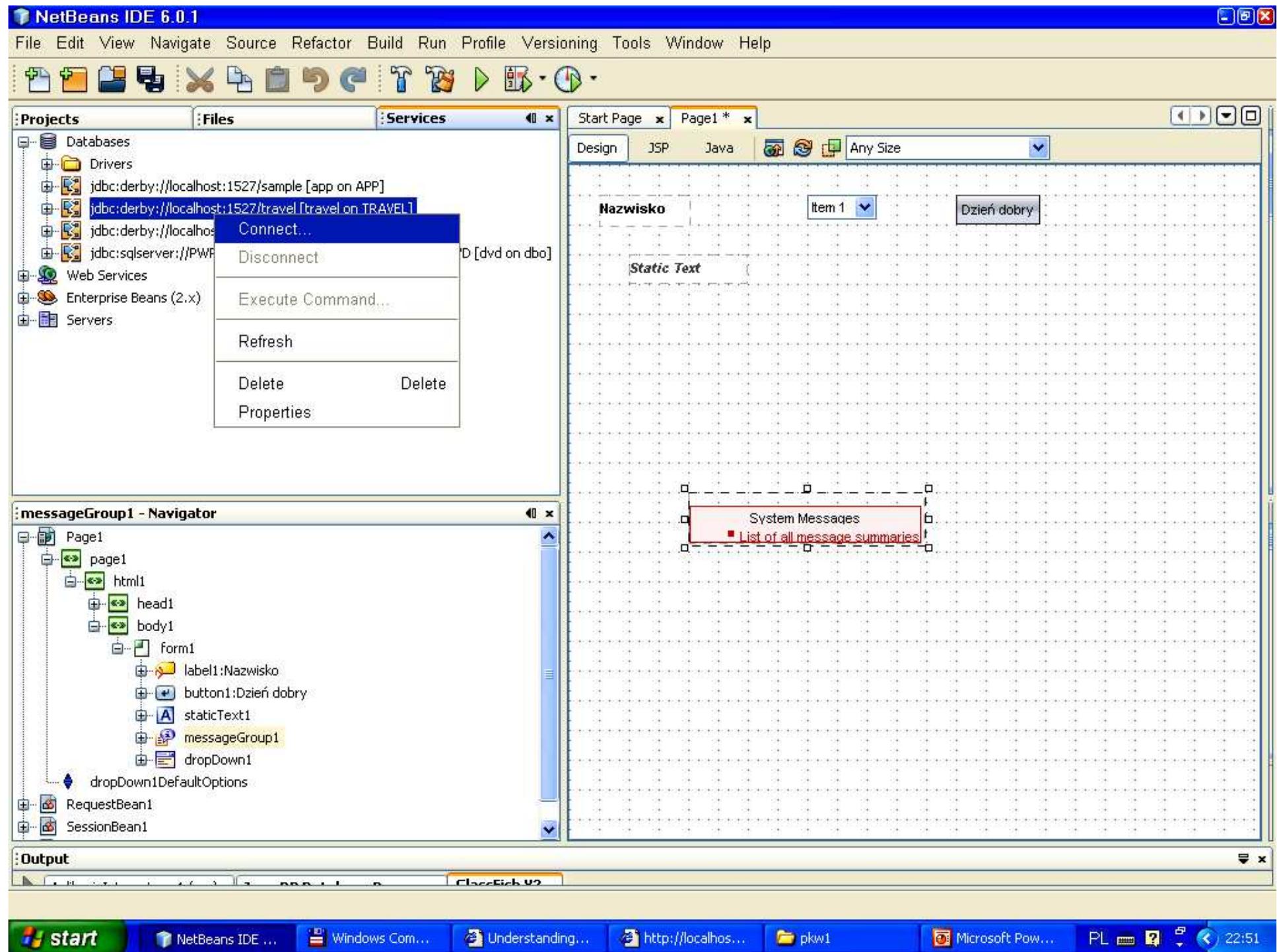
start AplikacjaInter... Windows Com... Understanding... http://localhost... pkw1 Microsoft Pow... PL 22:47

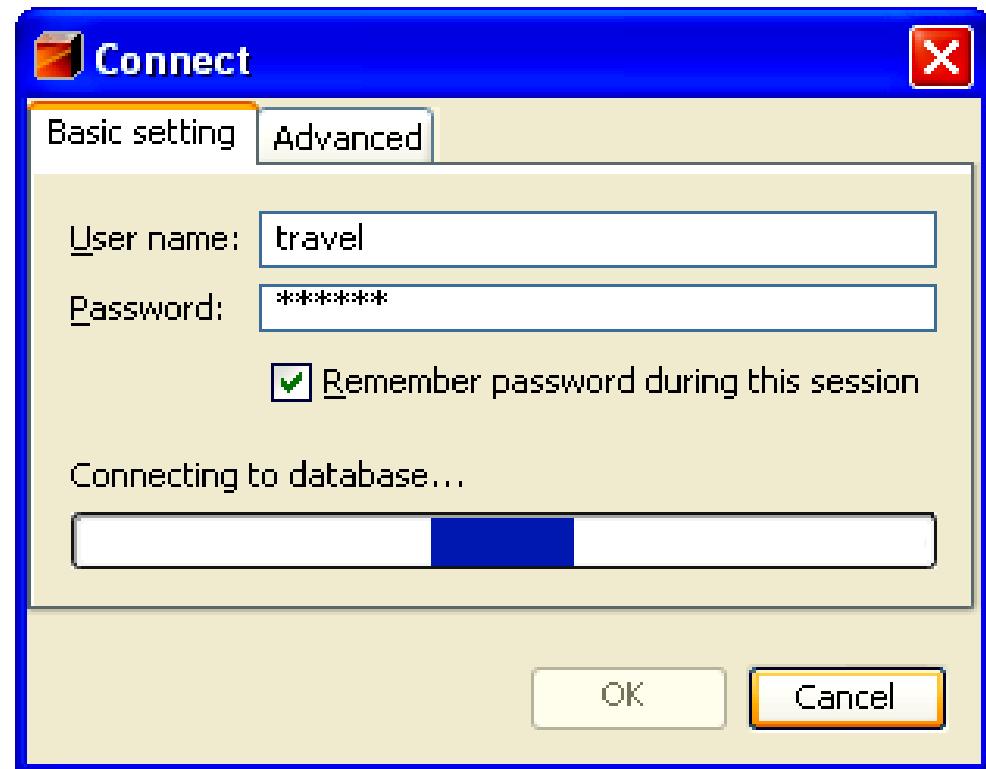
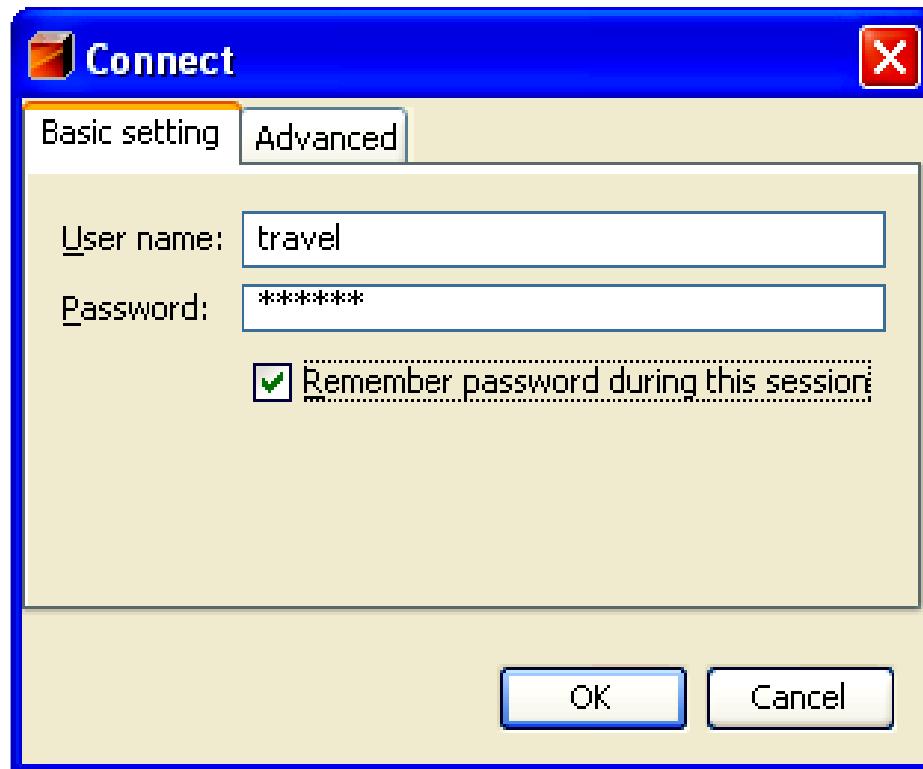




7) Powiązania elementu typu DropDownList z tabelą bazy danych

1. W oknie **Services** należy wybrać **Databases** oraz bazę danych **Travel** i połączyć się z nia: należy kliknąć prawym klawiszem myszy, wybrać z wyskakującego menu **Connect**
2. Pojawi się okno logowania dla loginu **travel** i hasła **travel**, należy je wprowadzić do formularza logowania i zatwierdzić
3. Po połączeniu pojawią się elementy bazy danych **Travel**: tabele, procedury wbudowane itp.
4. Przeciągnij tabelę **Person** na komponent typu **DropDownList** w trybie **Design**
5. W oknie **Navigator** pojawią się nowe elementy niewizualne: komponent **personDataProvider** jako element strony **Page1** do obsługi wybranej tabeli oraz właściwość **personRowSet**, która należy do **SessionBean1** i służy do obsługi zapytań SQL
6. Kliknij prawym klawiszem myszy komponent typu **DropDownList** i wybierz opcję **Bind to Data** z wyskakującego menu. Pojawi się okno dialogowe **Bind to Data**
7. Należy ustawić pole **Value** na **PERSON.NAME** (używane jako wartość domyślna odpowiadająca kolumnie wybranej tabeli) oraz pole **Display PERSON.NAME** do wyświetlania w liście rozwijanej komponentu **DropDownList** – zatwierdzić wybór klikając na przycisk **OK**





NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Projects Files Services Start Page Page1 *

Databases
Drivers
jdbc:derby://localhost:1527/sample [app on APP]
jdbc:derby://localhost:1527/travel [travel on TRAVEL]
Tables
CARRENTAL
FLIGHT
HOTEL
PERSON
TRIP
TRIPTYPE
VALIDATION_TABLE
Views
Procedures
jdbc:derby://localhost:1527/vir [vir on VIR]
jdbc:sqlserver://PWR-DD49D5GOPFQ(ZK1;databaseName=DVD [dvd on dbo]
Web Services
Enterprise Beans (2.x)
Servers

messageGroup1 - Navigator

Page1
page1
html1
head1
body1
form1
label1:Nazwisko
button1:Dzień dobry
staticText1
messageGroup1
dropDown1

Design JSP Java Any Size

Nazwisko Item 1 Dzień dobry

Static Text

System Messages
List of all message summaries

Output

ClassEdit v2

start NetBeans IDE ... Windows Com... Understanding... http://localhos... pkw1 Microsoft Pow... PL 22:53

NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Projects Services

Files Inspector

Databases Drivers

- JDBC-ODBC Bridge
- Microsoft SQL Server 2005
- MySQL (Connector/J driver)
- Java DB (Network)
- Java DB (Embedded)
- PostgreSQL

jdbc:derby://localhost:1527/sample [app on APP]

jdbc:derby://localhost:1527/travel [travel on TRAVEL]

- Tables
- CURRENTAL
- FLIGHT
- HOTEL
- PERSON
 - PERSONID
 - NAME
 - JOBTITLE
 - FREQUENTFLYER
 - LASTUPDATED
 - Indexes
 - Foreign keys
- TRIP
- TRIPTYPE
- VALIDATION_TABLE

Views Procedures

jdbc:derby://localhost:1527/vir [vir on VIR]

jdbc:sqlserver://PWR-DD49D5GOPFQ\ZK1;databaseName=DVD [dvd on dbo]

Web Services Enterprise Beans (2.x)

Servers

...ava Start Page Page1

Design JSP Java Any Size

Nazwisko Item 1 Dzień dobry

Static Text

System Messages List of all message summaries

Palette Properties

- Basic
 - Label
 - Static Text
 - Text Field
 - Text Area
 - Button
 - Hyperlink
 - Image Hyp
 - Drop Down
 - Listbox
 - Checkbox
 - Checkbox!
 - Radio Butt
 - Radio Butt
 - Image
 - Table
 - Table Colu
 - Table Row
 - Password F
 - Hidden Fiel
 - Calendar
 - File Upload
 - Tree
 - Tree Node
 - Anchor

Output - Java DB Database Process

Aplikacjainternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Projects Services

Files Inspector

Databases

- Drivers
 - JDBC-ODBC Bridge
 - Microsoft SQL Server 2005
 - MySQL (Connector/J driver)
 - Java DB (Network)
 - Java DB (Embedded)
 - PostgreSQL
- jdbc:derby://localhost:1527/sample [app on APP]
- jdbc:derby://localhost:1527/travel [travel on TRAVEL]
 - Tables
 - CURRENTAL
 - FLIGHT
 - HOTEL
 - PERSON
 - PERSONID
 - NAME
 - JOBTITLE
 - FREQUENTFLYER
 - LASTUPDATED
 - Indexes
 - Foreign keys
 - TRIP
 - TRIPTYPE
 - VALIDATION_TABLE
 - Views
 - Procedures
- jdbc:derby://localhost:1527/vir [vir on VIR]
- jdbc:sqlserver://PWR-DD49D5GOPFQ\ZK1;databaseName=DVD [dvd on dbo]
- Web Services
- Enterprise Beans (2.x)
- Servers

...ava Start Page Page1 * Design JSP Java Any Size

Nazwisko a... Dzień dobry

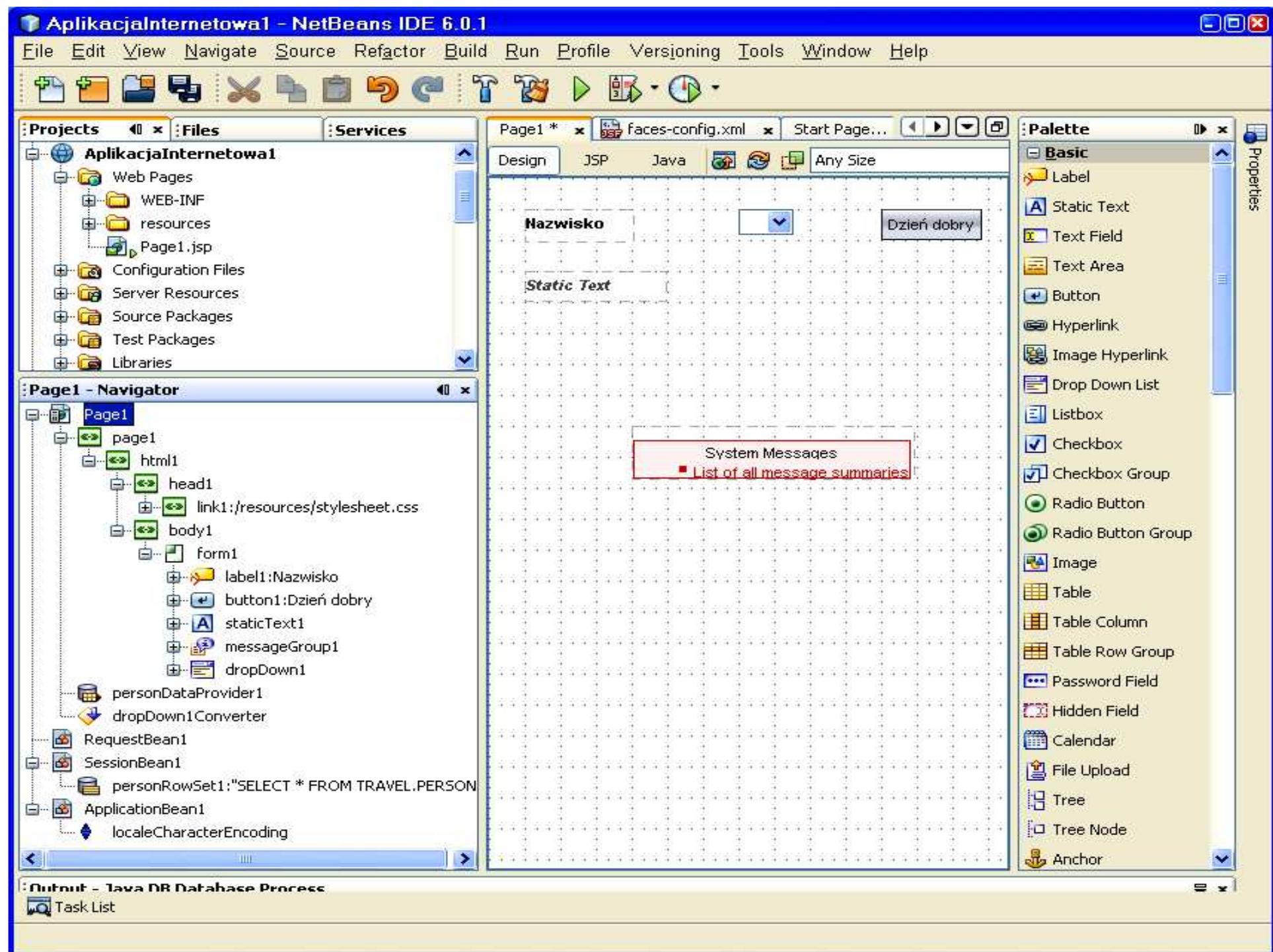
Static Text

System Messages
List of all message summaries

Palette Properties

- Basic
 - Label
 - Static Text
 - Text Field
 - Text Area
 - Button
 - Hyperlink
 - Image Hyp
 - Drop Down
 - Listbox
 - Checkbox
 - Checkbox!
 - Radio Butt
 - Radio Butt
 - Image
 - Table
 - Table Colu
 - Table Row
 - Password F
 - Hidden Fiel
 - Calendar
 - File Upload
 - Tree
 - Tree Node
 - Anchor

Output - Java DB Database Process



AplikacjaInternetowa1 - NetBeans IDE 6.0.1

File Edit View Navigate Source Refactor Build Run Profile Versioning Tools Window Help

Projects Files Services

ApplikacjaInternetowa1

- Web Pages
- WEB-INF
- resources
- Page1.jsp

- Configuration Files
- Server Resources
- Source Packages
- Test Packages
- Libraries

dropDown1 - Navigator

- Page1
- page1
 - html1
 - head1
 - link1:/resources/stylesheet.css
 - body1
 - form1
 - label1:Nazwisko
 - button1:Dzień dobry
 - staticText1
 - messageGroup1
 - dropDown1
 - personDataProvider1
 - dropDown1Converter
 - RequestBean1
 - SessionBean1
 - personRowSet1:"SELECT * FROM TRAVEL.PERSON"
 - ApplicationBean1
 - localeCharacterEncoding

Output - Java DB Database Process

Task List

Page1 * faces-config.xml

Design JSP Java

Nazwisko

Static Text

System M List of all m

Context menu open for 'Nazwisko' label:

 - Edit Java Source
 - Auto-Submit on Change
 - Bind to Data...**
 - Add
 - Property Bindings...
 - Edit JSP Source
 - Edit Label
 - Select Parent
 - Edit Event Handler
 - Set Initial Focus
 - Configure Virtual Forms...
 - Snap to Grid
 - Bring to Front
 - Send to Back
 - Customize
 - Cut Ctrl+X
 - Copy Ctrl+C
 - Paste Ctrl+V
 - Delete Delete
 - Preview in Browser...
 - Refresh
 - Target Browser Window
 - Page Navigation

Palette

Basic

 - Label
 - Static Text
 - Text Field
 - Text Area
 - Button
 - Hyperlink
 - Image Hyperlink
 - Drop Down List
 - Listbox
 - Checkbox
 - Checkbox Group
 - Radio Button
 - Radio Button Group
 - Image
 - Table
 - Table Column
 - Table Row Group
 - Password Field
 - Hidden Field
 - Calendar
 - File Upload
 - Tree
 - Tree Node
 - Anchor

Properties

start

ApplikacjaInternetowa...

Windows Commander...

Microsoft PowerPoint ...

PL 00:45



Bind to Data - dropDown1



Current Items property setting

```
#-{Page1.personDataProvider1.options['PERSON.NAME',PERSON.NAME']}
```

Bind to Data Provider

Bind to an Object

Choose a Data Provider to bind to dropDown1:

personDataProvider1 (Page1)

Value field:

<none>
PERSON.PERSONID Integer
PERSON.NAME String
PERSON.JOBTITLE String
PERSON.FREQUENTFLYER Integer
PERSON.LASTUPDATED Timestamp

Display field:

<use value field>
PERSON.PERSONID Integer
PERSON.NAME String
PERSON.JOBTITLE String
PERSON.FREQUENTFLYER Integer
PERSON.LASTUPDATED Timestamp

OK

Cancel

Apply

Help

8) Dodanie nowych właściwości elementom strony

1. Obsługa zdarzenia kliknięcia na komponent typu **Button** – w trybie **Design** należy dwukrotnie kliknąć na przycisk Pojawi się wtedy plik typu Java dla strony **Page1** z klasą dziedziczącą po klasie **AbstractPageBean** na metodzie **button1_action()**.

Ciało metody button1_action():

```
public String button1_action() {  
    String name = (String)dropDown1.getSelected();  
    String splitnames[] = name.split(",");  
    staticText1.setText("Dzień dobry, " + splitnames[1] + "!");  
    return null; //jeśli return null, wtedy nastąpi powrót do tej samej strony  
}
```

Kod ten pozwala na wyświetlenie danej wybranej z listy komponentu typu **DropDownList** w komponencie typu **StaticText**. Dane są pobrane z bazy danych.

2. Zdefiniowanie metody **prerender** pozwala w przypadku braku wybranej pozycji wyświetlać domyślną pierwszą daną występującą w bazie danych na pozycji pierwszej. Dane są wyświetlane w liście komponentu **DropDownList** jako nazwisko i imię, stąd w polu **StaticText** wyświetla się imię, jako łańcuch po przecinku, wyświetlany w liście komponentu **DropDownList**, wydobyty funkcją metodą **split** (z klasy typu **String**).

Ciało metody prerender

```
public void prerender() {  
    // jeśli nie wybrano pozycji listy, należy przyjąć domyślnie pierwszą krotkę  
    if (dropDown1.getSelected() == null) {  
        personDataProvider.cursorFirst();  
        dropDown1.setSelected((String)personDataProvider.getValue("person.name"));  
    } }
```

AplikacjaInternetowa1 - NetBeans IDE 6.0.1

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Page1 * faces-config.xml Start Page

Design JSP Java

```
245     protected RequestBean1 getRequestBean1() {  
246         return (RequestBean1) getBean("RequestBean1");  
247     }  
248     /**  
249      * <p>Return a reference to the scoped data bean.</p>  
250      *  
251      * @return reference to the scoped data bean  
252     */  
253     protected ApplicationBean1 getApplicationBean1() {  
254         return (ApplicationBean1) getBean("ApplicationBean1");  
255     }  
256  
257     public String button1_action() {  
258         // TODO: Process the action. Return value is a navigation  
         // case name where null will return to the same page.  
259         String name = (String) dropDown1.getSelected();  
260         String splitnames[] = name.split(",");  
261         staticText1.setText("Dzień dobry, " + splitnames[1] + "!");  
262         return null; // jeśli return null, wtedy nastąpi powrót do tej samej  
263     }  
264 }
```

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Output - Java DB Database Process

```
Dwier sieciowy Apache Derby - 10.2.2.1 - (538595) uruchomiony i gotowy do zaakceptowania połączeń na porcie 1527 w 2008-03-02 00:00:00
```

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Database F...
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Page1 * faces-config.xml Start Page

Design JSP Java

204 }
205 /**
206 * <p>Callback method that is called just before rendering takes place.
207 * This method will only be called for the page that
208 * will actually be rendered (and not, for example, on a page that
209 * handled a postback and then navigated to a different page). Customize
210 * this method to allocate resources that will be required for rendering
211 * this page.</p>
212 */
213 @Override
214 public void prerender() {
215 // jeśli nie wybrano pozycji listy, należy przyjąć domyślnie pierwszą krotkę
216 if (dropDown1.getSelected() == null) {
217 personDataProvider1.cursorFirst();
218 dropDown1.setSelected((String) personDataProvider1.getValue("person.name"));
219 }
220 }
221 /**
222 * <p>Callback method that is called after rendering is completed for
223 * this request, if <code>init()</code> was called (regardless of whether
224 * or not this was the page that was actually rendered). Customize this
225 * method to release resources acquired in the <code>init()</code>,
226 * <code>preprocess()</code>, or <code>prerender()</code> methods (or
227 * acquired during execution of an event handler).</p>

230:28 INS

Output - Java DB Database Process

ser sieciowy Apache Derby - 10.2.2.1 - (538595) uruchomiony i gotowy do zaakceptowania połączeń na porcie 1527 w 2008-03-02 00:00:00

Task List

Palette Samples Database Application Web Application Log Message

9) Uruchomienie aplikacji – podobnie jak w p.5

