

JSF Application that uses managed-
bean and ejb

Example `jsf-managedBean-and-ejb` can be browsed at <https://github.com/apache/tomee/tree/master/examples/jsf-managedBean-and-ejb>

This is a simple web-app showing how to use dependency injection in JSF managed beans using TomEE.

It contains a Local Stateless session bean `CalculatorImpl` which adds two numbers and returns the result. The application also contains a JSF managed bean `CalculatorBean`, which uses the EJB to add two numbers and display the results to the user. The EJB is injected in the managed bean using `@EJB` annotation.

A little note on the setup:

You could run this in the latest Apache TomEE [snapshot](#)

As for the libraries, `myfaces-api` and `myfaces-impl` are provided in `tomee/lib` and hence they should not be a part of the war. In maven terms, they would be with scope 'provided'

Also note that we use servlet 2.5 declaration in `web.xml`

```
<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
version="2.5">
```

And we use 2.0 version of `faces-config`

```
<faces-config xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-facesconfig_2_0.xsd"
version="2.0">
```

The complete source code is provided below but let's break down to look at some smaller snippets and see how it works.

We'll first declare the `'FacesServlet'` in the `'web.xml'`

```
<servlet>
  <servlet-name>Faces Servlet</servlet-name>
  <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
  <load-on-startup>1</load-on-startup>
```

```
</servlet>
```

`FacesServlet` acts as the master controller.

We'll then create the `calculator.xhtml` file.

```
<h:outputText value='Enter first number' />
<h:inputText value='#{calculatorBean.x}' />
<h:outputText value='Enter second number' />
<h:inputText value='#{calculatorBean.y}' />
<h:commandButton action="#{calculatorBean.add}" value="Add" />
```

Notice how we've use the bean here.

By default it is the simple class name of the managed bean.

When a request comes in, the bean is instantiated and placed in the appropriate scope. By default, the bean is placed in the request scope.

```
<h:inputText value='#{calculatorBean.x}' />
```

Here, `getX()` method of `calculatorBean` is invoked and the resulting value is displayed. `x` being a `Double`, we rightly should see `0.0` displayed.

When you change the value and submit the form, these entered values are bound using the setters in the bean and then the `commandButton-action` method is invoked.

In this case, `CalculatorBean#add()` is invoked.

`Calculator#add()` delegates the work to the `ejb`, gets the result, stores it and then instructs what view is to be rendered.

You're right. The return value "success" is checked up in `faces-config` navigation-rules and the respective page is rendered.

In our case, `result.xhtml` page is rendered.

The request scoped `calculatorBean` is available here, and we use EL to display the values.

```
## Source
```

```
## Calculator
```

```
package org.superbiz.jsf;
```

```
import javax.ejb.Local;
```

```
@Local
```

```

public interface Calculator {
    public double add(double x, double y);
}

## CalculatorBean

package org.superbiz.jsf;

import javax.ejb.EJB;
import javax.faces.bean.ManagedBean;

@ManagedBean
public class CalculatorBean {
    @EJB
    Calculator calculator;
    private double x;
    private double y;
    private double result;

    public double getX() {
        return x;
    }

    public void setX(double x) {
        this.x = x;
    }

    public double getY() {
        return y;
    }

    public void setY(double y) {
        this.y = y;
    }

    public double getResult() {
        return result;
    }

    public void setResult(double result) {
        this.result = result;
    }

    public String add() {
        result = calculator.add(x, y);
        return "success";
    }
}

## CalculatorImpl

```

```

package org.superbiz.jsf;

import javax.ejb.Stateless;

@Stateless
public class CalculatorImpl implements Calculator {

    public double add(double x, double y) {
        return x + y;
    }
}

# web.xml

<?xml version="1.0"?>

<web-app xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:web="http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-app_2_5.xsd"
version="2.5">

<description>MyProject web.xml</description>

<!-- Faces Servlet -->
<servlet>
    <servlet-name>Faces Servlet</servlet-name>
    <servlet-class>javax.faces.webapp.FacesServlet</servlet-class>
    <load-on-startup>1</load-on-startup>
</servlet>

<!-- Faces Servlet Mapping -->
<servlet-mapping>
    <servlet-name>Faces Servlet</servlet-name>
    <url-pattern>*.jsf</url-pattern>
</servlet-mapping>

<!-- Welcome files -->
<welcome-file-list>
    <welcome-file>index.jsp</welcome-file>
    <welcome-file>index.html</welcome-file>
</welcome-file-list>
</web-app>

```

Calculator.xhtml

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
xmlns:f="http://java.sun.com/jsf/core"
xmlns:h="http://java.sun.com/jsf/html">

<h:body bgcolor="white">
  <f:view>
    <h:form>
      <h:panelGrid columns="2">
        <h:outputText value='Enter first number' />
        <h:inputText value='#{calculatorBean.x}' />
        <h:outputText value='Enter second number' />
        <h:inputText value='#{calculatorBean.y}' />
        <h:commandButton action="#{calculatorBean.add}" value="Add" />
      </h:panelGrid>
    </h:form>
  </f:view>
</h:body>
</html>
```

##Result.xhtml

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
xmlns:f="http://java.sun.com/jsf/core"
xmlns:h="http://java.sun.com/jsf/html">

<h:body>
  <f:view>
    <h:form id="mainForm">
      <h2><h:outputText value="Result of adding #{calculatorBean.x} and
#{calculatorBean.y} is #{calculatorBean.result }"/></h2>
      <h:commandLink action="back">
        <h:outputText value="Home" />
      </h:commandLink>
    </h:form>
  </f:view>
</h:body>
</html>
```

#faces-config.xml

```
<?xml version="1.0"?>
<faces-config xmlns="http://java.sun.com/xml/ns/javaee"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/web-facesconfig_2_0.xsd"
version="2.0">

<navigation-rule>
  <from-view-id>/calculator.xhtml</from-view-id>
  <navigation-case>
    <from-outcome>success</from-outcome>
    <to-view-id>/result.xhtml</to-view-id>
  </navigation-case>
</navigation-rule>

<navigation-rule>
  <from-view-id>/result.xhtml</from-view-id>
  <navigation-case>
    <from-outcome>back</from-outcome>
    <to-view-id>/calculator.xhtml</to-view-id>
  </navigation-case>
</navigation-rule>
</faces-config>
```