

# JSF 2 Templating with Facelets example

By [mkyong](#) | October 18, 2010 | Updated : August 29, 2012 | Viewed : 350,628 times +937 pv/w

In web application, most pages are follow a similar web interface layout and styling, for example, same header and footer. In JSF 2.0, you can use Facelets tags to provide a standard web interface layout easily, in fact, it's look similar with [Apache Tiles framework](#).

In this example, it shows the use of 4 Facelets tags to build page from a template :

1. **ui:insert** – Used in template file, it defines content that is going to replace by the file that load the template. The content can be replace with “ui:define” tag.
2. **ui:define** – Defines content that is inserted into template with a matching “ui:insert” tag.

3. **ui:include** – Similar to JSP's "jsp:include", includes content from another XHTML page.
4. **ui:composition** – If used with "template" attribute, the specified template is loaded, and the children of this tag defines the template layout; Otherwise, it's a group of elements, that can be inserted somewhere. In addition, JSF removes all tags "outside" of "ui:composition" tag.

## 1. Template Layout

In JSF 2.0, a template file is just a normal XHTML file, with few JSF facelets tags to define the template layout.

*File : commonLayout.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:h="http://java.sun.com/jsf/html"
      xmlns:ui="http://java.sun.com/jsf/facelets"
    >

    <h:head>
        <h:outputStylesheet name="common-style.css" library="css" />
    </h:head>

    <h:body>

        <div id="page">
```

```

<div id="header">
    <ui:insert name="header" >
        <ui:include src="/template/common/commonHeader.xhtml" />
    </ui:insert>
</div>

<div id="content">
    <ui:insert name="content" >
        <ui:include src="/template/common/commonContent.xhtml" />
    </ui:insert>
</div>

<div id="footer">
    <ui:insert name="footer" >
        <ui:include src="/template/common/commonFooter.xhtml" />
    </ui:insert>
</div>

</div>

</h:body>
</html>

```

In this template, it defines a standard web layout :

1. Uses “**h:outputStylesheet**” tag to include a CSS file in head to styling the whole page layout.
2. Uses “**ui:insert**” tag to define three replaceable sections : header, content and footer.
3. Uses “**ui:include**” tag to provide a default content if no replacement is specified when the template is used.



## 2. Header, Content and Footer

Three default page content.

*File : commonHeader.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:ui="http://java.sun.com/jsf/facelets"
      >
  <body>
    <ui:composition>

      <h1>This is default header</h1>

    </ui:composition>
  </body>
</html>
```

### File : commonContent.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:ui="http://java.sun.com/jsf/facelets"
      >
  <body>
    <ui:composition>

      <h1>This is default content</h1>

    </ui:composition>
  </body>
</html>
```

### File : commonFooter.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:ui="http://java.sun.com/jsf/facelets"
      >
  <body>
    <ui:composition>
```

```
        <h1>This is default footer</h1>

    </ui:composition>

</body>
</html>
```

When these pages are insert into the template file, all the tags outside of the “`ui:composition`” will be removed. For example,

*File : commonHeader.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:ui="http://java.sun.com/jsf/facelets"
  >
  <body>

    ALL TAGS ABOVE THIS LINE WILL BE REMOVED BY JSF
    <ui:composition>

        <h1>This is default header</h1>

    </ui:composition>
    ALL TAGS BELOW THIS LINE WILL BE REMOVED BY JSF

  </body>
</html>
```

JSF only takes following elements and insert into the template file

```
<ui:composition>

    <h1>This is default header</h1>

</ui:composition>
```

When insert into the “commonLayout” template , it became...

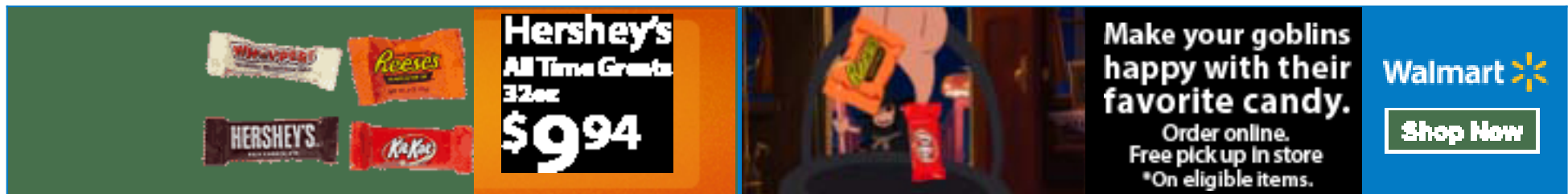
*File : commonLayout.xhtml*

```
...
<h:body>

<div id="page">

    <div id="header">
        <h1>This is default header</h1>
    </div>

...
```



The advertisement is a horizontal banner for Walmart. On the left, there are images of Hershey's, Reese's, and Kit-Kat candy bars. In the center, a black box contains the text "Hershey's All Time Greats 32oz \$9.94". To the right of this is an image of a person's hand holding a candy bar. Further right, a black box contains the text "Make your goblins happy with their favorite candy. Order online. Free pick up in store \*On eligible items." On the far right, a blue box contains the Walmart logo and a "Shop Now" button.

### 3. Using Template

To make use of an existing template, eg. “`commonLayout.xhtml`”, you use “`ui:composition`” tag with a “template” attribute. See following two examples :

*File : default.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:h="http://java.sun.com/jsf/html"
      xmlns:ui="http://java.sun.com/jsf/facelets"
  >
  <h:body>

      <ui:composition template="template/common/commonLayout.xhtml">

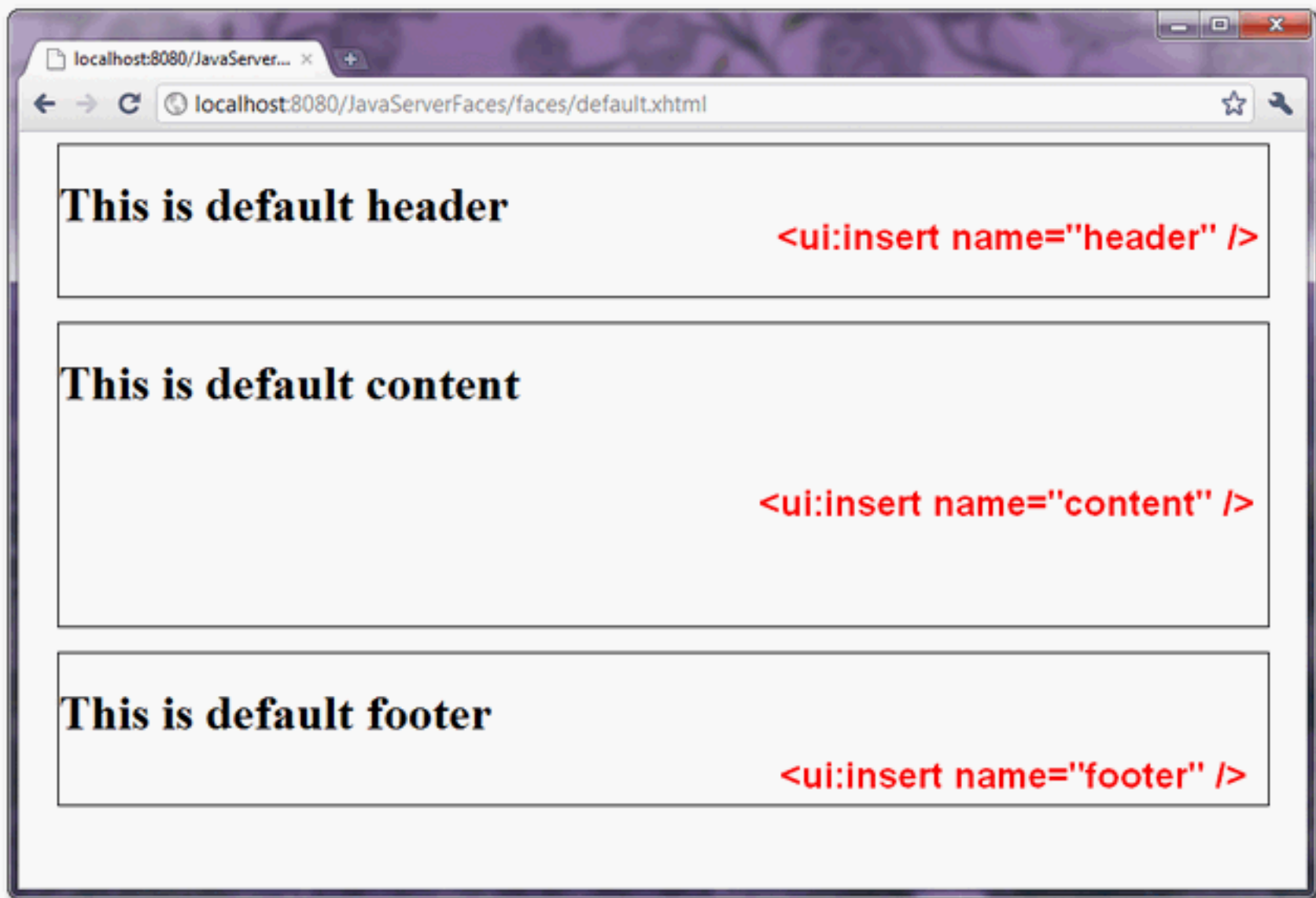
      </ui:composition>

  </h:body>

</html>
```

This JSF page load “commonLayout.xhtml” template and display all the default page content.





File : page1.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:h="http://java.sun.com/jsf/html"
      xmlns:ui="http://java.sun.com/jsf/facelets"
      >
  <h:body>

    <ui:composition template="/template/common/commonLayout.xhtml">

      <ui:define name="content">
        <h2>This is page1 content</h2>
      </ui:define>

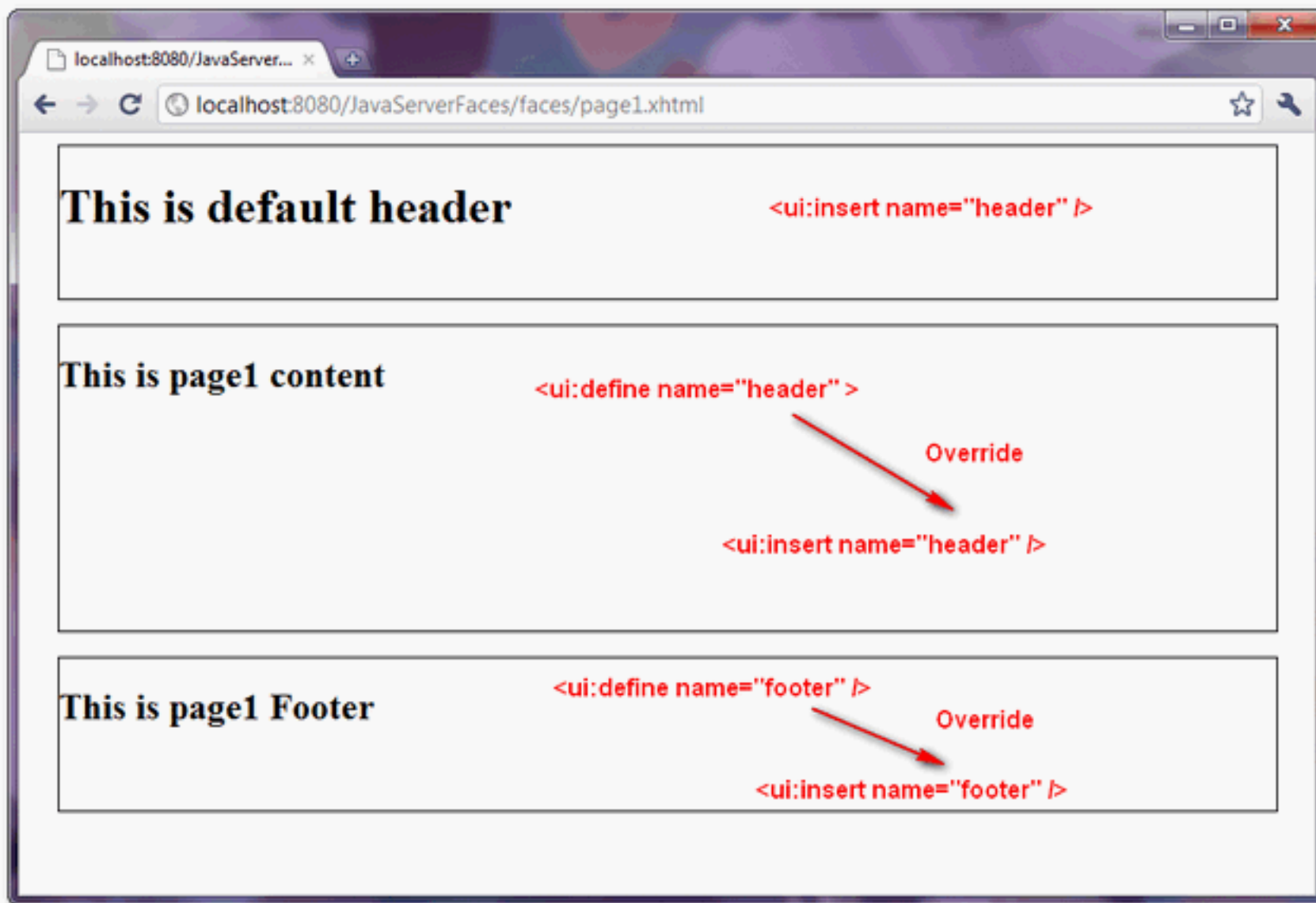
      <ui:define name="footer">
        <h2>This is page1 Footer</h2>
      </ui:define>

    </ui:composition>

  </h:body>

</html>
```

This JSF page load a “commonLayout.xhtml” template and use “ui:define” tag to override the the “ui:insert” tag, which defined in the template file.



## Note

As long as the name of the “**ui:define**” tag is matched to the name of the “**ui:insert**” tag, which defined in template, the “**ui:insert**” content is replaced.

## Download Source Code



Download It – [JSF-2-Facelets-Template-Example.zip](#) (12KB)

### References

1. [Apache Tiles Framework](#)
2. [JSF “ui:include” JavaDoc](#)
3. [JSF “ui:insert” JavaDoc](#)
4. [JSF “ui:define” JavaDoc](#)
5. [JSF “ui:composition” JavaDoc](#)

Tags : [jsf2](#) [template](#)

### Share this article on

[Twitter](#)[Facebook](#)[Google+](#)

### Related Posts

25k

[JSF 2 + Quartz 2 example](#)

---

181k

JSF 2 repeat tag example

73k

How to display dataTable row numbers in JSF

93k

JSF 2 outputText example

220k

Injecting Managed beans in JSF 2.0

15k

JSF 2.0 : managed bean x does not exist, Check that appropriate getter and/or setter methods exist

86k

java.lang.ClassNotFoundException : javax.servlet.jsp.jstl.core.Config

253k

JSF 2 dropdown box example

110k

JSF 2 PreRenderViewEvent example

89k

Multiple Components Validator in JSF 2.0



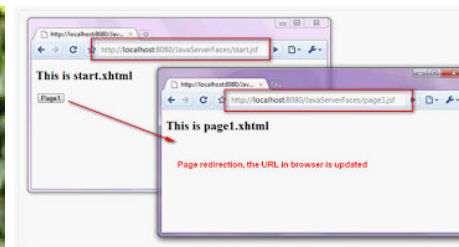
Powered by Google



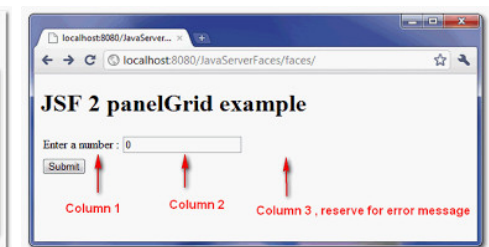
Composite Components  
in JSF 2.0



Top 8 Java People You  
Should Know



JSF : Page Forward vs  
Page Redirect



JSF 2 panelGrid example

A0003	Dell Laptop	11600.00	8
A0004	Samsung T.CD	5200.00	2

[JSF 2 dataTable example](#)

[JSF 2 valueChangeListener...](#)

[JSF 2 PreRenderViewEvent...](#)

[How to include cascading style sheets...](#)

## About the Author



mkyong

Founder of [Mkyong.com](#) and [HostingCompass.com](#), love Java and open source stuff. Follow him on [Twitter](#), or befriend him on [Facebook](#) or [Google Plus](#). If you like my tutorials, consider make a donation to [these charities](#).

## Popular Posts

577k

[How to install JDK on Ubuntu](#)

672k

[How to read XML file in Java - \(SAX Parser\)](#)

679k

[How to install Maven on Windows](#)

719k

[Hibernate Query examples \(HQL\)](#)

	733k
JAX-WS Hello World Example - RPC Style	
	681k
How to create a Web Application Project with Maven	
	631k
Jersey hello world example	
	716k
Java XML Tutorial	
	1.6m
How to read XML file in Java - (DOM Parser)	
	655k
Spring MVC hello world example	
	956k
Java object sorting example (Comparable and Comparator)	
	693k
JSF 2.0 hello world example	
	912k
JAXB hello world example	
	597k
Tomcat - java.lang.OutOfMemoryError: PermGen space	
	738k
log4j.properties example	
	849k
JavaMail API - Sending email via Gmail SMTP example	



	1.3m
Java Properties file examples	1.2m
How to read file in Java - BufferedReader	
	605k
Android ListView example	1.1m
JSF 2.0 Tutorial	

# Comments

47 Comments      Mkyong.com

 Recommend
 2
 Share



Join the discussion...



**gezzedo** • 2 years ago  
 Thanks mkyong. The Eclipse JSF2 tutorial is not as good as this.  
 1 ^ | v • Reply • Share ›



**Laura** • 3 years ago  
 Do you know if it's possible to have a template inside another template? For example I need to have the

split into a toolbar and a content zone.

1 ^ | v • Reply • Share ›



**Literate Aspects** • 6 hours ago

Hello, Mkyong. Are you still around? Please, I have one quick question.

^ | v • Reply • Share ›



**Murtuza Vohra** • a year ago

This is great tutorial, this helps solve the problem of PrimeFaces `<p:layout fullpage="false">`. I wanted 1 Pane height to expand as per content then followed by the Footer Pane. This was not possible with sta without specifying height for each layoutUnit.

Thanks again.

^ | v • Reply • Share ›



**onourdean** • 2 years ago

why there is no replies from mkyoung????

^ | v • Reply • Share ›



**Douglas Hurst** • 3 years ago

This is a fantastic example that I've made work for me, but I have a real problem.

One of my 'ui:define content' pages is doing a file upload which requires the `<< h:form to be enctype='r data'.` This all works well and I can navigate all my pages until I actually select the content page that is upload. Even the file upload works fine, but when I then try to navigate away from that page I get the foll

the request doesn't contain a multipart/form-data or multipart/mixed stream, content type header is app  
www-form-urlencoded; charset=UTF-8

I tried creating a whole layout.xhtml page just for that content page but it didn't seem to make any difference. Anyone else have such a problem?

^ | v • Reply • Share ›



**Vikas Sharma** • 3 years ago

Hello Sir, first of all i want to thank you for such a nice tutorial. I just implemented my code using your tutorial and everything worked fine as expected. But when i look the source code of my sample page in which i use commonLayout.xhtml then i found two html tags and two body tags as the commonLayout.xhtml and the page both have the html and body tags. so its repeating. I am newbie so please tell me if i'm missing something..thanks in advance..

^ | v • Reply • Share ›



**Douglas Hurst** • 3 years ago

I believe I've implemented this correctly in Eclipse, but even with page1.xhtml, I'm not getting the substituted content... but rather all 3 defaults? Anyone else have this problem? Normally, you return the page you want from a Java String method in the Bean, like "return page1.xhtml". I guess I'm not getting how the example would know to load page1.xhtml... over say page2.xhtml would have its own "content".

^ | v • Reply • Share ›



**Douglas Hurst** ➔ Douglas Hurst • 3 years ago

I figured it out. Some sort of button on the default content sends the user to a bean and the next page1.xhtml in this case is displayed with the substituted content.

^ | v • Reply • Share ›



**Imran** • 3 years ago

Your explanations and examples are fabulous. Excellent work man (X). Thanks again.



Your explanations and examples are fabulous. Excellent work man (1).. Thanks again

^ | v • Reply • Share ›



**Ketan** • 3 years ago

Thanks !

-

Ketan

^ | v • Reply • Share ›



**Kevin Yeandel** • 3 years ago

And again a search takes me to another of your fantastic pages. I would like just to tell you how much I love your fine examples. So thank you!

^ | v • Reply • Share ›



**besho** • 3 years ago

Thank U very much, this is a simple and very beneficial description to including mechanism. Thanks again

^ | v • Reply • Share ›



**2** • 3 years ago

Thanks a lot.

^ | v • Reply • Share ›



**NKS** • 3 years ago

how does the web.xml file appear in this program? can you please explain every line?

^ | v • Reply • Share ›



**Buck Ofama** → NKS • 3 years ago

lose, lose.

^ | v • Reply • Share ›



**selva** • 3 years ago

Thanks a lot. you saved my day..

^ | v • Reply • Share ›



**Baskar** • 3 years ago

how we can avoid the page refresh for header and footer area

^ | v • Reply • Share ›



**Andrea Franceschini** • 3 years ago

The clearest example I found till now about templates. It definitely make me understand the use of them

^ | v • Reply • Share ›



**Michael R** • 3 years ago

This tutorial is great! Thank you so much.

^ | v • Reply • Share ›



**Reda** • 4 years ago

Thanks, very helpful tutorial :)

^ | v • Reply • Share ›



**Mortoza** • 4 years ago

very helpful tutorial. Thanks MKYong.



Very helpful tutorial. Thanks mkyong.

^ | v • Reply • Share ›



**Sam** • 4 years ago

Nice article. page1.xhtml content part is replaced by right?

^ | v • Reply • Share ›



**Sam** ➔ Sam • 4 years ago

page1 content is replaced by ui:define content but not ui:define header ?

^ | v • Reply • Share ›



**Ryan** ➔ Sam • 3 years ago

only those ui:define with the same name as ui:insert is replaced for the template. Since for header, the header from the template is used instead.

^ | v • Reply • Share ›



**Mazaher Namjofar** • 4 years ago

Thank u very much!very good tutorial from mkyong.

^ | v • Reply • Share ›



**arthur grohe** • 4 years ago

Thanks for this very simple and easy to understand tutorial!

Never seen such a clear article!

Keep up the good work ;)

^ | v • Reply • Share ›



**Diego Fernando Trujillo** • 4 years ago



The most simplest and easiest post to understand the concept. Thanks.

^ | v • Reply • Share ›



**Mohit Saluja** • 4 years ago

I am having a JavaScript in commonHeader, Now will it render/work in default.xhtml and page1.xhtml. (include it in commonLayout.xhtml)

^ | v • Reply • Share ›



**Mohit Saluja** • 4 years ago

Mkyong Sir, I am having a JavaScript in commonHeader, now will it render/work in default.xhtml, page1 need to keep that in these two pages or somewhere else like commonLayout.xhtml

^ | v • Reply • Share ›



**murat** • 4 years ago

Your examples are so clear and so instructive, thanks..

^ | v • Reply • Share ›



**Prasanth** • 4 years ago

Great Tutorials

^ | v • Reply • Share ›



**noboundaries** • 4 years ago

Couldn't stop to say "thanks" for the easy writeup.

^ | v • Reply • Share ›



**Mabruk** • 4 years ago



more than 1 year ago

Nice and clean code. Good examples, easy to follow.

^ | v • Reply • Share ›



**vahid** • 5 years ago

you explained it very easy and clear

thank you

^ | v • Reply • Share ›



**mn** • 5 years ago

Thanks...

You explain this concept in a good and easy way.

^ | v • Reply • Share ›



**somasekhar** • 5 years ago

Hi mkyong, Is a templates concept replaces tiles concept?

^ | v • Reply • Share ›



**David** • 5 years ago

Hi.

Great tutorial,

I have been using facelets but there is something I couldn't do it.

If you take a composition like you use in your tutorial, and add a button like you have in your page for "p



section" in commonHeader.xhtml.

Is there a way to indicate you want to print the content, just the content, in the "content section"???? In show in that section different contents, so I don't want to print the hole page (or composition).

Thanks

David.

^ | v • Reply • Share ›



**agungdmt** • 5 years ago

this is nice great go damn tutorial Mkyong  
thx bro...

^ | v • Reply • Share ›



**royjavelosa** • 5 years ago

Hi Mkyong nice tutorial. I have a question is it possible to update the content part asynchronously (ajax) example it does preserve the parts of your template but the whole page gets refreshed. Is it possible th of the templates are refreshed? Thanks in advance.

^ | v • Reply • Share ›




**Russ Bateman** • 6 years ago

This is a nice, basic article. However, for a real beginner who wants to do this hands-on, there's not a li and other details to accomplish it in, say, Eclipse or NetBeans. Obviously, you know how to do that. Cc the JARs and their origins?

^ | v • Reply • Share ›



**mkyong** → Russ Bateman • 6 years ago

 Sorry for the missing information, you can download this project (Maven + Eclipse project), all tl listed in the pom.xml file. Alternatively, you can find all the JARs in this article - <http://www.mkyong.com/jsf2/jsf...>

^ | v • Reply • Share ›



**vinod bhavihal** → mkyong • 4 years ago

Hi... can we use tiles with JSF2.0? If so how?

^ | v • Reply • Share ›



**java\_dev** • 6 years ago

like yr demo..cool

^ | v • Reply • Share ›



**Alex** • 6 years ago

Hi, i have a question. You wrote that in page2.xhtml we can override template's CONTENT with and put some xhtml code there. but if i have, for example, content2.xhtml, and i want to include it - i mu

Can i solve my question in such way?

^ | v • Reply • Share ›



**Alex** → Alex • 6 years ago

write code

```
ui:define name="content"
```

```
ui:insert name="content"
```

```
ui:include src="/template/common/content2.xhtml"
```

```
ui:insert
```

```
ui:define
```

^ | v • Reply • Share ›



This comment is awaiting moderation. [Show comment](#).



**Paras Jain** ➔ Flavio Furlanetto • 4 years ago

Thanks Flavio

^ | v • Reply • Share ›

ALSO ON MKYONG.COM

## Java 8 flatMap example

4 comments • 6 months ago•



**Carol** — good article!

## How to install Oracle JDK 8 on CentOS

1 comment • 3 months ago•



**Lee Namkyu** — Thanks for this article.

## Java Custom Exception Examples

2 comments • 4 months ago•



**Hinotori** — great! thanks!

## Java 8 – HijrahDate, How to calculate the date

1 comment • 2 months ago•



**Muhammad Zeeshan Khan** — this post was great for me.



Subscribe



Add Disqus to your site

[Privacy](#)



**THIS IS  
SENDING MONEY  
ONLINE WITH  
WESTERN UNION**

Available 24/7. Online or  
with our mobile app

[westernunion.com](https://westernunion.com)

**WESTERN UNION WU**

**SEND MONEY NOW ►**



Mkyong

51,463 likes

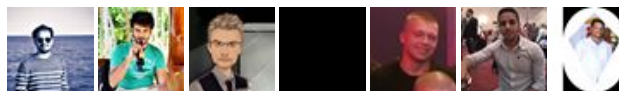


Like Page



Sign Up

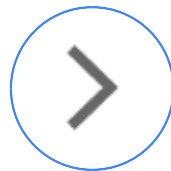
Be the first of your friends to like this



# Domo® Business Dashboard

The data you need, when  
its needed. Watch how  
Domo solves data  
problems

domo.com



## Rising Posts (100k-500k pv)

+10.3k	Jackson 2 - Convert Java Object to / from JSON
+6.3k	Java 8 forEach examples
+4.8k	RESTful Java client with java.net.URL
+4.6k	Java - Read a file from resources folder
+4k	Log4j hello world example
+3.8k	How to determine a prime number in Java
+3.7k	Spring @PropertySource example
+3.6k	Spring 4 MVC Ajax Hello World Example
+3.4k	Apache HttpClient Examples
+3.3k	Spring Batch Tutorial

## Rising Posts (10k-99k pv)

+7.3k	Java - Convert String to int
+3.9k	Java 8 Streams filter examples
+2.7k	Java 8 Stream - Read a file line by line
+2.5k	Java - Generate random integers in a range

+2.4k

Java 8 - Filter a Map examples

+2.4k

Java - How to split a string

+2.3k

Java 8 Lambda : Comparator example

+1.7k

Java 8 – Stream Collectors groupingBy examples

+1.7k

Java - Display double in 2 decimal points

+1.5k

Python - How to loop a dictionary

## Rising Posts (<10k pv)

+1.1k

Java Custom Exception Examples

+802

How to install Oracle JDK 8 on CentOS

+735

Java 8 - How to convert String to LocalDate

+719

How to view HTTP headers in Google Chrome?

+702

JUnit - How to test a List

+675

How to use Gradle Wrapper

+649

Java - How to convert Array to Stream

+557

Unit Test - What is Mocking? and Why?

+504

Java 8 - How to sort a Map

+433

Java 8 - Convert Map to List



## Favorites Links

---

[Android Getting Started](#)

[Google App Engine – Java](#)

[Spring 2.5.x Documentation](#)

[Spring 3.2.x Documentation](#)

[Spring 4.1.x Documentation](#)

[Java EE 5 Tutorial](#)

[Java EE 6 Tutorial](#)

[Java EE 7 Tutorial](#)

[Java 6 API](#)

[Java 7 API](#)

[Java 8 API](#)

[JSF Home Page](#)

[JSP Home Page](#)

[Maven Central Repository](#)

[Hibernate ORM](#)

[JAX-WS Home Page](#)

[JAX-RS Home Page \(Jersey\)](#)

## Partners & Bookmarks

---

Java Code Geeks  
TestNG Founder  
DZone

## About Mkyong.com

---

Mkyong.com is for Java and J2EE developers, all examples are simple and easy to understand, and well tested in my development environment.

Mkyong.com is created, written by, and maintained by Yong Mook Kim, aka Mkyong. It is built on [WordPress](#), hosted by [Liquid Web](#), and the caches are served by CloudFlare CDN.

Copyright © 2008-2016 Mkyong.com, all rights reserved. [Privacy Policy](#)