

Composite Components in JSF 2.0

By [mkyong](#) | November 18, 2010 | Updated : August 29, 2012 | Viewed : 156,648 times +482 pv/w

Since JSF 2.0, it's very easy to create a reusable component, known as **composite components**. In this tutorial, we show you how to create a simple composite components (stored as "*register.xhtml*"), which is an user registration form, includes name and email text fields (`h:inputText`) and a submit button (`h:commandButton`). In addition, we also show you how to use it.

Create a Composite Components

Here's the steps to create a composite components :



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1. Composite Namespace

Create a **.xhtml** file, and declared the composite namespace.

```
<html xmlns="http://www.w3.org/1999/xhtml"
//...
xmlns:composite="http://java.sun.com/jsf/composite">
</html>
```



2. Interface & Implementation

Uses composite tags `composite:interface`, `composite:attribute` and `composite:implementation`,

to define content of the composite component. For example,

```
<html xmlns="http://www.w3.org/1999/xhtml"
//...
xmlns:composite="http://java.sun.com/jsf/composite">

    <composite:interface>
        <composite:attribute name="anything" />
    </composite:interface>

    <composite:implementation>
        #{cc.attrs.anything}
    </composite:implementation>

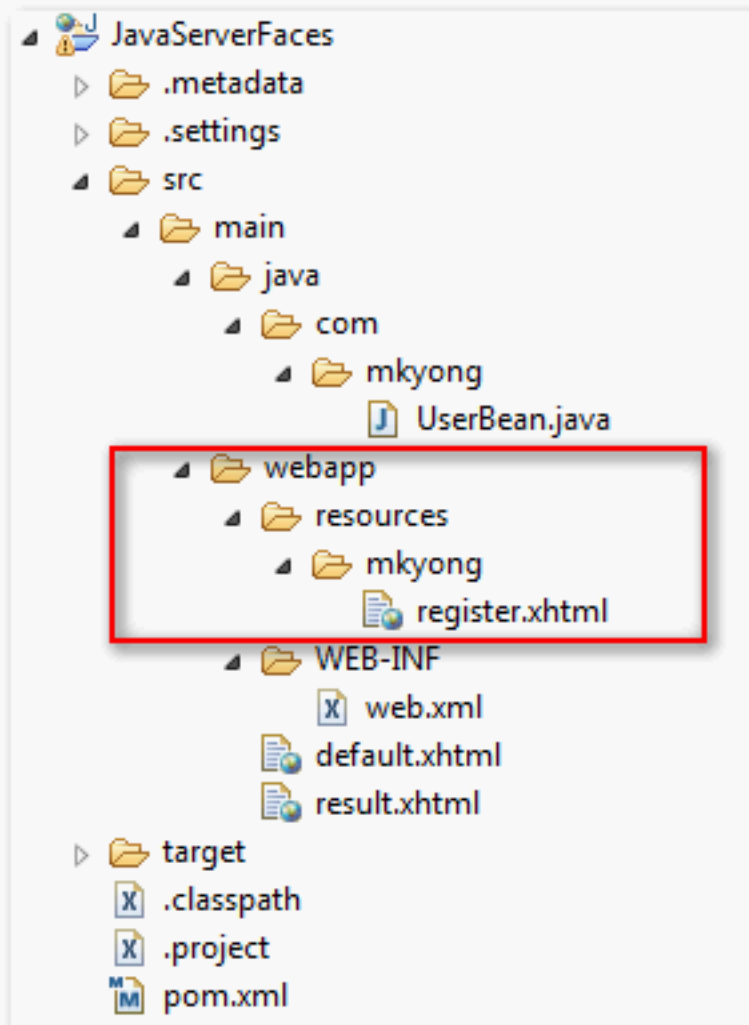
</html>
```

The `composite:interface` tag is used to declare the configurable values which are expose to the developer who use it. And `composite:implementation` tag is declares all the XHTML markups, which are the content of the composite component, inside the `composite:implementation` tag, you can access `composite:interface` attribute with the expression `#{cc.attrs.attributeName}`.

3. Resources Folder

Put composite components (".xhtml" file) into JSF's resources folder, see figure 1:

Figure 1 : Directory structure of this example.



In this case, you put the “*register.xhtml*” composite components into a folder named “mkyong”.

4. Complete Example

Done, let see a complete example of “register.xhtml”.

File : register.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:f="http://java.sun.com/jsf/core"
      xmlns:composite="http://java.sun.com/jsf/composite"
      >

    <composite:interface>

        <composite:attribute name="nameLabel" />
        <composite:attribute name="nameValue" />
        <composite:attribute name="emailLabel" />
        <composite:attribute name="emailValue" />

        <composite:attribute name="registerButtonText" />
        <composite:attribute name="registerButtonAction"
            method-signature="java.lang.String action()" />

    </composite:interface>

    <composite:implementation>

        <h:form>

            <h:message for="textPanel" style="color:red;" />
```

```
<h:panelGrid columns="2" id="textPanel">

    #{cc.attrs.nameLabel} :
    <h:inputText id="name" value="#{cc.attrs.nameValue}" />

    #{cc.attrs.emailLabel} :
    <h:inputText id="email" value="#{cc.attrs.emailValue}" />

</h:panelGrid>

<h:commandButton action="#{cc.attrs.registerButtonAction}"
    value="#{cc.attrs.registerButtonText}"
/>

</h:form>

</composite:implementation>

</html>
```

Use a Composite Components

You just created a composite component “register.xhtml”, and now we show you how to use it.

1. Composite Component Access Path

Refer to figure 1 above; the “register.xhtml” file is under the folder “mkyong”. Here’s how you access it :

```
<html xmlns="http://www.w3.org/1999/xhtml"
      ///...
      xmlns:mkyong="http://java.sun.com/jsf/composite/mkyong"
    >
      <mkyong:register />
</html>
```

http://java.sun.com/jsf/composite/folder-name-in-resources-folder

The folder name of the composite components is defined the component access path, for example, if you put your “register.xhtml” file under folder named “abc”, then you should access it like this :

```
<html xmlns="http://www.w3.org/1999/xhtml"
      ///...
      xmlns:mkyong="http://java.sun.com/jsf/composite/abc"
    >
      <mkyong:register />
</html>
```

2. Complete Example

Let's see a complete example to show the use of "register.xhtml" composite components.

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:mkyong="http://java.sun.com/jsf/composite/mkyong"
      >

  <h:body>

    <h1>Composite Components in JSF 2.0</h1>

    <mkyong:register
      nameLable="Name"
      nameValue="#{user.name}"
      emailLable="E-mail"
      emailValue="#{user.email}"

      registerButtonText="Register"
      registerButtonAction="#{user.registerAction}"
    />

  </h:body>

</html>
```


You are allowed to pass either hard-coded value or backing method or property into the composite component via exposed attributes, when the form is submitted, JSF will do all the backing bean binding automatically.

P.S Here's the "user" managed or backing bean, for those who are interested.

```
package com.mkyong;

import javax.faces.bean.ManagedBean;
import javax.faces.bean.SessionScoped;

@ManagedBean(name="user")
@SessionScoped
public class UserBean{

    public String name;
    public String email;

    //getter and setter methods for name and email

    public String registerAction(){
        return "result";
    }

}
```

Demo

Here's the result.

URL : <http://localhost:8080/JavaServerFaces/default.xhtml>



Download Source Code



Download It – [JSF-2-Composite-Components-Example.zip](#) (11KB)

Reference

1. [JSF 2 composite:interface JavaDoc](#)
2. [JSF 2 composite:implementation JavaDoc](#)
3. [JSF 2 composite:attribute JavaDoc](#)

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JSF 2 PreRenderViewEvent example

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Multiple Components Validator in JSF 2.0

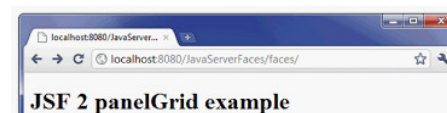
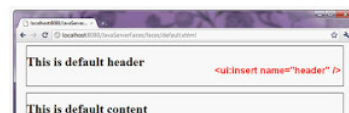
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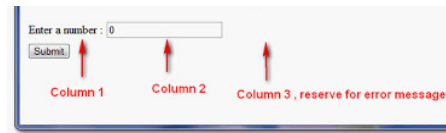




Multiple Components
Validator in JSF 2.0



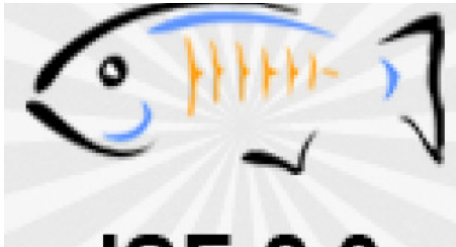
JSF 2 Templating with
Facelets example



JSF 2 panelGrid example



JSF 2.0 Tutorial



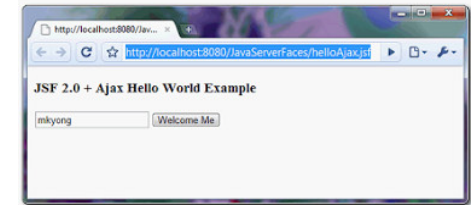
JSF 2 link, commandLink
and outputLink example



Custom tags in JSF 2.0



JSF 2 attribute example



JSF 2.0 + Ajax hello world
example

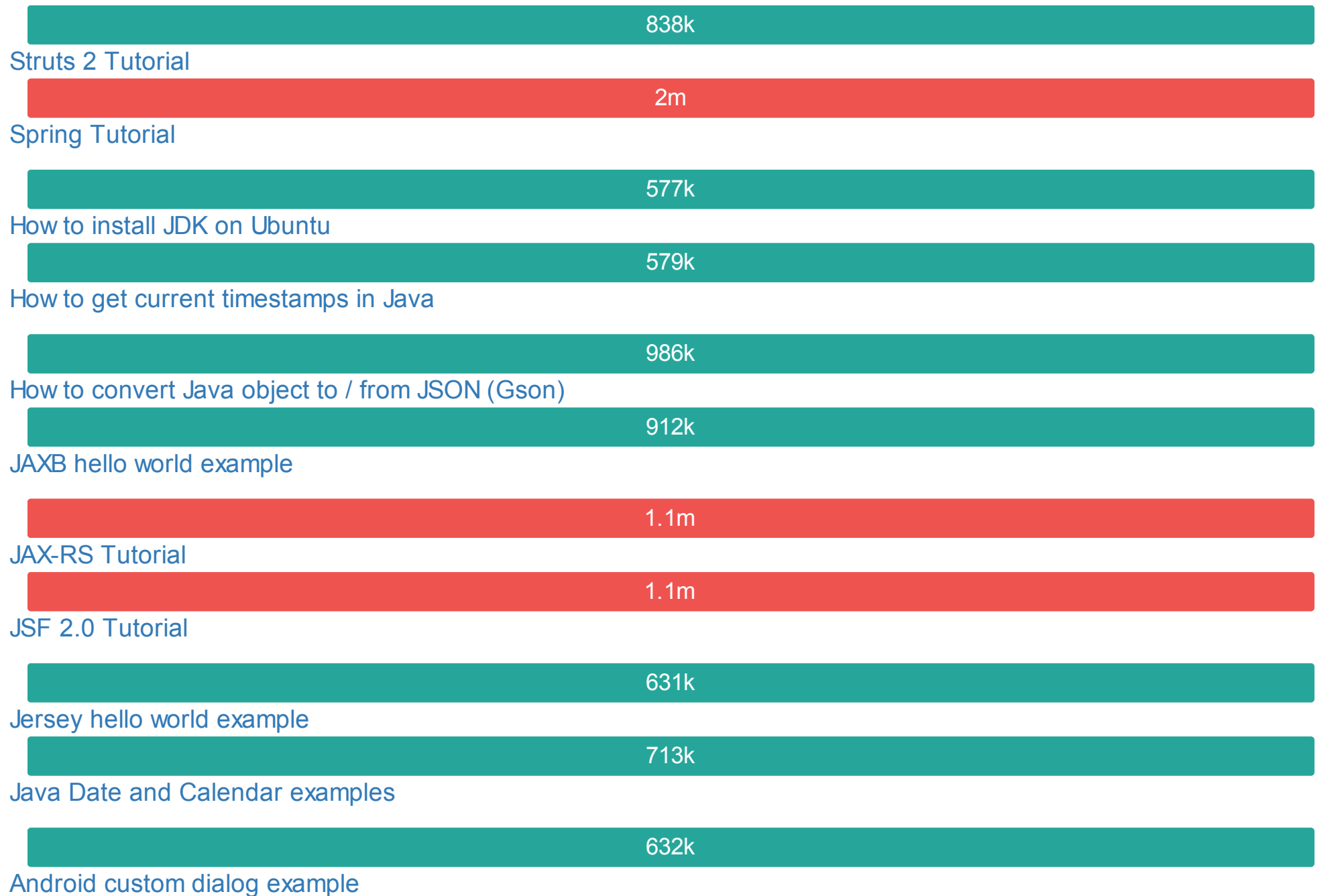
About the Author



mkyong

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

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naveen • 5 years ago

Hey mk

I am trying to extend the selectItems tag of core jsf 2.0

i wrote a class which extends SelectItems and then added an attribute title for tooltip

i added xml suggested by you (using 1.1 DTD)

i added context param as per your advice

still i am getting

```
SEVERE: Servlet.service() for servlet [Faces Servlet] in context with path [/app-manager] th
Tag Library supports namespace: http://dummy.com/facelets, but no tag was defined for name:
javax.faces.view.facelets.TagException: /index.xhtml @22,68
Tag Library supports namespace: http://dummy.com/facelets, but no tag was defined for name:
    at com.sun.faces.facelets.compiler.CompilationManager.pushTag(CompilationManager.jav
    at com.sun.faces.facelets.compiler.SAXCompiler$CompilationHandler.startElement(SAXCo
    at com.sun.org.apache.xerces.internal.parsers.AbstractSAXParser.startElement(Abstrac
```

6 ^ | v • Reply • Share ›



hale • 2 years ago



typo. Lable

^ | v • Reply • Share ›



Benny Neugebauer • 3 years ago

Has worked like a charm! The best tutorial I could find to Composite Components in the web. Short, practical. Thank you!!

^ | v • Reply • Share ›



Salamunti • 3 years ago

Hi mkyong,

```
<composite:interface>
<composite:attribute name="selection" required="true"/>
<composite:attribute name="ajaxListner" required="false" method-signature="void
listner(javax.faces.event.AjaxBehaviorEvent)"/>
</composite:interface>
```

I have a problem with passing ajax listner to the composite component. the using of composite component with the method:

```
public void onNodeSelect(NodeSelectEvent event) {

}
```

but it not works with the throws Exception syntax

```
public void onNodeSelect(NodeSelectEvent event) throws Exception {
```

any idea?!



Sam • 3 years ago

Hi mkyong,

thanks for your great article!

I'm here wondering what's the advantages and disadvantages for custom tags mentioned in previous s (<http://www.mkyong.com/jsf2/cus...> compared with composite components here. Can you shed the lig

Thanks in advance!

^ | v • Reply • Share ›



Shantanu • 3 years ago

Hi mkyong,

I depend a lot on your blogs.

I am currently trying to develop composite components.

However after doing some basic stuff I was looking for the schema for <http://java.sun.com/jsf/compos...> namespace and could not get it.

That would help me in getting IDE tag completion etc.

Can you send me any pointers regarding the same.

regards

^ | v • Reply • Share ›



Clement ➔ Shantanu • 3 years ago

For all those whose page has the inclusion of the composite element having the error that "the i

cannot be found , you MUST create the resources folder under your web pages folder. It has same level as your WEB-INF folder. All along I had the impression that the "resources" folder was specific to certain types of project. I was using the Java Enterprise application which was explicit.

Thank you mkyong too~

1 ^ | v • Reply • Share ›



Saleh • 4 years ago

Thank you for all these tutorials. Many Google searches about Java EE results your website. It is very helpful.

^ | v • Reply • Share ›



Fábio Fagundes • 4 years ago

Great help. Thank you for all of your work.

^ | v • Reply • Share ›



Tim • 4 years ago

Hello,

I also work with composite components, but in combination with other fields and text outside the component. What I do is... I put a table on the jsf page that has 2 columns and multiple rows. The first column is a component and the second column contains plain text.

When you submit the page without ajax and come back to the same page then all components are plain text.

It is as jsf parses first all normal tags, text,... and after that the components.

Pressing F5 puts everything back normal.

Someone any idea?

^ | v • Reply • Share ›



edi • 4 years ago

I works like a charm, now is much much easier to built my own composite components.

Thank you for the post.

^ | v • Reply • Share ›



Haolin • 4 years ago

I tried the example in both JSF 2.0/Weblogic and Mojarra JSF 2.1.11/Tomcat. But cc.attrs cannot be ev
you encounter this problem before? Have your code been tested in the environments listed above yet?

^ | v • Reply • Share ›



Rudra • 5 years ago

Hi Yong, this is very good article,
can you please give an example to hide if some of the defined fileds in register.xml not required in some

like my requirement is to hide some fileds in some pages

^ | v • Reply • Share ›



Leandro • 5 years ago

Hello,

I'm having problem to create the component dynamically.

What am I doing wrong?

```
Resource resource = context.getApplication().getResourceHandler().createResource("date.xhtml", "uti  
DynamicFieldList compositeComponent = (DynamicFieldList)context.getApplication().createComponent  
resource);  
UIPanel facetComponent = (UIPanel) context.getApplication().createComponent(UIPanel.COMPONEN  
facetComponent.setRendererType("javax.faces.Group");  
compositeComponent.getFacets().put(UIComponent.COMPOSITE_FACET_NAME, facetComponent);  
context.getViewRoot().getChildren().add(compositeComponent);
```

^ | v • Reply • Share ›



Leandro ➔ Leandro • 5 years ago

No error occurs, the more the component is not displayed

^ | v • Reply • Share ›



msm • 5 years ago

Hi,

I have different application structure.

src

web

resources/mykong/register.xhtml

web-inf

I have added resource folder in web/resources/mykong/register.xhtml

1. added name space xmlns:mkyong="<http://java.sun.com/jsf/compos...>" jsf page.

2.called register in one the jsf page.

But i am unable to see component?

Please if anyone has an idea.

^ | v • Reply • Share ›



DE OLIVEIRA • 5 years ago

Hello,

I create my own component (a panel) :



see more

^ | v • Reply • Share ›



DE OLIVEIRA → DE OLIVEIRA • 5 years ago

Sorry for the double post but it seems that the HTML pre markup doesn't work.

^ | v • Reply • Share ›



mkyong → DE OLIVEIRA • 5 years ago

Can't read your code, try post at javanullpointer.com

^ | v • Reply • Share ›



DE OLIVEIRA → mkyong • 5 years ago

I've sent you another post with the contact form. Hope this will work. Thanks for !

I will try to post on javanullpointer.com too.

^ | v • Reply • Share ›

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