Java Programming

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What is JSF?

- Java Server Faces (JSF) technology is a **front end** framework which makes the creation of user interface components easier by reusing the UI components.
- JSF is designed based on the Model View Controller pattern (MVC) which segregates the presentation, controller and the business logic.
- **UI Components:** Text fields, list boxes, checkboxes, labels, panels, radio buttons, and other elements

Why JSF?

- JavaServer Faces (JSF) is a new standard Java framework for building Web applications.
- **Java** specification for building component-based **user interfaces for web applications**
- JSF offers a clean separation between behavior and presentation for web applications.

JSF Features

- Component Based Framework.
- JSP is based on the Model-View-Controller concept
- Ease and Rapid web Development.
- Default Exception Handling.
- JSF separates the functionality of a component from the display of the component.

Why not JSF?

- JSF forces you to mix Java and xhtml code for the same feature.
- JSF project can be easily become too complex to maintain

JSF program

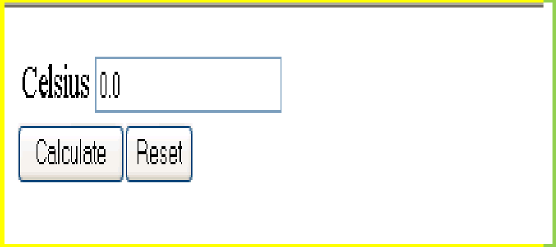
- JSF provides a standard HTML tag library which are rendered into corresponding html output.
- In order to use these these tags we need to use the following namespaces of URI in html node.
- <html xmlns="**http://www.w3.org/1999/xhtml**" xmlns:h="**http://java.sun.com/jsf/html**" >

JSF tags	HTML tags
h:inputText	<input type="text“>
h:outputText	Plain text
h:form	<form>
h:commandButton	<input type=value> value can be "submit", "reset", or "image"
h:inputSecret	<input type="password">
h:inputTextarea	<textarea>
h:inputHidden	<input type="hidden">
h:dataTable	<table>
h:outputLabel	<label>
h:panelGrid	<table> element with <tr> and <td> elements
h:selectOneRadio	<input type="radio">
h:selectBooleanCheckbox	<input type="checkbox">

JSF tags are similar to html tags with minor variations

Example 2

```
@ManagedBean(name="temperatureConvertor")
public class TemperatureConvertor {
private double celsius;
private double fahrenheit;
 private boolean initial= true;
 public double getCelsius() {
 return celsius;  }
public void setCelsius(double celsius) {
this.celsius = celsius;  }
public double getFahrenheit() {
 return fahrenheit;  }
public boolean getInitial(){
return initial;  }
public String reset (){
 initial = true;
 fahrenheit =0;
 celsius = 0;
return "reset";
 }
public String celsiusToFahrenheit(){ initial = false;
 fahrenheit = (celsius *9 / 5) +32;
 return "calculated"; } }
```



```
<html>
<title>Celsius to Fahrenheit Convertor</title>
 <h:body>
 <h:form>
<h:outputLabel value="Celsius">
</h:outputLabel>
 <h:inputText
value="#{temperatureConvertor.celsius}">
</h:inputText>
<h:commandButton action=
"#{temperatureConvertor.celsiusToFahrenheit}"
value="Calculate">
</h:commandButton>
 <h:commandButton action=
"#{temperatureConvertor.reset}" value="Reset">
</h:commandButton>
</h:form>
<h3> Result </h3>
<h:outputLabel value="Fahrenheit ">
</h:outputLabel>
<h:outputText
value="#{temperatureConvertor.fahrenheit}" />
</h:body> </html>
```

JSF-Example code 1
java class and X-html

@ManagedBean(name="hello")
This is the name for the object of HelloWorld class
Later can use in JSF tag to fetch its variables as #(hello.s1)

```
@ManagedBean(name="hello")
public class HelloWorld
{
private String s1 = "Hello World!!";

}
```

```
<?xml version='1.0' encoding='UTF-8' ?>
<html
xmlns="https://www.w3.org/1999/xhtml"
xmlns:h="https://java.sun.com/jsf/html">
<h:head>
 <title>Hello World JSF Example</title>
</h:head>
<h:body>
 #{hello.s1}
 <br />
<br />
</h:body>
</html>
```

Use <h:head> instead of <head>

Access the java class HelloWorld varaible s1 via java object helloWorld declared using @ManagedBean

Example 2: jdbc connectivity

```
// index.xhtml
html xmlns="http://www.w3.org/1999/xhtml"
xmlns:h="http://xmlns.jcp.org/jsf/html">
<h:head> <title>User Form</title> </h:head>
<h:body>
<h:form>
<h:outputLabel for="username" value="User Name "/>
<h:inputText id="username" value="#{user.userName}">  </h:inputText><br/>
<h:outputLabel for="email" value="Email ID "/>
<h:inputText id="email" value="#{user.email}">
</h:inputText><br/><br/>
<h:commandButton action="#{user.submit()}" value="submit"/>
</h:form>
</h:body>
</html>
```

Example 2: jdbc connectivity

```
// User.java
@ManagedBean(name="user")
public class User {
String userName;
String email;
public String getUserName() {
return userName;  }
public void setUserName(String userName)
 {
this.userName = userName;  }
public String getEmail() {
return email; }
public void setEmail(String email) {
this.email = email;
}
```

```
public boolean save(){
int result = 0;
try{
 String url="jdbc:oracle:thin:@localhost:1521:XE";
        String user ="SYSTEM";
        String pwd ="oracle";
        Connection
con=DriverManager.getConnection(url,user,pwd);
PreparedStatement stmt = con.prepareStatement(
"insert into user(name,email) values(?,?)");
stmt.setString(1, this.getUserName());
stmt.setString(2, this.getEmail());
result = stmt.executeUpdate();
}catch(Exception e){ System.out.println(e); }
if(result == 1){  return true;  }
else return false;
}
public String submit(){
if(this.save()){ return "response.xhtml";
}else return "index.xhtml";
}
}
```

Example 2: jdbc connectivity

```
// response.xhtml
<html xmlns="http://www.w3.org/1999/xhtml"
xmlns:h="http://xmlns.jcp.org/jsf/html">
<h:head>
<title>Response Page</title>
</h:head>
<h:body>
<h1><h:outputText value="Hello #{user.userName}"/></h1>
<h:outputText value="Your Record has been Saved Successfully!"/>

</h:body>
</html>
```