**JSF**

* Create a new workspace and configure tomcat server
* Create new dynamic web project , name it as staticNavigation
* Select dynamic web module version 3.0 and check the generate xml option
* In web.xml insert the servlet name and servlet mapping

<servlet>

<servlet-name>Faces Servlet</servlet-name>

<servlet-class>javax.faces.webapp.FacesServlet</servlet-class>

<load-on-startup>1</load-on-startup>

</servlet>

<servlet-mapping>

<servlet-name>Faces Servlet</servlet-name>

<url-pattern>\*.jsf</url-pattern>

</servlet-mapping>

* Under web-inf folder paste the following code with the file name as faces-config.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<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"*>

<managed-bean>

<managed-bean-name>wbean</managed-bean-name>

<managed-bean-class>com.hexa.bean.WorkerBean</managed-bean-class>

<managed-bean-scope>request</managed-bean-scope>

</managed-bean>

<navigation-rule>

<from-view-id>/WorkerForm.jsp</from-view-id>

<navigation-case>

<from-outcome>success</from-outcome>

<to-view-id>/WorkerSubmit.jsp</to-view-id>

</navigation-case>

</navigation-rule>

<lifecycle>

<phase-listener> com.hexa.listener.MyPhaseListener</phase-listener>

</lifecycle>

</faces-config>

* Under WebContent folder create a new jsp and name it as Main.jsp
* Add two taglib to the Main.jsp initially

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"* %>

[%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"* %](mailto:%25@taglib%20uri=%22http://java.sun.com/jsf/html%22%20prefix=%22h%22%20%25)

* Copy and paste all the libs given by trainer in lib folder(Do not refer)
* Initailly add the below code to the Main.jsp file

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<title>Static Navigation</title>

</head>

<body>

<h1 align=*"center"*>Main Page</h1>

<hr size=*"2"*/>

<h:form>

<h:commandLink value=*"Go First"* action=*"first"* />

<h:commandLink value=*"Go Second"* action=*"second"* />

</h:form>

</body>

</f:view>

</html>

* In faces-config.xml add the below code

<navigation-rule>

<from-view-id>/Main.jsp</from-view-id>

<navigation-case>

<from-outcome>first</from-outcome>

<to-view-id>/First.jsp</to-view-id>

</navigation-case>

<navigation-case>

<from-outcome>second</from-outcome>

<to-view-id>/Second.jsp</to-view-id>

</navigation-case>

</navigation-rule>

* Create First.jsp under webcontent folder and type the code as below

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<title>Insert title here</title>

</head>

<body>

<h1 align=*"center"*>First Page</h1>

<hr size=*"2"* />

</body>

</html>

* Create Second.jsp under webcontent folder and type the code as below

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<!DOCTYPE html>

<html>

<head>

<title>Insert title here</title>

</head>

<body>

<h1 align=*"center"*>Second Page</h1>

<hr size=*"2"* />

</body>

</html>

* Add the application to the server and execute it. In Url give Main.jsf
* Make the following changes and see the result

<h:form>

<h:commandButton value=*"Go First"* action=*"first"* /> &nbsp; &nbsp;

<h:commandButton value=*"Go Second"* action=*"second"* />

</h:form>

* In first.jsp Add the follwong code

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<title>First Page</title>

</head>

<body>

<h1 align=*"center"*>First Page</h1>

<hr size=*"2"* />

<h:form>

<h:commandLink value=*"Go to Home Page"* action=*"home"* /> &nbsp; &nbsp;

<!-- <h:commandButton value="Go Second" action="second" /> -->

</h:form>

</body>

</f:view>

</html>

* In faces-config.xml add the following code
* Do the same for Second.jsp

<navigation-rule>

<from-view-id>/First.jsp</from-view-id>

<navigation-case>

<from-outcome>home</from-outcome>

<to-view-id>/Main.jsp</to-view-id>

</navigation-case>

</navigation-rule>

<navigation-rule>

<from-view-id>/Second.jsp</from-view-id>

<navigation-case>

<from-outcome>home</from-outcome>

<to-view-id>/Main.jsp</to-view-id>

</navigation-case>

</navigation-rule>

* In web.xml change the welcome-file as “Main.jsp”

<welcome-file-list>

<welcome-file>Main.jsf</welcome-file>

</welcome-file-list>

* Make the following changes

<body>

<h1 align=*"center"*>Main Page</h1>

<hr size=*"2"* />

<h:form id=*"frm"*>

<h:commandButton id=*"btn1"* value=*"Go First"* action=*"first"* /> &nbsp; &nbsp;

<h:commandButton id=*"btn2"* value=*"Go Second"* action=*"second"* />

</h:form>

</body>

* In the above code look at the page source. Which would have generated id as defined by us.

**Program 2:**

**Tax Calculator**

* Create new project and name it as dynamic Navigation
* Copy and paste the jsf libraries under lib folder
* Add the following code to the web.xml file

<servlet>

<servlet-name>Faces Servlet</servlet-name>

<servlet-class>javax.faces.webapp.FacesServlet</servlet-class>

<load-on-startup>1</load-on-startup>

</servlet>

<servlet-mapping>

<servlet-name>Faces Servlet</servlet-name>

<url-pattern>\*.jsf</url-pattern>

</servlet-mapping>

* Add the faces-config.xml under Web-INF folder.
* Under src folder create a package com.hexa.bean
* Create a class under the created package TaxBean.java

**package** com.hexa.bean;

**public** **class** TaxBean {

**private** String ename;

**private** **double** income;

**private** **double** tax;

**public** String getEname() {

**return** ename;

}

**public** **void** setEname(String ename) {

**this**.ename = ename;

}

**public** **double** getIncome() {

**return** income;

}

**public** **void** setIncome(**double** income) {

**this**.income = income;

}

**public** **double** getTax() {

**return** tax;

}

**public** **void** setTax(**double** tax) {

**this**.tax = tax;

}

// Action Method which ll return String

**public** String calcTax() {

**if** (income > 1000000) {

**this**.tax = 750000 \* 0.1 + (income - 1000000) \* 0.15;

} **else** **if** (income > 250000) {

**this**.tax = (income - 250000) \* 0.1;

}

**return** "TaxSuccess";

}

}

* Create a jsp file “TaxFrm.jsp” under webcontent folder
* In faces-config file add the below code

<managed-bean>

<managed-bean-name>tbean</managed-bean-name>

<managed-bean-class>com.hexa.bean.TaxBean</managed-bean-class>

<managed-bean-scope>request</managed-bean-scope>

</managed-bean>

* Add the following code to the TaxFrm.jsp file

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<title>Tax Calculation</title>

</head>

<body>

<h1 align=*"center"*>Tax Calculation</h1>

<hr size=*"2"* />

<h:form id=*"frm"* id=*"tfrm"*>

<!-- Panel grid ll giv table -->

<h:panelGrid id=*"pg1"* columns=*"2"* cellpadding=*"10"* bgcolor=*"wheat"*>

<h:outputText value=*"Employee Name"*></h:outputText>

<h:inputText id=*"name"* value=*"*#{tbean.ename}*"* required=*"true"*

requiredMessage=*"Name is Mandatory"*></h:inputText>

<h:outputText value=*"Annual income"*></h:outputText>

<h:inputText id=*"income"* value=*"*#{tbean.income}*"* required=*"true"*

requiredMessage=*"Income is Mandatory"*></h:inputText>

<h:commandButton value=*"calcTax"* action=*"*#{tbean.calctax}*"*></h:commandButton>

</h:panelGrid>

</h:form>

</body>

</f:view>

</html>

* Create taxSubmit.jsp file under webcontent folder

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<title>Tax Calculation</title>

</head>

<body>

<h1 align=*"center"*>Tax Calculation</h1>

<hr size=*"2"* />

<h:panelGrid id=*"pg"* columns=*"2"* cellpadding=*"10"* bgcolor=*"wheat"*>

<h:outputText value=*"Employee Name"*></h:outputText>

<h:outputText value=*"*#{tbean.ename}*"*></h:outputText>

<h:outputText value=*"Annual income"*></h:outputText>

<h:outputText value=*"*#{tbean.income}*"*></h:outputText>

<h:outputText value=*"Tax to be paid"*></h:outputText>

<h:outputText value=*"*#{tbean.tax}*"*></h:outputText>

</h:panelGrid>

</body>

</f:view>

</html>

* Add the navigation rule to the faces-config.xml

<navigation-rule>

<from-view-id>/TaxFrm.jsp</from-view-id>

<navigation-case>

<from-outcome>TaxSuccess</from-outcome>

<to-view-id>/TaxSubmit.jsp</to-view-id>

</navigation-case>

</navigation-rule>

* Save and execute the code
* Make the following changes for the error messages to appear

<h:form id=*"tfrm"*>

<h:panelGrid id=*"pg1"* columns=*"3"* cellpadding=*"10"* bgcolor=*"wheat"*>

<h:outputText value=*"Employee Name"*></h:outputText>

<h:inputText id=*"name"* value=*"*#{tbean.ename}*"* required=*"true"*

requiredMessage=*"Name is Mandatory"*></h:inputText>

<h:message for=*"name"*></h:message>

<h:outputText value=*"Annual income"*></h:outputText>

<h:inputText id=*"income"* value=*"*#{tbean.income}*"* required=*"true"*

requiredMessage=*"Income is Mandatory"*></h:inputText>

<h:message for=*"income"*></h:message>

<h:commandButton value=*"calcTax"* action=*"*#{tbean.calcTax}*"*></h:commandButton>

</h:panelGrid>

* Now the css is added to the code Taxfrm.jsp as below:

<style type=*"text/css"*>

**table** {

margin: *0 auto*;

border-collapse: *collapse*;

}

*.css1* {

background-color: *orange*;

}

*.css3* {

color: *red*;

}

</style>

<h:panelGrid id=*"pg1"* columns=*"3"* columnClasses=*"css1,,css3"*

cellpadding=*"10"* bgcolor=*"wheat"*>

* The same css has been added to TaxSubmit.jsp and add the below <facet tag>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<style type=*"text/css"*>

**table** {

margin: *0 auto*;

border-collapse: *collapse*;

}

*.css1* {

background-color: *orange*;

}

*.css3* {

color: *red*;

}

**tfoot,thead** {

background-color: *red*;

text-align: *center*;

}

</style>

<title>Tax Calculation</title>

</head>

<body>

<h1 align=*"center"*>Tax Calculation</h1>

<hr size=*"2"* />

<h:form id=*"tfrm"*>

<h:panelGrid id=*"pg1"* columns=*"3"* columnClasses=*"css1,,css3"*

cellpadding=*"10"* bgcolor=*"wheat"*>

<f:facet name=*"header"*>

<h:outputText value=*"Tax form"*></h:outputText>

</f:facet>

<h:outputText value=*"Employee Name"*></h:outputText>

<h:inputText id=*"name"* value=*"*#{tbean.ename}*"* required=*"true"*

requiredMessage=*"Name is Mandatory"*></h:inputText>

<h:message for=*"name"*></h:message>

<h:outputText value=*"Annual income"*></h:outputText>

<h:inputText id=*"income"* value=*"*#{tbean.income}*"* required=*"true"*

requiredMessage=*"Income is Mandatory"*></h:inputText>

<h:message for=*"income"*></h:message>

<f:facet name=*"footer"*>

<h:commandButton value=*"calcTax"* action=*"*#{tbean.calcTax}*"*></h:commandButton>

</f:facet>

</h:panelGrid>

</h:form>

</body>

</f:view>

</html>

<%@ page language=*"java"* contentType=*"text/html; charset=UTF-8"*

pageEncoding=*"UTF-8"*%>

<%@taglib uri=*"http://java.sun.com/jsf/core"* prefix=*"f"*%>

<%@taglib uri=*"http://java.sun.com/jsf/html"* prefix=*"h"*%>

<!DOCTYPE html>

<html>

<f:view>

<head>

<style type=*"text/css"*>

**table** {

margin: *0 auto*;

border-collapse: *collapse*;

}

*.css1* {

background-color: *orange*;

}

**tfoot,thead** {

background-color: *red*;

text-align: *center*;

}

</style>

<title>Tax Calculation</title>

</head>

<body>

<h1 align=*"center"*>Tax Calculation</h1>

<hr size=*"2"* />

<h:panelGrid id=*"pg"* columns=*"2"* columnClasses=*"css1"* cellpadding=*"10"* bgcolor=*"wheat"*>

<f:facet name=*"header"*>

<h:outputText value=*"Tax Result"*></h:outputText>

</f:facet>

<h:outputText value=*"Employee Name"*></h:outputText>

<h:outputText value=*"*#{tbean.ename}*"*></h:outputText>

<h:outputText value=*"Annual income"*></h:outputText>

<h:outputText value=*"*#{tbean.income}*"*></h:outputText>

<h:outputText value=*"Tax to be paid"*></h:outputText>

<h:outputText value=*"*#{tbean.tax}*"*></h:outputText>

</h:panelGrid>

</body>

</f:view>

</html>

**Lifecycle Listener**

* Create a package com.hexa.listener in the above project itself
* Create a class MyPhaselistener and add the below code

package com.hexa.listener;

import javax.faces.event.PhaseEvent;

import javax.faces.event.PhaseId;

import javax.faces.event.PhaseListener;

public class MyPhaseListener implements PhaseListener {

@Override

public void afterPhase(PhaseEvent event) {

System.out.println("after "+ event.getPhaseId());

if(event.getPhaseId()== PhaseId.RENDER\_RESPONSE){

System.out.println(event.getFacesContext().

getViewRoot().getViewId());

}

}

@Override

public void beforePhase(PhaseEvent event) {

System.out.println("before " + event.getPhaseId());

}

@Override

public PhaseId getPhaseId() {

return PhaseId.ANY\_PHASE;

}

}

* In faces-config.xml add the below code

<lifecycle>

<phase-listener> com.hexa.listener.MyPhaseListener</phase-listener>

</lifecycle>

* In TaxBean.java file , write a constructor to see when it gets invoked

**package** com.hexa.bean;

**public** **class** TaxBean {

**private** String ename;

**private** **double** income;

**private** **double** tax;

**public** TaxBean() {

System.***out***.println("Tax Bean constructor is invoked");

}

**public** String getEname() {

System.***out***.println("Ename getter");

**return** ename;

}

**public** **void** setEname(String ename) {

System.***out***.println("Ename setter");

**this**.ename = ename;

}

**public** **double** getIncome() {

System.***out***.println("Income getter");

**return** income;

}

**public** **void** setIncome(**double** income) {

System.***out***.println("Income Setter");

**this**.income = income;

}

**public** **double** getTax() {

System.***out***.println("Tax getter");

**return** tax;

}

**public** **void** setTax(**double** tax) {

System.***out***.println("Tax Setter");

**this**.tax = tax;

}

// Action Method which ll return String

**public** String calcTax() {

**if** (income > 1000000) {

**this**.tax = 750000 \* 0.1 + (income - 1000000) \* 0.15;

} **else** **if** (income > 250000) {

**this**.tax = (income - 250000) \* 0.1;

}

**return** "success";

}

}

* Save and execute the project

**O/P for first Get Request:**

before RESTORE\_VIEW 1

after RESTORE\_VIEW 1

before APPLY\_REQUEST\_VALUES 2

after APPLY\_REQUEST\_VALUES 2

before PROCESS\_VALIDATIONS 3

after PROCESS\_VALIDATIONS 3

before UPDATE\_MODEL\_VALUES 4

after UPDATE\_MODEL\_VALUES 4

before INVOKE\_APPLICATION 5

after INVOKE\_APPLICATION 5

before RENDER\_RESPONSE 6

Tax Bean constructor is invoked

Ename getter

Income getter

after RENDER\_RESPONSE 6

/TaxFrm.jsp

**Post Method 1st Request**

before RESTORE\_VIEW 1

after RESTORE\_VIEW 1

before APPLY\_REQUEST\_VALUES 2

after APPLY\_REQUEST\_VALUES 2

before PROCESS\_VALIDATIONS 3

Tax Bean constructor is invoked

Ename getter

Income getter

after PROCESS\_VALIDATIONS 3

before UPDATE\_MODEL\_VALUES 4

Ename setter

Income Setter

after UPDATE\_MODEL\_VALUES 4

before INVOKE\_APPLICATION 5

Inside CalcTax Method

after INVOKE\_APPLICATION 5

before RENDER\_RESPONSE 6

Ename getter

Income getter

Tax getter

after RENDER\_RESPONSE 6

/TaxSubmit.jsp

**If Validation Fails**

before RESTORE\_VIEW 1

after RESTORE\_VIEW 1

before APPLY\_REQUEST\_VALUES 2

after APPLY\_REQUEST\_VALUES 2

before PROCESS\_VALIDATIONS 3

Tax Bean constructor is invoked

Ename getter

after PROCESS\_VALIDATIONS 3

before RENDER\_RESPONSE 6

after RENDER\_RESPONSE 6

/TaxFrm.jsp