

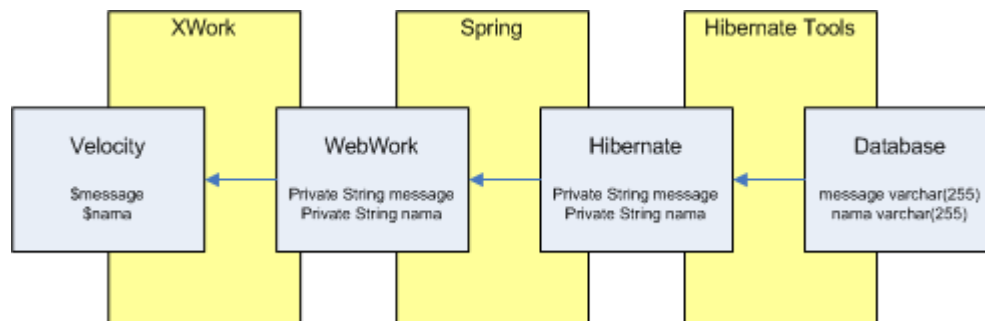
Modul Praktikum Cimande 1

1. Tujuan

- Mengenal project Cimande
- Memahami prinsip kerja Model-View-Controll
- Mengimplementasikan CRUD dalam project Cimande

2. Latar Belakang

Modul ini akan menjelaskan bagaimana membuat sebuah aplikasi dengan implementasi CRUD (Create, Read, Update and Delete) yang lebih umum dapat dikatakan membuat aplikasi untuk membuat content baru, melakukan search/pencarian, melakukan pengeditan data, serta menghapus data. Adapun mapping standar setiap C, R, U dan D adalah dengan melakukan data flow mapping dari database ke Velocity sesuai dengan gambar berikut.



3. Percobaan

1. Tools :

1. cimande-1.2rc1.zip
2. minimal jdk 1.5
3. minimal mysql 4.1.9
4. minimal tomcat 5.5

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2. Persiapan

- Ekstrakt cimande-1.2rc1.zip kemudian import project tersebut kedalam eclipse Anda
- Buat database bernama "cimande" dengan lokasi mysqldump pada cimande/src/sql
- Ubah user nama dan password sesuai database Anda pada src/java/cimande.properties
- Bukalah file applicationContext-hibernate.xml pada cimande\WebContent\WEB-INF, kemudian berilah komentar pada Item seperti berikut ini:

```
<!-- <value>org.blueoxygen.training.item.Item</value> -->
```
- Jalankan servlet container Anda dengan cara klik kanan run on Server untuk menjalankan Cimande Engine (cimeng) dengan terlebih dahulu mendaftarkan tomcat Anda menjadi server dari eclipse dengan cara klik File-New-Other-Server
- Jika terjadi permasalahan pada setting database Anda karena tomcat masih membaca setting yang lama, maka Anda perlu untuk mererefresh project Anda dengan cara klik pada project kemudian pilih clean

3. Cimande Set Up

Setelah Anda mendapatkan bahwa cimande telah dapat dijalankan maka Anda hanya perlu untuk masuk sebagai administrator dengan login :

User name : admin

Password : admin

Role : God

Site : Cimande Backend

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a. Membuat Descriptor baru

1. Pilih icon New pada *tree menu* Site Manager – Descriptor Manager – Descriptor
2. Masukan nama descriptor; item (nama sesuai nama namespace yang akan dibuat pada struts-*.xml)
3. Masukkan descripsi; Item
4. Pilih tipe descriptor yang akan dibuat; Webwork
5. Simpan Descriptor yang baru dibuat dengan menekan button Save

b. Membuat Module Function baru yang digunakan untuk tree

- a. Pilih icon New pada menu pohon Site Manager – Module Manager – Module Function
- b. Masukan nama Module Function; training
- c. Masukan descripsi; Training (yang akan di tampilkan pada menu pohon)
- d. Memilih Thread Master Id
 - i. Tekanlah button Change yang terdapat di kanan
 - ii. Pilihlah Master dengan menekan button Set yang terdapat di kanannya
- e. Biarkan Descriptor dikosongkan
- f. Simpan dengan menekan button Submit
- g. Jika terjadi error, pada AddModulFunction.java tambahkan

```
logInfo.setLastUpdateBy(sess.getCurrentUser().getId());
```

```
logInfo.setLastUpdateDate(new Timestamp(System.currentTimeMillis()));
```

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c. Membuat Module Function yang terhubung dengan Descriptor

- a. Pilih icon New pada menu pohon Site Manager – Module Manager – Module Function
- b. Masukkan nama Module Function; item
- c. Masukkan descripsi; Item (yang akan di tampilkan pada menu pohon)
- d. Memilih Thread Master Id
 - i. Tekanlah button Change yang terdapat di kanan
 - ii. Pilihlah Training (yang dibuat pada langkah no 3) dengan menekan button Set yang terdapat di kanannya
- e. Memilih Descriptor
 - i. Tekanlah button Change yang terdapat di kanan
 - ii. Pilihlah Item (yang dibuat pada langkah no 2) dengan menekan button Set yang terdapat di kanannya
- f. Simpan dengan menekan button Submit

d. Membuat Site

- a. Pilih icon New pada menu pohon Site Manager – Multi Site – Site
- b. Masukkan nama site; Training
- c. Masukkan description; Training MVC
- d. Simpan dengan menekan button Submit

e. Membuat Role

- a. Pilih icon New pada tree menu Workflow designer – WF Role
- b. Masukkan nama role; input_item
- c. Masukkan description; Mengisi data item
- d. Simpan dengan menekan button Submit

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f. Role Manager

- a. Pilih icon New atau Search pada tree menu Site Manager – Module Manager – Role Manager
- b. Carilah role input_item kemudian klik image View
- c. Tambahkan Site
 - i. Tekanlah button Change yang terdapat di kanan
 - ii. Pilihlah Training (yang dibuat pada langkah no 5) dengan menekan button Set yang terdapat di kanannya
 - iii. Tekan button Submit untuk menyimpan

g. Role Privilage

- a. Pilih icon New atau Search pada tree menu Site Manager – Module Manager – Role Privilage
- b. Carilah role input_item kemudian klik image View
- c. Tambahkan Module Function
 - i. Tekanlah button Change yang terdapat di kanan
 - ii. Pilihlah Training (yang dibuat pada langkah no 4) dengan menekan button Set yang terdapat di kanannya
 - iii. Tekan button Submit untuk menyimpan

h. Role Site Privilage

- a. Pilih icon New atau Search pada menu pohon Site Manager – Module Manager – Role Site Privilage
- b. Carilah role input_item kemudian klik image view
- c. Carilah site Training kemudian klik image view
- d. Tambahkan Module Function
 - i. Tekanlah button Change yang terdapat di kanan

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- ii. Pilihlah Training (yang dibuat pada langkah no 4) dengan menekan button Set yang terdapat di kanannya
- iii. Tekan button Submit untuk menyimpan

i. User Manager

- a. Pilih icon New pada menu pohon Site Manager – User Management – User Manager Ver 2.1
- b. Masukan username, password, nama depan, company, job position kemudian tekan button submit
- c. Pilihlah Role input_item kemudian tambahkan ke list dengan menekan button AddWorkflowRole

Jika terjadi error pada saat menambahkan user roler maka tambahkan kode berikut ini pada AddUserRole.java

```
LogInformation l = new LogInformation();
```

```
l.setCreateBy(sessionCredentials.getCurrentUser().getId());  
l.setCreateDate(new Timestamp(System.currentTimeMillis()));  
l.setLastUpdateBy(sessionCredentials.getCurrentUser().getId());  
l.setLastUpdateDate(new Timestamp(System.currentTimeMillis()));  
l.setActiveFlag(1);
```

```
ur.setLogInformation(l);
```

- d. Tekan button Next
- e. Masukan Site Training kemudian tekan button “Add Workflow Site”

```
LogInformation l = new LogInformation();  
l.setCreateBy(sessionCredentials.getCurrentUser().getId());  
l.setCreateDate(new Timestamp(System.currentTimeMillis()));  
l.setLastUpdateBy(sessionCredentials.getCurrentUser().getId());  
l.setLastUpdateDate(new Timestamp(System.currentTimeMillis()));  
l.setActiveFlag(1);  
getUserSite().setLogInformation(l);
```

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f. Tekan button "Finish"

j. LogOut

4. Code

Tambahkan kode-kode berikut ini, perhatikan bahwa Anda harus meletakkan class-class ini pada package-package yang harus dibuat terlebih dahulu pada src/java/org/blueoxygen/.....

1. Item.java

```
package org.blueoxygen.training.item;

import javax.persistence.Entity;
import javax.persistence.Inheritance;
import javax.persistence.InheritanceType;
import javax.persistence.Table;

import org.blueoxygen.cimande.DefaultPersistence;

@Entity
@Table(name="app_item")
@Inheritance(strategy=InheritanceType.SINGLE_TABLE)
public class Item extends DefaultPersistence {

    private String code;

    private String name;

    private String description;

    private int price;
```

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```
public String getCode() {  
    return code;  
}  
  
public void setCode(String code) {  
    this.code = code;  
}  
  
public String getName() {  
    return name;  
}  
  
public void setName(String name) {  
    this.name = name;  
}  
  
public String getDescription() {  
    return description;  
}  
  
public void setDescription(String description) {  
    this.description = description;  
}  
  
public int getPrice() {
```

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```
        return price;
    }

    public void setPrice(int price) {
        this.price = price;
    }
}
```

2. ItemForm.java

```
package org.blueoxygen.training.item.actions;

import java.util.ArrayList;
import java.util.List;

import org.blueoxygen.cimande.persistence.PersistenceAware;
import org.blueoxygen.cimande.persistence.PersistenceManager;
import org.blueoxygen.cimande.security.SessionCredentials;
import org.blueoxygen.cimande.security.SessionCredentialsAware;
import org.blueoxygen.training.item.Item;

import com.opensymphony.xwork2.ActionSupport;

public class ItemForm extends ActionSupport
implements PersistenceAware, SessionCredentialsAware {
    protected PersistenceManager manager;
```

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```
protected SessionCredentials sessionCredentials;

private Item item = new Item();

private List<Item> items = new ArrayList<Item>();

public String execute(){
    if(getItem().getId() != null &&
        !"".equalsIgnoreCase(getItem().getId().trim())){
        setItem((Item) manager.getById(Item.class, getItem().getId()));
    }

    return SUCCESS;
}

public void setPersistenceManager(PersistenceManager persistenceManager){
    this.manager = persistenceManager;
}

public void setSessionCredentials(SessionCredentials sessionCredentials){
    this.sessionCredentials = sessionCredentials;
}

public Item getItem() {
    return item;
}

public void setItem(Item item) {
```

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```
        this.item = item;
    }

    public List<Item> getItems() {
        return items;
    }

    public void setItems(List<Item> items) {
        this.items = items;
    }
}
```

3. form.vm

Untuk seluruh kode vm bagi item letakkan pada WebContent/WEB-INF/view/module/apps/item

```
<link rel="stylesheet" type="text/css" href="../../style.css">
#if (!$actionErrors.isEmpty())
<div class="errorMessage">Errors</div>
<ul class="errorMessage">
#foreach( $error in $actionErrors ) <li>$error</li>
#end
</ul>
#end
<form method="post" action="save.action">
    <table bgcolor="#000000" border="0" cellpadding="3"
        cellspacing="1" width="98%">
        <tr bgcolor="#d0dcff">
            <td colspan="2">
                <strong>Item</strong>
            </td>
        </tr>
        <tr bgcolor="#ffffff">
            <td>
                Kode:
            </td>
        </tr>
    </table>
```

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```

        <td>
            <input name="item.code" size="20"
value="$!item.code"/>
        </td>
    </tr>
    <tr bgcolor="#ffffff">
        <td>
            Nama:
        </td>
        <td>
            <input name="item.name" size="20"
value="$!item.name"/>
        </td>
    </tr>
    <tr bgcolor="#ffffff">
        <td>
            Keterangan:
        </td>
        <td>
            <input name="item.description" size="20"
value="$!item.description"/>
        </td>
    </tr>
    <tr bgcolor="#ffffff">
        <td>
            Price:
        </td>
        <td>
            <input name="item.price" size="20"
value="$!item.price"/>
        </td>
    </tr>
    <tr bgcolor="#ffffff">
        <td>
            Kategori:
        </td>
        <td>
            <select name="category.id">
                #foreach($c in $categories)
                <option value="$!c.id" #if($c.id ==
$!item.category.id) selected #end>$!c.name</option>
                #end
            </select>
        </td>
    </tr>
    <tr bgcolor="#e4e4e4">
        <td colspan="2">
            <input type="submit" value="Save"/>
        </td>
    </tr>

```

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```
                                <input type="hidden" name="item.id"
value="$!item.id"/>

                                </td>

                                </tr>
                                </table>

</form>
```

4. filter.vm

```
<link rel="stylesheet" type="text/css" href="../../style.css">

<form method="post" action="search.action">

    <table bgcolor="#000000" border="0" cellpadding="3"
        cellspacing="1" width="98%">

        <tr bgcolor="#d0dcff">

            <td colspan="2">

                <strong>Item</strong>

            </td>

        </tr>

        <tr bgcolor="#ffffff">

            <td>

                Kode:

            </td>

            <td>

                <input name="item.code" size="20" value="$!item.code"/>

            </td>
```

Modul Praktikum Cimande 1

```
</tr>

<tr bgcolor="#ffffff">

    <td>

        Nama :

    </td>

    <td>

        <input name="item.name" size="20" value="$!item.name"/>

    </td>

</tr>

<tr bgcolor="#e4e4e4">

    <td colspan="2">

        <input type="submit" value="Search"/>

    </td>

</tr>

</table>

</form>
```

5. Saveltem.java

```
package org.blueoxygen.training.item.actions;

import java.lang.reflect.InvocationTargetException;

import java.sql.Timestamp;

import org.apache.commons.beanutils.PropertyUtils;

import org.blueoxygen.cimande.LogInformation;
```

Modul Praktikum Cimande 1

```
import org.blueoxygen.training.item.Item;

public class SaveItem extends ItemForm {

    public String execute(){

        if(getItem().getName() == null ||

            "".equalsIgnoreCase(getItem().getName())){

            addActionError("Nama tidak boleh kosong");

        }

        if(hasErrors()){

            return INPUT;

        }

        LogInformation log;

        if(getItem().getId() == null ||

            "".equalsIgnoreCase(getItem().getId())){

            log = new LogInformation();

            log.setCreateBy(sessionCredentials.getCurrentUser().getId());

            log.setCreateDate(new Timestamp(System.currentTimeMillis()));

            getItem().setId(null);

        } else {

            Item temp = getItem();

            setItem((Item) manager.getById(Item.class, getItem().getId()));

            log = getItem().getLogInformation();

            try {

                PropertyUtils.copyProperties(getItem(), temp);

            } catch (IllegalAccessException e) {
```

Modul Praktikum Cimande 1

```
e.printStackTrace();

    } catch (InvocationTargetException e) {

        e.printStackTrace();

    } catch (NoSuchMethodException e) {

        e.printStackTrace();

    }

}

log.setLastUpdateBy(sessionCredentials.getCurrentUser().getId());
log.setLastUpdateDate(new Timestamp(System.currentTimeMillis()));
log.setActiveFlag(1);

getItem().setLogInformation(log);
manager.save(getItem());

return SUCCESS;

}

}
```

6. success.vm

```
<link rel="stylesheet" type="text/css" href="../../style.css">

<table bgcolor="#000000" border="0" cellpadding="3"
    cellspacing="1" width="98%">
    <tr bgcolor="#d0dcff">
        <td>
            <strong>Item</strong>
```

Modul Praktikum Cimande 1

```
</td>

</tr>

<tr bgcolor="#ffffff">

    <td align="center">

        Success

    </td>

</tr>

<tr bgcolor="#e4e4e4">

    <td>

        &nbsp;

    </td>

</tr>

</table>
```

7. SearchItem.java

```
package org.blueoxygen.training.item.actions;

import java.sql.SQLException;

import org.blueoxygen.cimande.persistence.hibernate.HibernateSessionFactory;
import org.blueoxygen.cimande.persistence.hibernate.HibernateSessionFactoryAware;
import org.blueoxygen.training.item.Item;
import org.hibernate.Criteria;
import org.hibernate.HibernateException;
```

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```
import org.hibernate.classic.Session;

import org.hibernate.criterion.Expression;

import org.hibernate.criterion.MatchMode;

import org.hibernate.criterion.Order;

public class SearchItem extends ItemForm
implements HibernateSessionFactoryAware {

    private HibernateSessionFactory hsf;

    private Session sess;

    private int maxPage, currPage, nextPage, prevPage = 0, page = 0;

    private int maxRowPerPage = 10;

    private String orderBy = "name";

    private int resultRows;

    public String execute(){

        sess = hsf.createSession();

        Criteria crit = sess.createCriteria(Item.class);

        if(getItem().getCode() != null

            && !" ".equalsIgnoreCase(getItem().getCode())){

            crit.add(Expression.like("code", getItem().getCode(),

                MatchMode.ANYWHERE));

        }

        if(getItem().getName() != null

            && !" ".equalsIgnoreCase(getItem().getName())){
```

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```
crit.add(Expression.like("name", getItem().getName(),
                           MatchMode.ANYWHERE));
    }
    if(getItem().getDescription() != null
        && !"".equalsIgnoreCase(getItem().getDescription())){
crit.add(Expression.like("description",getItem().getDescription(),
                           MatchMode.ANYWHERE));
    }
    resultRows = crit.list().size();
    maxPage = resultRows / maxRowPerPage;
    prevPage = currPage - 1;
    nextPage = currPage + 1;
    page = currPage + 1;
    if (resultRows % maxRowPerPage == 0) maxPage = maxPage -1;
    setItems(crit.addOrder(Order.asc(orderBy))
        .setFirstResult(currPage * maxRowPerPage)
        .setMaxResults(maxRowPerPage)
        .list());
    try {
        hsf.endSession((sess));
        hsf.closeSession(sess);
    } catch (HibernateException e) {
        e.printStackTrace();
    } catch (SQLException e) {
```

Modul Praktikum Cimande 1

```
e.printStackTrace();

    }

    return SUCCESS;
}

public void setHibernateSessionFactory(HibernateSessionFactory hsf) {
    this.hsf = hsf;
}

public int getMaxPage() {
    return maxPage;
}

public void setMaxPage(int maxPage) {
    this.maxPage = maxPage;
}

public int getCurrPage() {
    return currPage;
}

public void setCurrPage(int currPage) {
    this.currPage = currPage;
}
```

Modul Praktikum Cimande 1

```
public int getNextPage() {  
    return nextPage;  
}  
  
public void setNextPage(int nextPage) {  
    this.nextPage = nextPage;  
}  
  
public int getPrevPage() {  
    return prevPage;  
}  
  
public void setPrevPage(int prevPage) {  
    this.prevPage = prevPage;  
}  
  
public int getMaxRowPerPage() {  
    return maxRowPerPage;  
}  
  
public void setMaxRowPerPage(int maxRowPerPage) {  
    this.maxRowPerPage = maxRowPerPage;  
}  
  
public String getOrderBy() {
```

Modul Praktikum Cimande 1

```
        return orderBy;
    }

    public void setOrderBy(String orderBy) {
        this.orderBy = orderBy;
    }

    public int getResultRows() {
        return resultRows;
    }

    public void setResultRows(int resultRows) {
        this.resultRows = resultRows;
    }

    public int getPage() {
        return page;
    }

    public void setPage(int page) {
        this.page = page;
    }
}
```

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8. result.vm

```
<link rel="stylesheet" type="text/css" href="../../style.css">

<table bgcolor="#000000" border="0" cellpadding="3"
        cellspacing="1" width="98%">
    <tr bgcolor="#d0dcff">
        <td colspan="5">
            <strong>Item</strong>
        </td>
    </tr>
    <tr bgcolor="#e4e4e4">
        <td>Kode</td>
        <td>Nama</td>
        <td>Keterangan</td>
        <td>Price</td>
        <td>Action</td>
    </tr>
    #foreach($i in $items)
    <tr bgcolor="#ffffff">
        <td>${i.code}</td>
        <td>${i.name}</td>
        <td>${i.description}</td>
        <td>${i.price}</td>
```

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```

        <td>

            <a href="edit.action?item.id=$!i.id">

                </a>

            <a href="delete.action?item.id=$!i.id">

                </a>

            </td>

        </tr>

    #end

    <tr bgcolor="#e4e4e4">

        <td colspan="5">

            #if ($currPage > 0)<a
href="search.action?item.code=$!item.code&item.name=$!item.name&currPage=0"
title="currPage">

            </a>#end

            #if ($currPage > 0)<a
href="search.action?item.code=$!item.code&item.name=$!item.name&currPage=$!pr
evPage" title="prevPage">

            </a>#end

            [page $!page]

            #if ($currPage < $maxPage)<a
href="search.action?item.code=$!item.code&item.name=$!item.name&currPage=$!ne
xtPage" title="nextPage">

```

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```
</a>#end

    #if ($currPage < $maxPage)<a
href="search.action?item.code=$!item.code&item.name=$!item.name&currPage=$!ma
xPage" title="maxPage">

    </a>#end

</td>

</tr>

</table>
```

9. DeleteItem.java

```
package org.blueoxygen.training.item.actions;

import org.blueoxygen.training.item.Item;

public class DeleteItem extends ItemForm {

    public String execute(){

        if(getItem().getId() != null &&

            !"".equalsIgnoreCase(getItem().getId())){

            setItem((Item) manager.getById(Item.class, getItem().getId()));

            manager.remove(getItem());

        }

        return SUCCESS;

    }

}
```

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10. delete.vm

```
<link rel="stylesheet" type="text/css" href="../../style.css">

<form method="post" action="confirm.action">
  <table bgcolor="#000000" border="0" cellpadding="3"
    cellspacing="1" width="98%">
    <tr bgcolor="#d0dcff">
      <td>
        <strong>Item</strong>
      </td>
    </tr>
    <tr bgcolor="#ffffff">
      <td align="center">
        Delete item $!item.name
      </td>
    </tr>
    <tr bgcolor="#e4e4e4">
      <td>
        <input type="submit" value="Delete">
        <input type="button" value="Cancel"
onclick="javascript:location.href='filter.action'">
        <input type="hidden" name="item.id" value="$!item.id"/>
      </td>
    </tr>
  </table>
```

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```
</form>
```

11. struts-cimande-sample.xml

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

<!DOCTYPE struts PUBLIC

    "-//Apache Software Foundation//DTD Struts Configuration 2.0//EN"

    "http://struts.apache.org/dtds/struts-2.0.dtd">

<struts>

    <package name="item" extends="default" namespace="/module/item">

        <action name="create"

            class="org.blueoxygen.training.item.actions.ItemForm">

            <result name="success" type="velocity">

                /WEB-INF/view/module/apps/item/form.vm

            </result>

        </action>

        <action name="save"

            class="org.blueoxygen.training.item.actions.SaveItem">

            <result name="success" type="velocity">

                /WEB-INF/view/module/apps/item/success.vm

            </result>

            <result name="input" type="velocity">

                /WEB-INF/view/module/apps/item/form.vm

            </result>

        </action>

    </package>

</struts>
```

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```
<action name="filter"

    class="org.blueoxygen.training.item.actions.ItemForm">

    <result name="success" type="velocity">

        /WEB-INF/view/module/apps/item/filter.vm

    </result>

</action>

<action name="search"

    class="org.blueoxygen.training.item.actions.SearchItem">

    <result name="success" type="velocity">

        /WEB-INF/view/module/apps/item/result.vm

    </result>

</action>

<action name="edit"

    class="org.blueoxygen.training.item.actions.ItemForm">

    <result name="success" type="velocity">

        /WEB-INF/view/module/apps/item/form.vm

    </result>

</action>

<action name="delete"

    class="org.blueoxygen.training.item.actions.ItemForm">

    <result name="success" type="velocity">

        /WEB-INF/view/module/apps/item/delete.vm

    </result>

</action>

<action name="confirm"
```

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```
class="org.blueoxygen.training.item.actions.DeleteItem">  
  
<result name="success" type="velocity">  
  
    /WEB-INF/view/module/apps/item/success.vm  
  
</result>  
  
</action>  
  
</package>  
</struts>
```

Lets Do Some Coding!!!

5. Hasil