MyEmpManagedBean

```java
public String changeEmployee() {

    FacesContext context = FacesContext.getCurrentInstance();
    ExternalContext externalContext = context.getExternalContext();

    String employeeId = externalContext.getRemoteUser();

    empId = employeeId;
    // check empId is null
    if (isNull(empId)) {
        return "employee is is null";
    }

    EmployeeDTO empDTO = new EmployeeDTO(empId, name, phone,
    address, email, password, appGroup, bnkAccId, salary, active);
    boolean result = employeeManagement.updateEmpolyeeDetails(empDTO);

    // note the endConversation of the conversation
    endConversation();

    if (result) {
        return "success";
    } else {
        return "failure";
    }
}

public void showEmployeeId() {
    FacesContext context = FacesContext.getCurrentInstance();
    ExternalContext externalContext = context.getExternalContext();
    String employeeId = externalContext.getRemoteUser();
    this.empId = employeeId;
}

public void showEmployeeDetails() {
    System.out.println("SHOW EMPLOYEE DETAIL");
    FacesContext context = FacesContext.getCurrentInstance();
    ExternalContext externalContext = context.getExternalContext();
```

```
    String employeeId = externalContext.getRemoteUser();
    System.out.println("USER ID: " + employeeId);
    if (isNull(employeeId) || conversation == null) {
        System.out.println("SOMETHING IS NULL");
    }
    this.empId = employeeId;
    System.out.println("SETTING EMPLOYEE ID: " + this.empId);
    setEmployeeDetailsForChange();
  }
}
```

MyLoginManagedBean

```
public MyLoginManagedBean() {
    System.out.println("Inside MyLoginManagedBean");

    FacesContext context = FacesContext.getCurrentInstance();
    ExternalContext externalContext = context.getExternalContext();

    System.out.println("USERNAME: " + externalContext.getRemoteUser());
    System.out.println("USER IN ROLE: " + externalContext.isUserInRole("ED-APP-ADMIN"));
  }
```

EmployeeManagement

```
@Override
  @RolesAllowed({"ED-APP-ADMIN", "ED-APP-USERS"})
  public boolean hasEmployee(String empId) {
    return employeeFacade.hasEmployee(empId);
  }

@Override
  @RolesAllowed({"ED-APP-ADMIN", "ED-APP-USERS"})
  public boolean updateEmpolyeeDetails(EmployeeDTO empDTO) {
    // check employee exist?
    if (!hasEmployee(empDTO.getEmpid())) {
        return false;
    }

    // employee exist, update details
    // convert to entity class
```

```java
        Employee employee = this.employeeDTO2Entity(empDTO);

        // update details
        return employeeFacade.updateEmployeeDetails(employee);

    }


@Override
    @RolesAllowed({"ED-APP-ADMIN", "ED-APP-USERS"})
    public boolean updateEmployeePassword(String empId, String newPassword) {
        return employeeFacade.updatePassword(empId, newPassword);

    }


@Override
    @RolesAllowed({"ED-APP-ADMIN", "ED-APP-USERS"})
    public EmployeeDTO getEmployeeDetails(String empId) {
        // get the employee
        Employee employee = employeeFacade.find(empId);


        System.out.println("VIEWING EMPLOYEE DETAILS");


        if (employee == null) {
            // not found - no such employee
            return null;
        } else {
            // found - prepare details
            EmployeeDTO empDTO = new EmployeeDTO(employee.getEmpid(),
            employee.getName(), employee.getPhone(), employee.getAddress(),
            employee.getEmail(), employee.getPassword(), employee.getAppGroup(),
            employee.getBnkAccId(), employee.getSalary(), employee.isActive());


            return empDTO;

        }

    }
```

Redirect

```java
package web;


import java.io.IOException;
import javax.enterprise.context.SessionScoped;
```

```java
import javax.faces.context.FacesContext;
import javax.inject.Named;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;

/**
 *
 * @author elau
 */
@Named(value = "Redirect")
@SessionScoped
public class Redirect extends HttpServlet {

    /**
     * Creates a new instance of MyLoginManagedBean
     */
    public Redirect() {
    }

    public void mainmenu() throws IOException {
        FacesContext context = FacesContext.getCurrentInstance();
        HttpServletRequest request = (HttpServletRequest) context.getExternalContext().getRequest();

        if (request.isUserInRole("ED-APP-ADMIN")) {
            context.getExternalContext().redirect("faces/admin/mainmenu.xhtml");
        } else if (request.isUserInRole("ED-APP-USERS")) {
            context.getExternalContext().redirect("faces/user/mainmenu.xhtml");
        }
    }
}
```

USER GROUP
changeEmployeeDetails.xhtml

```xml
<?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">
```

```html
<h:head>
    <title>Change Employee's Details</title>
</h:head>
<h:body>

    <h2>Change Employee Details Page</h2>

    <h3>Please update the details of employee
        <h:outputText value="#{myEmpManagedBean.empId}"/>
    </h3>

    <p></p>

    <h:form>

        <table>
            <tbody>
                <tr>
                    <td>
                        <h:outputLabel value="Employee Id:"/>
                    </td>
                    <td>
                        <h:outputText value="#{myEmpManagedBean.empId}"/>
                    </td>
                </tr>
                <tr>
                    <td>
                        <h:outputLabel value="Name:"/>
                    </td>
                    <td>
                        <h:inputText title="Name" id="name"
                                maxlength="25"
                                required="true"
                                requiredMessage="Name must not be blank"
                                value="#{myEmpManagedBean.name}"/>
                    </td>
                    <td>
                        <h:message for="name" style="color:red"/>
                    </td>
                </tr>
```

```html
<tr>
  <td>
    <h:outputLabel value="Phone:"/>
  </td>
  <td>
    <h:inputText title="Phone" maxlength="10"
            required="false"
            value="#{myEmpManagedBean.phone}"/>
  </td>
</tr>
<tr>
  <td>
    <h:outputLabel value="Address:"/>
  </td>
  <td>
    <h:inputText title="Address" maxlength="30"
            required="false"
            value="#{myEmpManagedBean.address}"/>
  </td>
</tr>
<tr>
  <td>
    <h:outputLabel value="Email:"/>
  </td>
  <td>
    <h:inputText title="Email" maxlength="30"
            required="false"
            value="#{myEmpManagedBean.email}"/>
  </td>
</tr>
<tr>
  <td>
    <h:outputLabel value="User Group:"/>
  </td>
  <td>
    <h:selectOneMenu id="appGroup"
            required="true"
            value="#{myEmpManagedBean.appGroup}">
      <f:selectItem itemValue="ED-APP-ADMIN" itemLabel="ED-APP-ADMIN"></f:selectItem>
      <f:selectItem itemValue="ED-APP-USERS" itemLabel="ED-APP-USERS"></f:selectItem>
```

```xml
            </h:selectOneMenu>
        </td>
    </tr>
    <tr>
        <td>
            <h:outputLabel value="Bank Account No"/>
        </td>
        <td>
            <h:inputText title="BnkAccId"
                    required="false" maxlength="10"
                    value="#{myEmpManagedBean.bnkAccId}"/>
        </td>
    </tr>
    <tr>
        <td>
            <h:outputLabel value="Salary:"/>
        </td>
        <td>
            <h:inputText title="Salary" id="salary"
                    required="true"
                    requiredMessage="Salary cannot be blank"
                    value="#{myEmpManagedBean.salary}"
                    validatorMessage="Salary must be positive!">
                <f:validateDoubleRange minimum="0.001"/>
            </h:inputText>
        </td>
        <td>
            <h:message for="salary" style="color:red"/>
        </td>
    </tr>
    <tr>
        <td>
            <h:outputLabel value="Active:" for="active"/>
        </td>
        <td>
            <h:selectBooleanCheckbox id="active"
                        required="false"
                        value="#{myEmpManagedBean.active}" />
        </td>
    </tr>
```

```
          </tbody>
      </table>


      <p></p>


      <h:commandButton id="submit" value="Submit"
                  action="#{myEmpManagedBean.changeEmployee()}"/>


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

changeEmployeeFailure.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">
  <h:head>
    <title>Change Employee Failure</title>
  </h:head>
  <h:body>


    <h2>There is no employee with ID
    <h:outputText value="#{myEmpManagedBean.empId}"/>!</h2>


    <p></p>


    <h2>Please ensure that the employee ID does exist in the system.</h2>


    <p></p>


    Click <h:outputLink value="changeEmployee.xhtml">here</h:outputLink>
    to try again
```

```
    <p></p>

    Click <h:outputLink value="mainmenu.xhtml">here</h:outputLink>

    to return to the Main Menu

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

changeEmployeePassword.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">

  <h:head>

    <title>Change Employee's Details</title>

  </h:head>

  <h:body onload="#{myEmpManagedBean.showEmployeeId()}">

    <h2>Change Employee Password Page</h2>

    <h3>Please update the password of employee

      <h:outputText value="#{myEmpManagedBean.empId}"/>

    </h3>

    <h:form>

      <table>

        <tbody>

          <tr>

            <td>

              <h:outputLabel value="Current Password"/>

            </td>

            <td>

              <h:inputText title="Password" id="password"

                    maxlength="8" required="true"

                    requiredMessage="Password cannot be blank"

validator="#{myEmpManagedBean.validateNewPassword}"

                    value="#{myEmpManagedBean.password}">

            </h:inputText>

            </td>

          </tr>
```

```
        <tr>
          <td>
            <h:outputLabel value="New Password"/>
          </td>
          <td>
            <h:inputText title="newpwd" id="newpwd"
                    maxlength="8" required="true"
                    requiredMessage="Password cannot be blank"
                    validator="#{myEmpManagedBean.validateNewPasswordPair}"
                    value="#{myEmpManagedBean.newPassword}">
              <f:validateLength minimum="8" maximum="8"/>
            </h:inputText>
          </td>
        </tr>
        <tr>
          <td>
            <h:outputLabel value="Confirm Password"/>
          </td>
          <td>
            <h:inputText title="cnfpwd" id="cnfpwd"
                    maxlength="8" required="true"
                    requiredMessage="Confirm Password cannot be blank"
value="#{myEmpManagedBean.confirmPassword}">
                <f:validateLength minimum="8" maximum="8"/>
            </h:inputText>
          </td>
        </tr>
      </tbody>
    </table>
    <p></p>
    <h:commandButton id="submit" value="Submit"
            action="#{myEmpManagedBean.changeEmployeePassword()}"/>
  </h:form>
  </h:body>
</html>
```

changeEmployeePasswordFailure.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">
  <h:head>
    <title>Change Employee Password Failure</title>
  </h:head>
  <h:body>


    <h2>Failed to update employee
    <h:outputText value="#{myEmpManagedBean.empId}"/>!</h2>


    <p></p>


    <h2>Please ensure that the employee ID does exist in the system.</h2>


    <p></p>


    Click <h:outputLink value="changeEmployeePassword.xhtml">here</h:outputLink>
    to try again


    <p></p>


    Click <h:outputLink value="mainmenu.xhtml">here</h:outputLink>
    to return to the Main Menu
  </h:body>
</html>
```

changeEmployeePasswordSuccessful.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">
  <h:head>
    <title>Password Details Changed</title>
  </h:head>
  <h:body>
    <h2>The password of the employee with ID
    <h:outputText value="#{myEmpManagedBean.empId}"/>
    has been updated in the system.
```

```
    </h2>
    <p></p>
    Click <h:outputLink value="mainmenu.xhtml">here</h:outputLink>
    to return to the Main Menu
  </h:body>
</html>
```

changeEmployeeSuccessful.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">
  <h:head>
    <title>Employee Details Changed</title>
  </h:head>
  <h:body>

    <h2>The details of the employee with ID
    <h:outputText value="#{myEmpManagedBean.empId}"/>
    has been updated in the system.
    </h2>

    <p></p>

    Click <h:outputLink value="mainmenu.xhtml">here</h:outputLink>
    to return to the Main Menu

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

mainmenu.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">
  <h:head>
    <title>Display an Employee's Details</title>
```

```html
</h:head>
<h:body onload="#{myEmpManagedBean.showEmployeeDetails()}">
   <h2>
      Details of Employee <h:outputText value="#{myEmpManagedBean.empId}"/>
   </h2>

   <h:form>
     <table>
       <tbody>
         <tr>
           <td>
             <h:outputLabel value="Name:"/>
           </td>
           <td>
             <h:outputText value="#{myEmpManagedBean.name}"/>
           </td>
         </tr>
         <tr>
           <td>
             <h:outputLabel value="Phone:"/>
           </td>
           <td>
             <h:outputText value="#{myEmpManagedBean.phone}"/>
           </td>
         </tr>
         <tr>
           <td>
             <h:outputLabel value="Address:"/>
           </td>
           <td>
             <h:outputText value="#{myEmpManagedBean.address}"/>
           </td>
         </tr>
         <tr>
           <td>
             <h:outputLabel value="Email:"/>
           </td>
           <td>
             <h:outputText value="#{myEmpManagedBean.email}"/>
           </td>
```

```xml
        </tr>
        <tr>
          <td>
            <h:outputLabel value="User Group:"/>
          </td>
          <td>
            <h:outputText value="#{myEmpManagedBean.appGroup}"/>
          </td>
        </tr>
        <tr>
          <td>
            <h:outputLabel value="Bank Account No:"/>
          </td>
          <td>
            <h:outputText value="#{myEmpManagedBean.bnkAccId}"/>
          </td>
        </tr>
        <tr>
          <td>
            <h:outputLabel value="Salary:"/>
          </td>
          <td>
            <h:outputText value="#{myEmpManagedBean.salary}"/>
          </td>
        </tr>
        <tr>
          <td>
            <h:outputLabel value="Active:"/>
          </td>
          <td>
            <h:outputText value="#{myEmpManagedBean.active}" />
          </td>
        </tr>
      </tbody>
    </table>


  <p></p>


  <h:outputLink value="changeEmployeeDetails.xhtml">Edit user</h:outputLink>
```

```
            <p></p>

            <h:outputLink value="changeEmployeePassword.xhtml">Edit Password</h:outputLink>


            <p></p>
            <h:form>
               Click <h:commandButton value="Logout" action="#{myLoginManagedBean.logoutResult()}"/>
            </h:form>
         </h:form>
      </h:body>
</html>
```

faces-config.xml

```xml
<?xml version='1.0' encoding='UTF-8'?>
<faces-config version="2.1"
          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_1.xsd">
   <navigation-rule>
      <description>Admin's Main Menu</description>
      <from-view-id>admin/mainmenu.xhtml</from-view-id>
      <navigation-case>
         <from-outcome>logout</from-outcome>
         <to-view-id>logout.xhtml</to-view-id>
      </navigation-case>
   </navigation-rule>
   <navigation-rule>
      <description>Add Employee</description>
      <from-view-id>/admin/addEmployee.xhtml</from-view-id>
      <navigation-case>
         <from-outcome>success</from-outcome>
         <to-view-id>/admin/addEmployeeSuccessful.xhtml</to-view-id>
      </navigation-case>
      <navigation-case>
         <from-outcome>failure</from-outcome>
         <to-view-id>/admin/addEmployeeFailure.xhtml</to-view-id>
      </navigation-case>
      <navigation-case>
         <from-outcome>debug</from-outcome>
```

```xml
        <to-view-id>/debugEmpId.xhtml</to-view-id>
    </navigation-case>
</navigation-rule>
<navigation-rule>
    <description>Display Employee</description>
    <from-view-id>/admin/displayEmployee.xhtml</from-view-id>
    <navigation-case>
        <from-outcome>success</from-outcome>
        <to-view-id>/admin/displayEmployeeDetails.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
        <from-outcome>failure</from-outcome>
        <to-view-id>/admin/displayEmployeeFailure.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
        <from-outcome>debug</from-outcome>
        <to-view-id>/admin/debugEmpId.xhtml</to-view-id>
    </navigation-case>
</navigation-rule>
<navigation-rule>
    <description>Change employee</description>
    <from-view-id>/admin/changeEmployee.xhtml</from-view-id>
    <navigation-case>
        <from-outcome>success</from-outcome>
        <to-view-id>/admin/changeEmployeeDetails.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
        <from-outcome>failure</from-outcome>
        <to-view-id>/admin/changeEmployeeFailure.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
        <from-outcome>debug</from-outcome>
        <to-view-id>/admin/debugEmpId.xhtml</to-view-id>
    </navigation-case>
</navigation-rule>
<navigation-rule>
    <description>Change details</description>
    <from-view-id>/admin/changeEmployeeDetails.xhtml</from-view-id>
    <navigation-case>
        <from-outcome>success</from-outcome>
```

```xml
      <to-view-id>/admin/changeEmployeeSuccessful.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
      <from-outcome>failure</from-outcome>
      <to-view-id>/admin/changeEmployeeFailure.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
      <from-outcome>debug</from-outcome>
      <to-view-id>/admin/debugEmpId.xhtml</to-view-id>
    </navigation-case>
  </navigation-rule>
  <navigation-rule>
    <description>Change Password</description>
    <from-view-id>/admin/changeEmployeePassword.xhtml</from-view-id>
    <navigation-case>
      <from-outcome>success</from-outcome>
      <to-view-id>/admin/changePasswordSuccessful.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
      <from-outcome>failure</from-outcome>
      <to-view-id>/admin/changePasswordFailure.xhtml</to-view-id>
    </navigation-case>
  </navigation-rule>
  <navigation-rule>
    <description>Delete Employee</description>
    <from-view-id>/admin/deleteEmployee.xhtml</from-view-id>
    <navigation-case>
      <from-outcome>success</from-outcome>
      <to-view-id>/admin/deleteEmployeeSuccessful.xhtml</to-view-id>
    </navigation-case>
    <navigation-case>
      <from-outcome>failure</from-outcome>
      <to-view-id>/admin/deleteEmployeeFailure.xhtml</to-view-id>
    </navigation-case>
  </navigation-rule>
  <navigation-rule>
    <from-view-id>/user/changeEmployeeDetails.xhtml</from-view-id>
    <navigation-case>
      <from-outcome>success</from-outcome>
      <to-view-id>/user/changeEmployeeSuccessful.xhtml</to-view-id>
```

```xml
      </navigation-case>
      <navigation-case>
         <from-outcome>failure</from-outcome>
         <to-view-id>/user/changeEmployeeFailure.xhtml</to-view-id>
      </navigation-case>
   </navigation-rule>
   <navigation-rule>
      <from-view-id>/user/changeEmployeePassword.xhtml</from-view-id>
      <navigation-case>
         <from-outcome>success</from-outcome>
         <to-view-id>/user/changeEmployeePasswordSuccessful.xhtml</to-view-id>
      </navigation-case>
      <navigation-case>
         <from-outcome>failure</from-outcome>
         <to-view-id>/user/changeEmployeePasswordFailure.xhtml</to-view-id>
      </navigation-case>
   </navigation-rule>
</faces-config>
```

SECURE Company Ltd

Employee Management System

Login Page

Username ed-admin1

Password ••••••••

[Login] [Reset]

SECURE Company Ltd

Employee Management System

Main Menu

1. Add a new employee
2. Change an employee's details
3. Change an employee's password
4. Delete an employee
5. Display employee's details

Click [Logout]

Please enter the details of an employee

Employee Id: 10001

Name: Duy

Phone: 2391293812

Address: nwjnwnwd

Email: wnnewne

Password: ••••••••

Confirm Password: ••••••••

UserGroup: ED-APP-USERS

Bank Account No: 100000000000

Salary: 200000

Active: ☑

Submit

Change Employee Details Page

Please enter the employee id

Employee Id: 10001

Submit

Change Employee Details Page

Please update the details of employee 10001

Employee Id: 10001

Name: Duy Nguyen

Phone: 2391293812

Address: nwjnwnwd

Email: duy220800@mail.com

User Group: ED-APP-USERS

Bank Account No 100000000000

Salary: 200000.0

Active: ☑

Submit

Change Employee's Password Page

Please enter the following information to change the password

Employee Id:	10001
New Password:	••••••••
Confirm New Password:	•••••••

Submit

The password of the employee whose id is 10001 has been updated in the system.

Click here to return to the Main Menu

Details of Employee 10001

Name:	Duy
Phone:	2391293812
Address:	nwjnwnwd
Email:	wnnewne
User Group:	ED-APP-USERS
Bank Account No:	100000000000
Salary:	200000.0
Active:	true

Click here to return to the Main Menu

Please enter the employee id of the employee to be deleted

Employee Id: 10001

Submit

The employee whose id is 10001 has been deleted from the system.

Click here to return to the Main Menu

4.1 Work-ethically, an employee C and D operations should only be accessed by the manager/ company. If an employee ever wants to do those actions, a request should be sent to the authorised person. C would be done when the employee joins the company, and D would be when that employee leaves.

4.2 With the Review option, employee should be able to review their own information in regard to their own personal information and the company/work-related information. Password should not be viewed since it should be kept discrete.

4.3 Password should be excluded from Review. Since information theft is raising, password of an employee when leaked could lead to personal information loss as well as insight of the company. Password should be generated and monitored by the company. Employee must remember their own password, however in the case that the employee forgets their password, the company needs to be noticed and then a new password will be changed.

4.4.1 When the employee chooses to update their information, it must only be their own personal information, such as email, address, phone etc. This is because the information may be seasonal, and it is up to the employee to choose to change their own personal information. However, to follow work ethic, they should update it correspondingly.

4.4.2 The information that employees should not be able to update would be their name, dob, gender etc, password and company-related information. Name, dob, gender etc should be their original and non-changeable information. Password and company-related information is provided by the company and employee should not be authorised to update them.
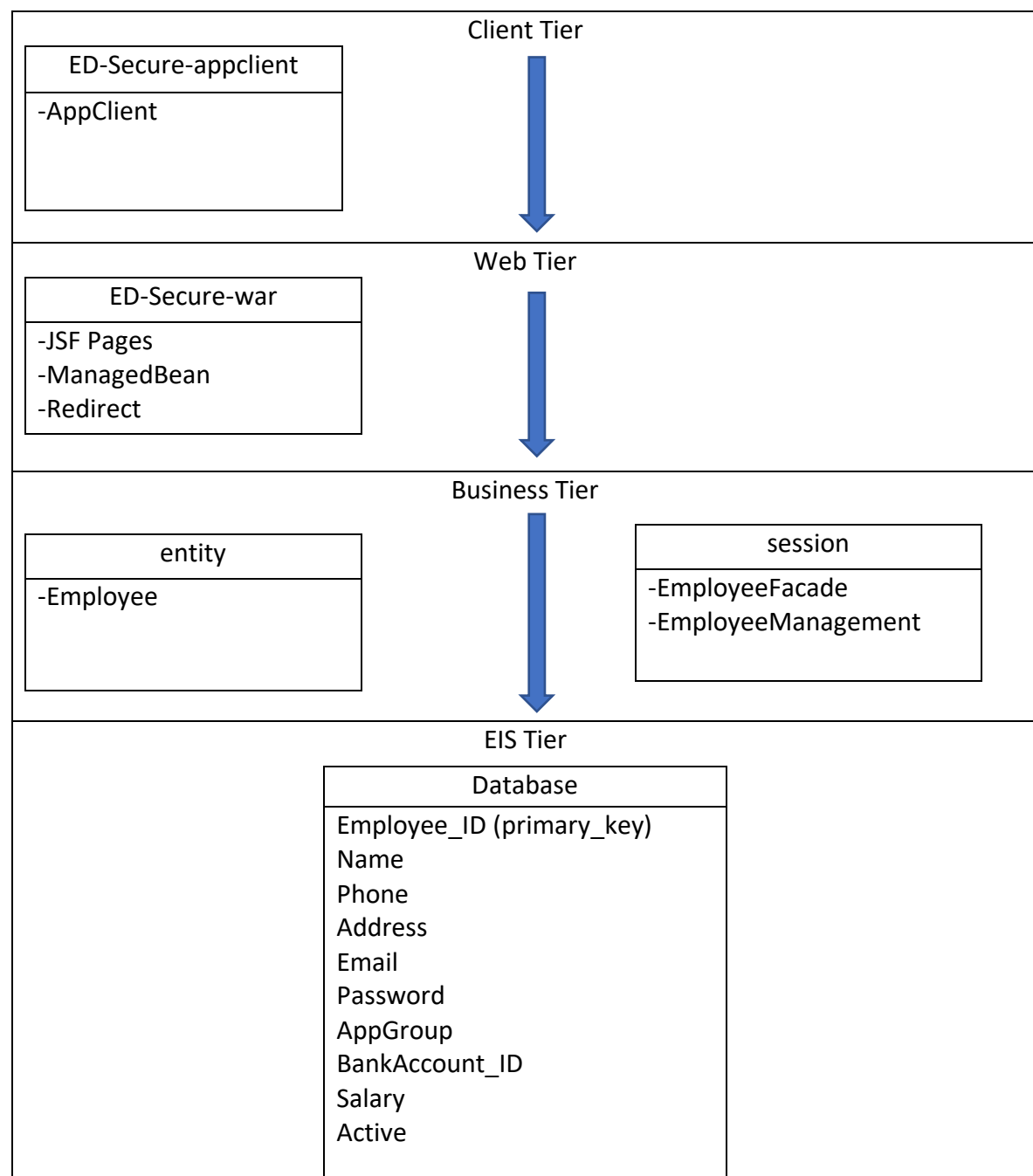
4.5 When performing an update, the information will be updated in EmployeeManagement.java and EmployeeManagementRemote.java. This is an acceptable practice; however, this update operation needs to be further implemented in order to divide between changeable and non-changeable information.

4.6 When performing an employee's update, the existing password should not be sent to the client for security purposes. In order to change the passwords, additional features may

be added to verify that the employee is the correct one, not a credential thief. These features could be PIN code, or security questions. The same method could be used as lab task 5.2C with validator tags and java validation codes.

4.7 This practice is moderately good, however there is pros and cons. If the employee decides to return to the company, the detail can be switched back on. However, keeping details are not always best practice if the company size is relatively small with not much inbuilt security. In order to do this, company must give prior notice about this action. The company may then keep the information for a period of time, then delete it afterwards.

4.8 Having the case study and application reviewed, it holds some deficiencies and some extras can be added to improve the overall UCD as well as CRUD, security etc.

Client Tier

ED-Secure-appclient

-AppClient

Web Tier

ED-Secure-war

-JSF Pages
-ManagedBean
-Redirect

Business Tier

entity

-Employee

session

-EmployeeFacade
-EmployeeManagement

EIS Tier

Database

Employee_ID (primary_key)
Name
Phone
Address
Email
Password
AppGroup
BankAccount_ID
Salary
Active

Client tier component runs on the client machine. For this instance, the web clients contain dynamic web pages from HTML and XML generated by web components running on the web tier.

Web tier component runs on the Jave EE server. This web tier consists of web pages created using JSF.

Business tier component runs on the Java EE component. Business code/ logic receives data from client, processes it and sends it to the enterprise information system tier for storage, vice versa.

Enterise information system (EIS) runs on the EIS server tier handles EIS software and includes enterprise infrastructure systems.