

# Employee management system

## Purpose

- Employee management system is a simple maven CRUD app for capturing and editing employee details. The employee management system uses hibernate as data access layer, JSF as UI framework and Spring in business layer. The main advantage of this combination is that there is very limited configuration through XML and by annotations. This allows developers to focus on the UI and the business layer. The application provides the following basic functionality

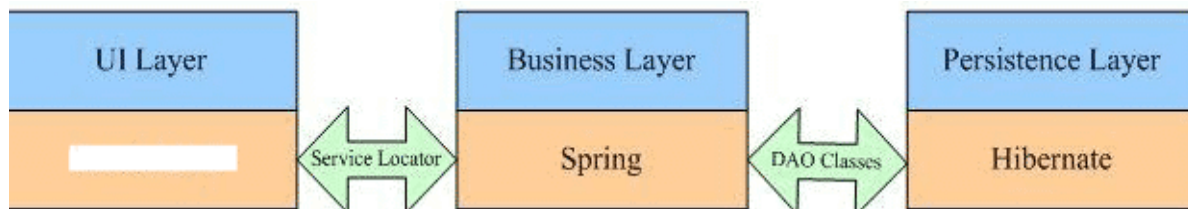
1. Create employee
2. Delete employee
3. Edit employee
4. View employee details

## Technology stack

1. Hibernate 5.0.7 Final
2. Postgres 10
3. JSF 2.2.18
4. Bootfaces 1.3.0
5. Primefaces 6.2
6. Bootstrap 3.3.7
7. Wildfly 10.0.0. Final
8. Maven 3.5.4
9. Junit 4.12
10. Spring framework 5.0.8

## Project overview

The following section provides the project overview and how all the components of the project fit together to form a solution.



- A maven project was created using the command line and imported to a NetBeans IDE.
- This maven project is based on a Project Object Model (POM) which is an XML file where all the project dependencies are outlined and resolved.
- After the declaration of maven dependencies, I ran a **Maven clean install** command on the command line to download all the required dependencies to my local machine.
- After downloading all the required dependencies, the following packages were created:
  - a. **net.iqb.common** : This package stores all java services that are shared across the whole application
  - b. **net.iqb.model** : This package contains all entities
  - c. **net.iqb.persistence** : This package contains a generic Data access object interface as well as the generic persistence service
  - d. **net.iqb.service** : This package contains all Spring services whose purpose is to integrate the user interface layer and the persistence layer.
  - e. **net.iqb.ui** : This package contains the managed beans for the user interface
  - f. **net.iqb.config** : This package contains the database configuration services
  - g. **net.iqb.test** : This package contains the Test case for the application

## Web pages

### User interface layout

For the user interface, JSF page templates were used. This allowed me to define static parts of the web page such as the header and the footer and define placeholders to insert non-static page content. Facelets are used as a templating framework. Templates contain placeholders which we will push our page content into. This method of creating application views allowed me to create web pages that are consistent and easy to maintain since boilerplate content is limited to the actual template and reused everywhere so if there are changes, we can change it in one place.

Header
Body
Footer

The diagram above represents the structure and layout of a typical web page with templating applied. The header and the footer will only be loaded when then the user makes a request to have that page. Upon a menu click to another page, on the body gets replaced because of the application of templates.

## Project setup

### Installation

1. Install maven
2. Clone the repository from <https://github.com/gershon12/IQ-Business-Assessment>
3. Go to project repository via **cmd** and type "**mvn clean install**" to build the project and download all the required dependencies.

### Database setup

1. Download and install **postgresl** and **PgAdmin IV**
2. Create a **postgres** database named "empdb" on PgAdmin
3. Make sure that the username and password on DataSourceUtility.java matches the credentials you used on the postgresSQL server created on PgAdmin

## How to run

1. Install wildfly 10.0
2. Drop PostgreSQL driver into wildfly

**C:\Program Files\wildfly-10.0.0.Final\modules\system\layers\base\org\postgresql**

3. On the project folder, compile the project using mvn clean install on the command line
4. Copy the war file from target folder and drop it on deployment folder

**C:\Program Files\wildfly-10.0.0.Final\standalone\deployments**

5. Navigate to the bin folder on the wildfly installation folder. On the cmd type,
6. **./standalone.sh to start the application server**
7. Open your browser and go to <http://localhost:8080/crudwebapp/>, you should see a welcome page explaining what the application does and links on the menu section to navigate to the employee management section.

**The end**