# FRESHER ACADEMY

## JAVA WEB

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**10/6/2017**

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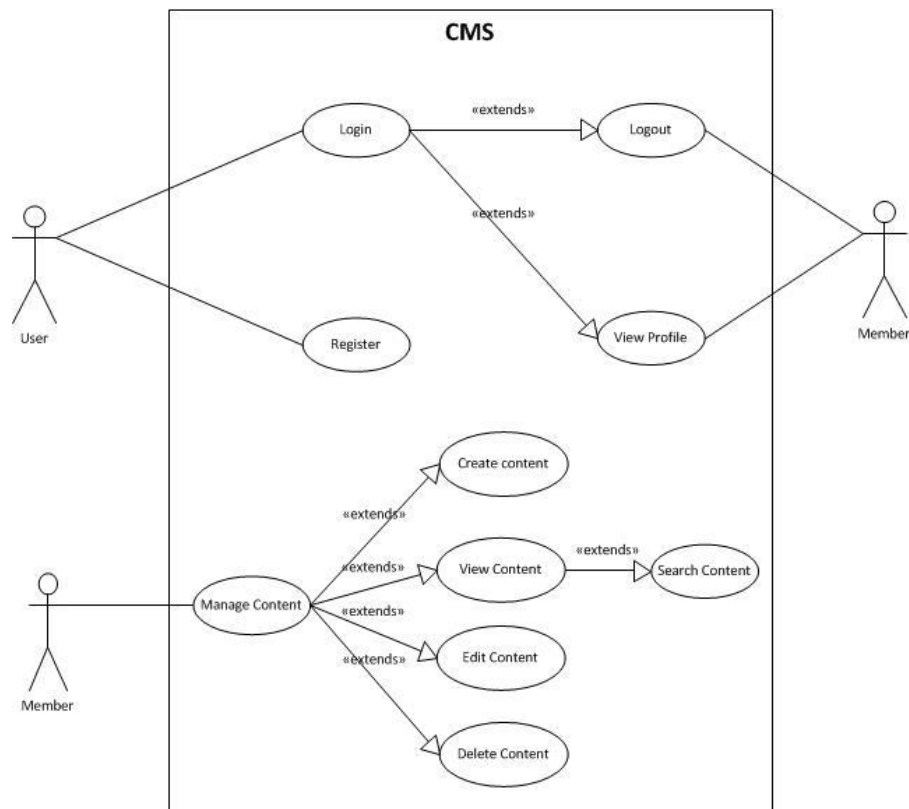
# Contents

# Purpose of Assignments

Create a Web application bases on HTML, CSS, JavaScript, Ajax, JSP/Servlet, Hibernate framework to Manage Content System (CMS).

Provide adequate provisions for special web system. In this assignment, we will learn about a content management system. The use case Diagram as below here:



## Business needs

A content management is a computer application that supports the creation and modification of digital content using a simple interface to abstract away low-level details unless required, usually supporting multiple users working in a collaborative environment.

CMS features vary widely. Most CMSes include Web-based publishing, format management, history editing and version control, indexing, search, and retrieval. By their nature, content management systems support the separation of content and presentation.

In this assignment, we will create a CMS web application bases on HTML, CSS, JavaScript, Ajax, Servlet, JSP, JDBC and Hibernate framework.

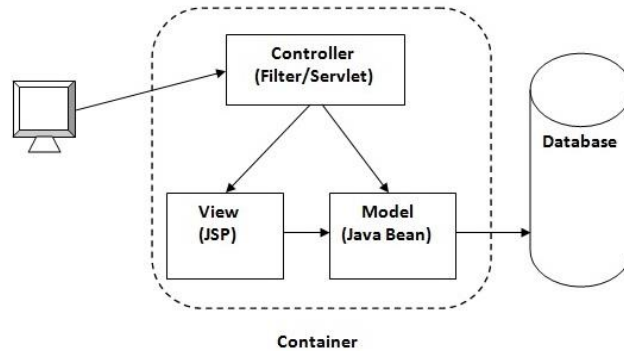## Working requirements

Working environment:

- Eclipse IDE,
- SQL DB Server,
- Apache TomCat 7 or later,
- Internet connection,
- Apache Maven.

Delivery:

Source code, deployment and testing evident packaged in a compress archive.

## Product architectures

The product is implemented using MVC Pattern base on Servlet, JSP:
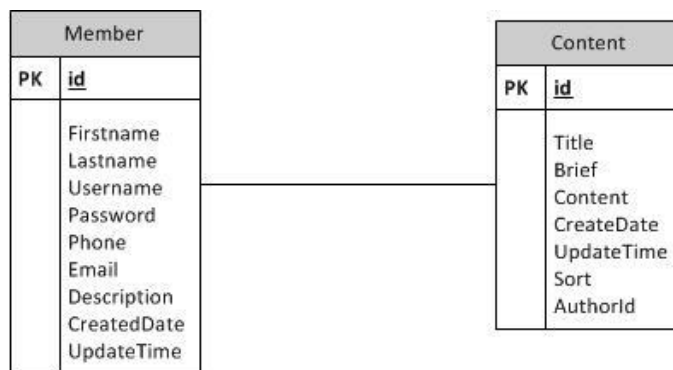


## Technologies

The product implements one or more technology:

1. HTML & CSS

2. JavaScript & Ajax

3. Servlet & JSP

4. MVC & JSP Model

5. Hibernate framework

## Database Relationship



- **Member** stores the user information, including username and password.

- **Content** stores the post content information. Each comment is associated with a post and mainly consists of the following columns:

  o authorID: required, the author id;

  o Title: required, the title of the content;

  o Brief: required, it is the description of content;

  o Content: required, the comment content in plain text format.

  o Sort: option, it use to other the post in the list.

  o CreateDate, UpdateTime are date time create and update this post.

# Assignment Description
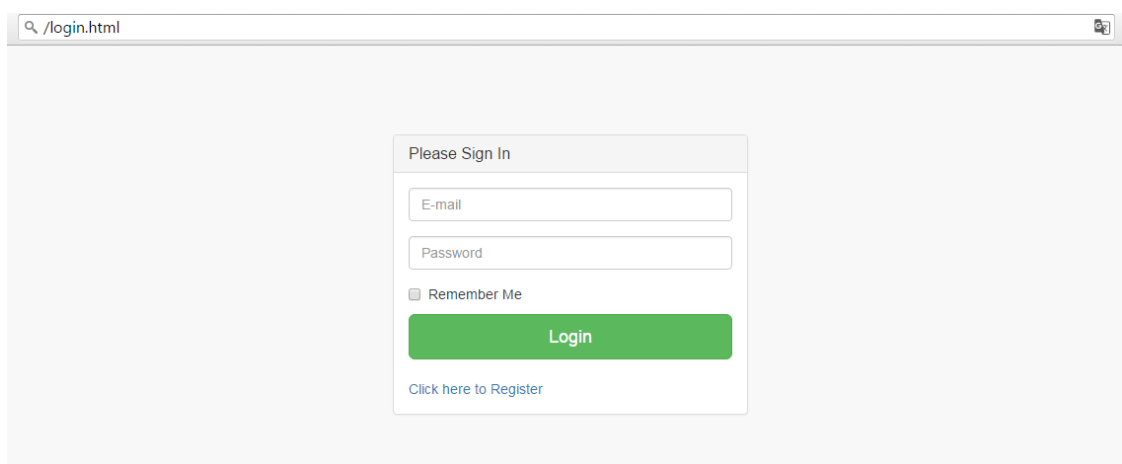
## Assignment_01

### HTML & CSS

**Objectives**:

1. Understand and use HTML and CSS to code of practice website design sample.

2. The Bootstrap source code download includes the precompiled CSS, JavaScript, and font assets. You will learn to customize a Bootstrap template to build HTML page.

**Assignment Specifications:**

Start with this basic HTML template in attachment, and modify the pages as below:
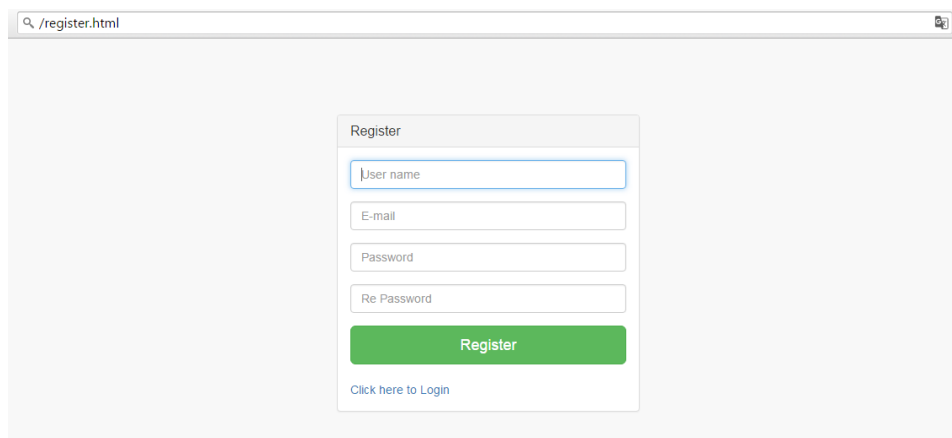
✓ *Login page*



List item definition:

| No | Items | Type | Size |
|----|-------|------|------|
| 1 | Email | Email | 50 |
| 2 | Password | Password | 50 |
| 3 | Remember Me | Checkbox | 1 |
| 4 | Login | Button | NA |
| 5 | Click here to Register | Link | NA |

✓ *Register page*

List item definition:

| No | Items | Type | Size |
|---|---|---|---|
| 1 | User name | Text | 50 |
| 2 | Email | Email | 50 |
| 3 | Password | Password | 50 |
| 4 | Re Password | Password | NA |
| 5 | Register | Button | NA |
| 6 | Click here to Login | Link | NA |

✓ *Edit Profile*

**CMS**

Search...

View contents
Form content

User Profile
Logout

## Edit Profile

Profile Form Elements

**First Name**

Enter the first name

**Last Name**

Enter the last name

**Email**

your_email@example.com

**Phone**

Enter your phone number

**Description**

Submit Button    Reset Button

List item definition:

| No | Items | Type | Size |
|---|---|---|---|
| 1 | First Name | Text | 50 |
| 2 | Last Name | Text | 50 |
| 3 | Email | Email | 50 |
| 4 | Phone | Text | NA |
| 5 | Description | Button | NA |
| 6 | Submit Button | Button | NA |
| 7 | Reset Button | Button | NA |

✓ *Form content*

**CMS**

Search...

View contents
Form content

## Add Content

Content Form Elements

**Title**

Enter the title

**Brief**

**Content**

Submit Button    Reset Button

List item definition:

| No | Items | Type | Size |
|----|-------|------|------|
| 1 | Title | Text | 50 |
| 2 | Brief | textarea | NA |
| 3 | Content | textarea | NA |

✓ *View contents*



**Requirement:**

- All buttons have background color is green.

- Placeholder text in inputs has a light gray color. You need defined the placeholder for input items same above screen.

- Add a new file fStyle.css to customize your screen, it will base on convention of CSS style.

**Estimated time:** 3 hours

# Assignment_02

## JavaScript, Ajax & JQuery

**Objectives:**

1. jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. In this assignment, we will use jQuery to validate data from the HTML form.

2. AJAX is about updating parts of a web page, without reloading the whole page. We will have some basic understanding when use Ajax in left menu, when click to the item, this will navigate to corresponding HTML page.

**Assignment Specifications**:

Form validation normally used to occur at the server, after the client had entered all the necessary data and then pressed the Submit button. If the data entered by a client was incorrect or was simply missing, the server would have to send all the data back to the client and request that the form be resubmitted with correct information. This was really a lengthy process which used to put a lot of burden on the server.

JavaScript provides a way to validate form's data on the client's computer before sending it to the web server. Form validation generally performs two functions.

In this assignment, we will validate data in the list item definition:

✓ *Login Page Screen:*

| No | Items | Type | Required | Min length | Max length |
|----|-------|------|----------|------------|------------|
| 1 | Email | Text | √ | 5 | 50 |
| 2 | Password | Password | √ | 8 | 30 |

✓ *Register Page screen*

| No | Items | Type | Required | Min length | Max length |
|----|-------|------|----------|------------|------------|
| 1 | User name | Text | √ | 3 | 30 |
| 2 | Email | Email | √ | 5 | NA |
| 3 | Password | Password | √ | 8 | 30 |
| 4 | Re Password | Password | √ | 8 | 30 |

✓ *Edit Profile Page:*

| No | Items | Type | Required | Min length | Max length |
|----|-------|------|----------|------------|------------|
| 1 | First Name | Text | √ | 3 | 30 |
| 2 | Last Name | Text | √ | 3 | 30 |
| 3 | Phone | Text | √ | 9 | 13 |
| 4 | Description | TextArea | NA | NA | 200 |

- ✓ *Add Content Page:*

| No | Items | Type | Required | Min length | Max length |
|----|-------|------|----------|------------|------------|
| 1 | Title | Text | √ | 10 | 200 |
| 2 | Brief | TextArea | √ | 30 | 150 |
| 3 | Content | TextArea | √ | 50 | 1000 |

Use Ajax: Click on item in left menu, it will loading in 5 seconds, after that it will call corresponding HTML page.
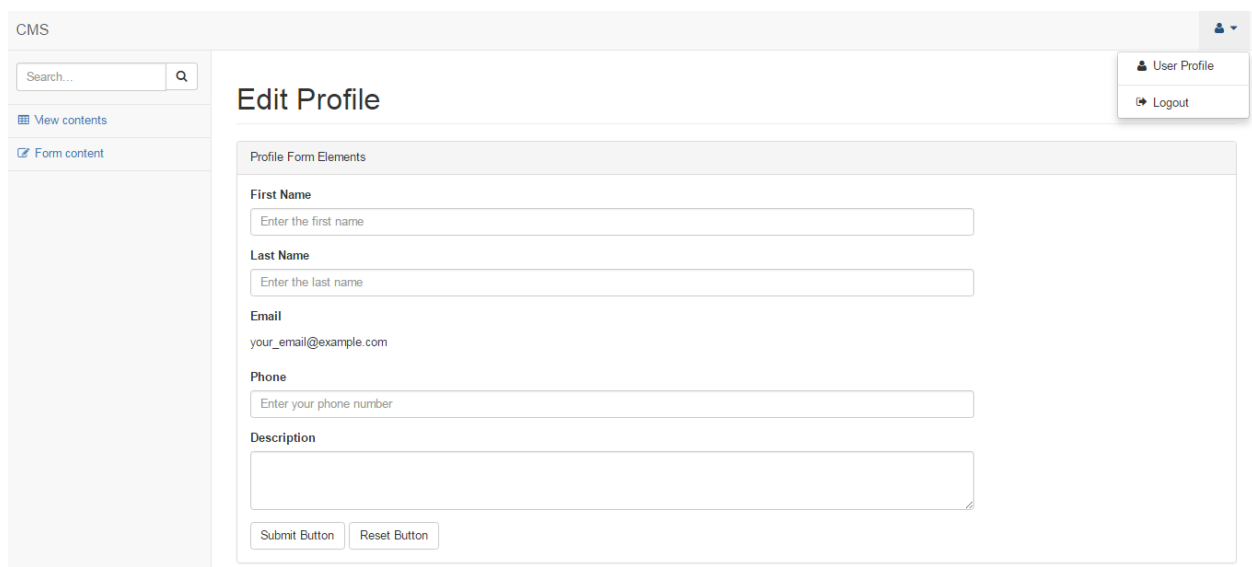
Loading screen will be show in 5 seconds.
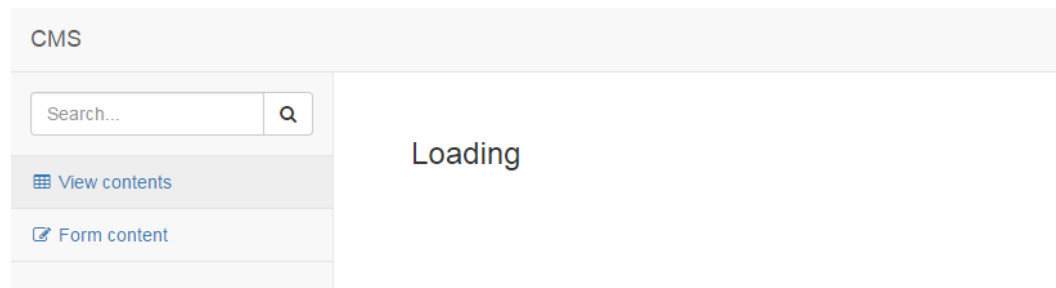


After that, it will show View Content screen.
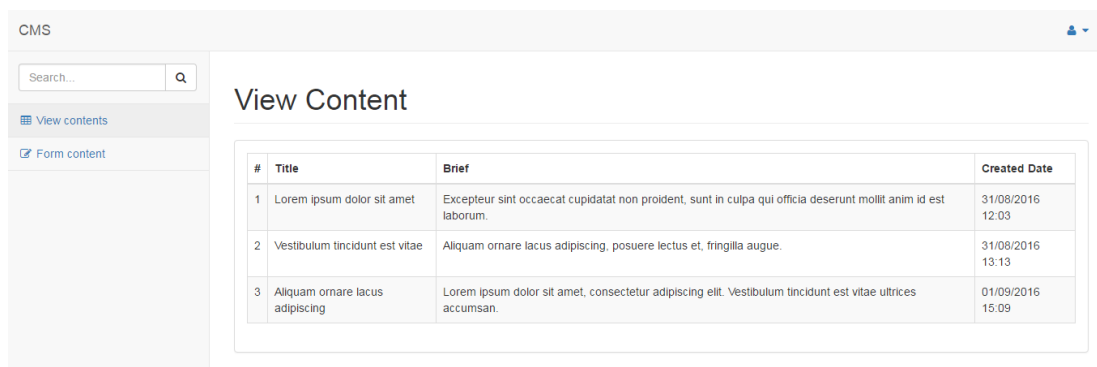


In the Edit profile, if click to Submit button, it will call to update your information via Ajax.

**Requirement:**

- The form must be checked to make sure all the mandatory fields are filled in the input tag. It would require just a loop through each field in the form and check for data.

- The data that is entered must be checked for correct form and value. Your code must include appropriate logic to test correctness of data.

- Show evidence of loading when click left menu

- Use Ajax to load View Content page and update information at Edit Profile.

**Estimated time:** 3 hours

# Assignment_03

## JSP/Servlet and JDBC

**Objectives:**

1. Understand JSP is a webpage scripting language that can generate dynamic content while Servlets are Java programs that are already compiled which also creates dynamic web content

2. Run your project using Apache Tomcat Server

3. Use JDBC to connect Database
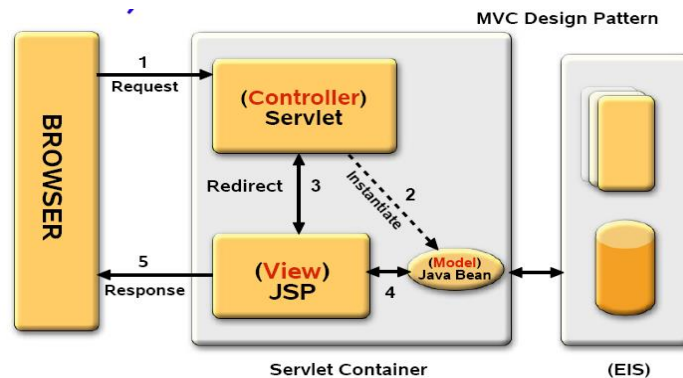


**Assignment Specifications:**

- Convert all html file from Assignment 01 and Assignment 02 to .jsp file (except View Content and Edit profile pages, it will use Ajax to load data from servlet).

- In this assignment, you must finish the feature in use case as below:
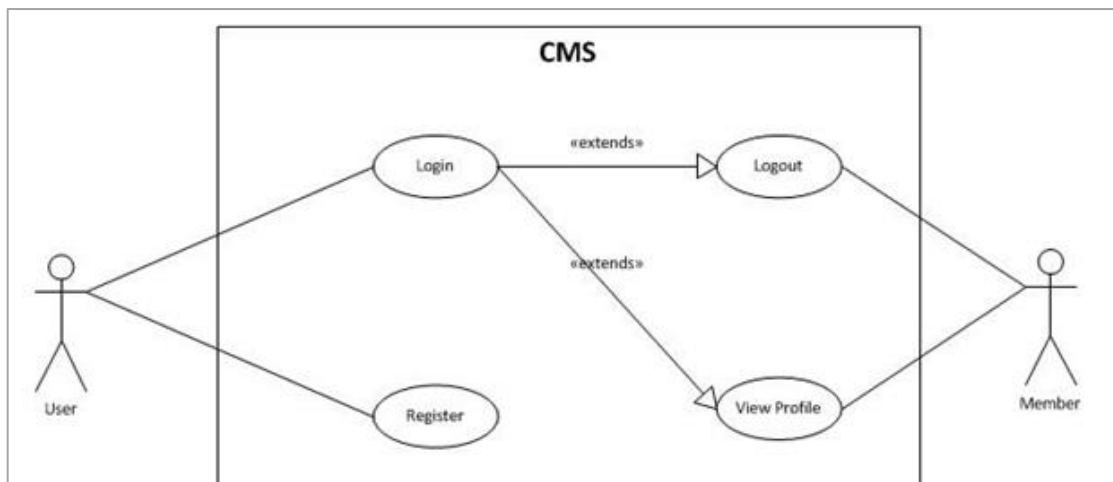


» The **authentication** and **authorized** user use Case:

o Use form-based authentication with a basic servlet. With form-based authentication, you can customize the login screen and error pages that are presented to the web client for authentication of their user name and password.

o When a user submits their name and password, the server determines if the user name and password are those of an authorized user and, if authorized, will move the user to the screen view his/her profile.

**Requirement:**

- All pages from assignment01 and assignment02 after convert to JSP file will run on the Tomcat server.

- In this assignment, you will create a program that allows a user to do the login using user and password if existed account in DB. Otherwise, the user must complete the registration via a Register page.

- In Register Page, you will insert user information to database.

    o ID column is a primary key column

    o The columns "CreateDate" and "UpdateTime" are automatically increases the value by current date and time.

- The registration page should be displayed when a user clicks on the register command button in the login page. After register success, you will navigate to Login Page.

- In Edit Profile Page, you will update some information of user.

- User need use java code to validate data before insert, update user information to database. So that, we was validated data on client by Javascript and you will validate by Java on server.

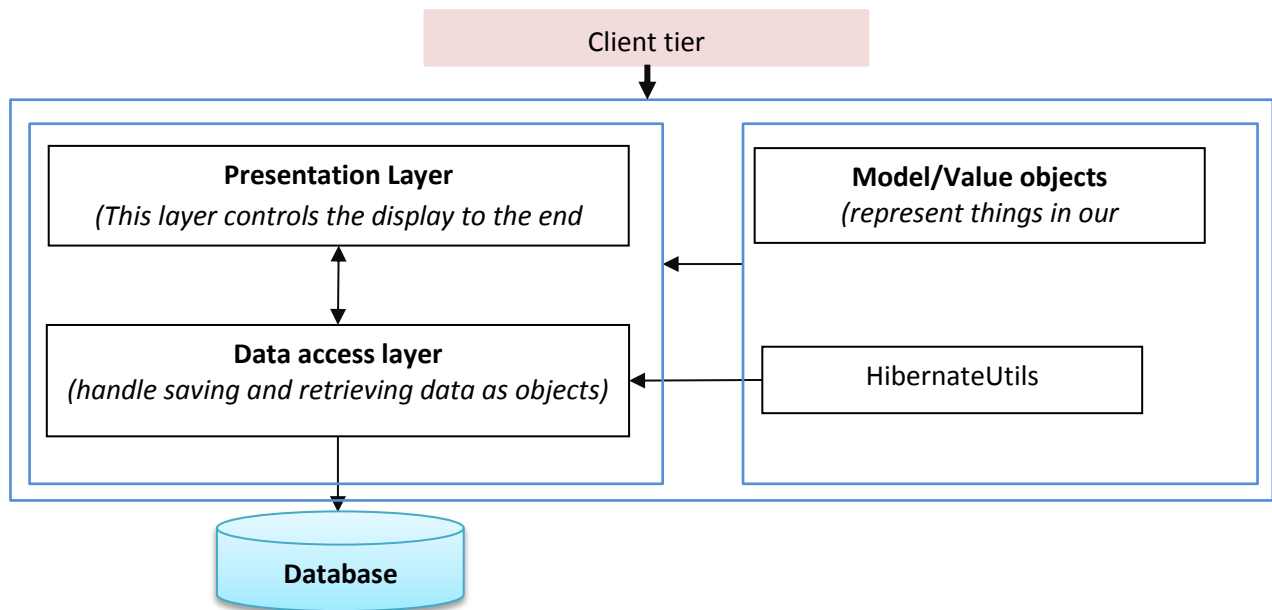- Deploy your application into Tomcat server.

**Estimated time:** 6 hours

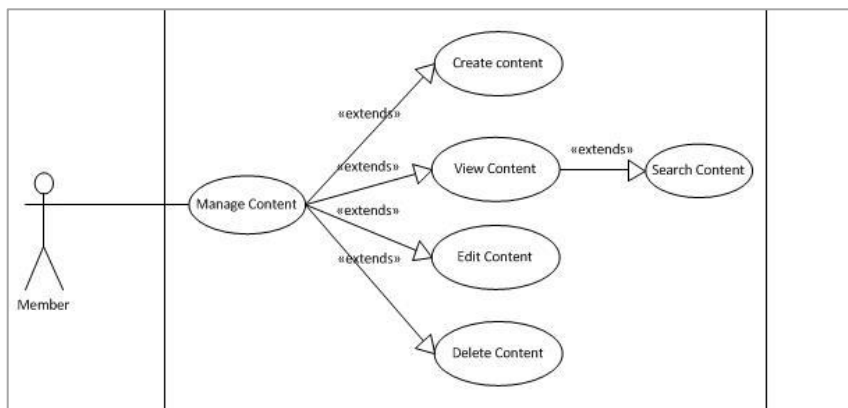# Assignments_04

## JSP/Servlet and Hibernate framework

**Objectives:**

- Can work with Hibernate framework

- This assignment will be developed using the following architecture:



**Assignment Specifications:**

Use JSP/Servlet and Hibernate framework connect to Database to finish all feature in bellow Use case:



**Requirement**

- Implement a program that manages Content and it will follow the above use case.
  - o The columns "CreateDate" and "UpdateTime" are automatically increases the value by current date and time.
  - o ID column is a primary key column
- Deploy your program on the Tomcat server.
- View Content and Search content page will be use ajax to load data from servlet.

- User need use java code to validate data before insert, update user information to the database. So that, we were validated data on the client by Javascript and you will validate by Java on the server.

**Estimated time:** 9 hours

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**The End!**