**[ 19 ] MVC 패턴**

1. MVC 패턴의 이해
   1. MVC란 Model, View, Controller를 뜻하는 용어로 개발 형태의 일종 입니다.
   2. Model은 데이터베이스와의 관계를 담당합니다. 클라이언트의 요청에서 필요한 자료를 데이터베이스로부터 추출하거나, 수정하여 Controller로 전달 합니다.
   3. View는 사용자한테 보여지는 UI 화면 입니다. 주로 .jsp파일로 작성 하며, Controller에서 어떤 View 컴폰넌트를 보여줄지 결정 합니다.
   4. Controller는 클라이언트의 요청을 받고, 적절한 Model에 지시를 내리며, Model에서 전달된 데이터를 적절한 View에 전달 합니다.
   5. 이렇게 작업을 분할하면, 추후 유지보수에 좋습니다

클라이언트

DB

* 1. Model1 ; MVC에서 View와 Controller가 같이 있는 형태

클라이언트

(클라이언트)

(dnpq

JSP

(View+Controller)

DAO

(Model)

DB

* 1. Model2 ; MVC에서 Model, View 그리고 Controller가 모두 **모듈화(부품화)** 되어 있는 형태

클라이언트

(클라이언트)

(dnpq

Servlet

(Controller)

Command

DB

JSP

(View)

DAO

(Model)

작업속도는 처음엔 Model1이 훨씬 빠른 듯하나 작업규모가 커지고 업데이트가 반복되면서 Model2가 훨씬 효율적이라고 느끼게 된다

1. 전체적인 컴포넌트 설계

**⑤**

**④**

로직실행

MemberJoinService

MembersAllService

클라이언트

(클라이언트)

FrontController

DB

DAO

join.jsp

joinResult.jsp

membersAll.jsp

DTO

요청 지시

**③③**

**②**

**①**

**⑥**

**index.jsp**

<body>

<h1><a href=*"*${conPath }*/membersAll.do"*>회원리스트</a></h1>

<h1><a href=*"*${conPath }*/joinForm.do"*>가입하기</a></h1>

</body>

**MembersDto.java**

**package** com.tj.ex.dto;

**import** java.sql.Date;

**public** **class** MemberDto {

**private** String id;

**private** String pw;

**private** String name;

**private** String email;

**private** String birth;

**private** Date rDate;

**private** String address;

**public** MemberDto() { }

**public** MemberDto(String id, String pw, String name, String email, String birth, Date rDate, String address) {

**this**.id = id;

**this**.pw = pw;

**this**.name = name;

**this**.email = email;

**this**.birth = birth;

**this**.rDate = rDate;

**this**.address = address;

}

**public** String getId() {**return** id;}

**public** **void** setId(String id) {**this**.id = id;}

**public** String getPw() {**return** pw;}

**public** **void** setPw(String pw) {**this**.pw = pw;}

**public** String getName() {**return** name;}

**public** **void** setName(String name) {**this**.name = name;}

**public** String getEmail() {**return** email;}

**public** **void** setEmail(String email) {**this**.email = email;}

**public** String getBirth() {**return** birth;}

**public** **void** setBirth(String birth) {**this**.birth = birth;}

**public** Date getrDate() {**return** rDate;}

**public** **void** setrDate(Date rDate) {**this**.rDate = rDate;}

**public** String getAddress() {**return** address;}

**public** **void** setAddress(String address) {**this**.address = address;}

@Override

**public** String toString() {

**return** "MemberDto [id=" + id + ", pw=" + pw + ", name=" + name + ", email=" + email + ", birth=" + birth

+ ", rDate=" + rDate + ", address=" + address + "]";

}

}

**MembersDao.java**

**package** com.tj.ex.dao;

**import** java.sql.Connection;

**import** java.sql.Date;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.util.ArrayList;

**import** javax.naming.Context;

**import** javax.naming.InitialContext;

**import** javax.naming.NamingException;

**import** javax.sql.DataSource;

**import** com.tj.ex.dto.MemberDto;

**public** **class** MemberDao {

**public** **static** **final** **int** ***FAIL*** = 0; // 실패 (회원가입, 정보수정)

**public** **static** **final** **int** ***SUCCESS*** = 1; // 성공(회원가입, 정보수정)

**private** **static** MemberDao *instance* = **new** MemberDao();;

**public** **static** MemberDao getInstance() {

**return** *instance*;

}

**private** MemberDao() {}

// getConnection() : conn객체 얻어오기

**private** Connection getConnection() **throws** SQLException {

Connection conn=**null**;

**try** {

Context ctx = **new** InitialContext();

DataSource ds =

(DataSource) ctx.lookup("java:comp/env/jdbc/Oracle11g");

conn = ds.getConnection();

} **catch** (NamingException e) {

System.***out***.println(e.getMessage());

}

**return** conn;

}

// 1. 회원리스트 가져오기

**public** ArrayList<MemberDto> getMembersAll(){

ArrayList<MemberDto> members = **new** ArrayList<MemberDto>();

Connection conn = **null**;

PreparedStatement pstmt = **null**;

ResultSet rs = **null**;

String sql = "SELECT \* FROM MEMBER";

**try** {

conn = getConnection();

pstmt = conn.prepareStatement(sql);

rs = pstmt.executeQuery();

**while**(rs.next()) {

String id = rs.getString("id");

String pw = rs.getString("pw");

String name = rs.getString("name");

String email = rs.getString("email");

String birth = rs.getString("birth");

Date rDate = rs.getDate("rDate");

String address= rs.getString("address");

members.add(**new** MemberDto(id, pw, name, email,

birth, rDate, address));

}

} **catch** (Exception e) {

System.***out***.println(e.getMessage());

}**finally** {

**try** {

**if**(rs !=**null**) rs.close();

**if**(pstmt!=**null**) pstmt.close();

**if**(conn !=**null**) conn.close();

} **catch** (Exception e) {System.***out***.println(e.getMessage());}

}

**return** members;

}

// 2. 회원가입

**public** **int** insertMember(MemberDto dto) {

**int** result = ***FAIL***;

Connection conn = **null**;

PreparedStatement pstmt = **null**;

String sql = "INSERT INTO MEMBER "

+ "(ID, PW, NAME, EMAIL, BIRTH, RDATE, ADDRESS) "

+ "VALUES (?,?,?,?,?, SYSDATE, ?)";

**try** {

conn = getConnection();

pstmt = conn.prepareStatement(sql);

pstmt.setString(1, dto.getId());

pstmt.setString(2, dto.getPw());

pstmt.setString(3, dto.getName());

pstmt.setString(4, dto.getEmail());

pstmt.setString(5, dto.getBirth());

pstmt.setString(6, dto.getAddress());

result = pstmt.executeUpdate();

System.***out***.println(result==***SUCCESS***? "회원가입성공":"회원가입실패");

} **catch** (Exception e) {

System.***out***.println(e.getMessage());

}**finally** {

**try** {

**if**(pstmt!=**null**) pstmt.close();

**if**(conn !=**null**) conn.close();

} **catch** (Exception e) {System.***out***.println(e.getMessage());}

}

**return** result;

}

}

**Service.java**

**package** com.tj.service;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**public** **interface** Service {

**public** **void** execute(HttpServletRequest request,

HttpServletResponse response);

}

**MemberJoinService.java**

**package** com.tj.service;

**import** java.sql.Date;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.tj.dao.MembersDao;

**import** com.tj.dto.MembersDto;

**public** **class** MemberJoinService **implements** Service {

@Override

**public** **void** execute(HttpServletRequest request, HttpServletResponse response) {

String id = request.getParameter("id");

String pw = request.getParameter("pw");

String name = request.getParameter("name");

String email = request.getParameter("email");

Date birth = **null**;

**if**(request.getParameter("birth")!=**null**) {

birth = Date.*valueOf*(request.getParameter("birth"));

}

Date rdate = **null**;

String address = request.getParameter("address");

MembersDto newMember = **new** MembersDto(id, pw, name, email,

birth, rdate, address);

MembersDao mDao = **new** MembersDao();

**int** result = mDao.joinMember(newMember);

request.setAttribute("joinResult", result);

}

}

**MembersAllService.java**

**package** com.tj.service;

**import** java.util.ArrayList;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.tj.dao.MembersDao;

**import** com.tj.dto.MembersDto;

**public** **class** MembersAllService **implements** Service {

@Override

**public** **void** execute(HttpServletRequest request, HttpServletResponse response) {

MembersDao mDao = **new** MembersDao();

ArrayList<MembersDto> members = mDao.getMembersAll();

request.setAttribute("membersAll", members);

}

}

**MemberController.java**

**package** com.tj.controller;

**import** java.io.IOException;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.tj.service.MemberJoinService;

**import** com.tj.service.MembersAllService;

**import** com.tj.service.Service;

@WebServlet("\*.do")

**public** **class** MemberController **extends** HttpServlet {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

**public** MemberController() {**super**();}

**protected** **void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

actionDo(request, response);

}

**protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

request.setCharacterEncoding("utf-8");

actionDo(request, response);

}

**private** **void** actionDo(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

String uri = request.getRequestURI(); // "/ch17\_mvc/memberJoin.do"

String conPath = request.getContextPath(); // "/ch17\_mvc"

String command = uri.substring(conPath.length());

String viewPage = **null**;

Service service = **null**;

**if**(command.equals("/joinForm.do")) {

viewPage = "member/join.jsp";

}**else** **if**(command.equals("/memberJoin.do")) {

service = **new** MemberJoinService();

service.execute(request, response);

viewPage = "member/joinResult.jsp";

}**else** **if**(command.equals("/membersAll.do")) {

service = **new** MembersAllService();

service.execute(request, response);

viewPage = "member/membersAll.jsp";

}

RequestDispatcher dispatcher =

request.getRequestDispatcher(viewPage);

dispatcher.forward(request, response);

}

}

**css와 js는 그대로**

**join.jsp**

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

pageEncoding=*"UTF-8"*%>

<%@ taglib prefix=*"c"* uri=*"http://java.sun.com/jsp/jstl/core"* %>

<c:set var=*"conPath"* value=*"*${pageContext.request.contextPath }*"*/>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

<link href=*"*${conPath }*/css/style.css"* rel=*"stylesheet"*>

<script src=*"*${conPath }*/js/join.js"*></script>

</head>

<body>

<form action=*"*${conPath }*/joinMember.do"* method=*"post"* name=*"join\_frm"*>

<table>

<caption>회원가입</caption>

<tr><th>아이디 </th><td><input type=*"text"* name=*"id"*></td></tr>

<tr><th>비밀번호</th><td><input type=*"password"* name=*"pw"*></td></tr>

<tr><th>비밀번호</th><td><input type=*"password"* name=*"pwChk"*></td></tr>

<tr><th>이름 </th><td><input type=*"text"* name=*"name"*></td></tr>

<tr><th>메일주소</th><td><input type=*"text"* name=*"email"*></td></tr>

<tr><th>생년월일</th><td><input type=*"date"* name=*"birth"*></td></tr>

<tr><th>주소 </th><td><input type=*"text"* name=*"address"*></td></tr>

<tr><td colspan=*"2"*>

<input type=*"button"* value=*"회원가입"* onclick="joinInfoChk()">

<input type=*"reset"* value=*"취소"*>

<input type=*"button"* value=*"로그인"* onclick="location='login.jsp'">

</td>

</tr>

</table>

</form>

</body>

</html>

**joinResult.jsp**

<%@page import=*"com.tj.ex.dao.MemberDao"*%>

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

pageEncoding=*"UTF-8"*%>

<%@ taglib prefix=*"c"* uri=*"http://java.sun.com/jsp/jstl/core"* %>

<c:set var=*"conPath"* value=*"*${pageContext.request.contextPath }*"*/>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

<link href=*"*${conPath }*/css/style.css"* rel=*"stylesheet"*>

</head>

<body>

<c:set var=*"SUCCESS"* value=*"*<%=MemberDao.SUCCESS %>*"*/>

<%-- <c:if test="${joinResult eq SUCCESS}">

<h1>회원가입 성공</h1>

</c:if>

<c:if test="${joinResult != SUCCESS}">

<h1>회원가입 실패</h1>

</c:if> --%>

<h1>${joinResult **eq** SUCCESS? "회원가입성공":"회원가입실패"}</h1>

<h1><a href=*"*${conPath }*/membersAll.do"*>회원리스트</a></h1>

</body>

</html>

**membersAll.jsp**

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

pageEncoding=*"UTF-8"*%>

<%@ taglib prefix=*"c"* uri=*"http://java.sun.com/jsp/jstl/core"* %>

<c:set var=*"conPath"* value=*"*${pageContext.request.contextPath }*"*/>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"UTF-8"*>

<title>Insert title here</title>

<link href=*"*${conPath }*/css/style.css"* rel=*"stylesheet"*>

</head>

<body>

<table>

<tr><th>번호</th><th>id</th><th>PW</th><th>이름</th><th>메일주소</th>

<th>생년월일</th><th>가입일</th><th>주소</th>

</tr>

<c:if test=*"*${membersAll.size() == 0 }*"*>

<tr><td colspan=*"8"*>가입한 회원이 없습니다</td></tr>

</c:if>

<c:if test=*"*${membersAll.size() != 0 }*"*>

<c:set var=*"i"* value=*"1"*/>

<c:forEach var=*"member"* items=*"*${membersAll }*"*>

<tr><td>${i }</td>

<td>${member.id }</td>

<td>${member.pw }</td>

<td>${member.name }</td>

<td>${member.email }</td>

<td>${member.birth }</td>

<td>${member.rDate }</td>

<td>${member.address }</td>

</tr>

<c:set var=*"i"* value=*"*${i+1 }*"*/>

</c:forEach>

</c:if>

</table>

</body>

</html>