**[ 18 ] 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

로직실행

MemberJoinService

MemberListService

클라이언트

(클라이언트)

FrontController

DB

DAO

memberJoin.jsp

memberList.jsp

DTO

요청 지시

**Members.sql**

**DROP** **TABLE** MEMBER **CASCADE** CONSTRAINTS;

**CREATE** **TABLE** MEMBER(

ID VARCHAR2(30) **PRIMARY** **KEY**,

PW VARCHAR2(30) **NOT** **NULL**,

NAME VARCHAR2(30) **NOT** **NULL**,

BIRTH **DATE**,

RDATE **DATE** **DEFAULT** SYSDATE **NOT** **NULL**);

--1. 회원리스트

**SELECT** \* **FROM** MEMBER;

-- 2. 회원가입

**INSERT** **INTO** MEMBER (ID, PW, NAME, BIRTH)

**VALUES** ('aaa','1','홍길동', TO\_DATE('1998-12-12','yyyy-MM-dd'));

**INSERT** **INTO** MEMBER (ID, PW, NAME, BIRTH)

**VALUES** ('bbb','1','김길동', '1998-12-12');

**commit**;

**index.jsp**

<body>

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

<h1><A href=*"*${conPath }*/memberJoin\_view.do"*>회원가입</A></h1>

</body>

**MembersDto.java**

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

**private** String id;

**private** String pw;

**private** String name;

**private** Timestamp birth;

**private** Timestamp rdate;

생성자

**Getters & setters** & toString 함수

}

**MembersDao.java**

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

**private** MemberDao() {}

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

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

**return** *instance*;

}

**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;

}

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

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");

Timestamp birth = rs.getTimestamp("birth");

Timestamp rdate = rs.getTimestamp("rdate");

members.add(**new** MemberDto(id, pw, name, birth, rdate));

}

} **catch** (SQLException e) {

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

}**finally** {

**try** {

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

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

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

} **catch** (SQLException e) {

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

}

}

**return** members;

}

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

**int** result = 0;

Connection conn = **null**;

PreparedStatement pstmt = **null**;

String sql = "INSERT INTO MEMBER (ID, PW, NAME, BIRTH) VALUES (?,?,?,?)";

**try** {

conn = getConnection();

pstmt = conn.prepareStatement(sql);

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

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

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

pstmt.setTimestamp(4, member.getBirth());

result = pstmt.executeUpdate();

System.***out***.println(member);

} **catch** (SQLException e) {

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

}**finally** {

**try** {

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

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

} **catch** (SQLException 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**

**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");

Timestamp birth = **null**;

**if**(!request.getParameter("birth").equals("")) {

birth = Timestamp.*valueOf*(request.getParameter("birth") + " 00:00:00");

}

MemberDto member = **new** MemberDto(id, pw, name, birth, **null**);

MemberDao mDao = MemberDao.*getInstance*();

**int** result = mDao.insertMember(member);

request.setAttribute("joinResult", result);

}

}

**MemberListService.java**

**public** **class** MemberListService **implements** Service {

@Override

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

MemberDao mDao = MemberDao.*getInstance*();

ArrayList<MemberDto> members = mDao.listMember();

request.setAttribute("memberList", members);

}

}

**MemberController.java**

@WebServlet("\*.do")

**public** **class** FrontController **extends** HttpServlet {

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

**private** **int** join\_view = 0;

**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 {

//response.getWriter().append("<h1>FrontController</h1>");

String uri = request.getRequestURI();

String conPath = request.getContextPath(); // "/ch18"

String command = uri.substring(conPath.length()); // "/~~.do"

String viewPage = **null**;

Service service = **null**;

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

// insert 로직

service = **new** MemberListService();

service.execute(request, response);

viewPage = "member/memberList.jsp";

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

join\_view = 1;

viewPage = "member/memberJoin.jsp";

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

**if**(join\_view == 1) {

service = **new** MemberJoinService();

service.execute(request, response);

join\_view = 0;

}

viewPage = "memberList.do";

}

RequestDispatcher dispatcher = request.getRequestDispatcher(viewPage);

dispatcher.forward(request, response);

}

}

**join.js**

**function** infoConfirm(){

if(join\_frm.id.value.length<3){

alert('아이디는 반드시 3글자 이상');

join\_frm.id.focus();

return;

}

if(!join\_frm.pw.value){

alert('비밀번호는 필수 입력 사항입니다');

join\_frm.pw.focus();

return;

}

if(join\_frm.pw.value!=join\_frm.pwChk.value){

alert('비밀번호를 확인하세요');

join\_frm.pw.value = '';

join\_frm.pwChk.value = '';

join\_frm.pw.focus();

return;

}

if(!join\_frm.name.value){

alert('이름은 필수 입력 사항입니다');

join\_frm.name.focus();

return;

}

join\_frm.submit(); // 강제로 submit 이벤트 발생

}

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

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

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

<input type=*"reset"* value=*"취소"*>

<input type=*"button"* value=*"회원목록"* onclick="location.href='memberList.do'">

</table>

</form>

</body>

</html>

**memberList.jsp**

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

pageEncoding=*"UTF-8"*%>

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

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

<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:if test=*"*${joinResult **eq** 1 }*"*>

<script>alert('회원가입이 완료되었습니다');</script>

</c:if>

<c:if test=*"*${joinResult **eq** 0 }*"*>

<script>

alert('회원가입이 실패되었습니다');

history.back();

</script>

</c:if>

<table>

<tr><th>번호</th><th>id</th><th>PW</th><th>이름</th><th>생일</th><th>가입일</th></tr>

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

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

</c:if>

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

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

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

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

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

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

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

<td><fmt:formatDate value=*"*${member.birth }*"* pattern=*"MM월dd일"*/></td>

<td><fmt:formatDate value=*"*${member.rdate }*"* type=*"date"*/></td>

</tr>

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

</c:forEach>

</c:if>

</table>

<h2><a href=*"*${conPath }*/memberJoin\_view.do"*>회원가입</a></h2>

</body>

</html>