

댓글 게시판

(Ajax, REST방식)

강사 : 강병준

REST 방식을 사용하는 원칙

- URI가 원하는 리스를 의미
 - 특별한 경우가 아니라면 영어에서 복수형의 형태로 작성하는 것이 일반적
- URI에는 식별할 수 있는 데이터를 같이 전달하는 것
 - HTTP의 전송방식(method)이 실제 작업의 종류를 의미

URI	의미
/boards/123	123번 게시물을 조회한다
/boards/123/replies/456	123번 게시물의 댓글 456을 조회
/boards/123/456	123번 게시물의 댓글 456을 조회
/boards/	신규작성 입력페이지 조회

HTTP method(사용예)	설명
get(/boards/123)	자료의 조회용
delete(/boards/123)	자료의 삭제
post(/boards 혹은 /board/new)+데이터	신규 자료의 등록
put(/boards/123)+데이터	신규자료의 수정 혹은 등록
Patch	간혹 put방식 대응으로 사용

데이터 베이스

create table board (

num number primary key, -- key
writer varchar2(20) not null, -- 작성자
subject varchar2(50) not null, -- 제목
content varchar2(500) not null, -- 본문
readcount number default 0, -- 읽은 횟수
Password varchar2(100) not null, -- 암호
ref number not null, -- 답변글끼리 그룹
re_step number not null, -- ref내의 순서
re_level number not null, -- 들여쓰기
reg_date date not null, -- 작성일
del char(1)

);

create table replyBoard (

rno number primary key,
bno number not null references board(num),
replytext varchar2(500) not null,
replier varchar2(50) not null,
regdate date not null,
update date not null

);

ReplyBoard

```
package board.model;
import java.sql.Date;
public class ReplyBoard {
    private int rno;private int bno;
    private String replytext;private String replyer;
    private Date regdate;private Date updatedate;
    private String del;

    // getter and setter
}
```

RepBoardDao

```
package board.dao;
import java.util.List;
import board.model.ReplyBoard;
public interface RepBoardDao {
    int insert(ReplyBoard rb);
    List<ReplyBoard> list(int num);
    int delete(int rno);
    int update(ReplyBoard rb);
}
```

RepBoardDaoImpl

@Repository

public class ReplyBoardDaoImpl implements ReplyBoardDao {

@Autowired

private SqlSessionTemplate sst;

public List<ReplyBoard> list(int bno) {

return sst.selectList("rbdns.list", bno);

}

public void insert(ReplyBoard rBoard) {

sst.insert("rbdns.insert", rBoard);

}

public void delete(int rno) {

sst.update("rbdns.delete", rno);

}

public void update(ReplyBoard rBoard) {

sst.update("rbdns.update", rBoard);

}

}

configuration.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE configuration PUBLIC "-//mybatis.org//DTD Config 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-config.dtd">
<configuration>
  <typeAliases>
    <typeAlias alias="board" type="board.model.Board" />
    <typeAlias alias="repBoard" type="board.model.ReplyBoard" />
  </typeAliases>
  <mappers>
    <mapper resource="board.xml" />
    <mapper resource="rbd.xml" />
  </mappers>
</configuration>
```

rbd.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="rbdns">
<!-- Use type aliases to avoid typing the full classname every time. -->
<resultMap id="rbdResult" type="rbd">
    <result property="rno" column="rno" />
    <result property="bno" column="bno" />
    <result property="replytext" column="replytext" />
    <result property="replyer" column="replyer" />
    <result property="regdate" column="regdate" />
    <result property="updatedate" column="updatedate" />
    <result property="del" column="del" />
</resultMap>
```


rbd.xml

```
<select id="list" parameterType="int" resultMap="rbdResult">
    select * from replyBoard where bno=#{bno} order by rno desc
</select>
<insert id="insert" parameterType="rbd">
    <selectKey keyProperty="rno" order="BEFORE" resultType="int">
        select nvl(max(rno), 0) + 1 rno from replyBoard
    </selectKey>
    insert into replyBoard values("#{rno}", #{bno}, #{replytext},
        #{replier}, sysdate, sysdate, 'n')
</insert>
<update id="delete" parameterType="int">
    update replyBoard set del='y' where rno=#{rno}
</update>
<update id="update" parameterType="rbd">
    update replyBoard set replytext=#{replytext},
        updatedate=sysdate where rno=#{rno}
</update>
</mapper>
```

RepBoardService

```
public interface RepBoardService {  
    int insert(ReplyBoard rb);  
    List<ReplyBoard> list(int num);  
    int delete(int rno);  
    int update(ReplyBoard rb);  
}
```

@Service

```
public class RepBoardServiceImpl implements RepBoardService {  
    @Inject  
    private RepBoardDao rbd;  
    public int insert(ReplyBoard rb) {  
        return rbd.insert(rb);  
    }  
    public List<ReplyBoard> list(int num) {  
        return rbd.list(num);  
    }  
    public int delete(int rno) {  
        return rbd.delete(rno);  
    }  
    public int update(ReplyBoard rb) {  
        return rbd.update(rb);  
    }  
}
```

BoardController

```
package com.ch.ch10.controller;
import java.util.List;
import javax.servlet.http.HttpServletRequest;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestMapping;
import com.ch.ch10.model.Board;
import com.ch.ch10.service.BoardService;
import com.ch.ch10.service.PagingBean;
@Controller
public class BoardController {
    @Autowired
    private BoardService bs;
    @RequestMapping("/list")
    public String init() {
        return "redirect:/list/pageNum/1";
    }
}
```

BoardController

```
@RequestMapping("/list/pageNum/{pageNum}")
public String list(@PathVariable String pageNum, Board board,
                  Model model) {
    if (pageNum==null || pageNum.equals("")) pageNum = "1";
    int currentPage = Integer.parseInt(pageNum);
    int total = bs.getTotal(board);
    int rowPerPage = 10;
    int startRow = (currentPage - 1) * rowPerPage + 1;
    int endRow    = startRow + rowPerPage - 1;
    board.setStartRow(startRow); board.setEndRow(endRow);
    List<Board> list = bs.list(board);
    int no = total - startRow + 1;
    PagingBean pb = new PagingBean(currentPage, rowPerPage, total);
    String[] t = {"작성자", "제목", "내용", "제목+내용"};
    model.addAttribute("t", t);
    model.addAttribute("board", board);
    model.addAttribute("list", list);
    model.addAttribute("no", no);
    model.addAttribute("pb", pb);
    return "list";
}
```

BoardController

```
@RequestMapping("/insertForm/pageNum/{pageNum}")
public String insertForm(@PathVariable String pageNum,
    String nm, Model model) {
    int num=0, ref=0, re_level=0, re_step=0;
    // 답변글시작
    if (nm!=null && !nm.equals("")) {
        num = Integer.parseInt(nm);
        Board board = bs.select(num);
        ref = board.getRef();
        re_level = board.getRe_level();
        re_step = board.getRe_step();
    }
    // 답변글 끝
    model.addAttribute("pageNum", pageNum);
    model.addAttribute("num", num);
    model.addAttribute("ref", ref);
    model.addAttribute("re_level", re_level);
    model.addAttribute("re_step", re_step);
    return "insertForm";
}
```

BoardController

```
@RequestMapping("/insert")
public String insert(Board board, String pageNum, Model model,
    HttpServletRequest request) {
    board.setIp(request.getRemoteAddr());
    int number = bs.maxNum();
    // 답변글은 num0이 0이 아님
    if (board.getNum() != 0) {
        bs.updateRe_step(board);
        board.setRe_level(board.getRe_level()+1);
        board.setRe_step(board.getRe_step()+1);
    } else board.setRef(number); // 답변글이 아닐때만 num고 일치
    board.setNum(number);
    int result = bs.insert(board);
    model.addAttribute("result", result);
    model.addAttribute("pageNum", pageNum);
    return "insert";
}
```

BoardController

```
@RequestMapping("/view/num/{num}/pageNum/{pageNum}")
public String view(@PathVariable int num,
                   @PathVariable String pageNum, Model model) {
    bs.updateReadCount(num);
    Board board = bs.select(num);
    model.addAttribute("board", board);
    model.addAttribute("pageNum", pageNum);
    return "view";
}

@RequestMapping("/updateForm/num/{num}/pageNum/{pageNum}")
public String updateForm(@PathVariable int num,
                         @PathVariable String pageNum, Model model) {
    Board board = bs.select(num);
    model.addAttribute("pageNum", pageNum);
    model.addAttribute("board", board);
    return "updateForm";
}
```


BoardController

```
@RequestMapping("/update")
public String update(Board board, String pageNum, Model model) {
    int result = bs.update(board);
    model.addAttribute("result", result);
    model.addAttribute("pageNum", pageNum);
    return "update";
}

@RequestMapping("/deleteForm/num/{num}/pageNum/{pageNum}")
public String deleteForm(@PathVariable int num,
    @PathVariable String pageNum, Model model) {
    Board board = bs.select(num);
    model.addAttribute("board", board);
    model.addAttribute("pageNum", pageNum);
    return "deleteForm";
}
```


BoardController

```
@RequestMapping("/delete")
public String delete(int num, String pageNum, Model model) {
    int result = bs.delete(num);
    model.addAttribute("result", result);
    model.addAttribute("pageNum", pageNum);
    return "delete";
}
}
```

RepController

```
import java.util.List;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestMapping;
@Controller
public class ReplyBoardController {
    @Autowired
    private ReplyBoardService rbs;
    @Autowired
    private BoardService bs;
    @RequestMapping("/replyList/bno/{bno}")
    public String replyList(@PathVariable int bno, Model model ) {
        Board board = bs.select(bno);
        List<ReplyBoard> rList = rbs.list(bno);
        model.addAttribute("board", board);
        model.addAttribute("rList", rList);
        return "replyList";
    }
}
```

RepController

```
@RequestMapping("/rInsert")
public String replyInsert(ReplyBoard rBoard) {
    rbs.insert(rBoard);
    return "redirect:/replyList/bno/" + rBoard.getBno();
}

@RequestMapping("/rDelete")
public String rDelete(ReplyBoard rBoard) {
    rbs.delete(rBoard.getRno());
    return "redirect:/replyList/bno/" + rBoard.getBno();
}

@RequestMapping("/rUpdate")
public String rUpdate(ReplyBoard rBoard) {
    rbs.update(rBoard);
    return "redirect:/replyList/bno/" + rBoard.getBno();
}
}
```

list.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" » pageEncoding="UTF-8"%>
<%@ include file="header.jsp" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Insert title here</title></head><body>
<c:set var="rNum" value="${ps.startNum}"></c:set>
<table><caption>게시판 목록</caption>
  <tr><th>번호</th><th>제목</th><th>작성자</th><th>이메일</th>
    <th>작성일</th><th>조회수</th></tr>
  <c:forEach var="brd" items="${list}">
    <tr><td>${rNum}</td>
      <c:if test="${brd.delYn != 'y'}"><td>
        <c:if test="${brd.re_level > 0}">
          
          
        </c:if>
        <c:url var="url1" value="/view/num/${brd.num}/pageNum/${ps.currentPage}"></c:url>
        <a href="${url1}">${brd.subject}</a>
        <c:if test="${brd.readcount > 30}">
          
        </c:if></td>
        <td>${brd.writer}</td><td>${brd.email}</td>
        <td>${brd.reg_date}</td><td>${brd.readcount}</td>
      </c:if>
    </tr>
  </c:forEach>
</table>
```

list.jsp

```
<c:if test= "${brd.delYn == 'y'}">
    <td colspan= "5"> 삭제된 글입니다</td>
</c:if>
<c:set var= "rNum" value= "${rNum - 1}"> </c:set> </tr>
</c:forEach>
</table>
<div align= "center">
    <form action= "/list">
        <select name= "search">
            <c:if test= "${keyword != null }">
                <option value= "${search}">
                    <c:if test= "${search== 'subject'}">제목</c:if>
                    <c:if test= "${search== 'writer'}">작성자</c:if>
                    <c:if test= "${search== 'content'}">내용</c:if>
                </option> </c:if>
                <option value= "subject">제목</option>
                <option value= "writer">작성자</option>
                <option value= "content">내용</option>
            </select>
            <input type= "text" name= "keyword" value= "${keyword}">
            <input type= "submit" value= "확인">
        </form>
    </div>
```

list.jsp

```
<div align="center">
  <c:url var="url2" value="/list/pageNum/"></c:url>
  <button onclick="location.href='writeForm/pageNum/${ps.currentPage}'">글쓰기</button>
  <c:if test="${keyword != null }">
    <c:if test="${ps.startPage > ps.pagePerBlock }">
      <a href="${url2}/${ps.endPage-ps.pagePerBlock}/search/${search}/keyword/${keyword}">
        [이전]</a></c:if>
    <c:forEach var="i" begin="${ps.startPage}" end="${ps.endPage}">
      <a href="${url2}/${i}/search/${search}/keyword/${keyword}">[${i}]</a>
    </c:forEach>
    <c:if test="${ps.totalPage > ps.endPage}">
      <a href="${url2}/${ps.startPage+ps.pagePerBlock}/search/${search}/keyword/${keyword}">
        [다음]</a></c:if>
  </c:if>
  <c:if test="${keyword == null }">
    <c:if test="${ps.startPage > ps.pagePerBlock }">
      <a href="${url2}/${ps.endPage-ps.pagePerBlock}">[이전]</a></c:if>
    <c:forEach var="i" begin="${ps.startPage}" end="${ps.endPage}">
      <a href="${url2}/${i}">[${i}]</a>
    </c:forEach>
    <c:if test="${ps.totalPage > ps.endPage}">
      <a href="${url2}/${ps.startPage+ps.pagePerBlock}">[다음]</a></c:if>
  </c:if>
</div></body>
</html>
```

header.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" %>
<%@ taglib prefix="form"
    uri="http://www.springframework.org/tags/form" %>
<%@ taglib prefix="spring"
    uri="http://www.springframework.org/tags" %>
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport"
    content="width=device-width, initial-scale=1">
<c:set var="path"
    value="${pageContext.request.contextPath}"> </c:set>
<link href="${path}/css/bootstrap.min.css" rel="stylesheet">
<script src="${path}/js/jquery.js"> </script>
<script src="${path}/js/bootstrap.min.js"> </script>
<style> .err { color: red; font-weight: bold; }</style>
```


deleteForm.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<%@ include file="header.jsp" %>
<!DOCTYPE html>
<html><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Insert title here</title><script type="text/javascript">
    function chk() {
        if (frm.pass.value != frm.passwd.value) {
            alert("암호가 다릅니다");frm.passwd.focus();
            frm.passwd.value = "";return false;
        }
    }
</script></head><body>
<h2>게시판 삭제</h2>
<form action="${path}/delete" name="frm" onsubmit="return chk()">
<input type="hidden" name="num" value="${board.num}">
<input type="hidden" name="pageNum" value="${pageNum}">
<input type="hidden" name="pass" value="${board.passwd}">
암호 : <input type="password" name="passwd" required="required"> <p>
<input type="submit" value="확인">
</form>
</body>
</html>
```


updateForm.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<%@ include file="header.jsp" %><!DOCTYPE html>
<html><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Insert title here</title></head><body>
<c:if test="${not empty msg}"><span class="err">${msg}</span></c:if>
<form action="${path}/update" method="post">
<input type="hidden" name="pageNum" value="${pageNum}">
<table><caption>게시판 수정</caption>
  <tr><th>번호</th><td>${board.num}
    <input type="hidden" name="num" value="${board.num}"></td>
  <th>조회수</th><td>${board.readcount}</td></tr>
  <tr><th>제목</th><td colspan="3">
    <input type="text" name="subject" value="${board.subject}" required="required"></td></tr>
  <tr><th>작성자</th><td colspan="3">
    <input type="text" name="writer" value="${board.writer}" required="required"></td></tr>
  <tr><th>이메일</th><td colspan="3">
    <input type="email" name="email" value="${board.email}" required="required"></td></tr>
  <tr><th>작성일</th><td colspan="3">${board.reg_date}</td></tr>
  <tr><th>내용</th><td colspan="3"><pre><textarea rows="5"
    cols="40" name="content"
    required="required">${board.content}</textarea></div></td></tr>
  <tr><th colspan="4"><input type="submit" value="확인"></th></tr>
</table></form></body></html>
```

writeForm.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ include file="header.jsp" %>
<!DOCTYPE html>
<html> <head> <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Insert title here</title> </head> <body>
<c:if test="${not empty msg}"> <span class="err"> ${msg}</span> </c:if>
<form action="${path }/write" method="post">
<input type="hidden" name="pageNum" value="${pageNum}">
<input type="hidden" name="num" value="${board.num}">
<input type="hidden" name="ref" value="${board.ref}">
<input type="hidden" name="re_step" value="${board.re_step}">
<input type="hidden" name="re_level" value="${board.re_level}">
<table> <caption>게시판 글쓰기</caption>
<tr> <th>제목</th> <td> <input type="text" name="subject"
required="required" value="${board.subject}"> </td> </tr>
<tr> <th>암호</th> <td> <input type="password" name="passwd"
required="required" value="${board.passwd}"> </td> </tr>
<tr> <th>작성자</th> <td> <input type="text" name="writer"
required="required" value="${board.writer}"> </td> </tr>
<tr> <th>이메일</th> <td> <input type="email" name="email"
required="required" value="${board.email}"> </td> </tr>
<tr> <th>내용</th> <td> <textarea rows="5" cols="40"
name="content" required="required"> ${board.content}</textarea> </td> </tr>
<tr> <th colspan="2"> <input type="submit" value="확인"> </th> </tr>
</table> </form> </body> </html>
```

view.jsp

```
<script type="text/javascript">
    $(function() {
        $('#replyDisp').load('${path}/replyList/bno/${board.num}');
        $('#boardDisp').load('${path}/list/pageNum/${pageNum}');
        $('#rInsert').click(function() {
            if (!frm.replytext.value) {
                alert("글을 입력 사용하십시오");
                frm.replytext.focus();
                return false;
            }
            var sendData = $('#frm').serialize();
            $.post('${path}/rInsert', sendData, function(data) {
                $('#replyDisp').html(data);
                frm.replytext.value="";
            });
        });
    });
</script></head>
<body>
```

view.jsp

```
<div class="container">
<h2>게시글 상세내역</h2>
<table class="table table-board table-hover">
  <tr><th>제목</th><td>${board.subject}</td></tr>
  <tr><th>작성자</th><td>${board.writer}</td></tr>
  <tr><th>이메일</th><td>${board.email}</td></tr>
  <tr><th>IP</th><td>${board.ip}</td></tr>
  <tr><th>조회수</th><td>${board.readcount}</td></tr>
  <tr><th>작성일</th><td>${board.reg_date}</td></tr>
  <tr><th>내용</th><td><pre>${board.content}</pre></td></tr>
</table><div align="center">
<a class="btn btn-warning"
href="${path}/updateForm/num/${board.num}/pageNum/${pageNum}">수정</a>
<a class="btn btn-danger"
href="${path}/deleteForm/num/${board.num}/pageNum/${pageNum}">삭제</a>
<a class="btn btn-success"
href="${path}/insertForm/pageNum/${pageNum}?nm=${board.num}">답변</a>
<a class="btn btn-primary" href="${path}/list/pageNum/${pageNum}">
게시글목록</a>
</div>
</div>
```

view.jsp

```
<h3 class="text-primary">댓글 작성</h3>
<form name="frm" id="frm">
  <input type="hidden" name="bno" value="${board.num}">
  <input type="hidden" name="replier" value="${board.writer}">
  <table class="table table-bordered table-hover">
    <tr><th>댓글</th><td><textarea rows="3" cols="30"
      name="replytext"></textarea> </td></tr>
    <tr><th colspan="2"><input type="button" value="확인"
      id="rInsert"></th></tr>
  </table>
</form>
</div>
  <div id="replyDisp"></div>
  <div id="boardDisp"></div>
</div>
</body>
</html>
```

repList.jsp

```
<script type="text/javascript">
    function rDelete(bno, rno) {
        $.post('${path}/rDelete', "bno="+bno+"&rno="+rno,
            function(data) {
                alert('삭제 성공 ㅋㅋ');
                $('#replyDisp').html(data);
            });
    }
    function rUpdate(bno,rno) {
        var txt = $('#td_'+rno).text();
        $('#td_'+rno).html(
            '<textarea name="replytext" cols="30" rows="3" id="rt">'
            +txt+'</textarea>');
        $('#btn_'+rno).html(
            '<button onclick="up('+bno+', '+rno+'
            +'" class="btn btn-danger btn-sm">확인</button> ' +
            '<button onclick="lst('+bno+'
            +'" class="btn btn-info btn-sm">취소</button>'
            );
        $('#rt').focus();
    }
}
```


repList.jsp

```
function lst(bno) {
    $('#replyDisp').load('${path}/replyList/bno/'+bno);
}
function up(bno, rno) {
    var sendData="replytext="+$("#rt").val()+
    "&bno="+bno+"&rno="+rno;
    $.post('${path}/rUpdate',sendData, function(data) {
        alert("수정 성공 ㅋㅋ");
        $('#replyDisp').html(data);
    });
}
</script></head><body>
<div class="container">
<h3 class="text-prin,ary">댓글 목록</h3>
<table class="table table-bordered table-hover">
    <tr><th>작성자</th><th>내용</th><th>수정일</th><th></th></tr>
<c:forEach var="rd" items="${rList}">
    <c:if test="${rd.del=='y'}">
        <tr><td colspan="4">삭제 되었습니다</td></tr>
    </c:if>
```

repList.jsp

```
<c:if test="${rd.del!='y'}">
  <tr><td>${rd.replyer}</td>
  <td id="td_${rd.rno}">${rd.replytext}</td>
  <td>${rd.updatedate}</td>
  <td id="btn_${rd.rno}">
    <c:if test="${rd.replyer==board.writer}">
      <!-- 실제로는 댓글작성자과 로그인한 사람이름과 비교 -->
      <button class="btn btn-warning btn-sm"
        onclick="rUpdate(${rd.bno},${rd.rno})">수정</button>
      <button class="btn btn-danger btn-sm"
        onclick="rDelete(${rd.bno},${rd.rno})">삭제</button>
    </c:if></td></tr>
  </c:if>
</c:forEach>
</table>
</div>
</body>
</html>
```