**[12] 페이징 가능한 게시판**

1. 인위적으로 데이터 70개 입력 3번 실행해 보기

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

<%@page import=*"com.lec.ex.dto.BoardDto"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

<link href=*"*<%=conPath %>*/css/style.css"* rel=*"stylesheet"* type=*"text/css"*>

</head>

<body>

<%

//임의로 데이터 채우기

BoardDto dto = **new** BoardDto();

BoardDao dao = BoardDao.getInstance();

**for**(**int** i = 0; i<70; i++){

dto.setBname("홍길동"+i);

dto.setBtitle("제목"+i);

dto.setBcontent("내용입니다." + i);

dto.setBemail("hong"+i+"@naver.com");

dto.setBpw("1");

dto.setBip("192.168.20."+i);

dao.writeBoard(dto);

}

response.sendRedirect(conPath+"/board/list.jsp");

%>

</body>

</html>

1. index.jsp

<%response.sendRedirect("board/list.jsp"); %>

또는

<jsp:forward page=*"board/list.jsp"*/>

1. Dao의 list() 메소드를 list(starRow, endRow)로 수정
   1. Top-N 구문

board.sql 에 다음 부분 추가

-- 1. 글목록(top-N구문)

**SELECT** ROWNUM RN, A.\* **FROM** (**SELECT** \* **FROM** BOARD **ORDER** **BY** BGROUP **DESC**, BSTEP) A; -- 전단계

**SELECT** \*

**FROM** (**SELECT** ROWNUM RN, A.\*

**FROM** (**SELECT** \* **FROM** BOARD **ORDER** **BY** BGROUP **DESC**, BSTEP) A)

**WHERE** RN **BETWEEN** 11 **AND** 20; -- 최종 TOP-N 구문 ((listBoard(s , e))

* 1. BoardDao.java에 추가

// 1. 글목록 (paging추가 부분)

**public** ArrayList<BoardDto> listBoard(**int** startRow, **int** endRow){

ArrayList<BoardDto> dtos = **new** ArrayList<BoardDto>();

Connection conn = **null**;

PreparedStatement pstmt = **null**;

ResultSet rs = **null**;

String sql = "SELECT \* "

+ " FROM (SELECT ROWNUM RN, A.\* "

+ " FROM (SELECT \* FROM BOARD ORDER BY BGROUP DESC, BSTEP) A) "

+ " WHERE RN BETWEEN ? AND ?";

**try** {

conn = getConnection();

pstmt = conn.prepareStatement(sql);

pstmt.setInt(1, startRow);

pstmt.setInt(2, endRow);

rs = pstmt.executeQuery();

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

**int** bid = rs.getInt("bid");

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

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

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

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

**int** bhit = rs.getInt("bhit");

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

**int** bgroup = rs.getInt("bgroup");

**int** bstep = rs.getInt("bstep");

**int** bindent = rs.getInt("bindent");

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

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

dtos.add(**new** BoardDto(bid, bname, btitle, bcontent, bemail, bhit, bpw, bgroup, bstep, bindent, bip, bdate));

}

} **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** dtos;

}

list.jsp?pageNum=1

list.jsp?pageNum=3

list.jsp

|  |  |  |
| --- | --- | --- |
| pageNum | 현재 몇 페이지인지(String) |  |
| currentPage | 현재 몇 페이지인지(int) |  |
|  |  |  |
| startRow | 시작번호 | (현재페이지 - 1) \* 페이지당 갯수+ 1 |
| endRow | 끝번호 | 시작번호 + 페이지당갯수 - 1 |
| pageCnt | 전체 페이지 수 | Math.ceil((double)전체글갯수/페이지당 글 갯수) |
|  | 블록수 | Math.ceil(페이지갯수/블록당 페이지갯수) |
| PAGESIZE | 한 페이지당 글 수 :10개 |  |
| BLOCKSIZE | 블록당 페이지 수 : 10개 |  |
| startPage | 시작페이지 | ((현재페이지 -1)/블록당페이지수)\*블록당페이지수 +1 |
| endPage | 끝페이지 | 시작페이지 + 블록당페이지 수 -1 |

1. list.jsp 위측에 뿌려질 startRow와 endRow 설정 (BLOCKSIZE 10, PAGESIZE 10으로 함)
   1. pageNum(현 페이지를 받는 파라미터명)
   2. currentPage = Integer.parse(pageNum);
   3. startRow = (currentPage – 1 )\* PAGESIZE + 1
   4. endRow = startRow + PAGESIZE – 1

<%/\* list.jsp에 paging 추가부분

\* 뿌려질 startRow와 endRow 설정 (BLOCKSIZE 10, PAGESIZE 10으로 정한다)

\* list.jsp 또는 list.jsp?pageNum=19

\*/

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

**if**(pageNum==**null**)

pageNum = "1"; // 전달받은 pageNum 파라미터가 없으면 1page로 전환

**int** currentPage = Integer.parseInt(pageNum);

**final** **int** PAGESIZE=10, BLOCKSIZE=10;

**int** startRow = (currentPage - 1) \* PAGESIZE + 1;

**int** endRow = startRow + PAGESIZE - 1 ;

BoardDao bDao = BoardDao.getInstance();

**int** totalCnt = bDao.getBoardTotalCnt(); // 글 갯수

**if**(totalCnt == 0){

out.println("<tr><td colspan='5'>등록된 글이 없습니다</td></tr>");

}**else**{

ArrayList<BoardDto> dtos = bDao.listBoard(startRow, endRow);

추가 후 아래 실행

list.jsp

list.jsp?pageNum=1

list.jsp?pageNum=3

1. list.jsp 아래측에 뿌려질 페이지 번호들 셋팅
   1. 전체 페이지 수 PageCnt = (totCnt / PageSize)의 올림
   2. 현 블럭의 시작 페이지 수

startPage = ((currentPage-1)/ BlockSize)의 int)\* BlockSize+1

* 1. 현 블럭의 끝 페이지 수

endPage = startPage + BlockSize - 1

* 1. If(endPage>pageCnt) endPage = pageCnt
  2. [이전]이 나오는 경우 : srartPage > BlockSize일 때
  3. 페이지 번호들 for문 이용

<a href=’list.jsp?pageNum=i’> [ i ] </a>

* 1. [다음]이 나오는 경우 : endPage < pageCnt 일 때

<div class=*"paging"*>

<%

**int** pageCnt = (**int**)Math.ceil((**double**)totalCnt / PAGESIZE);

**int** startPage = ((currentPage-1)/BLOCKSIZE) \* BLOCKSIZE + 1;

**int** endPage = startPage + BLOCKSIZE - 1;

**if**(endPage > pageCnt){

endPage = pageCnt;

}

**if**(startPage > BLOCKSIZE){

out.println("[ <a href='"+conPath+"/board/list.jsp?pageNum="+(startPage-1)+"'> 이전 </a> ]");

}

**for**(**int** i=startPage ; i<=endPage ; i++){

**if**(i == currentPage){

out.println("[ <b>" + i + "</b> ]");

}**else**{

out.println("[ <a href='"+conPath +"/board/list.jsp?pageNum="+i+"'> "+i +" </a> ]");

}

}

**if**(endPage < pageCnt){

out.println("[ <a href='"+conPath+"/board/list.jsp?pageNum=" + (endPage+1) + "'> 다음 </a> ]");

}

%>

</div>

1. 모든 페이지 전환시 pageNum을 파라미터로 전달

**<list.jsp>**

<%@page import=*"com.lec.ex.dto.BoardDto"*%>

<%@page import=*"java.util.ArrayList"*%>

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

<link href=*"*<%=conPath %>*/css/style.css"* rel=*"stylesheet"* type=*"text/css"*>

</head>

<body>

<table>

<caption>게시판</caption>

<tr><td><a href=*"*<%=conPath %>*/board/writeForm.jsp"*>글쓰기</a></td></tr>

</table>

<table>

<tr><th>글번호</th><th>작성자</th><th>글제목</th><th>메일</th><th>조회수</th></tr>

<%/\* list.jsp에 paging 추가부분

\* 뿌려질 startRow와 endRow 설정 (BLOCKSIZE 10, PAGESIZE 10으로 정한다)

\* list.jsp 또는 list.jsp?pageNum=19

\*/

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

**if**(pageNum==**null**)

pageNum = "1"; // 전달받은 pageNum 파라미터가 없으면 1page로 전환

**int** currentPage = Integer.parseInt(pageNum);

**final** **int** PAGESIZE=10, BLOCKSIZE=10;

**int** startRow = (currentPage - 1) \* PAGESIZE + 1;

**int** endRow = startRow + PAGESIZE - 1 ;

BoardDao bDao = BoardDao.getInstance();

**int** totalCnt = bDao.getBoardTotalCnt(); // 글 갯수

**if**(totalCnt == 0){

out.println("<tr><td colspan='5'>등록된 글이 없습니다</td></tr>");

}**else**{

ArrayList<BoardDto> dtos = bDao.listBoard(startRow, endRow);

**for**(BoardDto dto : dtos){

// 글번호

out.println("<tr><td>"+dto.getBid() + "</td>");

// 작성자

out.println("<td>" + dto.getBname() + "</td>");

// 글제목(조회수가 10 이상이면 hot 이미지와 같이 제목 출력, 글제목 클릭시 상세보기페이지로)

out.println("<td class='left'>");

**if**(dto.getBhit() > 10){

out.println("<img src='"+conPath+"/img/hot.gif'>");

}

out.println("<a href='"+conPath + "/board/content.jsp?bid="+ dto.getBid() +"&pageNum="+pageNum+"'>"

+ dto.getBcontent()+"</a>");

out.println("</td>");

//메일

String email = dto.getBemail();

out.println("<td>" + (email==**null**? "-":email) + "</td>");

//조회수

out.println("<td>"+dto.getBhit()+"</td></tr>");

}

}

%>

</table>

<div class=*"paging"*>

<%

**int** pageCnt = (**int**)Math.ceil((**double**)totalCnt / PAGESIZE);

**int** startPage = ((currentPage-1)/BLOCKSIZE) \* BLOCKSIZE + 1;

**int** endPage = startPage + BLOCKSIZE - 1;

**if**(endPage > pageCnt){

endPage = pageCnt;

}

**if**(startPage > BLOCKSIZE){

out.println("[ <a href='"+conPath+"/board/list.jsp?pageNum="+(startPage-1)+"'> 이전 </a> ]");

}

**for**(**int** i=startPage ; i<=endPage ; i++){

**if**(i == currentPage){

out.println("[ <b>" + i + "</b> ]");

}**else**{

out.println("[ <a href='"+conPath +"/board/list.jsp?pageNum="+i+"'> "+i +" </a> ]");

}

}

**if**(endPage < pageCnt){

out.println("[ <a href='"+conPath+"/board/list.jsp?pageNum=" + (endPage+1) + "'> 다음 </a> ]");

}

%>

</div>

</body>

</html>

**<content.jsp>**

<%@page import=*"com.lec.ex.dto.BoardDto"*%>

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

<link href=*"*<%=conPath %>*/css/style.css"* rel=*"stylesheet"* type=*"text/css"*>

</head>

<body>

<%

String bid = request.getParameter("bid"); // null 이거나 "3"

BoardDao bDao = BoardDao.getInstance();

BoardDto dto = bDao.getContent(bid); // 조회수 올리고 dto가져오기

/\* pageNum 추가 \*/

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

**if**(dto==**null**){

response.sendRedirect(conPath+"/board/list.jsp");

}**else**{

%>

<table>

<caption><%=bid %>번 글 상세보기</caption>

<tr><th>글번호</th><td><%=dto.getBid() %></td></tr>

<tr><th>글제목</th><td><%=dto.getBtitle() %></td></tr>

<tr>

<th>본문</th>

<td><pre><%=dto.getBcontent() %></pre></td>

</tr>

<tr><th>이메일</th><td><%=dto.getBemail()==**null**? "-":dto.getBemail() %></td></tr>

<tr><th>조회수</th><td><%=dto.getBhit() %></td></tr>

<tr><th>IP</th><td><%=dto.getBip()%></td></tr>

<tr><th>작성</th><td><%=dto.getBdate() %></td></tr>

<tr>

<td colspan=*"2"*>

<button onclick=*"location.href='*<%=conPath%>*/board/updateForm.jsp?bid=*<%=bid%>*&pageNum=*<%=pageNum%>*'"*>수정</button>

<button onclick=*"location.href='*<%=conPath %>*/board/deleteForm.jsp?bid=*<%=bid %>*&pageNum=*<%=pageNum%>*'"*>삭제</button>

<button>답변</button>

<button onclick=*"location.href='*<%=conPath%>*/board/list.jsp?pageNum=*<%=pageNum%>*'"*>목록</button>

</td>

</tr>

</table>

<%}%>

</body>

</html>

**<updateForm.jsp>**

<%@page import=*"com.lec.ex.dto.BoardDto"*%>

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

<link href=*"*<%=conPath %>*/css/style.css"* rel=*"stylesheet"* type=*"text/css"*>

</head>

<body>

<%

**int** bid = Integer.parseInt(request.getParameter("bid")); // null 이거나 "3"

BoardDao bDao = BoardDao.getInstance();

BoardDto dto = bDao.modifyForm\_replyForm(bid); // 조회수 올리고 dto가져오기

/\* pageNum 추가 \*/

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

%>

<form action=*"*<%=conPath %>*/board/updatePro.jsp"* method=*"post"*>

<input type=*"hidden"* name=*"pageNum"* value=*"*<%=pageNum%>*"*>

<input type=*"hidden"* name=*"bid"* value=*"*<%=bid %>*"*>

<table>

<caption><%=bid %>번 글 수정</caption>

<tr>

<th>작성자</th>

<td>

<input type=*"text"* name=*"bname"* required=*"required"* value=*"*<%=dto.getBname() %>*"*

autofocus=*"autofocus"*>

</td>

</tr>

<tr>

<th>글제목</th>

<td><input type=*"text"* name=*"btitle"* required=*"required"* value=*"*<%=dto.getBtitle()%>*"*></td>

</tr>

<tr>

<th>본문</th>

<td>

<textarea rows=*"5"* cols=*"10"* name=*"bcontent"*><%=dto.getBcontent() %></textarea>

</td>

</tr>

<tr>

<th>이메일</th>

<td>

<input type=*"email"* name=*"bemail"* value=*"*<%

String email = dto.getBemail();

**if**(email!=**null**){

out.println(email);

}

%>*"*>

</td>

</tr>

<tr>

<th>비밀번호</th>

<td><input type=*"password"* name=*"bpw"* required=*"required"* value=*"*<%=dto.getBpw()%>*"*></td>

</tr>

<tr>

<td colspan=*"2"*>

<input type=*"submit"* value=*"글수정"* class=*"btn"*>

<input type=*"reset"* value=*"취소"* class=*"btn"* onclick="history.back()">

<input type=*"button"* value=*"목록"* class=*"btn"*

onclick=*"location.href='*<%=conPath%>*/board/list.jsp?pageNum=*<%=pageNum%>*'"*>

</td>

</tr>

</table>

</form>

</body>

</html>

**<updatePro.jsp>**

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<%request.setCharacterEncoding("utf-8"); %>

<jsp:useBean id=*"dto"* class=*"com.lec.ex.dto.BoardDto"*/>

<jsp:setProperty property=*"\*"* name=*"dto"*/>

<!--

들어온 파라미터 : num, writer(필요 X), subject, content, email, pw

dao의 updateBoard() 호출을 위해서 ip가 추가적으로 필요

-->

<%

dto.setBip(request.getRemoteAddr()); // client의 ip로 셋팅

// out.println(dto);

BoardDao bDao = BoardDao.getInstance();

**int** result = bDao.modifyBoard(dto);

/\* pageNum 추가 \*/

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

**if** (result == BoardDao.SUCCESS) {

%>

<script>

alert('글 수정 성공');

// location.href = '<%=conPath%>/board/list.jsp?pageNum=<%=pageNum%>';

location.href = '<%=conPath%>/board/content.jsp?bid=<%=dto.getBid()%>&pageNum=<%=pageNum%>';

</script>

<%}**else**{%>

<script>

alert('글 수정 실패(길어)');

history.go(-1);

</script>

<%}%>

</body>

</html>

**<delteForm.jsp>**

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

<link href=*"*<%=conPath %>*/css/style.css"* rel=*"stylesheet"* type=*"text/css"*>

</head>

<body>

<%

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

/\* pageNum 추가 \*/

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

%>

<table>

<caption><%=bid %>번 글 삭제</caption>

<tr>

<td>

<fieldset>

<legend>삭제를 위한 암호</legend>

<form action=*"*<%=conPath%>*/board/deletePro.jsp"* method=*"post"*>

<input type=*"hidden"* name=*"pageNum"* value=*"*<%=pageNum%>*"*>

<input type=*"hidden"* name=*"bid"* value=*"*<%=bid%>*"*>

<p>암호 <input type=*"password"* name=*"bpw"* required=*"required"*

autofocus=*"autofocus"* class=*"btn"*></p>

<p>

<input type=*"submit"* value=*"삭제"* class=*"btn"*>

<input type=*"button"* value=*"삭제취소"* class=*"btn"* onclick="history.back()">

</p>

</form>

</fieldset>

</td>

</tr>

</table>

</body>

</html>

**<deltePro.jsp>**

<%@page import=*"com.lec.ex.dao.BoardDao"*%>

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

pageEncoding=*"UTF-8"*%>

<% String conPath = request.getContextPath(); %>

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<%

**int** bid = Integer.parseInt(request.getParameter("bid"));

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

BoardDao bDao = BoardDao.getInstance();

**int** result = bDao.deleteBoard(bid, bpw);

/\* pageNum 추가 \*/

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

**if**(result == BoardDao.SUCCESS){

%>

<script>

alert('<%=bid%>번 글 삭제 완료');

location.href = '<%=conPath%>/board/list.jsp?pageNum=<%=pageNum%>';

</script>

<%}**else**{%>

<script>

alert('<%=bid%>번 글 삭제 실패. 비밀번호를 확인하세요');

history.back();

</script>

<%}%>

</body>

</html>