

Day35; 20220818

강의 번호	
유형	@2022년 8월 18일
자료	
속성	
복습	<input type="checkbox"/>
작성일자	@2022년 8월 18일 오전 9:15

<메타버스 체험>

Alice in Wonderland

Hangout at the ZEPETO World, 'Alice in Wonderland'!

<https://go.zepeto.me/wQOIWU>



파일 처리

서비스 사용자들은 일반 텍스트 뿐만이 아니라 이미지, 문서, 음악 등등의 파일을 업로드 할 필요가 생긴다.

<input> 태그의 file 타입을 이용하여 파일을 연다.

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
    <form action = "filecheck.jsp">

        <input type="file" name="image">

    </form>
</body>
</html>
```

← → ↻ ⓘ localhost:8080/Day35_20220818/fileTest.jsp

파일 선택 선택된 파일 없음

사진 넣기

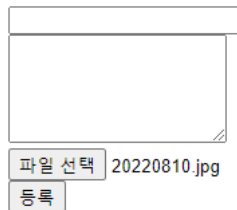
← → ↻ ⓘ localhc

파일 선택 20220810.jpg

fileTest.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
    <form action = "filecheck.jsp" method="post" enctype="multipart/form-data">
    <h3>게시판 등록</h3>
    <br>
    <input type="text" name="title">
    <br>
    <textarea name="content" rows="5" cols="20"></textarea>
    <br>
    <input type="file" name="image">
    <br>
    <input type="submit" value="등록">
    </form>
</body>
</html>
```

게시판 등록



```
<form action = "filecheck.jsp" method="post" enctype="multipart/form-data">
```

파일 전송을 위해 enctype 속성 값을 "multipart/form-data"로 설정한다.

fileCheck.jsp

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

title : <%=request.getParameter("title")%><br>
content : <%=request.getParameter("content")%><br>
file: <%=request.getParameter("image")%><br>

<%= request.getContentType() %>
<%= request.getContentLength() %>
```

파일 전송시에는 기존에 사용한 문법이 동작하지 않는다.

입력한 값들이 전부 null 출력되는 것을 확인할 수 있었다. (가끔 오작동으로 넘어가기도 한다.)

← → ↻ ⓘ localhost:8080/Day35_20220818_inputPhoto/fileCheck.jsp

```
title : null
content : null
file: null
multipart/form-data; boundary=----WebKitFormBoundaryJEAp8xmROQwP5agm 383
```

파일 전송을 위해 enctype="multipart/form-data"를 사용하게 되면, 내용 등도 하나하나 각각의 개념이 아닌 사진과 묶여서 하나의 덩어리로 넘어가게 된다.

따라서 DB에 자료를 넣어주기 위해 다시 각각의 항목들을 추출하는 과정이 필요하다.

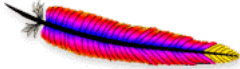
이러한 문제 해결을 도와주는 라이브러리를 활용하자.

Apache Commons - Apache Commons

Apache Commons is an Apache project focused on all aspects of reusable Java components. The Apache Commons project is composed of three parts: You may also read our charter, which spells out the goals of the project in greater detail. The Apache Commons source code repositories are writable for all ASF committers.

<https://commons.apache.org/>

← → ↻ ⓘ commons.apache.org



Apache CommonsTM
<http://commons.apache.org/>

Apache Commons TM Last Published: 14 July 2021 | Version: 19

Components

COMMONS

- Home
- License
- Mailing Lists
- PMC
- Components
- Sandbox
- Dormant

Welcome to Apache Commons

Apache Commons is an Apache project focused on all aspects of reusable Java components.

The Apache Commons project is composed of three parts:

- [The Commons Proper](#) - A repository for reusable Java components
- [The Commons Sandbox](#) - A workspace for new components
- [The Commons Dormant](#) - A repository for components that are no longer actively maintained

Apache Commons FileUpload 1.4 (requires Java 1.6 or later)

Binaries

commons-fileupload-1.4-bin.tar.gz	sha256	pgp
commons-fileupload-1.4-bin.zip	sha256	pgp

<https://s3-us-west-2.amazonaws.com/secure.notion-static.com/be3b8271-9bbc-49df-8964-1263476842a3/commons-fileupload-1.4-bin.zip>

Commons IO - Download Apache Commons IO

We recommend you use a mirror to download our release builds, but you must verify the integrity of the downloaded files using signatures downloaded from our main distribution directories. Recent releases (48 hours) may not yet be available from all the mirrors. You are currently using <https://d1cdn.apache.org/>.

https://commons.apache.org/proper/commons-io/download_io.cgi



ache Commons
p://commons.apache.org/

commons.apache.org/proper/commons-io/download_io.cgi

The **KEYS** file contains the public PGP keys used by Apache Commons developers to sign releases.

Apache Commons IO 2.11.0 (requires Java 8)

Binaries

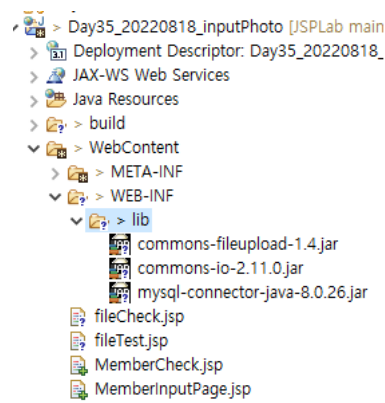
commons-io-2.11.0-bin.tar.gz	sha512	pgp
commons-io-2.11.0-bin.zip	sha512	pgp

<https://s3-us-west-2.amazonaws.com/secure.notion-static.com/49e6f2fc-a1e0-49bd-835d-2336d973ea73/commons-io-2.11.0-bin.zip>

commons-io-2.11.0.jar (업로드 안 됨)

commons-fileupload-1.4.jar (업로드 안 됨)

WebContent - WEB-INF - lib (라이브러리)에 넣어준다.



이클립스 프로젝트에 FileUpload와 IO 라이브러리 추가가 완료되면 해당 라이브러리를 이용해서 파일 등을 쉽게 추출할 수 있다.

임의로 수정해주자. 헤이디SQL

> sys		
▼ webmarket	64.0 KiB	
board	16.0 KiB	
customer	16.0 KiB	
member	16.0 KiB	
product	16.0 KiB	

#	이름	데이터 유형	길이/설정	부호 ...	NULL ...	0으...	기본값
1	bid	INT	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	AUTO_INCREMENT
2	title	VARCHAR	50	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL
3	content	VARCHAR	50	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL
4	image	VARCHAR	100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NULL
5	bdate	TIMESTAMP		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	current_time

fileCheck.jsp

```
<%@ page import="org.apache.commons.fileupload.*" %>
<%@ page import="org.apache.commons.fileupload.disk.*" %>
<%@ page import="org.apache.commons.fileupload.servlet.*" %>

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

fileCheck.jsp 사진과 사진을 제외한 것들을 뽑아내주는 것.

```
<%
ServletFileUpload sfu = new ServletFileUpload(new DiskFileItemFactory());

List items = sfu.parseRequest(request);

Iterator iter = items.iterator();

while(iter.hasNext()){
    FileItem item = (FileItem) iter.next();

    if(item.isFormField()){
        // 제목, 내용 등 사진을 제외한 나머지 항목들을 차례대로 추출
    }else{
        // 사진에 관련된 즉 사진 이름과 사진 파일 2개만 추출
    }
}
%>
```

isFormField()	요소가 이름-값의 쌍으로 구성된 필드면 (사진을 제외한 나머지 항목들) true를 반환
getFieldName()	이름 반환
getString()	값 반환
getName()	파일 이름 (사진, txt, excel) 반환
get()	파일 추출

fileCheck.jsp 전체

```
<%@page import="db.*"%>
<%@page import="util.*"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

<%@ page import="org.apache.commons.fileupload.*" %>
<%@ page import="org.apache.commons.fileupload.disk.*" %>
<%@ page import="org.apache.commons.fileupload.servlet.*" %>

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

```

<%
    String title = null;
    String content = null;
    String iname = null;
    byte[] ifile = null;

    ServletFileUpload sfu = new ServletFileUpload(new DiskFileItemFactory());

    List items = sfu.parseRequest(request);

    Iterator iter = items.iterator();

    while(iter.hasNext()){
        FileItem item = (FileItem) iter.next();
        String name = item.getFieldName(); //키값 즉 이름을 추출

        if(item.isFormField()) {
            //제목, 내용 등 사진을 제외한 나머지 항목들을 차례대로 추출
            String value = item.getString("utf-8");
            if (name.equals("title")) title = value;
            else if (name.equals("content")) content = value;

        } else {
            //사진에 관련된 즉 사진이름과 사진파일 추출
            if (name.equals("image")) {
                iname = item.getName();
                ifile = item.get();

                String root = application.getRealPath(java.io.File.separator);
                FileUtil.saveImage(root, iname, ifile);

            }
        }

        DAOfile.boardinsert(title, content, iname);
    }
%>

```

해당 파일을 서버의 특정 위치로 전송하는 class

src - util - FileUtil.java

```

package util;

import java.io.*;

public class FileUtil {

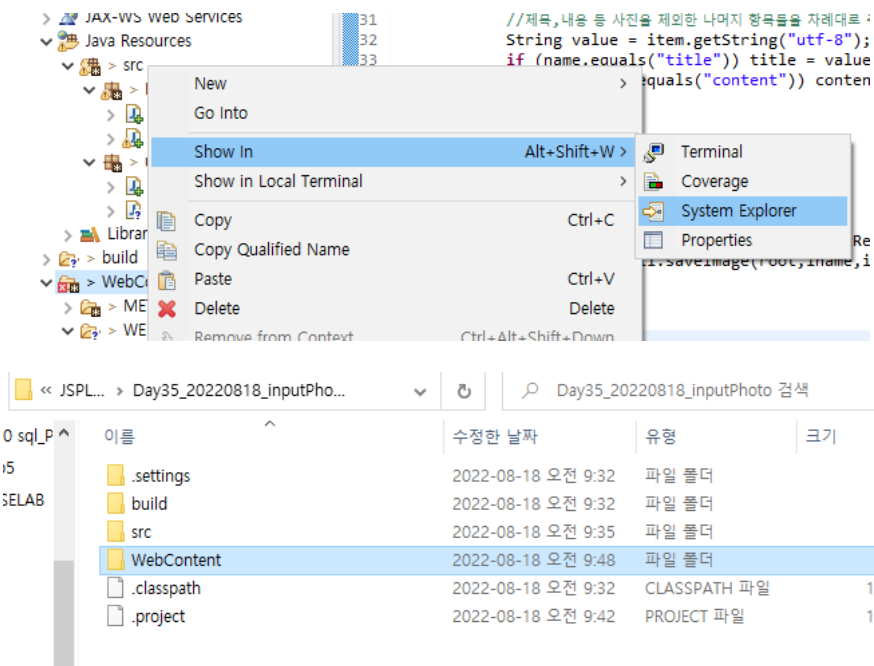
    public static void saveImage(String root, String iname, byte[] ifile) throws IOException {

        root += "/images";
        File f = new File(root);

        if (!f.exists()) f.mkdir();

        f = new File(root + "/" + iname);
        FileOutputStream out = new FileOutputStream(f);
        out.write(ifile);
        out.close();
    }
}

```



```
//사진에 관련된 즉 사진이름과 사진파일 추출
if (name.equals("image")) {
    iname = item.getName();
    ifile = item.get();

    String root = application.getRealPath(java.io.File.separator);
    FileUtil.saveImage(root,iname,ifile);
}
```

실제 사진 저장 위치

D:\dev\JSPLab\metadata\plugins\org.eclipse.wst.server.core\tmp0\wtpwebapps\Day35_20220818_inputPhoto\images 등등

```
public static int boardinsert(String title, String content, String iname) throws NamingException, SQLException {
    Connection conn = null;
    PreparedStatement stmt = null;
    int result = 0;

    String sql = "INSERT INTO board (title, content, iname) VALUES(?,?,?)";
    //Connection Pool 이용
    conn= ConnectionPool.get();

    stmt = conn.prepareStatement(sql);
    stmt.setString(1, title);
    stmt.setString(2, content);
    stmt.setString(3, iname);

    result = stmt.executeUpdate();
    // 결과가 성공1 과 실패 0으로 넘어 온다.

    return result;
}
```

src - util - ConnectionPool.java

```
package util;
import java.sql.*;
import javax.naming.*;
import javax.sql.DataSource;

public class ConnectionPool {

    private static DataSource _ds = null;

    public static Connection get() throws NamingException, SQLException {
        if(_ds == null) {
            _ds = (DataSource)(new InitialContext()).lookup("java:comp/env/jdbc/webmarket");
        }
        return _ds.getConnection();
    }
}
```

DTOfile

```
package db;

public class DTOfile {

    private String bid;
    private String title;
    private String content;
    private String iname;
    private String bdate;
    public String getBid() {
        return bid;
    }
    public void setBid(String bid) {
        this.bid = bid;
    }
    public String getTitle() {
        return title;
    }
    public void setTitle(String title) {
        this.title = title;
    }
    public String getContent() {
        return content;
    }
    public void setContent(String content) {
        this.content = content;
    }
    public String getIname() {
        return iname;
    }
    public void setIname(String iname) {
        this.iname = iname;
    }
    public String getBdate() {
        return bdate;
    }
    public void setBdate(String bdate) {
        this.bdate = bdate;
    }
    public DTOfile(String bid, String title, String content, String iname, String bdate) {
        super();
        this.bid = bid;
        this.title = title;
        this.content = content;
        this.iname = iname;
        this.bdate = bdate;
    }
}
```

DAOfile

```
package db;
```



```

import java.sql.*;
import java.util.ArrayList;

import javax.naming.NamingException;

import util.*;

public class DAOfile {
    // C create R read U update D delete
    //회원 가입처리 (=테이블에 데이터 넣기)
    public static int boardinsert(String title, String content, String iname) throws NamingException, SQLException {

        Connection conn = null;
        PreparedStatement stmt = null;
        try {

            String sql = "INSERT INTO board(title, content, iname) VALUES(?,?,?)";
            //Connectionpool 이용
            conn = ConnectionPool.get();

            stmt = conn.prepareStatement(sql);
            stmt.setString(1, title);
            stmt.setString(2, content);
            stmt.setString(3, iname);

            int result = stmt.executeUpdate();
            //결과가 성공시 1, 실패시 2로 넘어온다.
            return result;
        } finally {
            stmt.close();
            conn.close();
        }
    }

    public static ArrayList<DTOfile> fileList() throws NamingException, SQLException{
        Connection conn = null;
        PreparedStatement stmt = null;
        ResultSet rs = null;

        String sql = "SELECT * FROM board";

        conn = ConnectionPool.get();
        stmt = conn.prepareStatement(sql);
        rs = stmt.executeQuery();

        ArrayList<DTOfile> files = new ArrayList<DTOfile>();

        while(rs.next()) {
            files.add(new DTOfile(rs.getString(1),
                                rs.getString(2),
                                rs.getString(3),
                                rs.getString(4),
                                rs.getString(5)));
        }
        return files;
    }

    public static DTOfile fileDetail(String bid) throws NamingException, SQLException {
        Connection conn = null;
        PreparedStatement stmt = null;
        ResultSet rs = null;

        String sql = "SELECT * FROM board WHERE bid=? ";
        conn= ConnectionPool.get();
        stmt = conn.prepareStatement(sql);
        stmt.setString(1, bid);
        rs = stmt.executeQuery();

        rs.next();

        bid = rs.getString(1);
        String title = rs.getString(2);
        String content = rs.getString(3);
        String iname = rs.getString(4);
        String bdate = rs.getString(5);

        DTOfile file = new DTOfile(bid,title,content,iname,bdate);

        return file;
    }
}

```

fielist.jsp

```

<%@page import="db.*"%>
<%@page import="java.util.*"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<h3>파일 목록</h3>
<%

ArrayList<DTOfile> files = DAOfile.fileList();

for (DTOfile file : files) {
%>
    <%=file.getBid()%>
    <a href="filedetail.jsp?no=<%=file.getBid() %>"><%=file.getTitle() %></a>
    <br>
<%
}
%>

</body>
</html>

```

파일 목록

1 [1](#)
2 [asdfasdf](#)
3 [1](#)
18 [2](#)
19 [asdf](#)

fileCheck.jsp 출력해서 보여주는 jsp 아님

```

<%@page import="db.*"%>
<%@page import="util.*"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

<%@ page import="org.apache.commons.fileupload.*" %>
<%@ page import="org.apache.commons.fileupload.disk.*" %>
<%@ page import="org.apache.commons.fileupload.servlet.*" %>

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

<%

String title = null;
String content = null;
String iname = null;
byte[] ifile = null;

ServletFileUpload sfu = new ServletFileUpload(new DiskFileItemFactory());

List items = sfu.parseRequest(request);

Iterator iter = items.iterator();

while(iter.hasNext()){
    FileItem item = (FileItem) iter.next();
    String name = item.getFieldName(); //키값 즉 이름을 추출

    if(item.isFormField()) {
        //제목,내용 등 사진을 제외한 나머지 항목들을 차례대로 추출
        String value = item.getString("utf-8");
        if (name.equals("title")) title = value;
        else if (name.equals("content")) content = value;
    } else {
        //사진에 관련된 즉 사진이름과 사진파일 추출
        if (name.equals("image")) {

```

```

        iname = item.getName();
        ifile = item.get();

        String root = application.getRealPath(java.io.File.separator);
        FileUtil.saveImage(root, iname, ifile);

    }
}
}

DAOmember.boardinsert(title, content, iname);

%>

```

filedetail.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ page import = "db.*" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<%
    String no = "3";

    DTOfile file = DAOfile.fileDetail(no);

    String img = file.getIname();
    String imgstr = "";
    if (img != null) {
        imgstr = "images/" + img;
    }
%>

<br><br>
    <%=file.getBid()%>
    <%=file.getTitle()%>
    <%=file.getContent()%>
    <%=file.getBdate()%>
</body>
</html>

```



3 1 null 2022-08-18 15:54:17

Webmarket - Board를 이용해서 작업 시작.

boardList.jsp

```

<%@page import="db.*"%>
<%@page import="java.util.*"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<%@ include file = "../header.jsp" %>

<div class="alert alert-secondary" role="alert">
<div class="container">
    <h1 class = "display-3">Board List</h1>
</div>
</div>
<div class="container w-70">
<table class="table table-hover table-primary">
    <thead>
        <tr>
            <th scope="col">#</th>
            <th scope="col">Title</th>
            <th scope="col">Content</th>
        </tr>
    </thead>
    <tbody>

        <%
        ArrayList<DTObord> files = DAOboard.boardList();

        for (DTObord file : files) {
        %>

            <tr>
                <th scope="row"><%=file.getBid()%></th>
                <td> <a href="filedetail.jsp?no=<%=file.getBid()%>"><%=file.getTitle()%></a></td>
                <td> <a href="filedetail.jsp?no=<%=file.getBid()%>"><%=file.getContent()%></a></td>
            </tr>

        <%
        }
        %>

    </tbody>
</table>
</div>

    <br>

<%@ include file = "../footer.jsp" %>

</body>
</html>

```

Board List

#	Title	Content
1	1	null
2	asdfasdf	null
3	1	null
18	2	null
19	asdf	asdfas

[사진 등록](#)

boardinput.jsp

```

<%@page import="db.*"%>
<%@page import="util.*"%>
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>

<%@ page import="org.apache.commons.fileupload.*" %>
<%@ page import="org.apache.commons.fileupload.disk.*" %>
<%@ page import="org.apache.commons.fileupload.servlet.*" %>

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

<%
    String title = null;
    String content = null;
    String iname = null;
    byte[] ifile = null;

    ServletFileUpload sfu = new ServletFileUpload(new DiskFileItemFactory());

    List items = sfu.parseRequest(request);

    Iterator iter = items.iterator();

    while(iter.hasNext()){
        FileItem item = (FileItem) iter.next();
        String name = item.getFieldName(); //키값 즉 이름을 추출

        if(item.isFormField()) {
            //제목,내용 등 사진을 제외한 나머지 항목들을 차례대로 추출
            String value = item.getString("utf-8");
            if (name.equals("title")) title = value;
            else if (name.equals("content")) content = value;

        } else {
            //사진에 관련된 즉 사진이름과 사진파일 추출
            if (name.equals("image")) {

```

```

        iname = item.getName();
        ifile = item.get();

        String root = application.getRealPath(java.io.File.separator);
        FileUtil.saveImage(root, iname, ifile);

    }
}

DAOboard.boardinsert(title, content, iname);

response.sendRedirect("boardlist.jsp"); // 등록하자마자 바로 리스트를 보여줌.
%>

```

boarddetail.jsp

```

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ page import = "db.*" %>
<%@ page import = "java.sql.*" %>

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
<%
    String no = "3";

    DTOboard file = DAOboard.boardDetail(no);

    String img = file.getIname();
    String imgstr = "";
    if (img != null) {
        imgstr = "../images/" + img; // images 폴더는 board를 나가야 있다.
    }
%>

<br><br>
<%=file.getBid() %>
<%=file.getTitle() %>
<%=file.getContent() %>

<%=file.getBdate() %>
</body>
</html>

```



3 1 null 2022-08-18 15:54:17

목록

사진 등록

boardinputpage.jsp

```
<!-- 자료를 받는 화면 boardinputpage.jsp -->

<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<!DOCTYPE html>
<%@ page import="java.util.*" %>

<html>
<head>
<meta charset="UTF-8">
<title>Board_Input</title>

</head>
<body>
<!-- CSS only -->
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.0/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-gH2yIJqKdNHPEq"

<%@ include file = "../header.jsp" %>

<div class="alert alert-secondary" role="alert">
<div class="container">
    <h1 class = "display-3">Board</h1>
</div>
</div>

<div class="container">
<form action="boardinput.jsp" method="post" enctype="multipart/form-data">

    <div class="form-group row">
        <label class="col-sm-2">Title</label>
        <div class="col-sm-3">
            <textarea name="title" rows="1" cols="40" class="form-control" placeholder="제목을 입력하세요"></textarea>
        </div>
    </div>

    <div class="form-group row">
        <label class="col-sm-2">Content</label>
        <div class="col-sm-3">
            <textarea name="Content" rows="3" cols="40" class="form-control" placeholder="내용을 입력하세요"></textarea>
        </div>
    </div>

    <div class="form-group row">
        <div class="col-sm-5">
            <input type="file" name="image" class="form-control" id="inputGroupFile04" aria-describedby="inputGroupFileAddon04" aria-label=""
        </div>
    </div>

    <div class="form-group row">
        <div class="col-sm-offset-2 col-sm-10">
            <input type="submit" class="btn btn-primary" value="등록">
            <input type="reset" class="btn btn-danger" value="취소" onclick="reset()">
        </div>
    </div>

</form>
</div>

<%@ include file = "../footer.jsp" %>

<!-- JavaScript Bundle with Popper -->
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.0/dist/js/bootstrap.bundle.min.js" integrity="sha384-A3rJD856KowSb7dwlZdYEk039"

</body>
</html>
```

Board

Title

Content

파일 선택

src - db - DAOboard.java

```

package db;

import java.sql.*;
import java.util.ArrayList;

import javax.naming.NamingException;

import util.*;

public class DAOboard {
    // C create R read U update D delete
    //회원 가입처리 (=테이블에 데이터 넣기)
    public static int boardinsert(String title, String content, String iname) throws NamingException, SQLException {

        Connection conn = null;
        PreparedStatement stmt = null;
        try {

            String sql = "INSERT INTO board(title, content, iname) VALUES(?,?,?)";
            //Connectionpool 이용
            conn = ConnectionPool.get();

            stmt = conn.prepareStatement(sql);
            stmt.setString(1, title);
            stmt.setString(2, content);
            stmt.setString(3, iname);

            int result = stmt.executeUpdate();
            //결과가 성공시 1, 실패시 2로 넘어온다.
            return result;
        } finally {
            stmt.close();
            conn.close();
        }
    }

    public static ArrayList<DTObboard> boardList() throws NamingException, SQLException{
        Connection conn = null;
        PreparedStatement stmt = null;
        ResultSet rs = null;

        String sql = "SELECT * FROM board";

        conn = ConnectionPool.get();
        stmt = conn.prepareStatement(sql);
        rs = stmt.executeQuery();

        ArrayList<DTObboard> files = new ArrayList<DTObboard>();

        while(rs.next()) {

```



```

        files.add(new DTOboard(rs.getString(1),
                                rs.getString(2),
                                rs.getString(3),
                                rs.getString(4),
                                rs.getString(5)));
    }
    return files;
}

public static DTOboard boardDetail(String bid) throws NamingException, SQLException {
    Connection conn = null;
    PreparedStatement stmt = null;
    ResultSet rs = null;

    String sql = "SELECT * FROM board WHERE bid=? ";
    conn= ConnectionPool.get();
    stmt = conn.prepareStatement(sql);
    stmt.setString(1, bid);
    rs = stmt.executeQuery();

    rs.next();

    bid = rs.getString(1);
    String title = rs.getString(2);
    String content = rs.getString(3);
    String iname = rs.getString(4);
    String bdate = rs.getString(5);

    DTOboard file = new DTOboard(bid,title,content,iname,bdate);

    return file;
}
}

```

src - db - DTOboard.java

```

package db;

public class DTOboard {

    private String bid;
    private String title;
    private String content;
    private String iname;
    private String bdate;

    public String getBid() {
        return bid;
    }
    public void setBid(String bid) {
        this.bid = bid;
    }
    public String getTitle() {
        return title;
    }
    public void setTitle(String title) {
        this.title = title;
    }
    public String getContent() {
        return content;
    }
    public void setContent(String content) {
        this.content = content;
    }
    public String getIname() {
        return iname;
    }
    public void setIname(String iname) {
        this.iname = iname;
    }
    public String getBdate() {
        return bdate;
    }
    public void setBdate(String bdate) {
        this.bdate = bdate;
    }

    public DTOboard(String bid, String title, String content, String iname, String bdate) {
        super();
    }
}

```

```

        this.bid = bid;
        this.title = title;
        this.content = content;
        this.iname = iname;
        this.bdate = bdate;
    }
}

```

footer로 내리기

```

<nav class="navbar navbar-dark p-0 bg-warning fixed-bottom">
  <div class="container-fluid">
    <span class="navbar-brand mb-0 h1">© Austin Yoon</span>
    <form class="d-flex" role="search">
      test
    </form>
  </div>
</nav>

```

© Yongki Min

이동 링크 만들기

```

<div class="d-grid gap-2 col-6 mx-auto">
  <a href="boardlist.jsp" class="btn btn-primary" role="button">목록보기</a>
  <a href="boardinputpage.jsp" class="btn btn-secondary" role="button">등록하기</a>
</div>

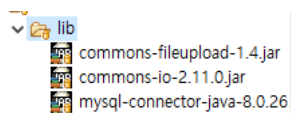
```

목록

사진 등록

주의사항

- 1) 사진을 올리기 위해 넣어야 하는 파일.



- 2) 오류가 conn 에서 생기면 throws 예외를 던져줘야 한다.

```

public static ArrayList<DTOboard> boardList() throws NamingException, SQLException{
    Connection conn = null;
    PreparedStatement stmt = null;
    ResultSet rs = null;

    String sql = "SELECT * FROM board";

    conn = ConnectionPool.get();
    ...
}

```
