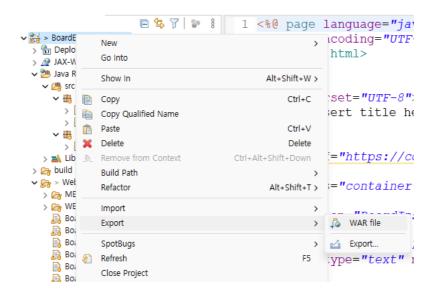
20230117 JDBC

■ Hour 1

cf) 프로젝트 export → WAR file의 형태로 export



Summer Note

- 주의사항
- DB에 필드 사이즈를 크게 LONGTEXT (4GB 까지 가능)로 사용해야만 한다.
 (code 형태로 DB에 등록)
- 2. 전송 방식을 "post"로 설정해야만 한다.
- 3. Bootstrap 5 를 이용하려면 without Bootstrap을 사용한 뒤 Bootstrap 5 를 따로 적용해야됨
- 모바일 화면 보기

<meta name="viewport" content="width=device-width, initial-scale=1" />

StartBootstrap

사이트 전체 구성을 쉽고 빠르게 템플릿으로 이용하는 사이트

■ Hour 2

file 전송

form 형태로 제목, 내용, 파일 전송

```
<form action="FboardInsert.jsp" method="post" enctype="multipart/form-data">
<div class="mb-3">
  <label for="exampleFormControlInput1" class="form-label">제목</label>
  <input type="text" name = "fbtitle" class="form-control" id="exampleFormControlInput1">
  </div>
  <div class="mb-3">
  <label for="exampleFormControlTextarea1" class="form-label">내용</label>
  <textarea class="form-control" name = "fbcontent" id="exampleFormControlTextarea1" rows="3"></textarea>
  </div>
  <div class="input-group mb-3"></textarea></div></ti>
```

```
<label class="input-group-text" for="inputGroupFile01">Upload</label>
<input type="file" class="form-control" id="inputGroupFile01" name="fbfile">
</div>
<button type="submit" class="btn btn-primary">등록</button>
</form>
```

- 사진 전송을 위해서는 mutilpart/form-data 를 이용해야 한다.
- 이를 이용하면 key 값, value 값 형태로 데이터를 넘기는 기존의 방식과는 다르게 전체 data를 하나의 덩어리로 넘긴다.
- 따라서 하나의 덩어리에서 원하는 data를 각각 추출해서 DB에 넣어야한다. (사진 자체는 이름만 DB에 올라가고 사진 자체는 서버의 특정 위치로 전송된다.)

파일 추출을 위한 준비 단계

▼ commons-fileupload-1.4.jar (lib에 설치)

https://commons.apache.org/proper/commons-fileupload/download_fileupload.cgi

▼ commons-io-2.11.0.jar (lib에 설치)

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



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

■ Hour 3

추출에 필요한 기본 메서드 정리

isFormField()

• 요소가 key 값, value 값 쌍으로 구성된 필드를 찾아낸다.

getFieldName()

• key 값 속성을 추출

getString()

value 값을 추출

getName()

• 사진(파일) 이름을 추출

get()

• 사진(파일) 자체를 추출

form 형태로 전송한 데이터를 DB에 insert

```
<%
request.setCharacterEncoding("UTF-8"); // 한글 처리
```

```
String fbtitle = null;  // 계시물 제목
String fbwriter = "asd";  // 작성자
String fbcontent = null;  // 게시말 내용
String fbfile = null;  // 사진 이름
byte[] fbu = null:
byte[] fbu = 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(); // key 값 속성 추출 if(item.isFormField()) { // key 값, value 값 형태의 data 추출
    String value = item.getString("UTF-8");
if(name.equals("fbtitle")){
       fbtitle = value;
    } else if (name.equals("fbcontent")) {
       fbcontent = value;
   } else {
     if(name.equals("fbfile")){
      fbfile = item.getName();
       fbu = item.get();
       String root = application.getRealPath(java.io.File.separator);
      FileUtil.saveImage(root, fbfile, fbu);
int result = FboardDAO.insert(fbtitle, fbwriter, fbcontent, fbfile);
if(result == 1){
  out.print("success");
} else {
  out.print("fail");
}
```

DiskFileItemFactory 클래스

• 업로드 파일의 크기가 지정한 크기를 넘기 전까지는 업로드 한 파일 데이터를 메모리에 저장하고 지정한 크기를 넘길 경우 임시 디렉 터리에 파일로 저장

파일을 서버에 저장하기 위한 방법

- DB내부에 파일을 직접 넣는 방법 (Summernote 사용)
- 서버의 특정 위치에 파일을 그대로 저장하고 DB에는 이름과 경로만 저장하는 방법 (주로사용)
 - $_{
 ightarrow}$ 전자의 경우는 파일의 크기에 비례해 테이블의 크기가 기하급수적으로 커져 유지비용 증가

파일을 서버의 특정 위치에 전송하는 방법

util → FileUtil.java

```
}
```

파일 업로드

▼ FboardDAO.java

```
package jdbc;
import java.sql.Connection;
import java.sql.PreparedStatement;
{\tt import java.sql.SQLException;}
import javax.naming.NamingException;
import util.ConnectionPool;
public class FboardDAO {
  public static int insert(String btitle, String bwriter, String bcontent, String bfile) throws NamingException, SQLException {
   String sql = "INSERT INTO fboard (btitle, bwriter, bcontent, bfile) VALUES(?,?,?,?)";
   Connection conn = ConnectionPool.get();
   PreparedStatement pstmt = conn.prepareStatement(sql);
     pstmt.setString(1, btitle);
     pstmt.setString(2, bwriter);
     pstmt.setString(3, bcontent);
     pstmt.setString(4, bfile);
   int result = pstmt.executeUpdate();
   return result;
}
```

▼ FboardInsert.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"</pre>
   pageEncoding="UTF-8"%>
<%@ page import="java.util.*"%>
<%@ page import="java.io.*" %>
<%@ page import="org.apache.commons.fileupload.*" %>
<%@ page import="org.apache.commons.fileupload.disk.*" %>
<%@ page import="org.apache.commons.fileupload.servlet.*" %>
<%@ page import="jdbc.*"%>
<%@ page import="util.FileUtil"%>
 request.setCharacterEncoding("utf-8"); //한글 처리
  String fbtitle = null; //게시물 제목
  String fbcontent = null; //게시물 내용
 String fbfile = null; //사진 이름
String fbwriter = "someone"; //작성자는 임시로 설정, 실제로는 세션에서 읽어오자
                          //사진
  byte[] fbu = 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 속성 추출 if(item.isFormField()) { // 키값 밸류값 형태의 데이터 추출
     String value = item.getString("utf-8");
if (name.equals("fbtitle")) fbtitle = value;
      else if (name.equals("fbcontent")) fbcontent = value;
    } else {
      if (name.equals("fbfile")) {
        fbfile = item.getName();
        fbu = item.get();
        String root = application.getRealPath(java.io.File.separator);
```

```
FileUtil.saveImage(root, fbfile, fbu);
}

int result = FboardDAO.insert(fbtitle, fbwriter, fbcontent, fbfile);

if (result == 1) {
    out.print("success");
}else {
    out.print("fail");
}
```

▼ FboardDTO.java

```
package jdbc;
public class FboardDTO {
 private String bno;
 private String btitle;
  private String bwriter;
  private String bcontent;
  private String bfile;
  private String bdate;
  public String getBno() {
   return bno;
 public void setBno(String bno) {
  this.bno = bno;
  public String getBtitle() {
  return btitle;
  public void setBtitle(String btitle) {
  this.btitle = btitle;
 public String getBwriter() {
   return bwriter;
 public void setBwriter(String bwriter) {
   this.bwriter = bwriter;
  public String getBcontent() {
   return bcontent;
  public void setBcontent(String bcontent) {
   this.bcontent = bcontent;
 public String getBfile() {
  public void setBfile(String bfile) {
  this.bfile = bfile;
 public String getBdate() {
  return bdate;
 public void setBdate(String bdate) {
 this.bdate = bdate;
 public FboardDTO(String bno, String btitle, String bwriter, String bcontent, String bfile, String bdate) {
   this.bno = bno;
   this.btitle = btitle;
   this.bwriter = bwriter;
this.bcontent = bcontent;
    this.bfile = bfile;
   this.bdate = bdate;
```

▼ getList 메소드

```
public static ArrayList<FboardDT0> getList()
   throws NamingException, SQLException {
```

■ Hour 4

DB에 올라간 사진 표시

▼ FboardList.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"</pre>
          pageEncoding="UTF-8"%>
 <%@ page import="jdbc.*, java.util.*" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>글 목록</title>
</head>
<body>
k href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-GLf"
     #
               title
               writer
               content
               file
              date
          </thead>
      <%
    ArrayList<FboardDTO> boards = FboardDAO.getList();
      for(FboardDTO fboard : boards){
          String img = fboard.getBfile();
          String imgstr = "";
          if(img != null) {
               imgstr = "<img src='images/" + img + "' width=200>";
                <modesize < td><modesize < td>
               <%=fboard.getBwriter()%>
               <%=fboard.getBcontent() %>
               <%=fboard.getBdate() %>
          <% }%>
     </body>
 </html>
```

#	title	writer	content	file	date
1	fhfhsgosbisipdspidvbpisbpispi	asd	svpis;oruvbz;soudvb;ziudvbikzduvbilzbus		2023-01- 17 11:53:08
2	title	asd	file	POLYGON, HA DONG GN	2023-01- 17 12:24:30
3	제에에에에에에에에에에에에에에에에에에에에에에에에에에에에에에네에네에네에네에	asd	내애 H		2023-01- 17 12:39:21

FboardList.jsp

■ Hour 5

- 기존 주소창 입력시 index.html은 생략 www.naver.com/(index.html)
- 주소 이동
 - <script>

window.location.href="main.jsp"

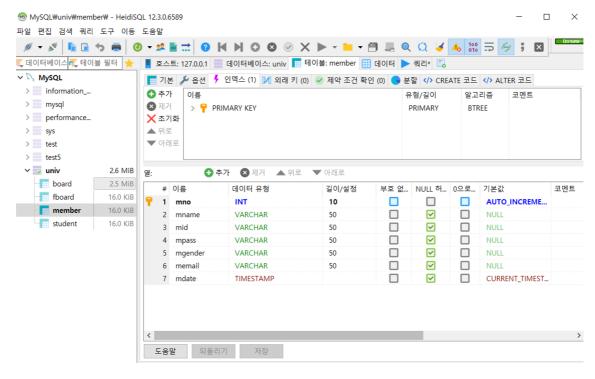
</script>

기본적으로는 index.html이 호출되지만 html에서는 jsp 문법을 사용할 수가 없어서 index.html 호출되면 자동으로 main.jsp 를 호출 하여 사용하면 편리하다

Signup

```
DB \rightarrow table \rightarrow (DTO) \rightarrow DAO \rightarrow signupCheck.jsp \rightarrow signupForm.jsp
```

▼ DB (table)



▼ MemberDTO

```
package jdbc;
public class MemberDTO {
  private int mno;
  private String mname;
  private String mid;
  private String mpass;
  private String mgender;
  private String memail;
  private String mdate;
  public int getMno() {
   return mno;
  public String getMname() {
   return mname;
  public String getMid() {
   return mid;
  public String getMpass() {
   return mpass;
  public String getMgender() {
   return mgender;
  public String getMemail() {
  public String getMdate() {
   return mdate:
  public MemberDTO(int mno, String mname, String mid, String mpass, String mgender, String memail, String mdate) {
    this.mname = mname:
    this.mid = mid:
    this.mpass = mpass;
    this.mgender = mgender;
    this.memail = memail;
    this.mdate = mdate;
}
```

▼ MemberDAO

```
package jdbc;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import javax.naming.NamingException;
import util.ConnectionPool;
public class MemberDAO {
 public static int insert(String mname, String mid, String mpass, String mgender, String memail ) throws SQLException, Naming
   // CRUD
    \textit{String sql} = \texttt{"INSERT INTO member (mname, mid, mpass, mgender, memail) VALUES(?,?,?,?,?)"; } \\
   Connection conn = ConnectionPool.get(); // 커넥션 사용
   PreparedStatement pstmt = conn.prepareStatement(sql);
   pstmt.setString(1, mname);
   pstmt.setString(2, mid);
   pstmt.setString(3, mpass);
   pstmt.setString(4, mgender);
   pstmt.setString(5, memail);
   int result = pstmt.executeUpdate();
// sql 구문 실행 성공 여부가 1과 0으로 돌아온다
   return result;
 public static int login(String mid, String mpass) throws SQLException, NamingException {
   String sql = "select mid, mpass from member where mid=?";
   Connection conn = ConnectionPool.get(); // 커넥션 사용
   PreparedStatement pstmt = conn.prepareStatement(sql);
   pstmt.setString(1, mid);
    ResultSet rs = pstmt.executeQuery();
   if(!rs.next()) {
     return 1; // DB에 회원정보가 없는 경우
   } else if (!mpass.equals(rs.getString(2))){
     return 2; // 비밀번호만 틀린 경우
   } else {
     return 0; // id와 비밀번호 모두 일치
   }
```

▼ signupCheck.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ page import="jdbc.*" %>
<%
String mid = request.getParameter("mid");
String mname = request.getParameter("mname");
String mpass = request.getParameter("mpass");
String mgender = request.getParameter("mgender");
String memail = request.getParameter("memail");

MemberDAO.insert(mname, mid, mpass, mgender, memail);

if(MemberDAO.insert(mname, mid, mpass, mgender, memail)==1){
    response.sendRedirect("login.jsp");
} else {
    out.print("fail");
}</pre>
```

▼ signupForm.jsp

```
<meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
       <meta name="description" content=""
       <meta name="author" content="">
       <title>SB Admin 2 - Register</title>
       <!-- Custom fonts for this template-->
       <link href="vendor/fontawesome-free/css/all.min.css" rel="stylesheet" type="text/css">
       link
             href="https://fonts.googleapis.com/css?family=Nunito:200,200i,300,300i,400,400i,600,600i,700,700i,800,800i,900,900i"
              rel="stylesheet">
       <!-- Custom styles for this template-->
       <link href="css/sb-admin-2.min.css" rel="stylesheet">
< link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384" integrity="sha3
</head>
<body class="bg-gradient-primary">
       <div class="container">
<form action="signupCheck.jsp" method="post">
              <div class="card o-hidden border-0 shadow-lg my-5">
                    <div class="card-body p-0">
                           <!-- Nested Row within Card Body -->
                           <div class="row">
                                  <div class="col-lg-5 d-none d-lg-block bg-register-image"></div>
                                  <div class="col-lg-7">
                                         <div class="p-5">
                                                <div class="text-center">
                                                      <h1 class="h4 text-gray-900 mb-4">회원 가입</h1>
                                                </div>
                                                <form class="user">
                                                      <div class="form-group row">
                                                              <div class="col-sm-6 mb-3 mb-sm-0">
                                                                    <input type="text" name="mname" class="form-control form-control-user" id="exampleFirs")</pre>
                                                                           placeholder="이름">
                                                              </div>
                                                              <div class="col-sm-6">
                                                                    <input type="text" name="mid" class="form-control form-control-user" id="exampleLastNa"</pre>
                                                                          placeholder="0|0|E|">
                                                              </div>
                                                      </div>
                                                      <div class="form-group row">
                                                              <div class="col-sm-6 mb-3 mb-sm-0">
                                                              <input type="email" name="memail" class="form-control form-control-user" id="exampleInputE"</pre>
                                                                    placeholder="이메일">
                                                              </div>
                                                              <div class="col-sm-6">
                           <select class="form-select" name="mgender" aria-label="Default select example">
                               <option selected>성별 선택</option>
                               <option value="male">남성</option>
                               <option value="female">여성</option>
                           </select>
                                                             </div>
                                                      </div>
                                                       <div class="form-group row">
                                                              <div class="col-sm-6 mb-3 mb-sm-0">
                                                                    <input type="password" name="mpass" class="form-control form-control-user"</pre>
                                                                           id="exampleInputPassword" placeholder="암호">
                                                              </div>
                                                              <div class="col-sm-6">
                                                                   <input type="password" class="form-control form-control-user"</pre>
                                                                          id="exampleRepeatPassword" placeholder="암호 확인">
                                                       </div>
                                                      <div class="d-flex justify-content-center">
                               <button type="submit" class="btn btn-primary">등록</button>
                                                      </div>
                                                      <a href="index.html" class="btn btn-google btn-user btn-block">
                                                              <i class="fab fa-google fa-fw"></i> Register with Google
                                                      </a>
                                                      <a href="index.html" class="btn btn-facebook btn-user btn-block">
                                                              <i class="fab fa-facebook-f fa-fw"></i> Register with Facebook
                                                </form>
                                                <div class="text-center">
                                                      <a class="small" href="forgot-password.html">Forgot Password?</a>
                                                </div>
                                                <div class="text-center">
```

```
<a class="small" href="login.html">Already have an account? Login!</a>
                                                                                                                       </div>
                                                                                                     </div>
                                                                                    </div>
                                                                    </div>
                                                  </div>
                                </div>
</form>
                 </div>
< script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.bundle.min.js" integrity="sha384-w76AqPfDkM" integrity="sha384-w76AqPf
               <!-- Bootstrap core JavaScript-->
                 <script src="vendor/jquery/jquery.min.js"></script>
                 <script src="vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
               <!-- Core plugin JavaScript-->
                <script src="vendor/jquery-easing/jquery.easing.min.js"></script>
                <!-- Custom scripts for all pages-->
                <script src="js/sb-admin-2.min.js"></script>
</html>
```

■ Hour 6

Login

 $login.jsp \rightarrow loginCheck.jsp \rightarrow DAO \rightarrow DTO \rightarrow DB$

▼ login.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"</pre>
            pageEncoding="UTF-8"%>
<!doctype html>
<html lang="en">
       <head>
             <meta charset="utf-8">
             <meta name="viewport" content="width=device-width, initial-scale=1">
             <meta name="description" content='
             <meta name="author" content="Mark Otto, Jacob Thornton, and Bootstrap contributors">
              <meta name="generator" content="Hugo 0.108.0">
             <title>Signin Template · Bootstrap v5.3</title>
             <link rel="canonical" href="https://getbootstrap.com/docs/5.3/examples/sign-in/">
< link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384" integrity="sha3
              <!-- Favicons -->
<link rel="apple-touch-icon" href="/docs/5.3/assets/img/favicons/apple-touch-icon.png" sizes="180x180">
< link \ rel="icon" \ href="/docs/5.3/assets/img/favicons/favicon-32x32.png" \ sizes="32x32" \ type="image/png"> type=
k rel="icon" href="/docs/5.3/assets/img/favicons/favicon-16x16 png" sizes="16x16" type="image/png">
<link rel="manifest" href="/docs/5.3/assets/img/favicons/manifest.json">
<link rel="mask-icon" href="/docs/5.3/assets/img/favicons/safari-pinned-tab.svg" color="#712cf9">
<link rel="icon" href="/docs/5.3/assets/img/favicons/favicon.ico">
<meta name="theme-color" content="#712cf9">
              <style>
                    .bd-placeholder-img {
                           font-size: 1.125rem
                           text-anchor: middle;
                           -webkit-user-select: none:
                            -moz-user-select: none;
                           user-select: none;
                     @media (min-width: 768px) {
                           .bd-placeholder-img-lg {
                                  font-size: 3.5rem;
                      .b-example-divider {
                            height: 3rem;
                            background-color: rgba(0, 0, 0, .1);
```

```
border: solid rgba(0, 0, 0, .15);
       border-width: 1px 0;
       box-shadow: inset 0 .5em 1.5em rgba(0, 0, 0, .1), inset 0 .125em .5em rgba(0, 0, 0, .15);
     .b-example-vr {
       flex-shrink: 0;
       width: 1.5rem;
       height: 100vh;
     .bi {
       vertical-align: -.125em;
       fill: currentColor;
     .nav-scroller {
       position: relative;
       z-index: 2;
       height: 2.75rem;
       overflow-y: hidden;
     .nav-scroller .nav {
       display: flex;
       flex-wrap: nowrap;
       padding-bottom: 1rem;
       margin-top: -1px;
       overflow-x: auto;
       text-align: center;
       white-space: nowrap;
       -webkit-overflow-scrolling: touch;
   </style>
   <!-- Custom styles for this template -->
   <link href="sign-in.css" rel="stylesheet">
 </head>
 <body class="text-center">
<div class="container col-md-4">
 <form action="loginCheck.jsp" method="post">
   <h1 class="h3 mb-3 fw-normal">Please sign in</h1>
   <div class="form-floating">
     <input type="text" class="form-control" id="floatingInput" placeholder="ID" name="mid">
     <label for="floatingInput">ID</label>
   </div>
   <div class="form-floating">
     <input type="password" class="form-control" id="floatingPassword" placeholder="Password" name="mpass">
     <label for="floatingPassword">Password</label>
   </div>
   <div class="checkbox mb-3">
     <label>
       <input type="checkbox" value="remember-me"> Remember me
     </label>
   </div>
   <button class="w-100 btn btn-lg btn-primary" type="submit">Sign in</button>
   © 2017-2022
 </form>
</div>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/js/bootstrap.bundle.min.js" integrity="sha384-w76AqPfDkM</pre>
 </body>
</html>
```

▼ loginCheck.jsp

```
response.sendRedirect("signupForm2.jsp");

return;
case 2:
// 비번이 틀린 경우 : 다시 로그인 페이지로 이동
response.sendRedirect("login.jsp");

return;
case 0:
// 로그인 성공 케이스 : 세션 생성 후 메인으로 이동
session.setAttribute("mid", mid);
response.sendRedirect("main.jsp");
return;
}
%>
```

▼ MemberDAO

```
package jdbc;
import java.sql.Connection;
\verb|import java.sql.PreparedStatement|;
import java.sql.ResultSet;
import java.sql.SQLException;
import javax.naming.NamingException;
import util.ConnectionPool;
public class MemberDAO {
  public static int login(String mid, String mpass) throws SQLException, NamingException {
    String sql = "select mid, mpass from member where mid=?";
    Connection conn = ConnectionPool.get(); // 커넥션 사용
    PreparedStatement pstmt = conn.prepareStatement(sql);
    pstmt.setString(1, mid);
    ResultSet rs = pstmt.executeQuery();
    if(!rs.next()) {
return 1; // DB에 회원정보가 없는 경우
    } else if (!mpass.equals(rs.getString(2))){
      return 2; // 비밀번호만 틀린 경우
    } else {
      return 0; // id와 비밀번호 모두 일치
    }
}
```

▼ MemberDTO

```
package jdbc;
public class MemberDTO {
 private int mno;
 private String mname;
 private String mid;
 private String mpass;
 private String mgender;
 private String memail;
 private String mdate;
 public int getMno() {
  return mno;
 public String getMname() {
  return mname;
 public String getMid() {
   return mid;
 public String getMpass() {
   return mpass;
 public String getMgender() {
   return mgender;
  public String getMemail() {
   return memail;
 public String getMdate() {
   return mdate;
```

```
public MemberDTO(int mno, String mname, String mid, String mpass, String mgender, String memail, String mdate) {
    super();
    this.mno = mno;
    this.mname = mname;
    this.mid = mid;
    this.mpass = mpass;
    this.mgender = mgender;
    this.memail = memail;
    this.mdate = mdate;
}
```

▼ DB

