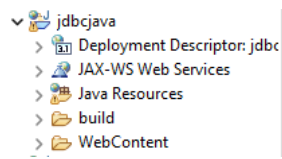
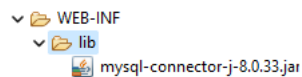


sql class day5

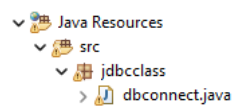
기본 프로젝트 생성



데이터베이스 연결 라이브러리 복사



데이터베이스 연결 클래스 작



```
package jdbcclass;

import java.sql.*;

public class dbconnect {

    public static Connection getConnection() throws ClassNotFoundException, SQLException {

        Class.forName("com.mysql.jdbc.Driver");

        Connection conn = null;

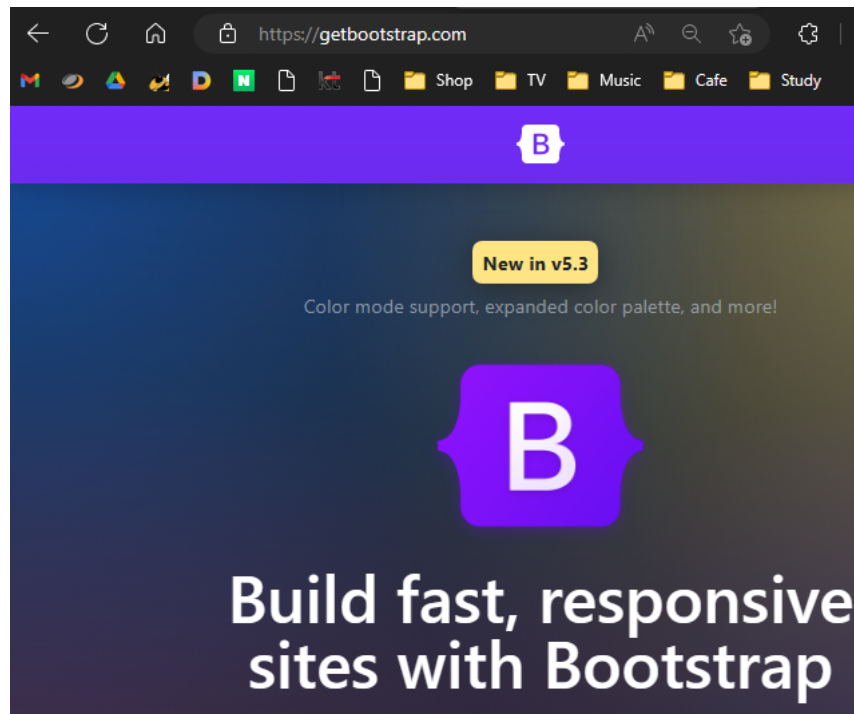
        String hostname = "jdbc:mysql://localhost:3306/class";
        String username = "root";
        String password = "0000";

        conn = DriverManager.getConnection(hostname, username, password);

        PreparedStatement pstmt = null;

        return conn;
    }
}
```

bootstrap



▼ C Read U D

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
    pageEncoding="UTF-8"%>
<%@ page import = "java.sql.*" %>
<%@ page import = "jdbc.class.*" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Read1</title>
</head>
<body>
<%

Connection conn = dbconnect.getConnection();

String sql = "SELECT * FROM user";

PreparedStatement pstmt = conn.prepareStatement(sql);

ResultSet rset = pstmt.executeQuery();

while(rset.next()) {

    String id = rset.getString("uid");
    String ps = rset.getString("ups");
    String addr = rset.getString("uaddr");
    String tel = rset.getString("utel");
    String name = rset.getString("uname");
    String gender = rset.getString("ugender");
    String age = rset.getString("uage");

    %>

    <%=id %>
    <%=addr %>
```

```

<%=tel %>
<a href="detail.jsp?no=<%=id %>"><%=name %></a>
<%=gender %>
<%=age %><br>

<%
}
%>
</body>
</html>

```

사이트 기본호출 파일인 index.html 은 명목상 만들고
실제적으로 보이는 파일은 main.jsp 로 구성한다.

```

index.html
1 <script>
2     window.location.href="main.jsp";
3 </script>

```

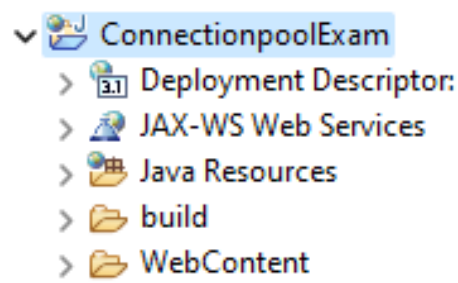
Connection Pool

커넥션 풀은 데이터베이스 연결 객체를 미리 생성하여 관리하는 기술입니다. 이렇게 미리 생성된 연결 객체를 사용하는 것으로, 매번 연결 객체를 생성하고 닫는 과정에서 발생하는 시간적 비용과 성능 저하를 줄일 수 있습니다. 커넥션 풀은 일반적으로 애플리케이션 서버에서 구현되며, 데이터베이스와의 연결을 관리하는 데 사용됩니다.

커넥션 풀은 미리 정의된 최대 연결 수를 가지며, 이를 넘지 않는 동시 연결 수를 유지합니다. **연결 객체를 사용한 후에는 해당 객체를 반환하여 다른 클라이언트에서 재사용할 수 있습니다.** 이렇게 함으로써, 클라이언트가 데이터베이스에 대한 연결을 요청할 때마다 새로운 연결 객체를 만드는 것을 방지할 수 있습니다.

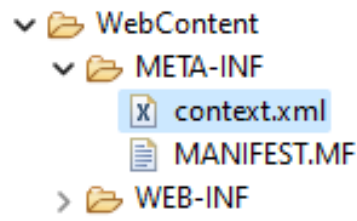
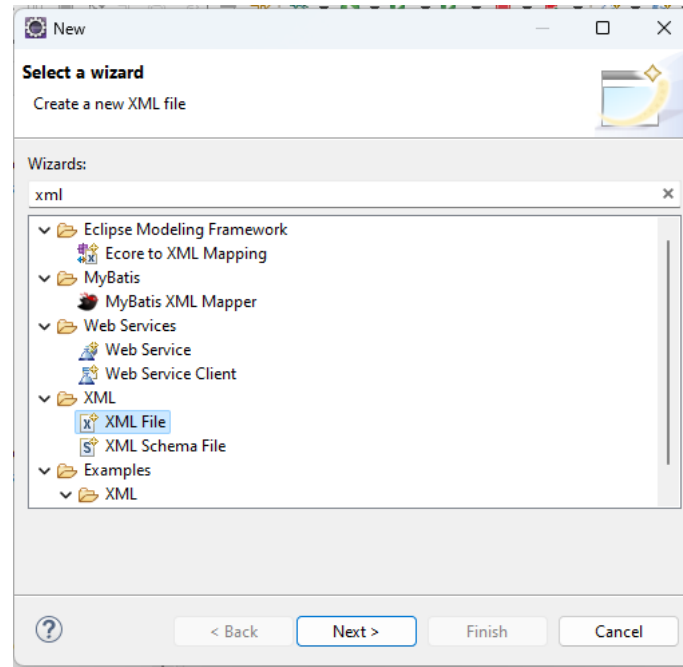
커넥션 풀은 애플리케이션의 성능 향상과 데이터베이스 연결 관리를 용이하게 하는 데 매우 유용합니다. 그러나 최대 동시 연결 수를 설정 함으로써, 높은 트래픽을 처리하는 애플리케이션에서는 성능 이슈가 발생할 수 있습니다. 이러한 경우, 커넥션 풀 크기를 조정하거나 다른 해결책을 탐색해야 할 수 있습니다.

새로운 프로젝트로 시작



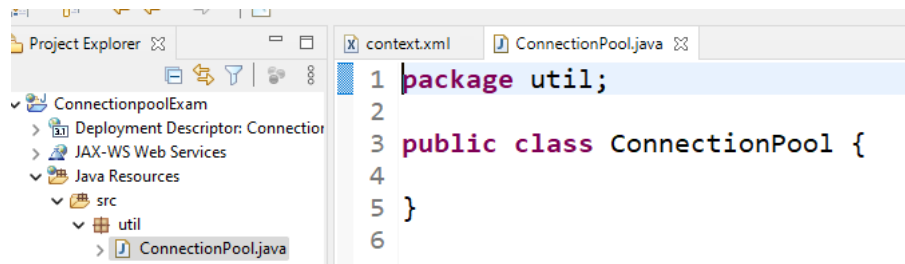
커넥션 풀 설정 3단계

1/3 Step context.xml 디비 연결에 필요한 정보들(아이디/비번 등등)을 설정



```
<?xml version="1.0" encoding="UTF-8"?>
<Context>    --> 주의 꼭 대문자로 Context
  <Resource name="jdbc/class"    --> DB 이름 설정  항상 jdbc/디비명
    auth="Container"
    type="javax.sql.DataSource"
    driverClassName="com.mysql.jdbc.Driver" --> maria/oracle 로 변경
    url="jdbc:mysql://localhost:3306/class?serverTimezone=UTC" --> 서버타임 설정 필수
    username="root"    --> DB아이디 설정
    password="00000"    --> DB비번 설정
    maxTotal="16"    --> 최대 커넥션 객체 갯수
    maxIdle="4"    --> 기본 객체 유지 갯수
    maxWaitMillis="-1" />
</Context>
```

2/3 Step ConnectionPool.java 연결 객체 사용을 위한 클래스 작성



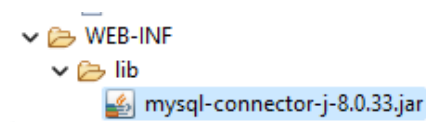
```
package util;

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/class");
        }
        return _ds.getConnection();
    }
}
```

3/3 Step



context.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<Context>
  <Resource name="jdbc/class"
    auth="Container"
    type="javax.sql.DataSource"
    driverClassName="com.mysql.jdbc.Driver"
    url="jdbc:mysql://localhost:3306/class?serverTimezone=UTC"
    username="root"
    password="0000"
    maxTotal="16"
    maxIdle="4"
    maxWaitMillis="-1" />
</Context>
```

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/class");
        }
        return _ds.getConnection();
    }
}

```

read.jsp

```

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

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

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title> READ.jdbcjava ver </title>
</head>
<body>

<%

    Connection conn = null;
    conn = ConnectionPool.get();

    String sql = "SELECT * FROM user";
    PreparedStatement pstmt = conn.prepareStatement(sql);
    ResultSet rset = pstmt.executeQuery();

    while(rset.next()){
        String uno = rset.getString("uno");
        String udate = rset.getString("udate");
        String uid = rset.getString("uid");
        String ups = rset.getString("ups");
        String uaddr = rset.getString("uaddr");
        String utel = rset.getString("utel");
        String uname = rset.getString("uname");
        String ugender = rset.getString("ugender");
        String uage = rset.getString("uage");

    %>

    <%=uno%> <%=update%> <%=uid%> <%=ups%> <%=uaddr%> <%=utel%> <a href="detail.jsp?no=<%=uno%>"><%=uname%></a> <%=ugender%> <%=uage%> <br>

    <%

        }

    %>

</body>
</html>

```

기본 테이블

```

<table class="table table-hover">

    <thead>
        <tr>
            <th scope="col">#</th>
            <th scope="col">First</th>
            <th scope="col">Last</th>
            <th scope="col">Handle</th>
        </tr>
    </thead>
    <tbody>

```

```

<tr>
  <th scope="row">1</th>
  <td>Mark</td>
  <td>Otto</td>
  <td>@mdo</td>
</tr>
<tr>
  <th scope="row">2</th>
  <td>Jacob</td>
  <td>Thornton</td>
  <td>@fat</td>
</tr>
<tr>
  <th scope="row">3</th>
  <td colspan="2">Larry the Bird</td>
  <td>@twitter</td>
</tr>
</tbody>
</table>

```

```

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

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

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title> READ.jdbcjava ver </title>
</head>
<body>
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-KK94CHF

```

```

<table class="table table-hover">

<thead>
<tr>
  <th scope="col">번호</th>
  <th scope="col">회원아이디</th>
  <th scope="col">회원주소</th>
  <th scope="col">회원전화번호</th>
  <th scope="col">회원성명</th>
  <th scope="col">회원성별</th>
  <th scope="col">회원나이</th>
  <th scope="col">회원가입일</th>
</tr>
</thead>
<tbody>
<%
    Connection conn = null;
    conn = ConnectionPool.get();

    String sql = "SELECT * FROM user";
    PreparedStatement pstmt = conn.prepareStatement(sql);
    ResultSet rset = pstmt.executeQuery();

    while(rset.next()){
        String uno = rset.getString("uno");
        String udate = rset.getString("update");
        String uid = rset.getString("uid");
        String ups = rset.getString("ups");
        String uaddr = rset.getString("uaddr");
        String utel = rset.getString("utel");
        String uname = rset.getString("uname");
        String ugender = rset.getString("ugender");
        String uage = rset.getString("uage");

%>
        <tr>
          <th scope="row"><%=uno%></th>
          <td><%=uid%></td>
          <td><%=uaddr%></td>
          <td><%=utel%></td>
          <td><a href="detail.jsp?no=<%=uno%>"><%=uname%></a></td>
          <td><%=ugender%></td>
          <td><%=uage%></td>
          <td><%=update%></td>
        </tr>

```

```

<%
}
%>

</tbody>
</table>

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/js/bootstrap.bundle.min.js" integrity="sha384-ENjd04Dr2bkBIFxQpe
</body>
</html>

```

- join.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>
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-KK94CHF
<!-- 헤더부분 -->
<%@ include file = "header.jsp" %>
회원가입

<form class="row g-3" action="create.jsp" method="get">
<div class="col-md-6">
    <label for="inputEmail4" class="form-label">아이디</label>
    <input type="text" name="id" class="form-control" id="inputEmail4">
</div>
<div class="col-md-6">
    <label for="inputPassword4" class="form-label">암호</label>
    <input type="password" name="ps" class="form-control" id="inputPassword4">
</div>
<div class="col-12">
    <label for="inputAddress" class="form-label">주소</label>
    <input type="text" name="adr" class="form-control" id="inputAddress" placeholder="1234 Main St">
</div>
<div class="col-12">
    <label for="inputAddress2" class="form-label">전화번호</label>
    <input type="text" name="tel" class="form-control" id="inputAddress2" placeholder="Apartment, studio, or floor">
</div>
<div class="col-md-6">
    <label for="inputCity" class="form-label">이름</label>
    <input type="text" name="name" class="form-control" id="inputCity">
</div>
<div class="col-md-4">
    <label for="inputState" class="form-label">성별</label>
    <select id="inputState" name="gender" class="form-select">
        <option selected>lady</option>
        <option>gentleman</option>
    </select>
</div>
<div class="col-md-2">
    <label for="inputZip" class="form-label">나이</label>
    <input type="text" name="age" class="form-control" id="inputZip">
</div>
<div class="col-12">
    <button type="submit" class="btn btn-primary">회원등록</button>
</div>
</form>

</body>
</html>

```

create.jsp


```

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

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

<%

    String id = request.getParameter("id");
    String ps = request.getParameter("ps");
    String addr = request.getParameter("addr");
    String tel = request.getParameter("tel");
    String name = request.getParameter("name");
    String gender = request.getParameter("gender");
    String age = request.getParameter("age");

    Connection conn = ConnectionPool.get();

    String sql = "INSERT INTO user (uid, ups, uaddr, utel, uname, ugender, uage) VALUES (?, ?, ?, ?, ?, ?, ?)";

    PreparedStatement pstmt = conn.prepareStatement(sql);
    pstmt.setString(1, id );
    pstmt.setString(2, ps);
    pstmt.setString(3, addr);
    pstmt.setString(4, tel);
    pstmt.setString(5, name);
    pstmt.setString(6, gender);
    pstmt.setString(7, age);

    pstmt.executeUpdate();

    response.sendRedirect("read.jsp");
%>

```

detail.jsp

```

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

<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Read2</title>
</head>
<body>
<%

    Connection conn = null;
    conn = ConnectionPool.get();

    int no = Integer.parseInt(request.getParameter("no"));

    String sql = "SELECT * FROM user WHERE uno = ?";

    PreparedStatement pstmt = conn.prepareStatement(sql);
    pstmt.setInt(1, no);

    ResultSet rset = pstmt.executeQuery();

    rset.next();

    String uno = rset.getString("uno");
    String udate = rset.getString("update");
    String uid = rset.getString("uid");
    String ups = rset.getString("ups");
    String uaddr = rset.getString("uaddr");
    String utel = rset.getString("utel");
    String uname = rset.getString("uname");
    String ugender = rset.getString("ugender");
    String uage = rset.getString("uage");

%>

<%=uno %> <br>
<%=update %><br>

```

```
<%=uid %><br>
<%=uaddr %><br>
<%=utel %> <br>
<%=uname %><br>
<%=ugender %><br>
<%=uage %><br>
```

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