mybatis

안화수

데이터베이스 접속 방식

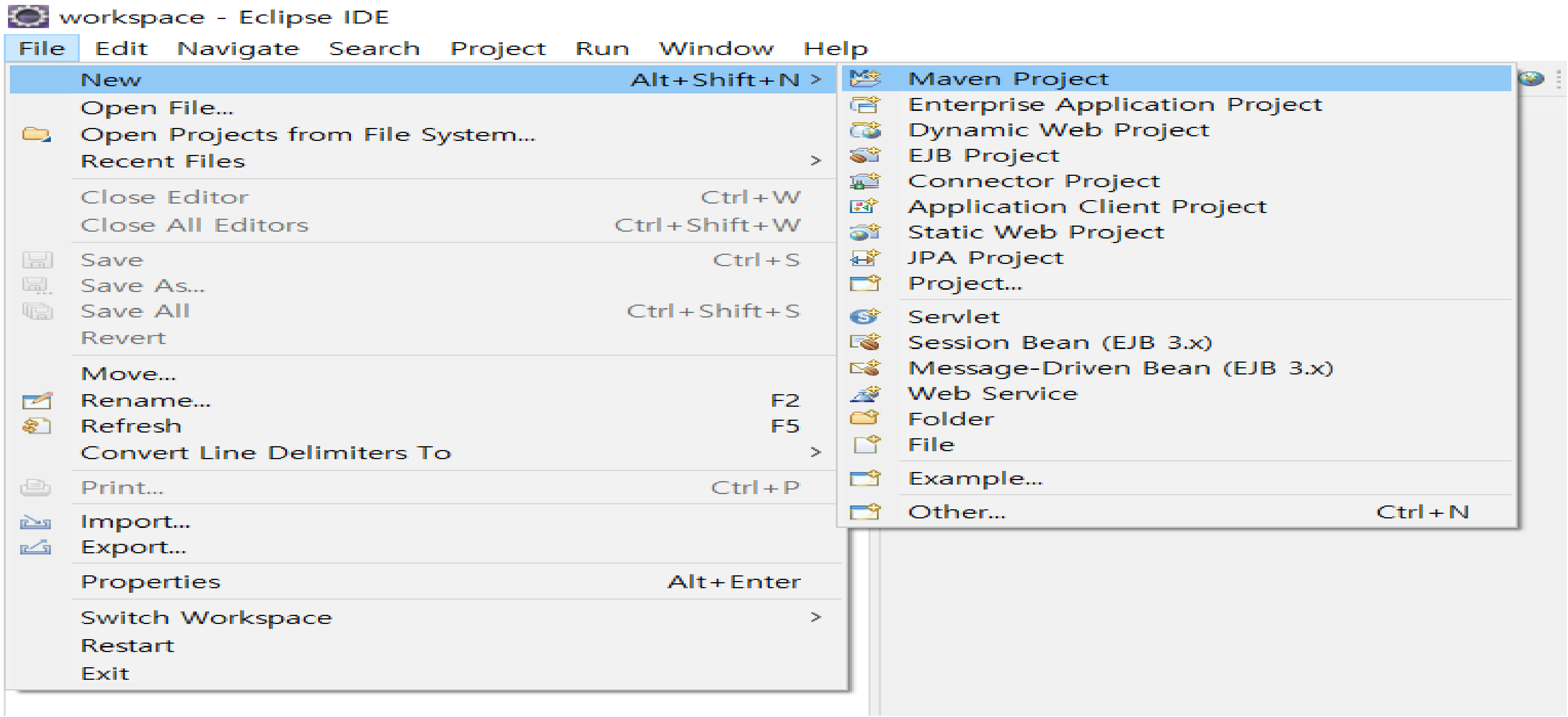
1. JDBC(Java DataBase Connectivity) 방식

2. DBCP(DataBase Connection Pool) 방식

3. ORM(Object Relational Mapping) 프레임워크
   ex) iBatis, MyBatis, hibernate, JPA etc

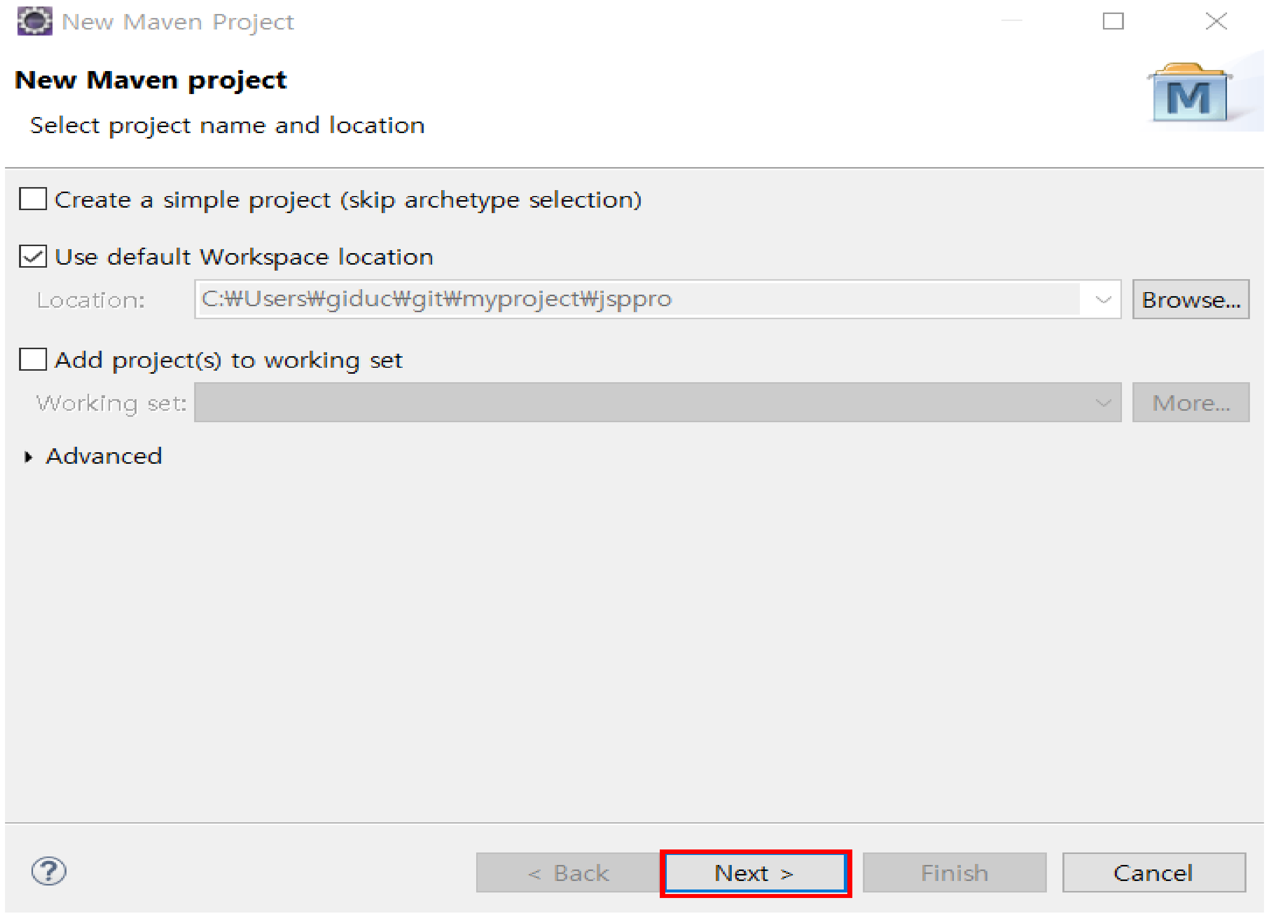
Maven Project 생성

- maven project



Maven Project 생성

- maven project



New Maven Project

New Maven project

Select project name and location

□ Create a simple project (skip archetype selection)

☑ Use default Workspace location

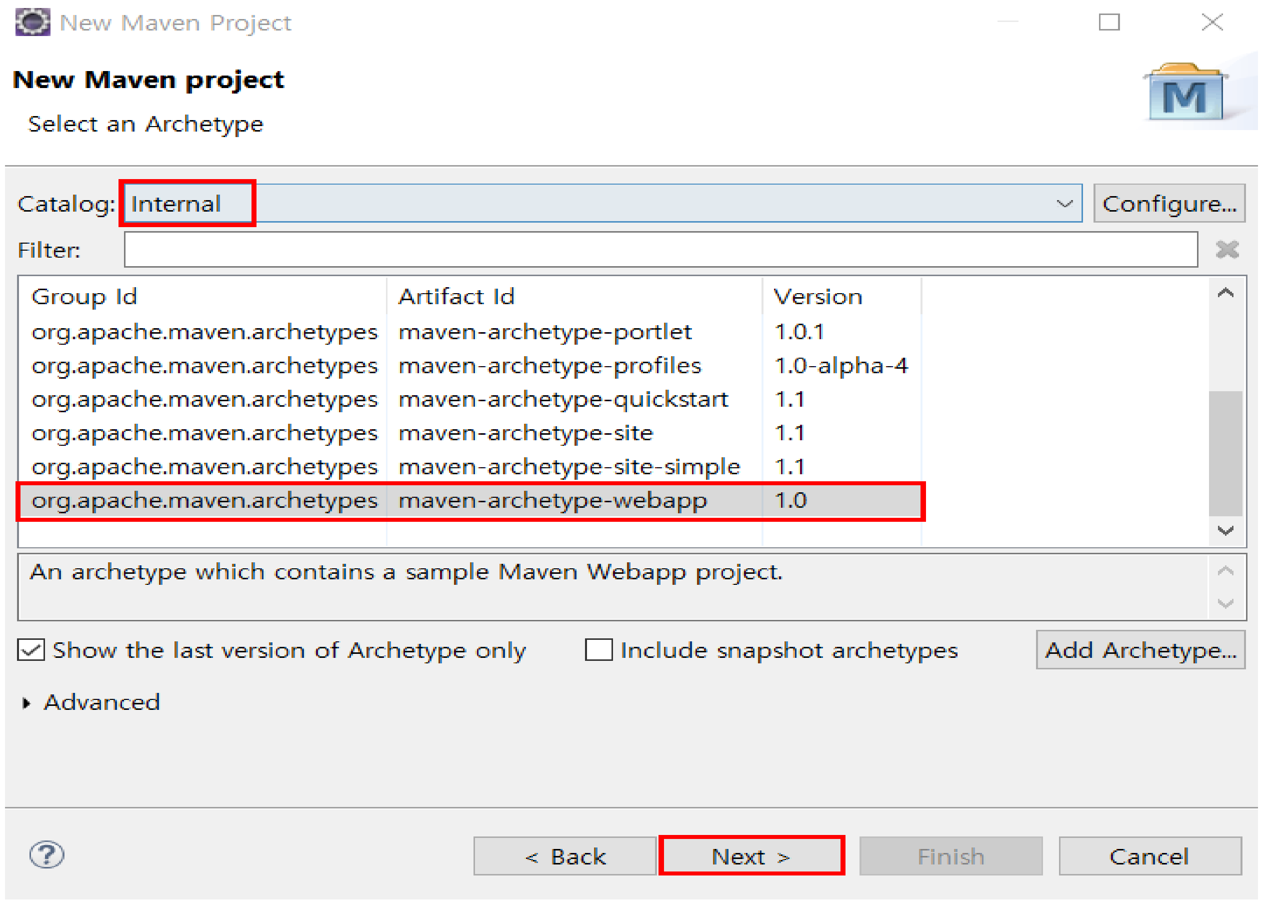
Location: C:₩Users₩giduc₩git₩myproject₩jsppro

□ Add project(s) to working set

Working set:

Maven Project 생성

- maven project



New Maven Project

New Maven project

Select an Archetype

Catalog: Internal

Filter:

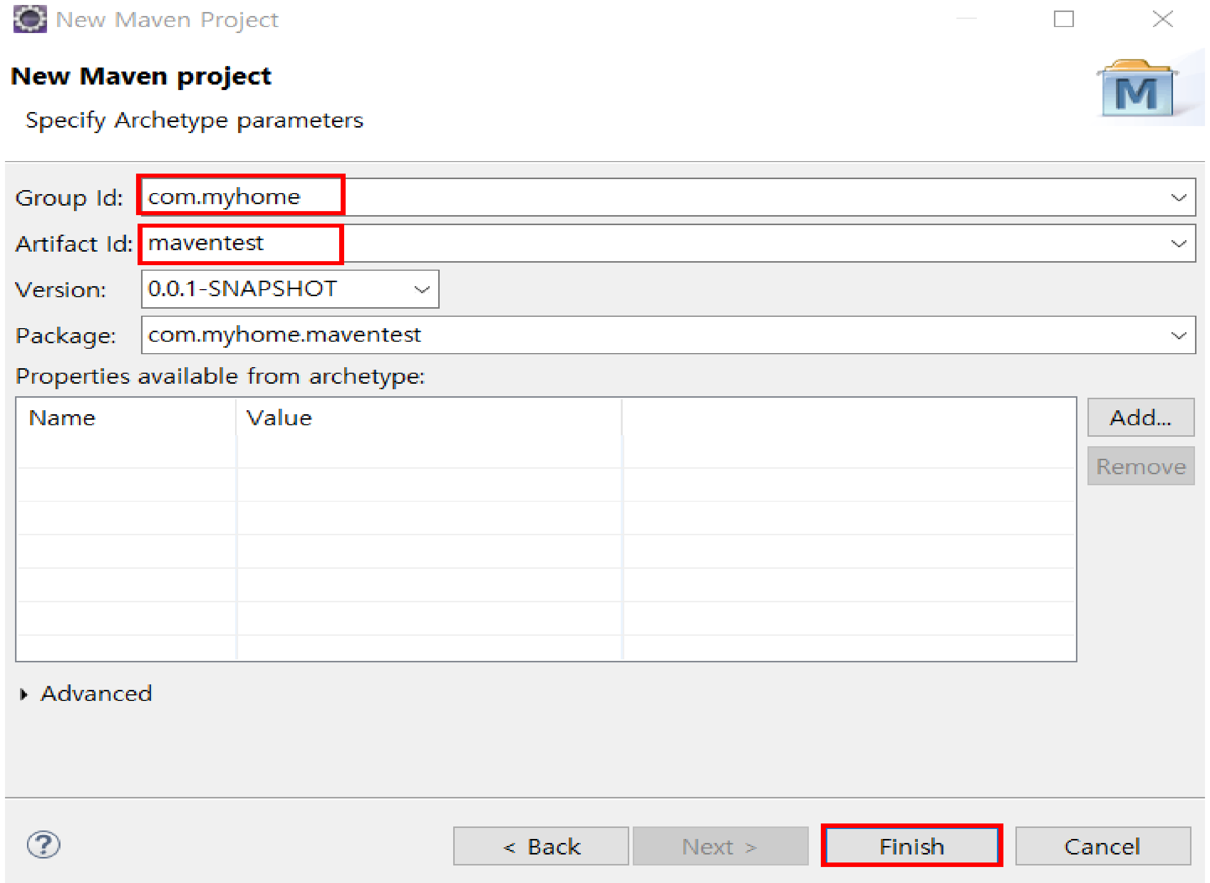
Group Id	Artifact Id	Version
org.apache.maven.archetypes	maven-archetype-portlet	1.0.1
org.apache.maven.archetypes	maven-archetype-profiles	1.0-alpha-4
org.apache.maven.archetypes	maven-archetype-quickstart	1.1
org.apache.maven.archetypes	maven-archetype-site	1.1
org.apache.maven.archetypes	maven-archetype-site-simple	1.1
org.apache.maven.archetypes	maven-archetype-webapp	1.0

An archetype which contains a sample Maven Webapp project.

☑ Show the last version of Archetype only ☐ Include snapshot archetypes

Maven Project 생성

- maven project



New Maven project

Specify Archetype parameters

Group Id: com.myhome

Artifact Id: maventest

Version: 0.0.1-SNAPSHOT

Package: com.myhome.maventest

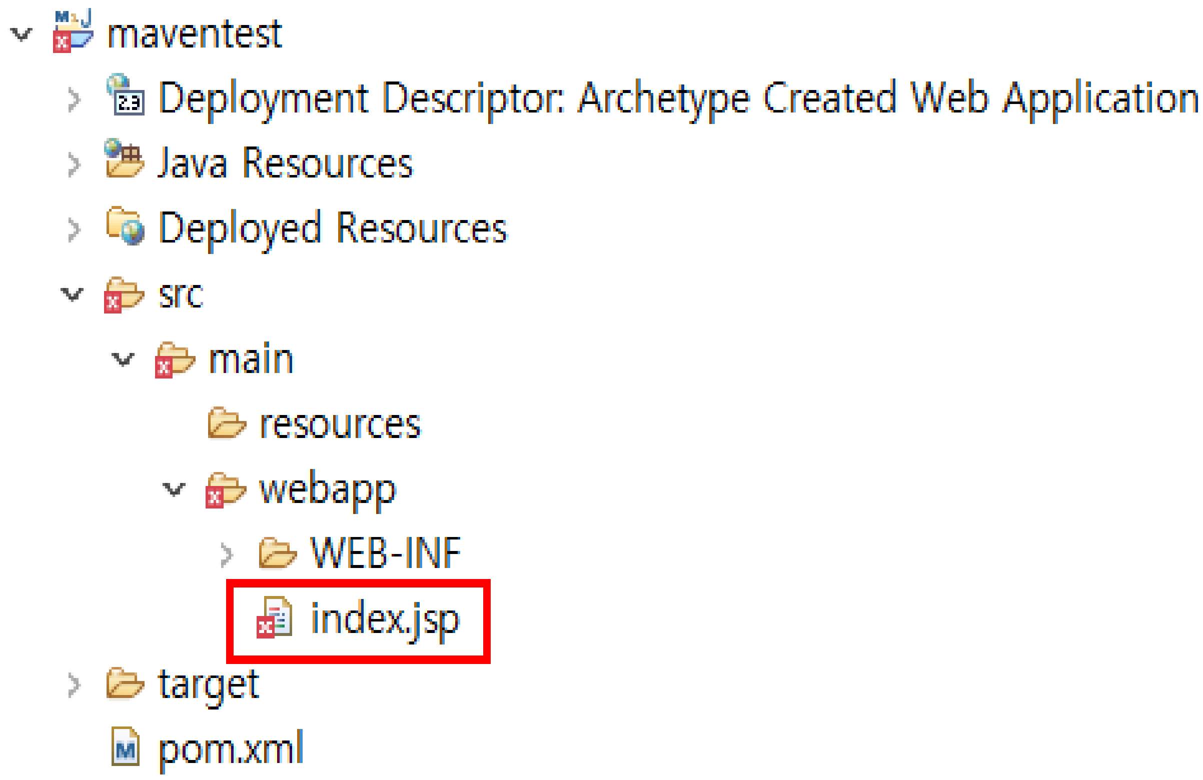
Properties available from archetype:

Name	Value

Maven Project 생성

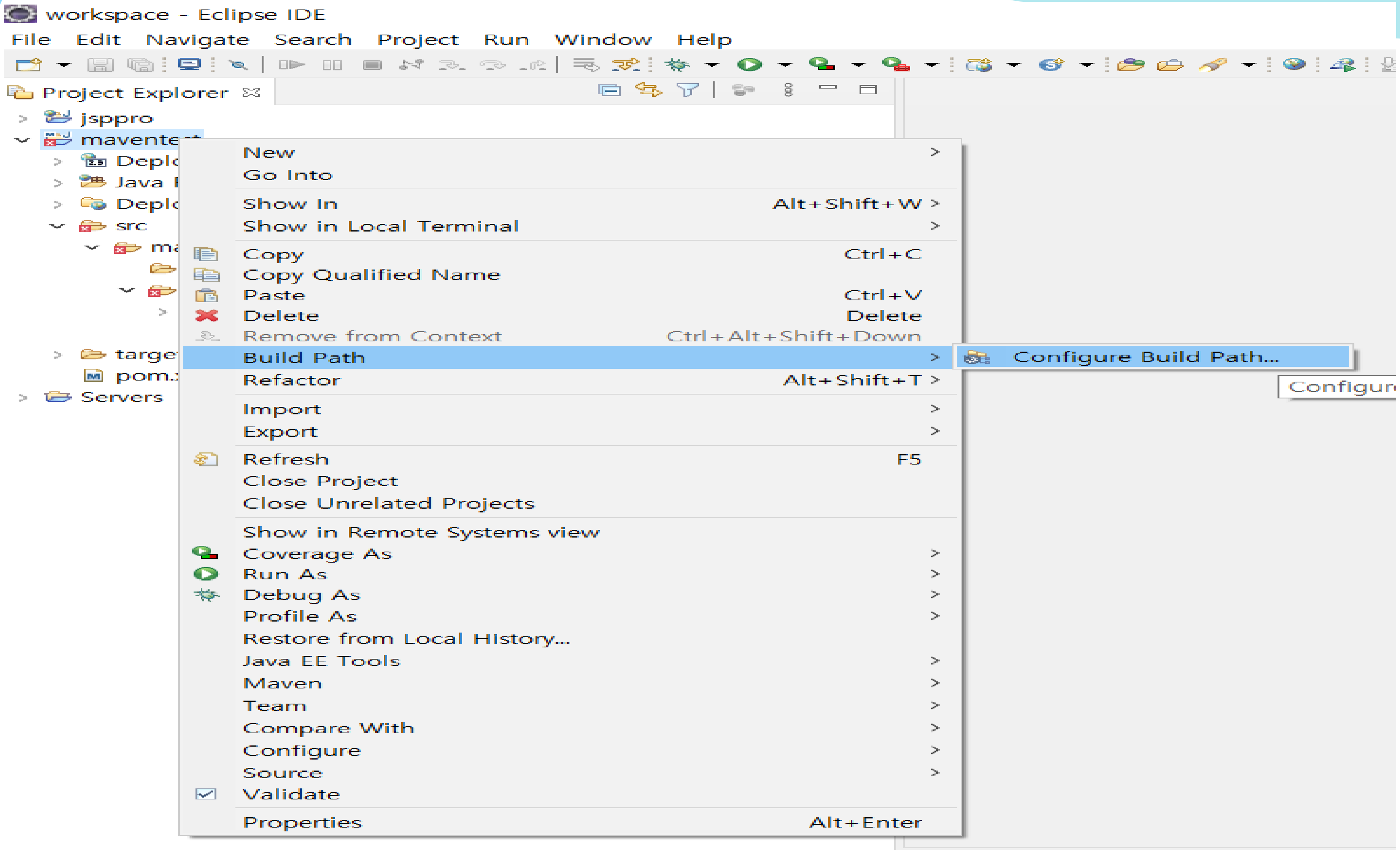
❖ maven project 에러발생

maven 프로젝트 생성후 index.jsp 파일에 에러가 발생하면, Apache Tomcat Library 를 추가하면 에러가 사라진다.

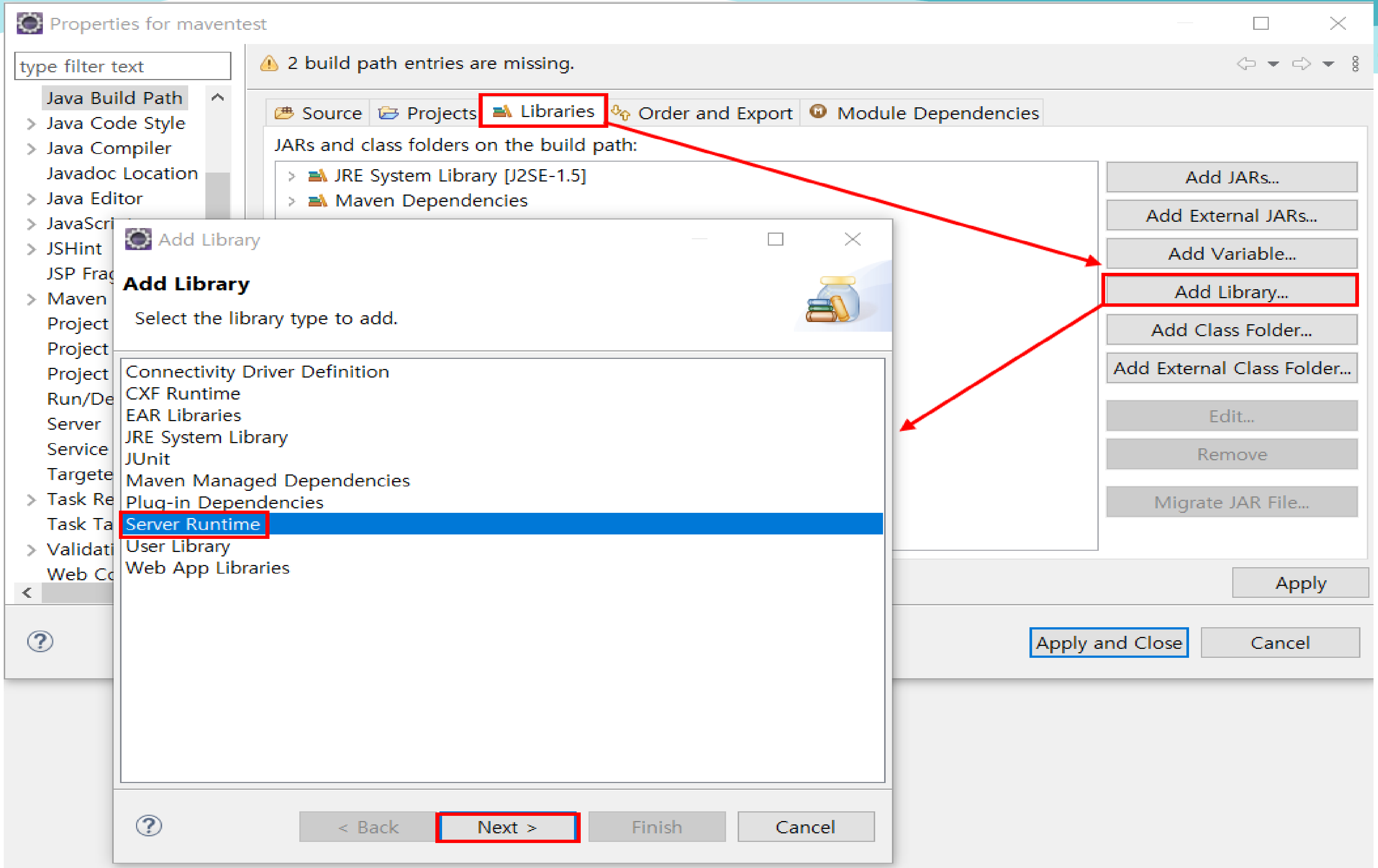


```
v maventest
  > Deployment Descriptor: Archetype Created Web Application
  > Java Resources
  > Deployed Resources
  v src
    v main
        resources
      v webapp
        > WEB-INF
          index.jsp
  > target
    pom.xml
```

Apache Tomcat Library 추가



Apache Tomcat Library 추가



2 build path entries are missing.

JARs and class folders on the build path:

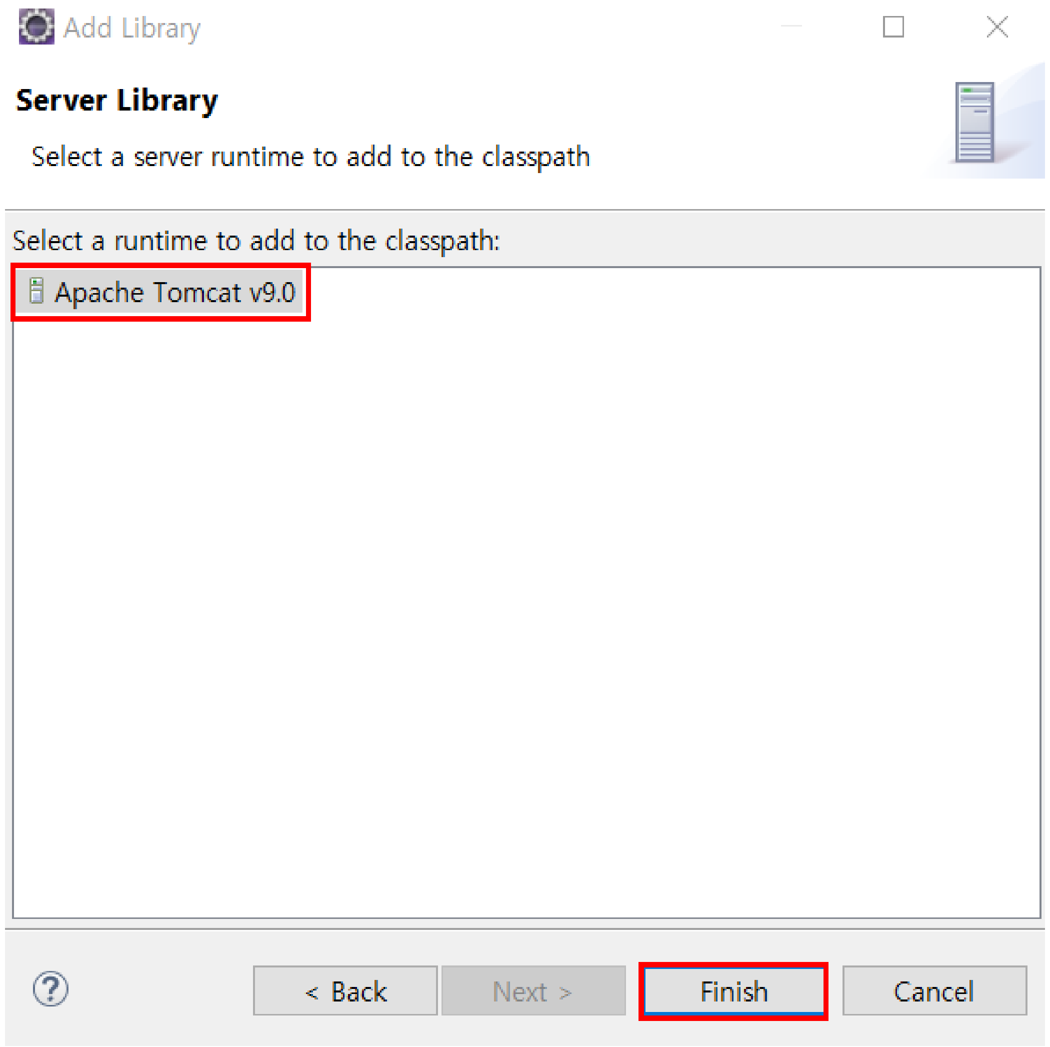
- JRE System Library [J2SE-1.5]
- Maven Dependencies

Add Library

Select the library type to add.

Connectivity Driver Definition
CXF Runtime
EAR Libraries
JRE System Library
JUnit
Maven Managed Dependencies
Plug-in Dependencies
Server Runtime
User Library
Web App Libraries

Apache Tomcat Library 추가



Server Library

Select a server runtime to add to the classpath

Select a runtime to add to the classpath:

Apache Tomcat v9.0

Maven Project 구조

maventest - src - main - java <--- Controller, Service, DTO, DAO

- **resources** <--- MyBatis의 환경설정 파일, SQL문 파일(*.xml)

- **webapp** <--- view페이지

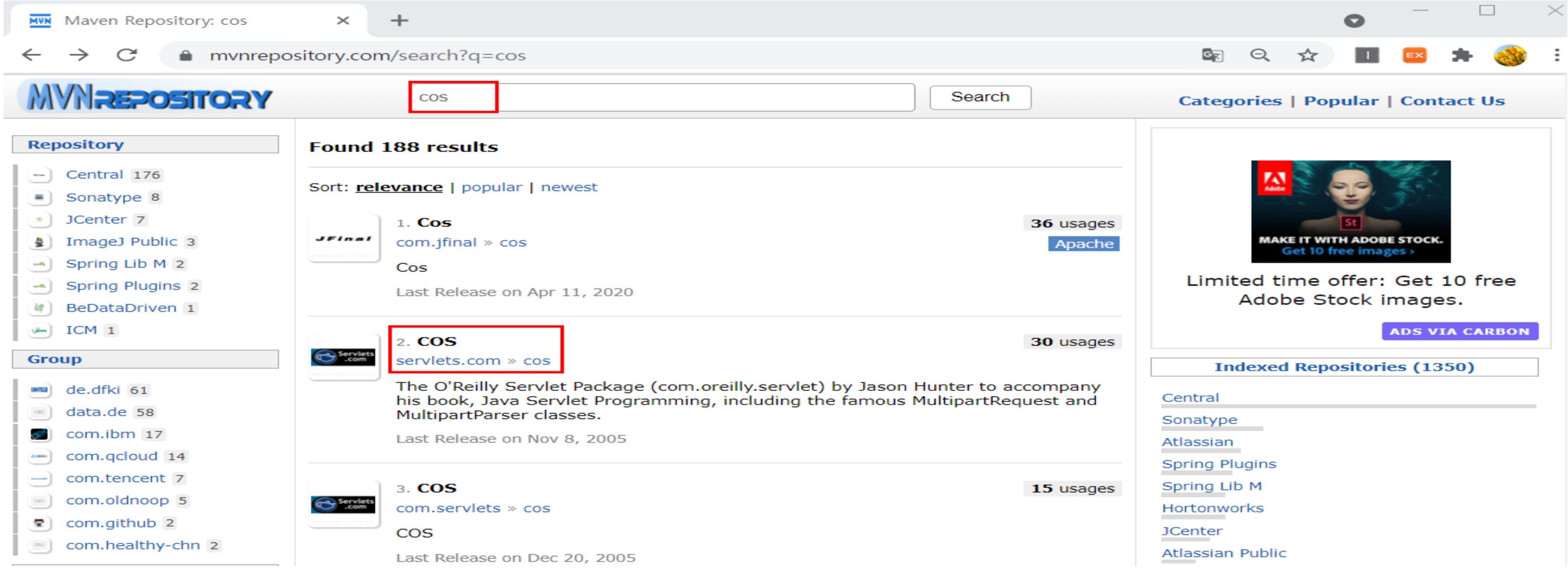
-WEB-INF - **web.xml** (project의 환경설정 파일)

- **pom.xml** (Maven 환경설정 파일)

의존 라이브러리 검색

- 의존 라이브러리 검색 (cos 검색)

http://mvnrepository.com


Maven Repository: cos
mvnrepository.com/search?q=cos
MVNREPOSITORY
cos
Search
Categories | Popular | Contact Us

Repository

Central	176
Sonatype	8
JCenter	7
ImageJ Public	3
Spring Lib M	2
Spring Plugins	2
BeDataDriven	1
ICM	1

Group

de.dfki	61
data.de	58
com.ibm	17
com.qcloud	14
com.tencent	7
com.oldnoop	5
com.github	2
com.healthy-chn	2

Found 188 results

Sort: **relevance** | popular | newest

1. **Cos** — 36 usages
com.jfinal » cos — Apache
Cos
Last Release on Apr 11, 2020

2. **COS** — 30 usages
servlets.com » cos
The O'Reilly Servlet Package (com.oreilly.servlet) by Jason Hunter to accompany his book, Java Servlet Programming, including the famous MultipartRequest and MultipartParser classes.
Last Release on Nov 8, 2005

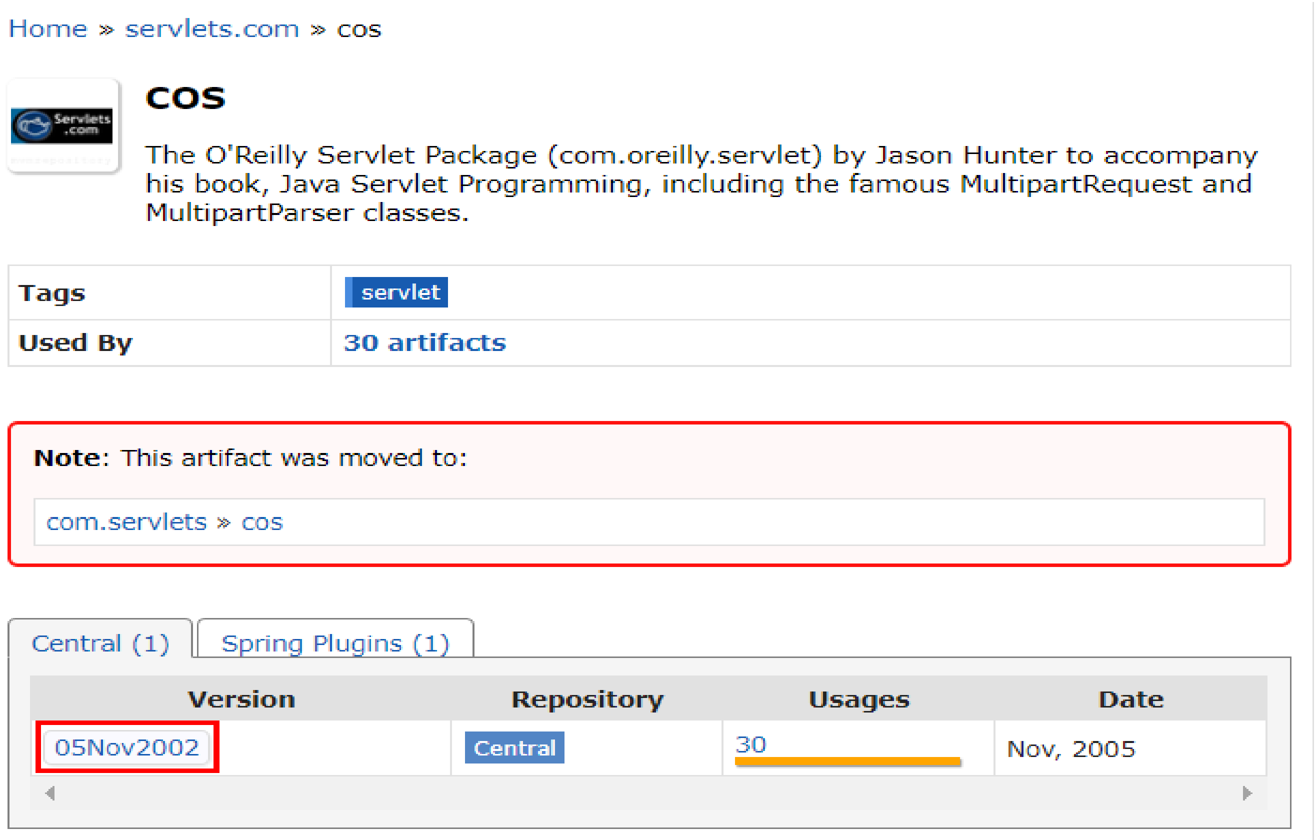
3. **COS** — 15 usages
com.servlets » cos
COS
Last Release on Dec 20, 2005

Indexed Repositories (1350)

- Central
- Sonatype
- Atlassian
- Spring Plugins
- Spring Lib M
- Hortonworks
- JCenter
- Atlassian Public

의존 라이브러리 검색

- 의존 라이브러리 검색 (cos 검색)



Home » servlets.com » cos

cos

The O'Reilly Servlet Package (com.oreilly.servlet) by Jason Hunter to accompany his book, Java Servlet Programming, including the famous MultipartRequest and MultipartParser classes.

Tags	servlet
Used By	**30 artifacts**

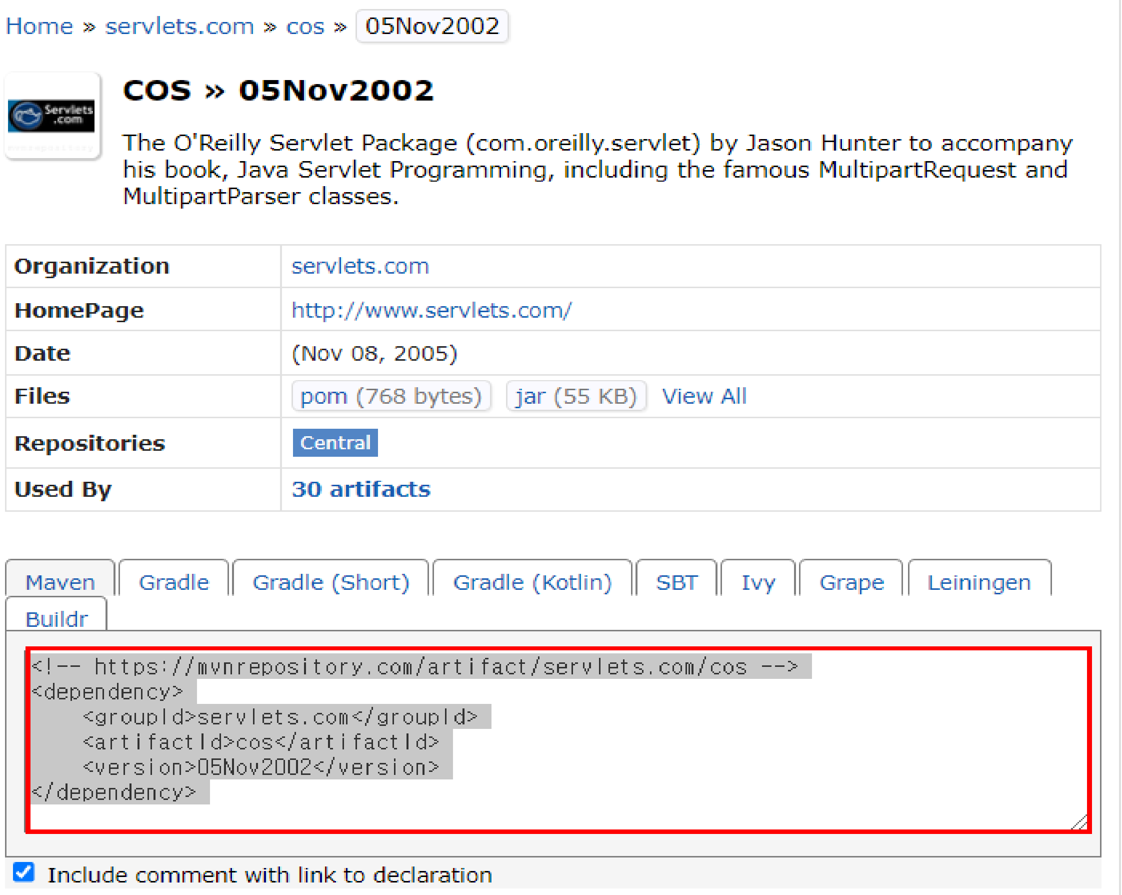
Note: This artifact was moved to:

com.servlets » cos

Version	Repository	Usages	Date
05Nov2002	Central	30	Nov, 2005

의존 라이브러리 검색

❖ 의존 라이브러리 검색 (cos 검색)



Home » servlets.com » cos » 05Nov2002

COS » 05Nov2002

The O'Reilly Servlet Package (com.oreilly.servlet) by Jason Hunter to accompany his book, Java Servlet Programming, including the famous MultipartRequest and MultipartParser classes.

Organization	servlets.com
HomePage	http://www.servlets.com/
Date	(Nov 08, 2005)
Files	pom (768 bytes) jar (55 KB) View All
Repositories	Central
Used By	**30 artifacts**

```
<!-- https://mvnrepository.com/artifact/servlets.com/cos -->
<dependency>
    <groupId>servlets.com</groupId>
    <artifactId>cos</artifactId>
    <version>05Nov2002</version>
</dependency>
```

☑ Include comment with link to declaration

Maven 환경설정 파일 : pom.xml

- pom.xml : cos 추가

```
<dependencies>

          <dependency>
                    <groupId>servlets.com</groupId>
                    <artifactId>cos</artifactId>
                    <version>05Nov2002</version>
          </dependency>

</dependencies>
```

Maven 환경설정 파일 : pom.xml

- pom.xml : oracle 추가

```
<dependencies>

	<dependency>
		<groupId>com.oracle.database.jdbc</groupId>
		<artifactId>ojdbc8</artifactId>
		<version>21.5.0.0</version>
	</dependency>

</dependencies>
```

Maven 환경설정 파일 : pom.xml

- pom.xml : mysql 추가

```
<dependencies>

          <dependency>
                    <groupId>com.mysql</groupId>
                    <artifactId>mysql-connector-j</artifactId>
                    <version>8.0.33</version>
          </dependency>

</dependencies>
```

Maven 환경설정 파일 : pom.xml

- pom.xml : mybatis 추가

```
<dependencies>

          <dependency>
                    <groupId>org.mybatis</groupId>
                    <artifactId>mybatis</artifactId>
                    <version>3.5.6</version>
          </dependency>

</dependencies>
```

Maven 환경설정 파일 : pom.xml

- pom.xml : jstl 추가 – Apache Tomcat 9

```
<dependencies>

        <dependency>
                <groupId>javax.servlet</groupId>
                <artifactId>jstl</artifactId>
                <version>1.2</version>
        </dependency>

        <dependency>
                <groupId>org.glassfish.web</groupId>
                <artifactId>jstl-impl</artifactId>
                <version>1.2</version>
        </dependency>

</dependencies>
```

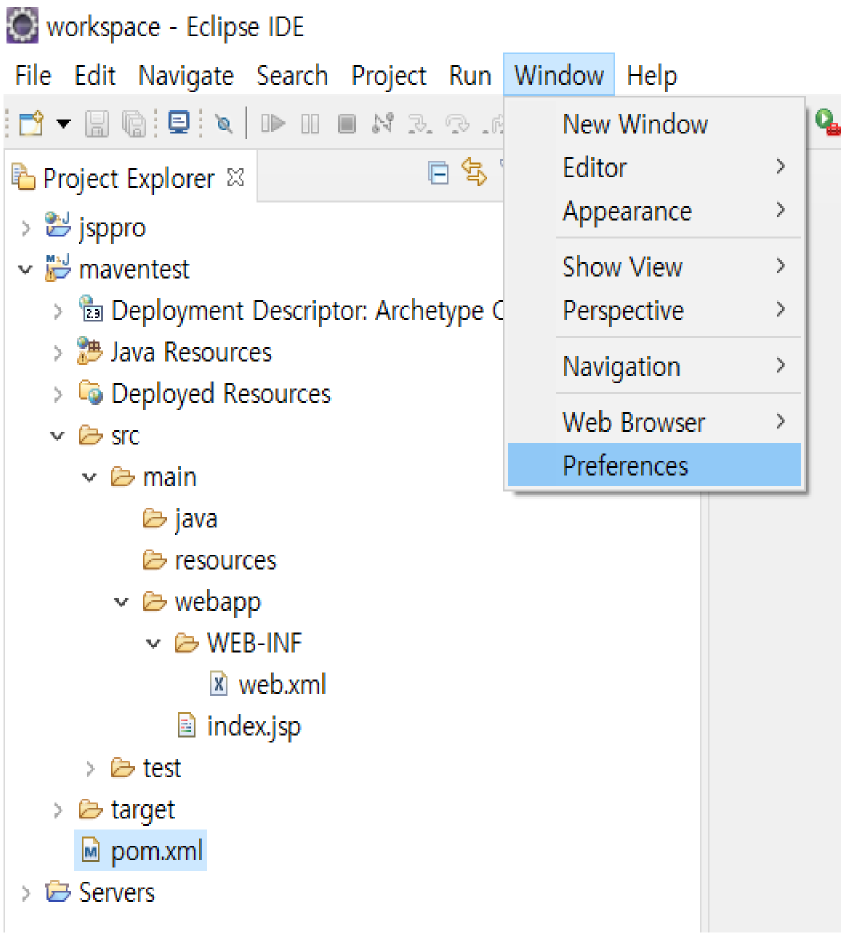
Maven 환경설정 파일 : pom.xml

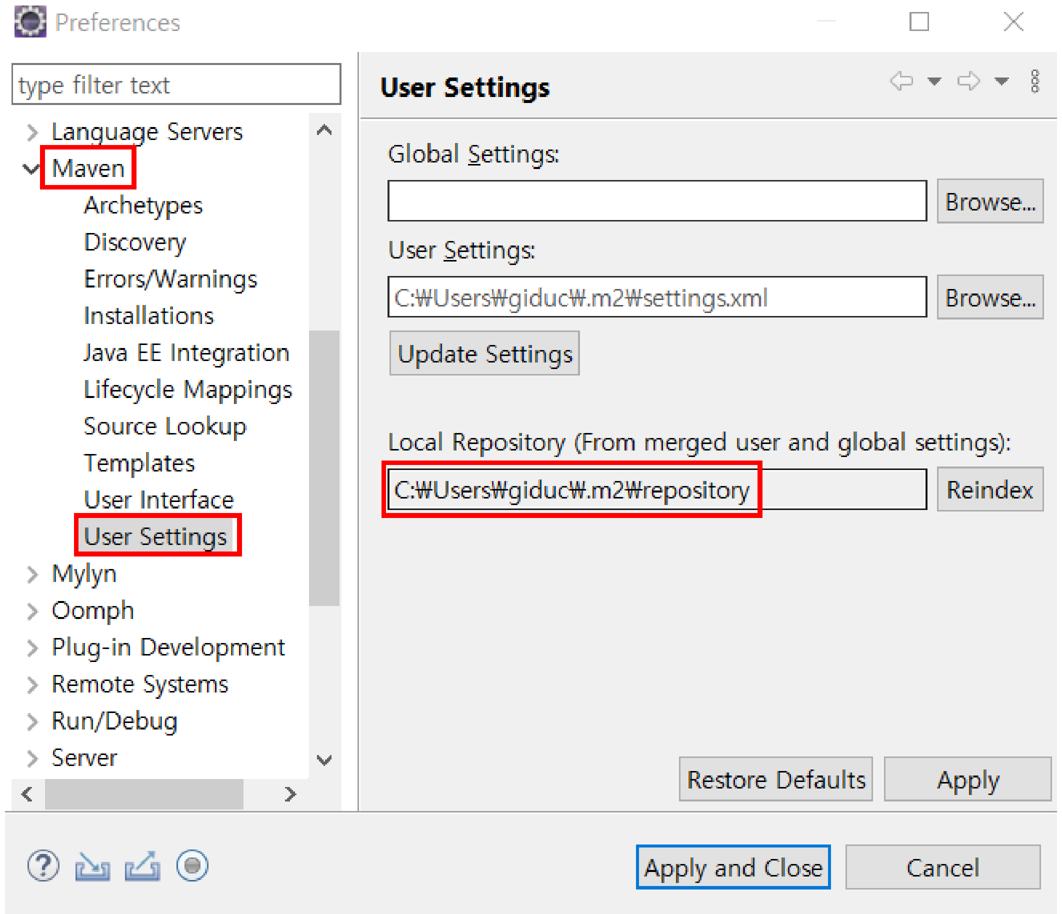
- pom.xml : jakarta jstl 추가 – Apache Tomcat10.1

```
<dependencies>

        <dependency>
                <groupId>jakarta.servlet.jsp.jstl</groupId>
                <artifactId>jakarta.servlet.jsp.jstl-api</artifactId>
                <version>3.0.0</version>
        </dependency>
        <dependency>
                <groupId>org.glassfish.web</groupId>
                <artifactId>jakarta.servlet.jsp.jstl</artifactId>
                <version>3.0.1</version>
        </dependency>

</dependencies>
```

Local Repository

- 로컬 저장소 위치 : C:₩Users₩계정₩.m2₩repository





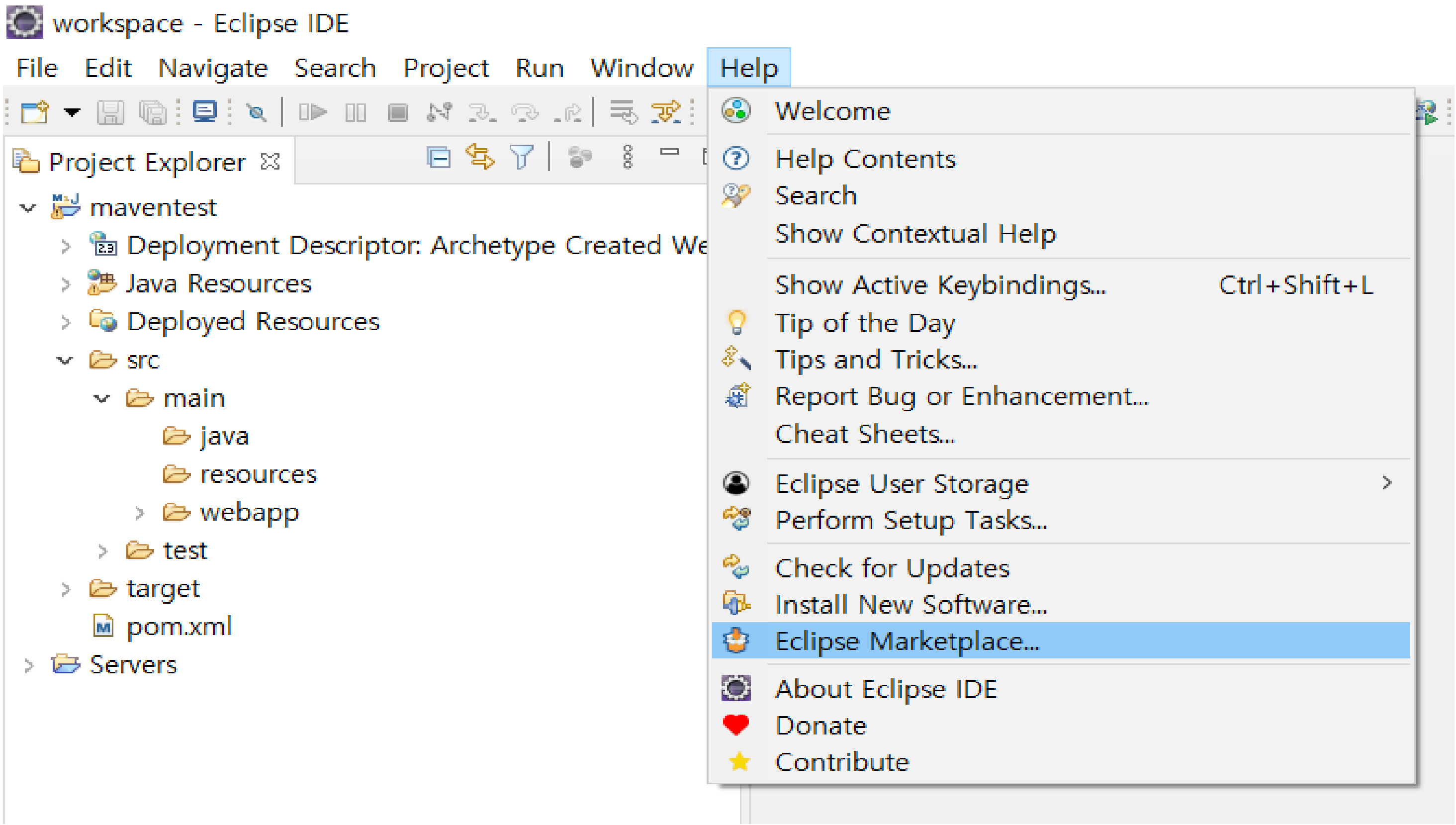
Global Settings:

User Settings: C:₩Users₩giduc₩.m2₩settings.xml

Local Repository (From merged user and global settings): C:₩Users₩giduc₩.m2₩repository

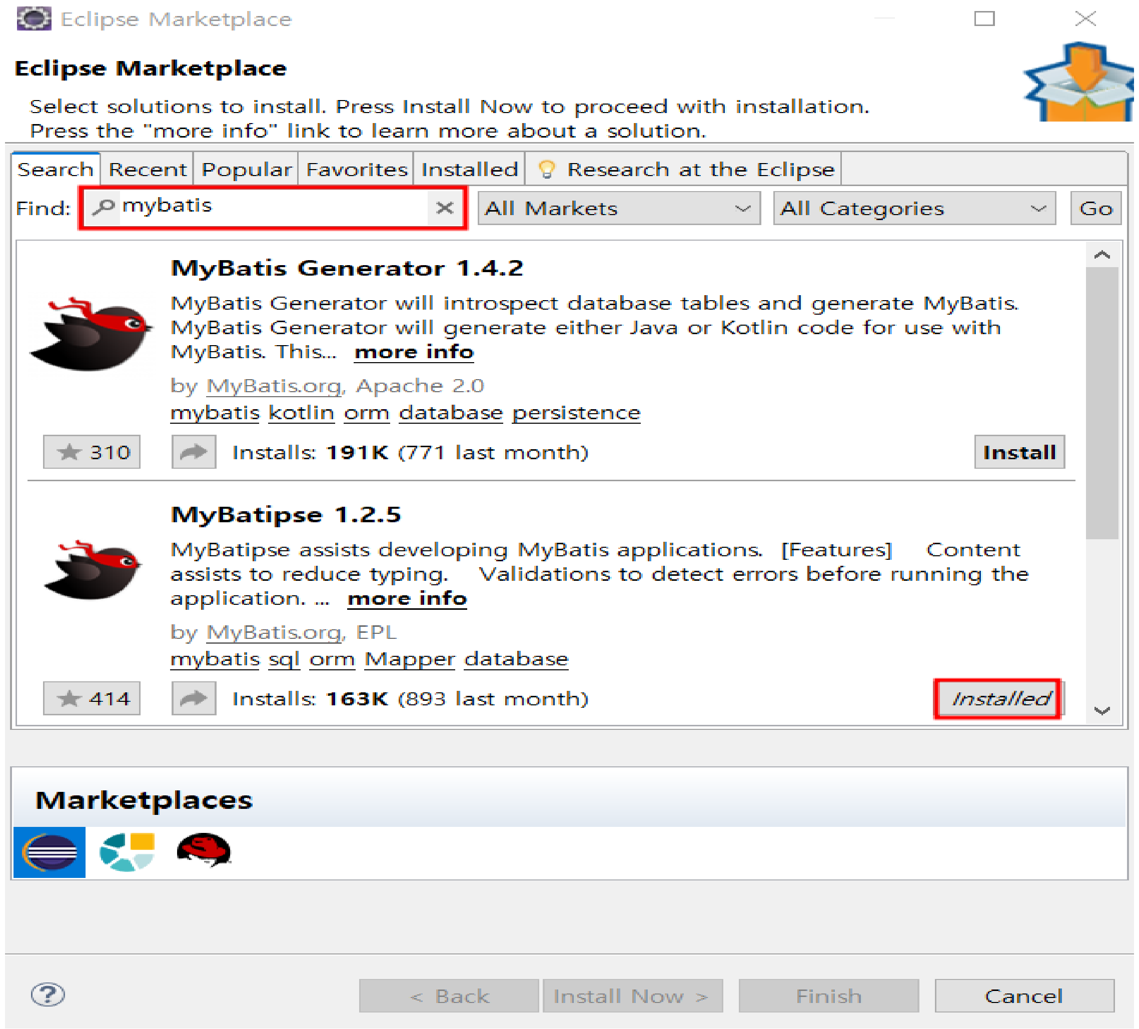
Eclipse plugin 설치

- mybatis plugin 설치



Eclipse plugin 설치

- mybatis plugin 설치



Eclipse Marketplace

Eclipse Marketplace

Select solutions to install. Press Install Now to proceed with installation.
Press the "more info" link to learn more about a solution.

Find: mybatis | All Markets | All Categories | Go

MyBatis Generator 1.4.2

MyBatis Generator will introspect database tables and generate MyBatis. MyBatis Generator will generate either Java or Kotlin code for use with MyBatis. This... **more info**

by MyBatis.org, Apache 2.0

mybatis kotlin orm database persistence

★ 310 Installs: **191K** (771 last month) **Install**

MyBatipse 1.2.5

MyBatipse assists developing MyBatis applications. [Features] Content assists to reduce typing. Validations to detect errors before running the application. ... **more info**

by MyBatis.org, EPL

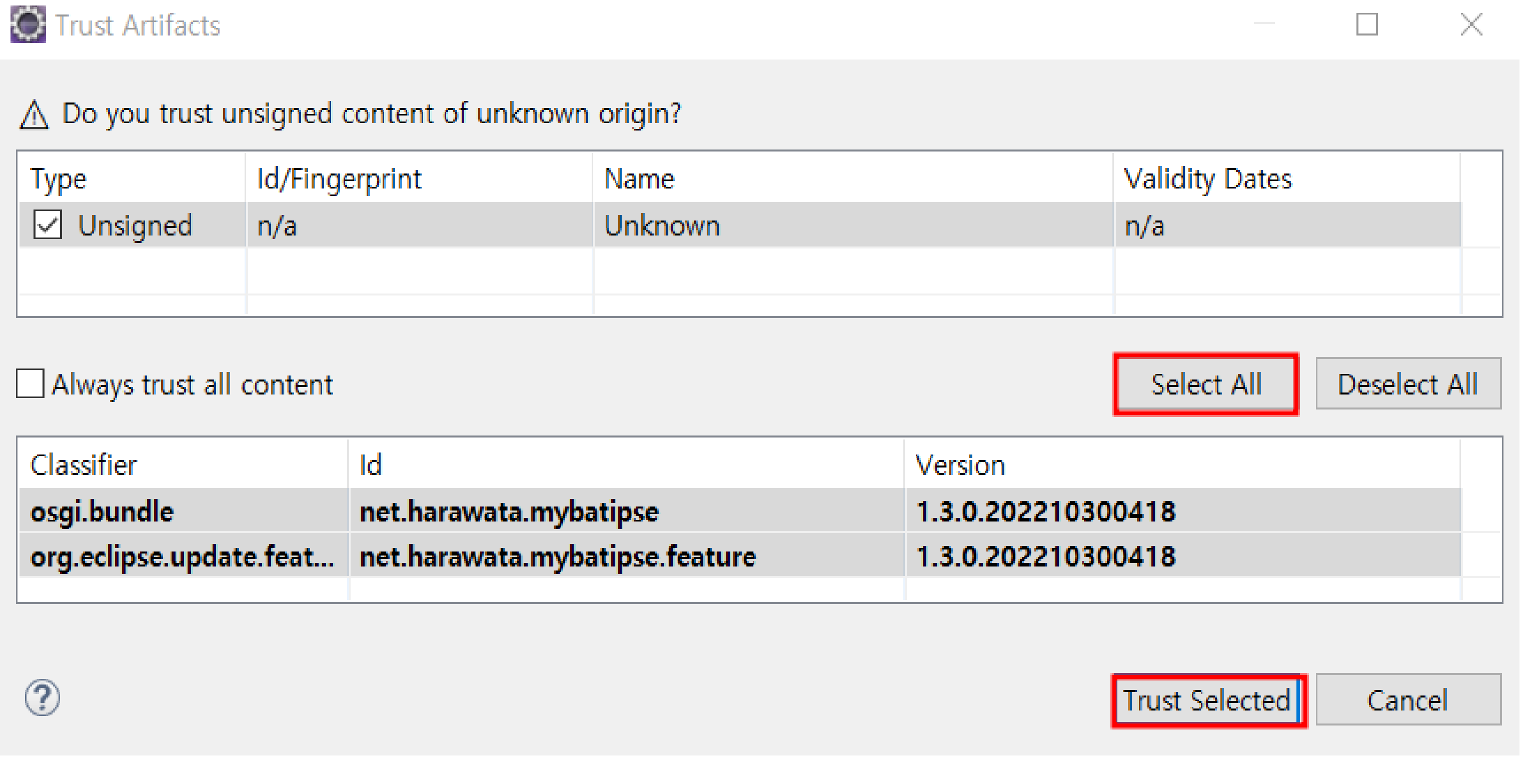
mybatis sql orm Mapper database

★ 414 Installs: **163K** (893 last month) *Installed*

Marketplaces

Eclipse plugin 설치

- mybatis plugin 설치



Trust Artifacts

⚠ Do you trust unsigned content of unknown origin?

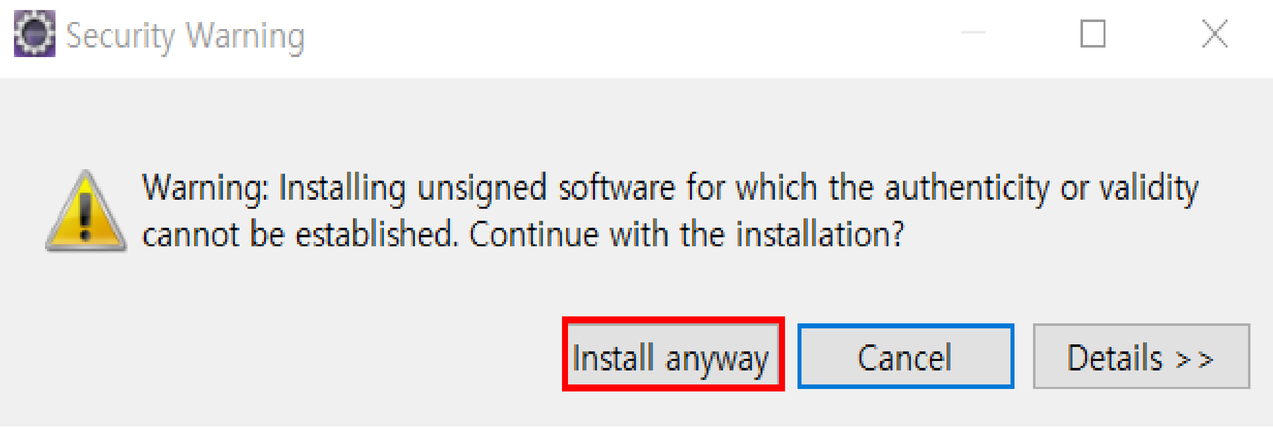
Type	Id/Fingerprint	Name	Validity Dates
☑ Unsigned	n/a	Unknown	n/a

☐ Always trust all content

Classifier	Id	Version
osgi.bundle	net.harawata.mybatipse	1.3.0.202210300418
org.eclipse.update.feat...	net.harawata.mybatipse.feature	1.3.0.202210300418

Eclipse plugin 설치

- mybatis plugin 설치

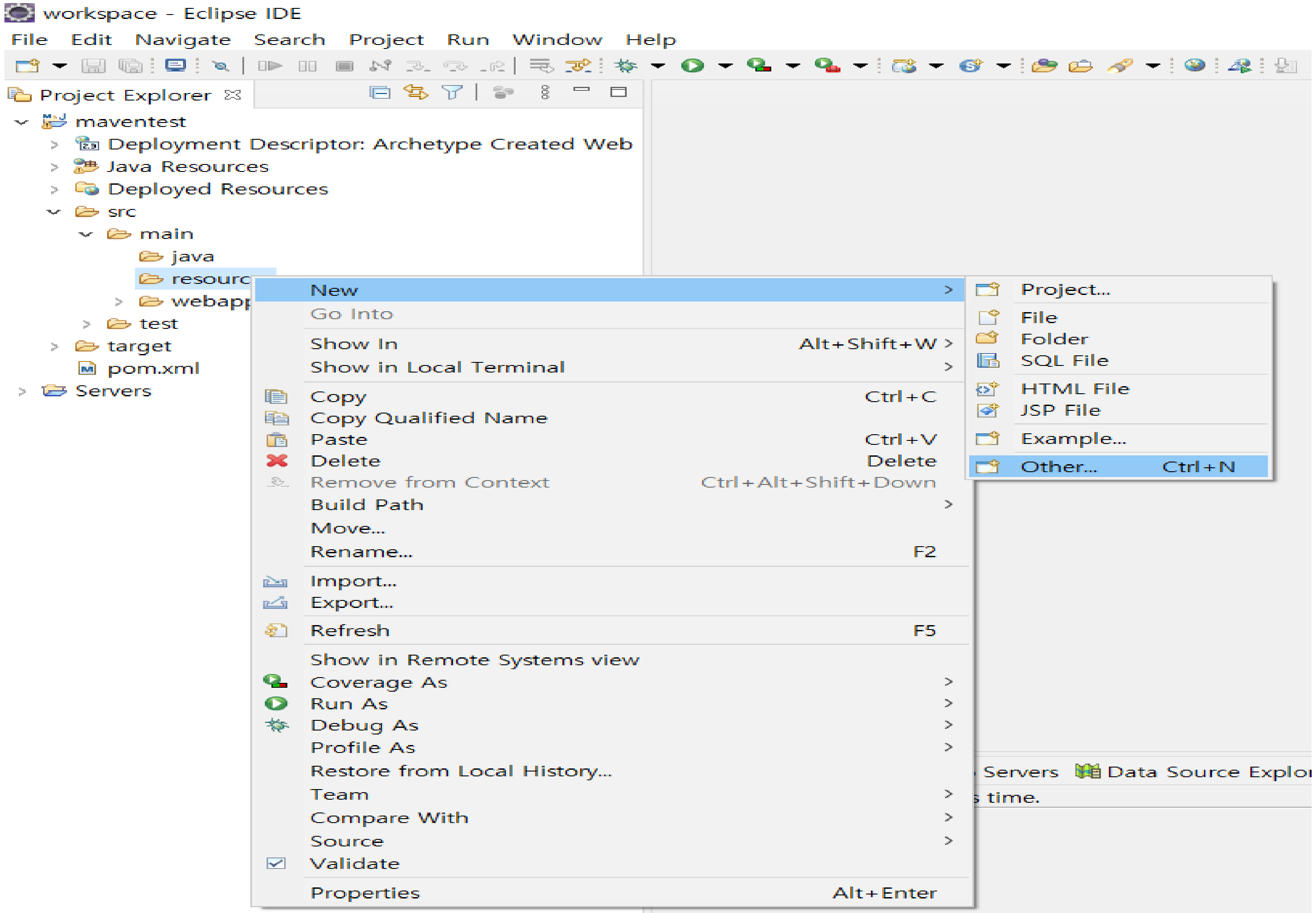


Security Warning

Warning: Installing unsigned software for which the authenticity or validity cannot be established. Continue with the installation?

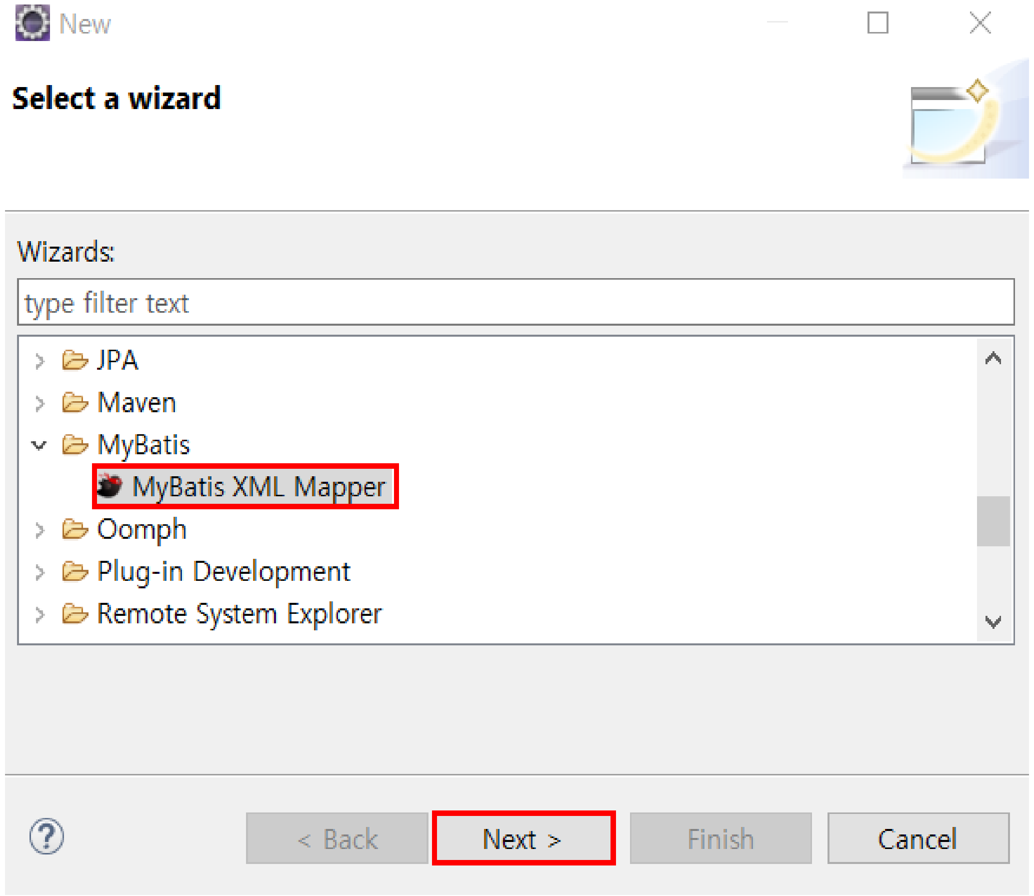
Mabatis Mapper

- mybatis mapper 파일 생성



Mabatis Mapper

- mybatis mapper 파일 생성



New

Select a wizard

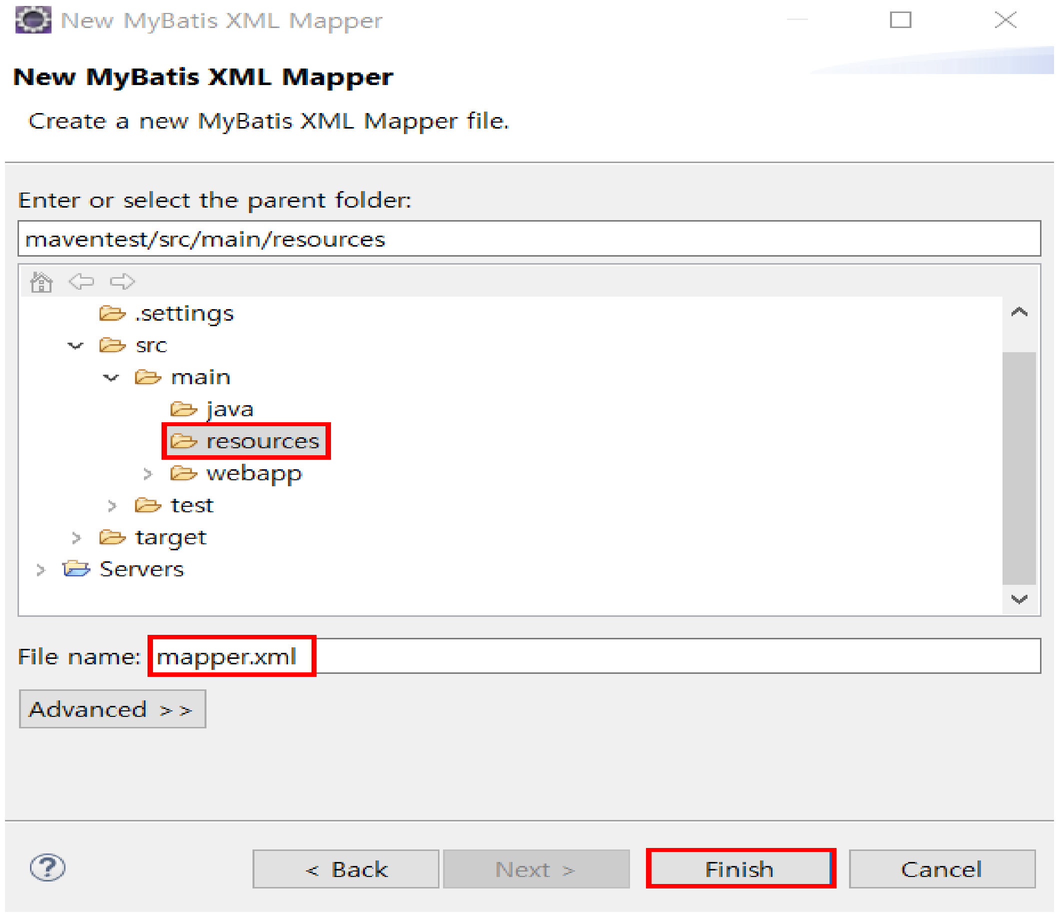
Wizards:

type filter text

- JPA
- Maven
- MyBatis
  - MyBatis XML Mapper
- Oomph
- Plug-in Development
- Remote System Explorer

Mabatis Mapper

- mybatis mapper 파일 생성



New MyBatis XML Mapper

New MyBatis XML Mapper

Create a new MyBatis XML Mapper file.

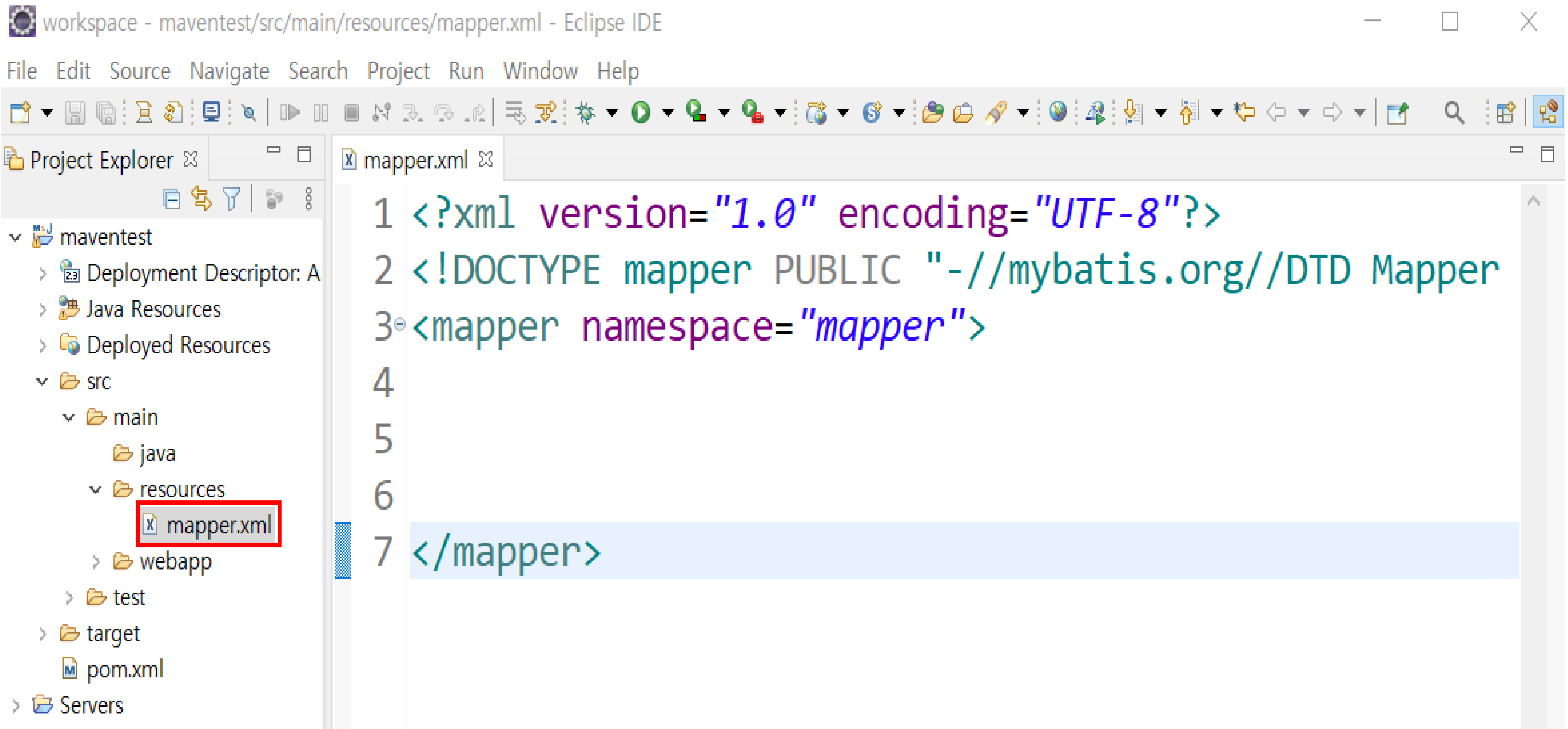
Enter or select the parent folder:

maventest/src/main/resources

File name: mapper.xml

Mabatis Mapper

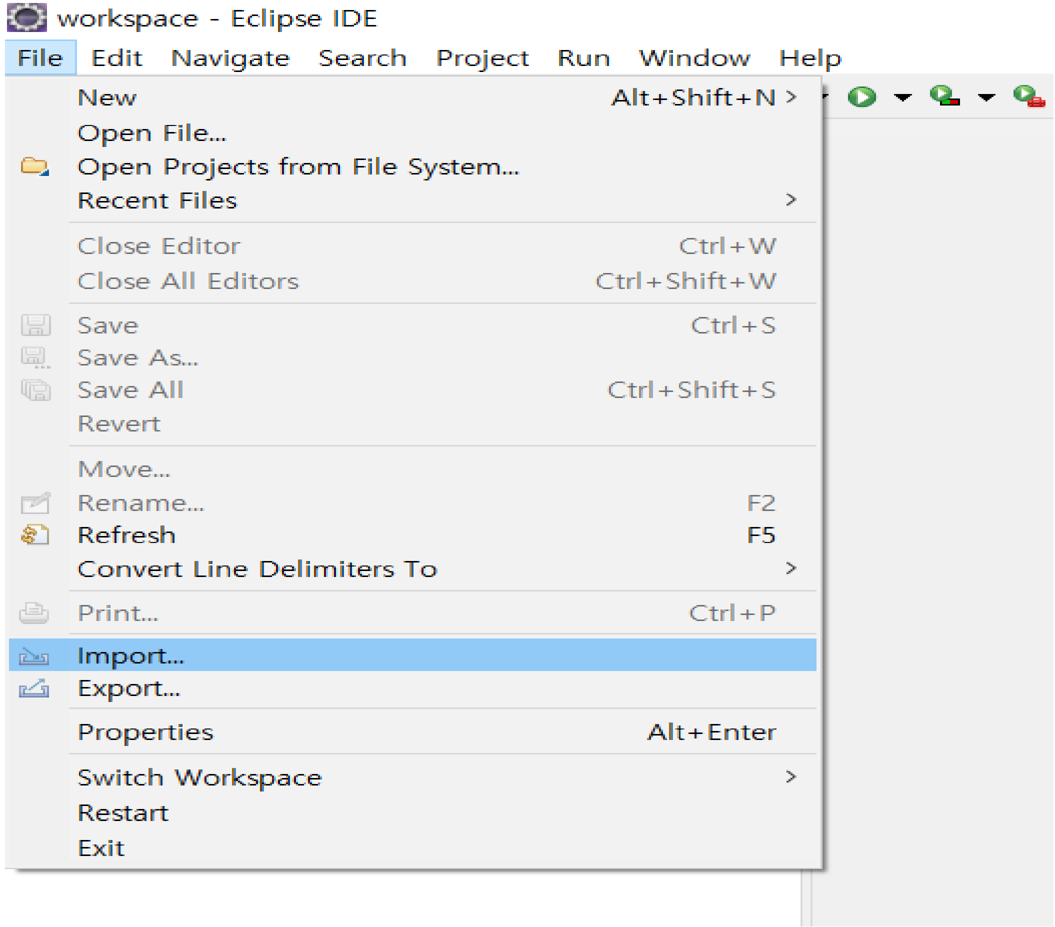
- mybatis mapper 파일 생성



```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper
<mapper namespace="mapper">



</mapper>
```

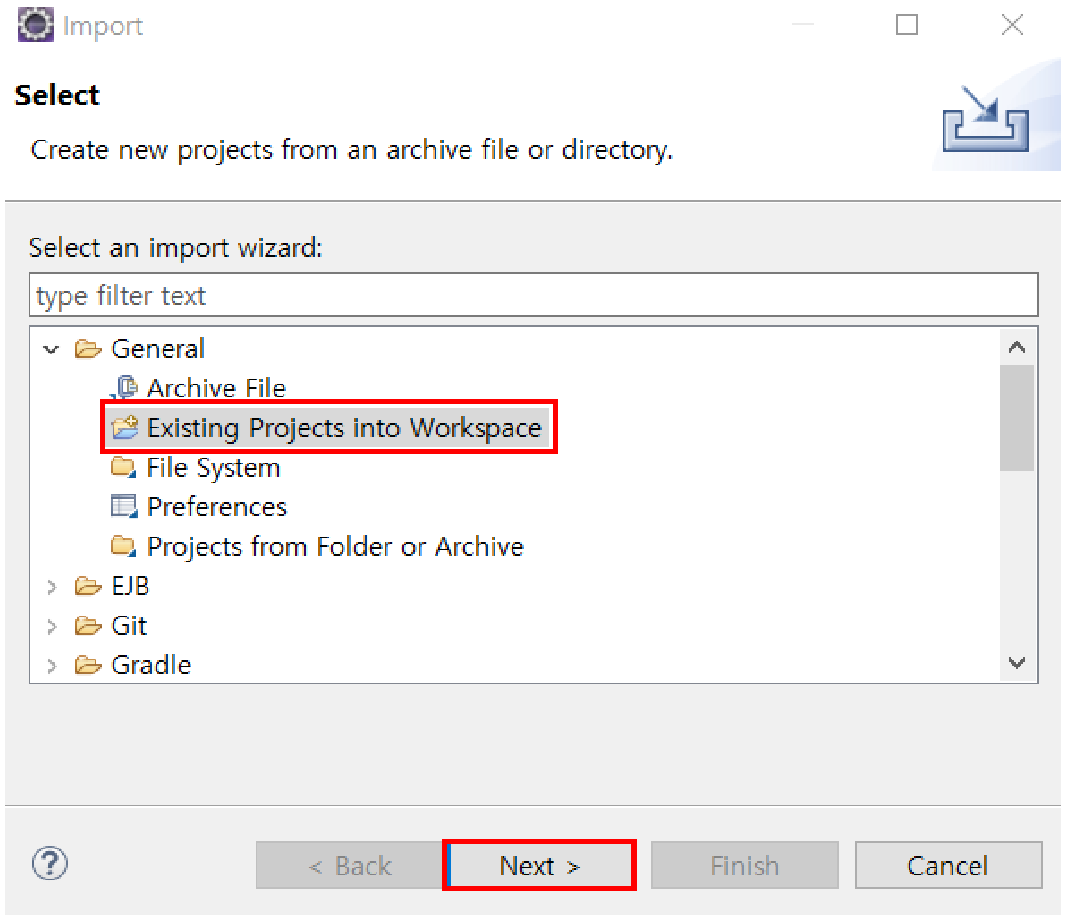
mybatistest project

- mybatistest project import



mybatistest project

- mybatistest project import



Import

Select

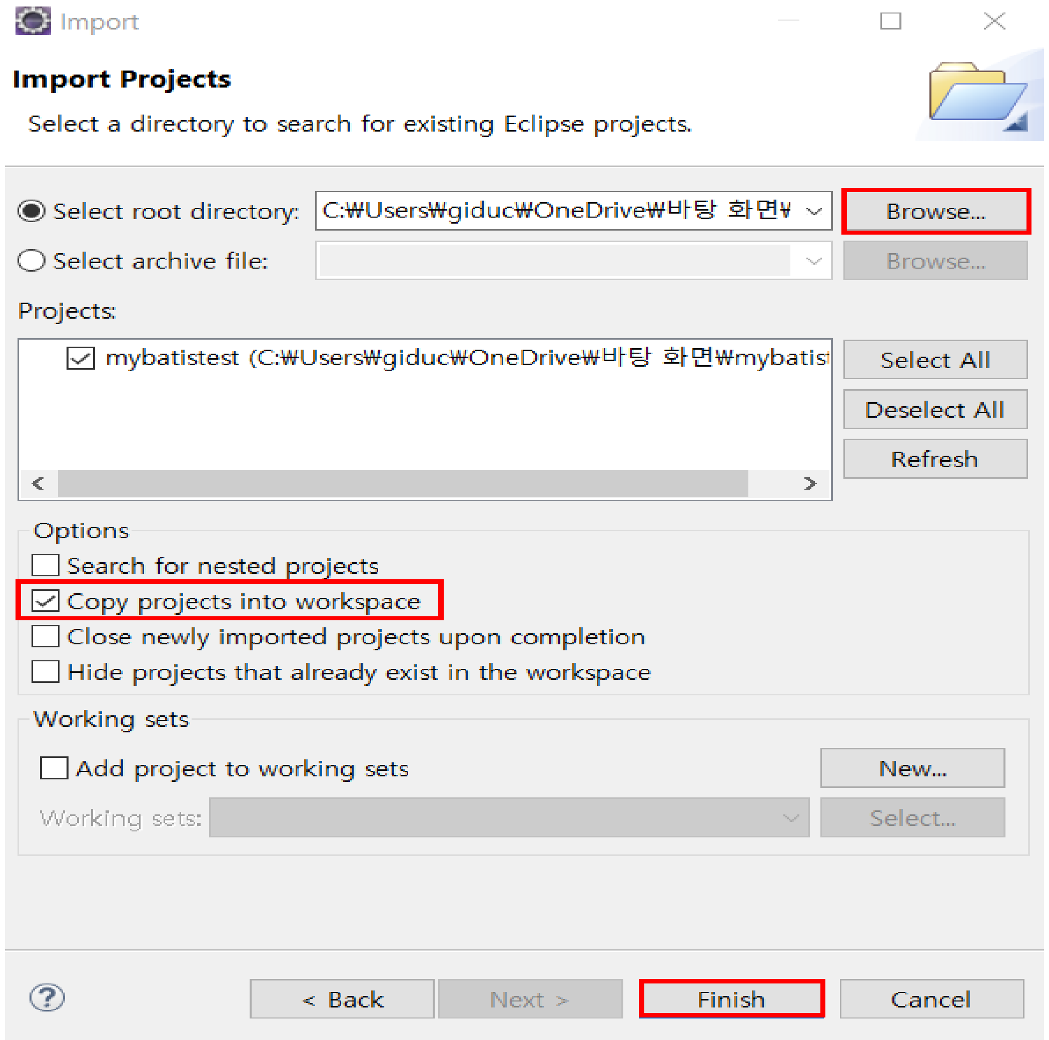
Create new projects from an archive file or directory.

Select an import wizard:

type filter text

mybatistest project

- mybatistest project import



Import

Import Projects

Select a directory to search for existing Eclipse projects.

● Select root directory: C:₩Users₩giduc₩OneDrive₩바탕 화면₩

○ Select archive file:

Projects:

☑ mybatistest (C:₩Users₩giduc₩OneDrive₩바탕 화면₩mybatis

Options

□ Search for nested projects

☑ Copy projects into workspace

□ Close newly imported projects upon completion

□ Hide projects that already exist in the workspace

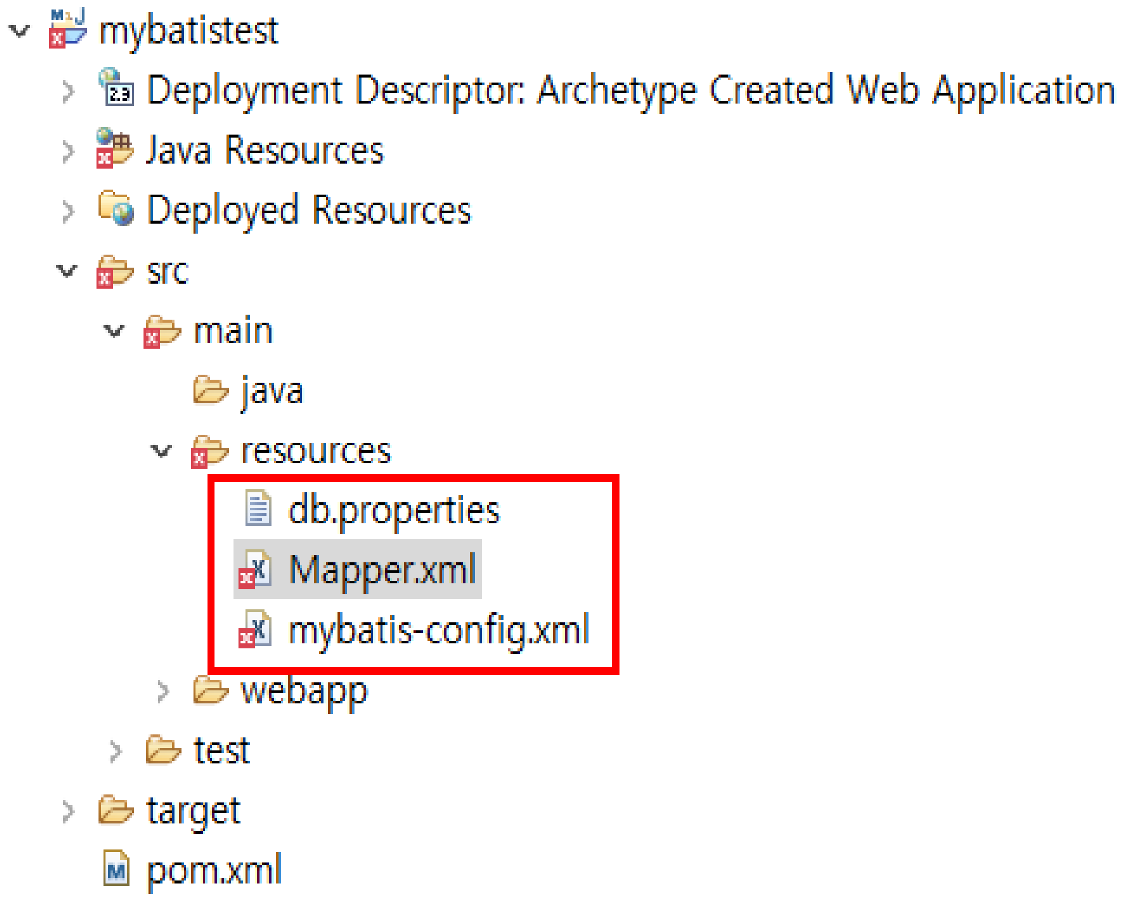
Working sets

□ Add project to working sets

Working sets:

mybatistest project

- mybatistest project import



```
mybatistest
  Deployment Descriptor: Archetype Created Web Application
  Java Resources
  Deployed Resources
  src
    main
      java
      resources
        db.properties
        Mapper.xml
        mybatis-config.xml
      webapp
    test
  target
  pom.xml
```

mybatistest project

- **db.properties**

```
#mysql
#jdbc.driverClassName=com.mysql.jdbc.Driver
#jdbc.url=jdbc:mysql://localhost:3306/jsptest
#jdbc.username=jspid
#jdbc.password=jsppass

#oracle
jdbc.driverClassName=oracle.jdbc.driver.OracleDriver
jdbc.url=jdbc:oracle:thin:@localhost:1521:xe
jdbc.username=scott
jdbc.password=tiger
```

mybatistest project

- **mybatis-config.xml** : mybatis 환경 설정 파일

```
<configuration>
    <properties resource="db.properties" />
    <typeAliases>
        <typeAlias type="#package.#modelname" alias="#modelname"></typeAlias>
    </typeAliases>
    <environments default="development">
        <environment id="development">
            <transactionManager type="JDBC" />
            <dataSource type="POOLED">
                <property name="driver" value="${jdbc.driverClassName}" />
                <property name="url" value="${jdbc.url}" />
                <property name="username" value="${jdbc.username}" />
                <property name="password" value="${jdbc.password}" />
            </dataSource>
        </environment>
    </environments>
    <mappers>
        <mapper resource="#package/#mapper.xml" />
    </mappers>
</configuration>
```

mybatistest project

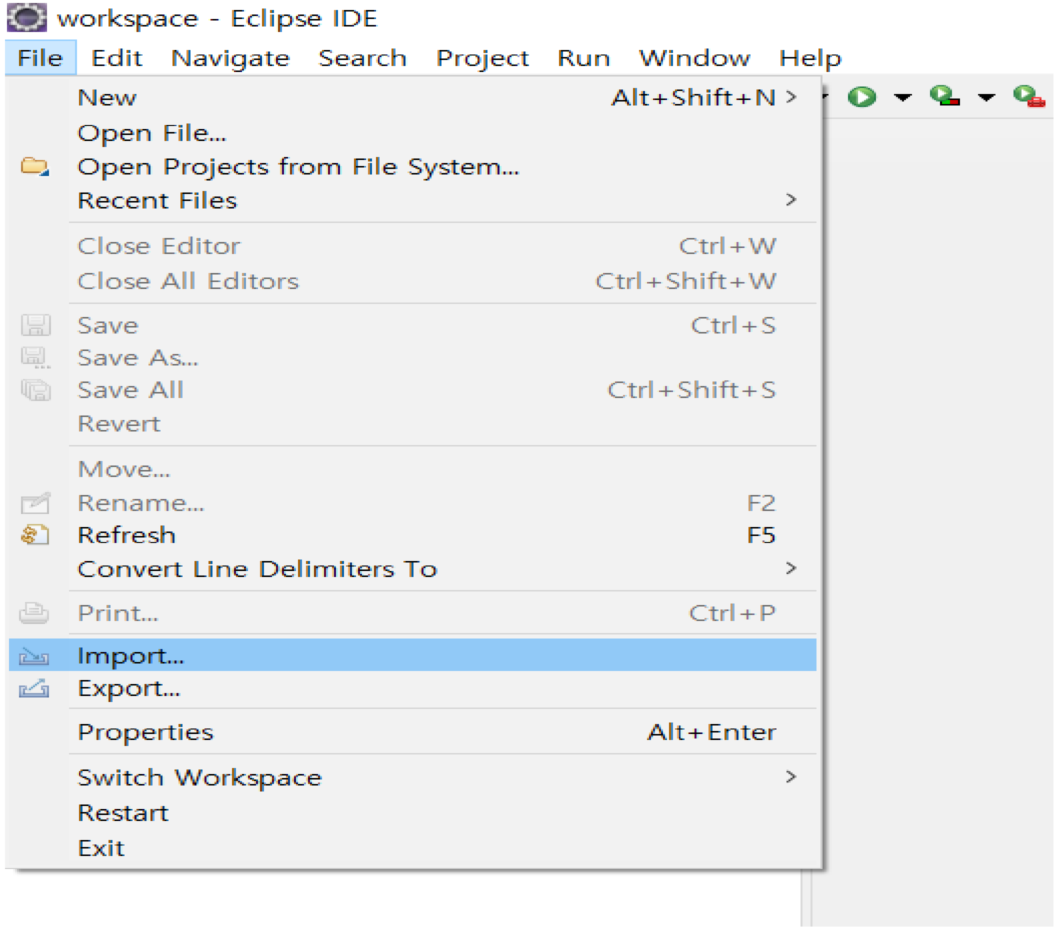
- **Mapper.xml** : mapper 파일

```
<mapper namespace="#package.#mapperinterfacename">
        <select id="getSomething" parameterType="int" resultType="#package.#modelname">
                SELECT
                columnname1,
                columnname2,
                columnname3
                FROM tablename1
                WHERE columnname1 = #{value}
        </select>
        <resultMap type="#modelname" id="YourResultSet">
                <id property="param1" column="columnname1" />
                <result property="param2" column="columnname2" />
                <result property="param3" column="columnname3" />
        </resultMap>
        <select id="getAll" resultMap="YourResultSet">
                SELECT * FROM tablename1
        </select>
        <insert id="insertSomething" parameterType="#modelname">
                INSERT INTO tablename1 (columnname1, columnname2, columnname3)
                VALUES(#{value1},#{value2},#{value3})
        </insert>
        <update id="updateSomething" parameterType="#modelname">
                UPDATE tablename1
                SET
                columnname1=#{param1}
                WHERE
                columnname2 = #{param2}
        </update>
        <delete id="deleteSomething" parameterType="int">
                DELETE FROM tablename1 WHERE
                columnname1 = #{param1}
        </delete>
</mapper>
```

JSP-MyBatis 연동

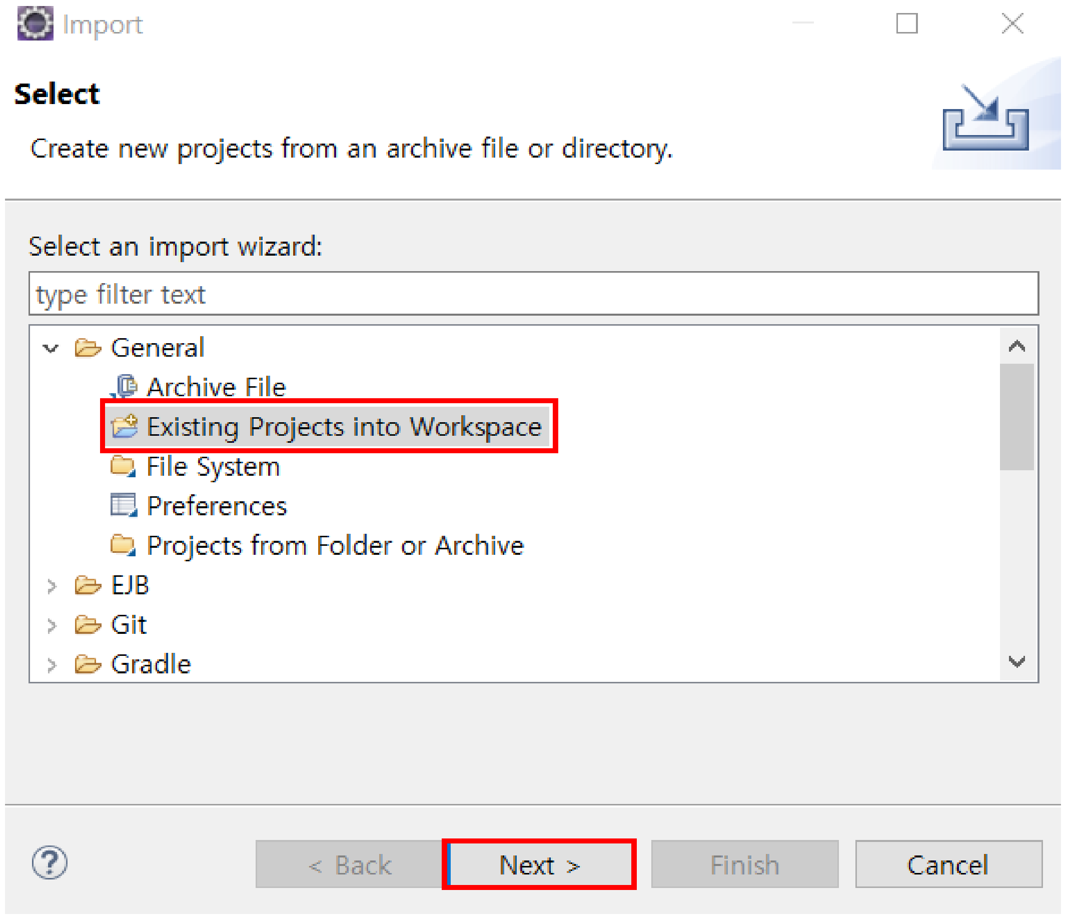
member22 project

- member22 project import



member22 project

- member22 project import



Import

Select

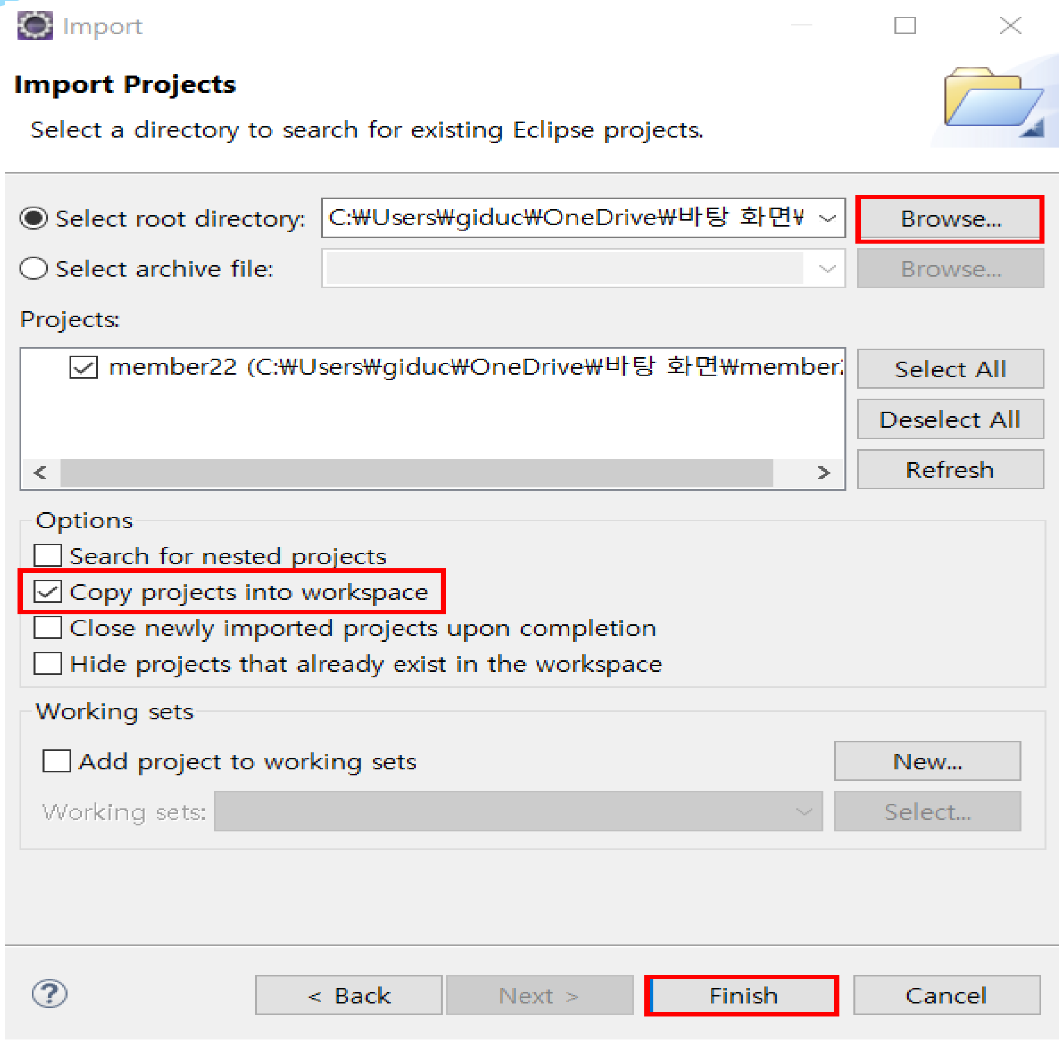
Create new projects from an archive file or directory.

Select an import wizard:

type filter text

member22 project

- member22 project import



Import

Import Projects

Select a directory to search for existing Eclipse projects.

● Select root directory: C:₩Users₩giduc₩OneDrive₩바탕 화면₩ | Browse...

○ Select archive file: | Browse...

Projects:

☑ member22 (C:₩Users₩giduc₩OneDrive₩바탕 화면₩member2

Select All | Deselect All | Refresh

Options

□ Search for nested projects

☑ Copy projects into workspace

□ Close newly imported projects upon completion

□ Hide projects that already exist in the workspace

Working sets

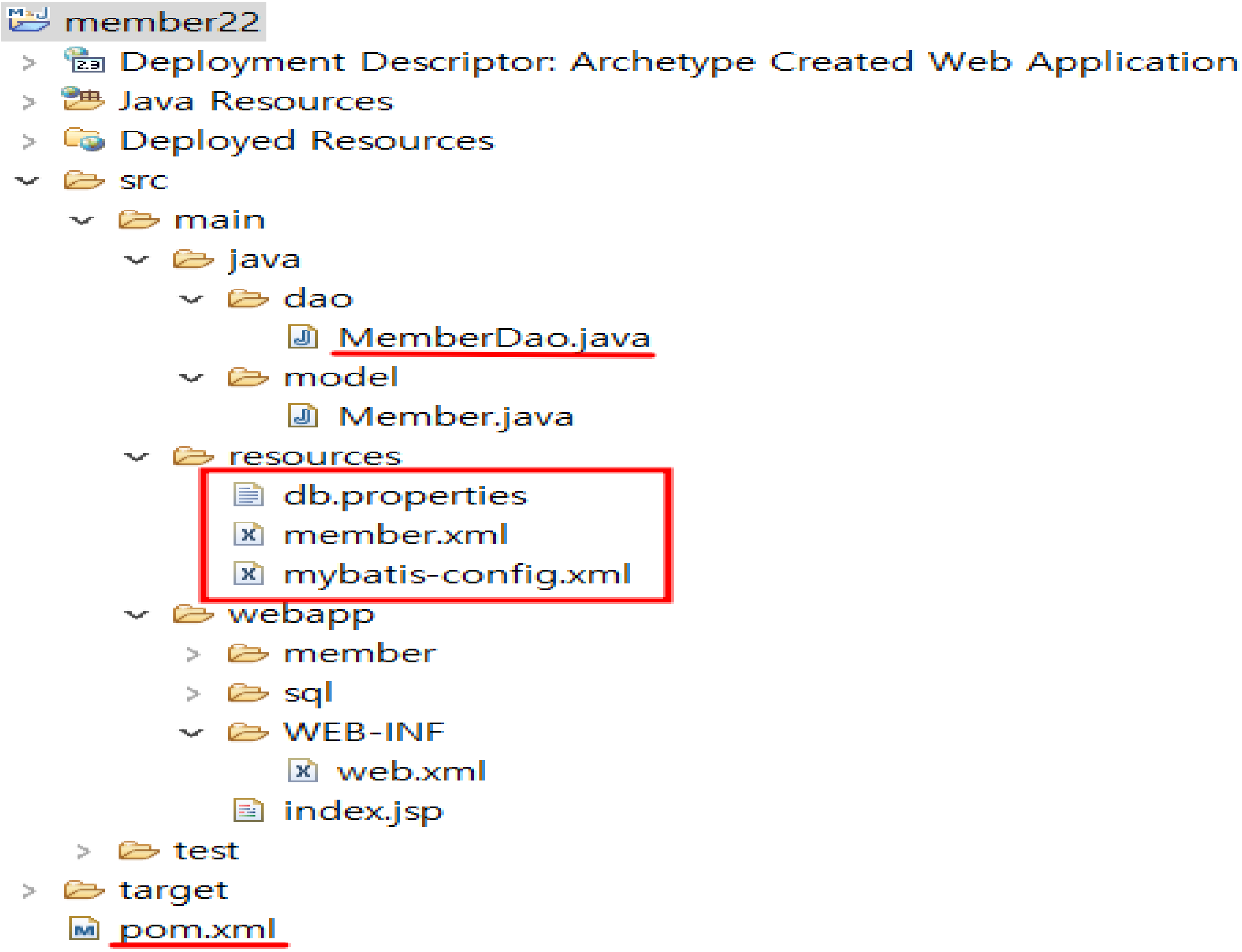
□ Add project to working sets | New...

Working sets: | Select...

< Back | Next > | Finish | Cancel

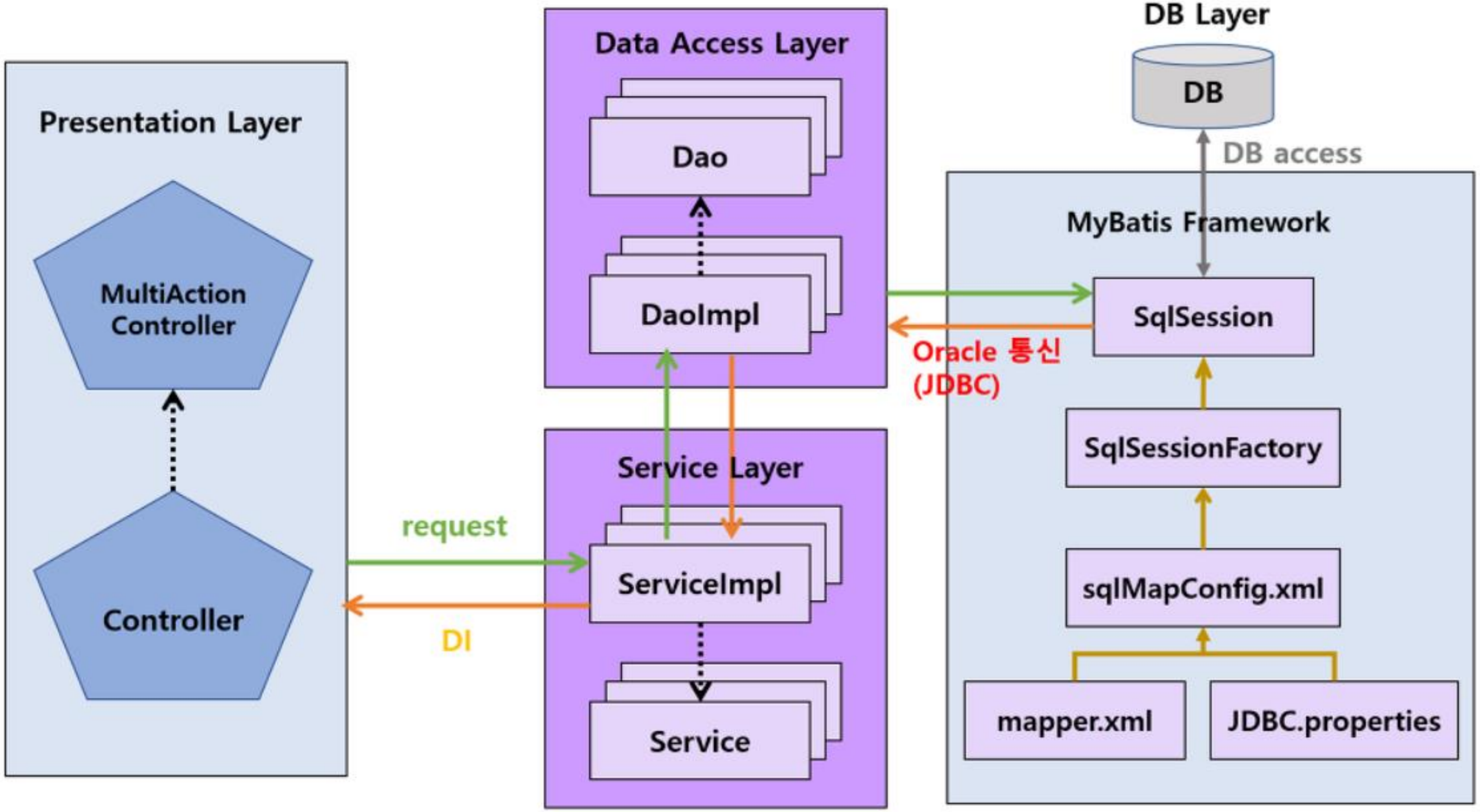
member22 project

- member22 project

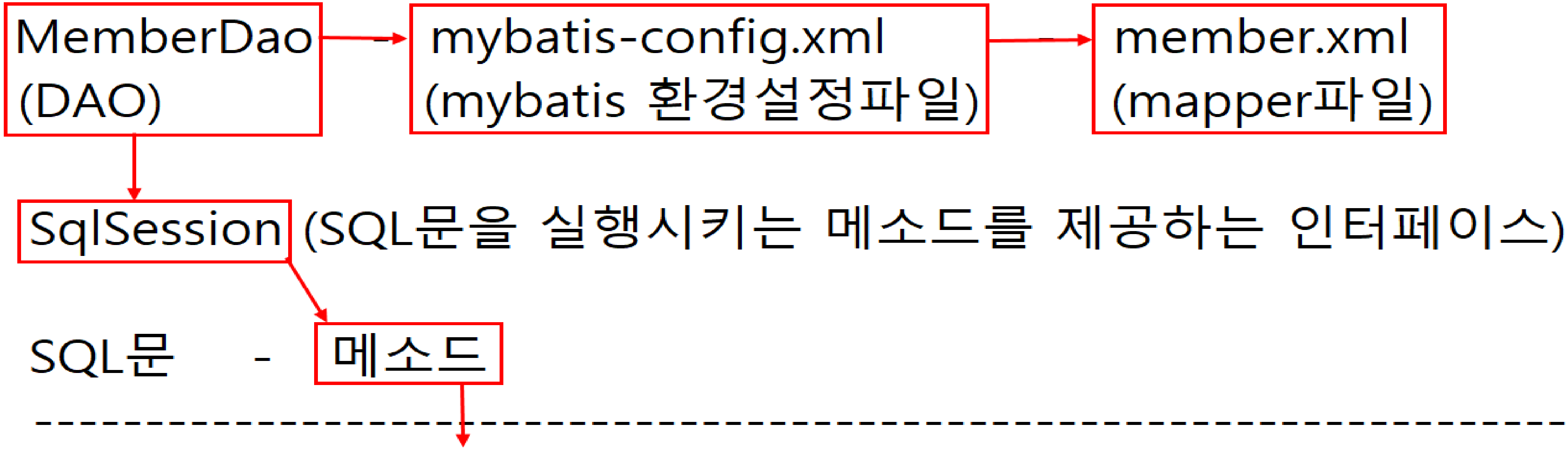


```
member22
  > Deployment Descriptor: Archetype Created Web Application
  > Java Resources
  > Deployed Resources
  v src
      v main
          v java
              v dao
                    MemberDao.java
              v model
                    Member.java
          v resources
                db.properties
                member.xml
                mybatis-config.xml
          v webapp
              > member
              > sql
              v WEB-INF
                    web.xml
                index.jsp
      > test
  > target
    pom.xml
```

Mybatis 데이터 액세스 계층 흐름도



Mybatis 데이터 액세스 계층 흐름도



MemberDao
(DAO)

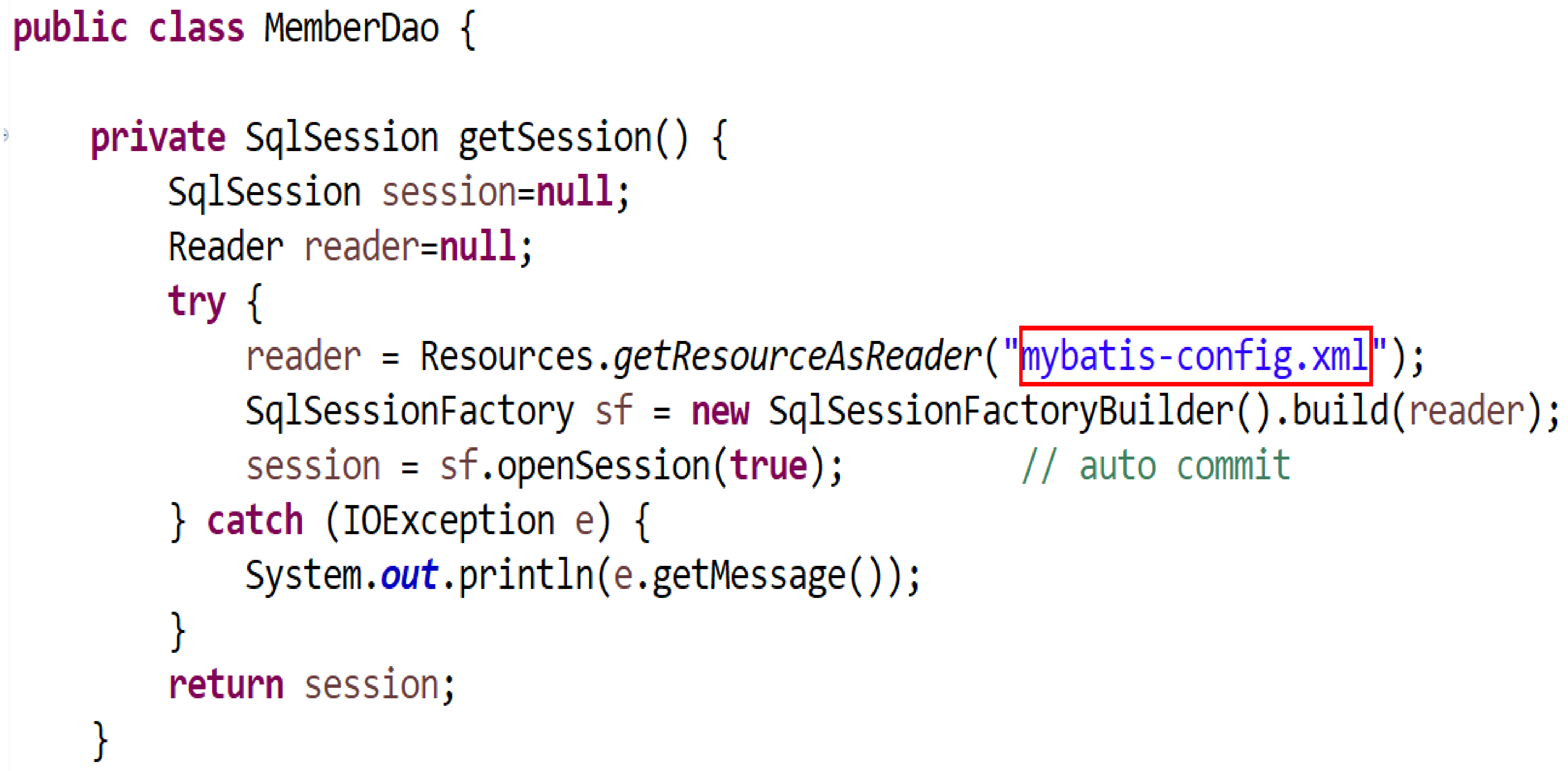
mybatis-config.xml
(mybatis 환경설정파일)

member.xml
(mapper파일)

SqlSession (SQL문을 실행시키는 메소드를 제공하는 인터페이스)

SQL문	-	메소드
insert	-	int insert()
update	-	int update()
delete	-	int delete()
select	-	Object selectOne() : 검색 결과가 1개인 경우에 사용
		List selectList() : 검색 결과가 여러개인 경우에 사용

MemberDao.java (1/7)



```
public class MemberDao {

    private SqlSession getSession() {
        SqlSession session=null;
        Reader reader=null;
        try {
            reader = Resources.getResourceAsReader("mybatis-config.xml");
            SqlSessionFactory sf = new SqlSessionFactoryBuilder().build(reader);
            session = sf.openSession(true);          // auto commit
        } catch (IOException e) {
            System.out.println(e.getMessage());
        }
        return session;
    }
```

MemberDao.java (2/7)

```
public int insert(Member member) {
    int result = 0;
    SqlSession session=null;
    try {
        session = getSession();
        result = session.insert("insert", member);
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return result;
}
```

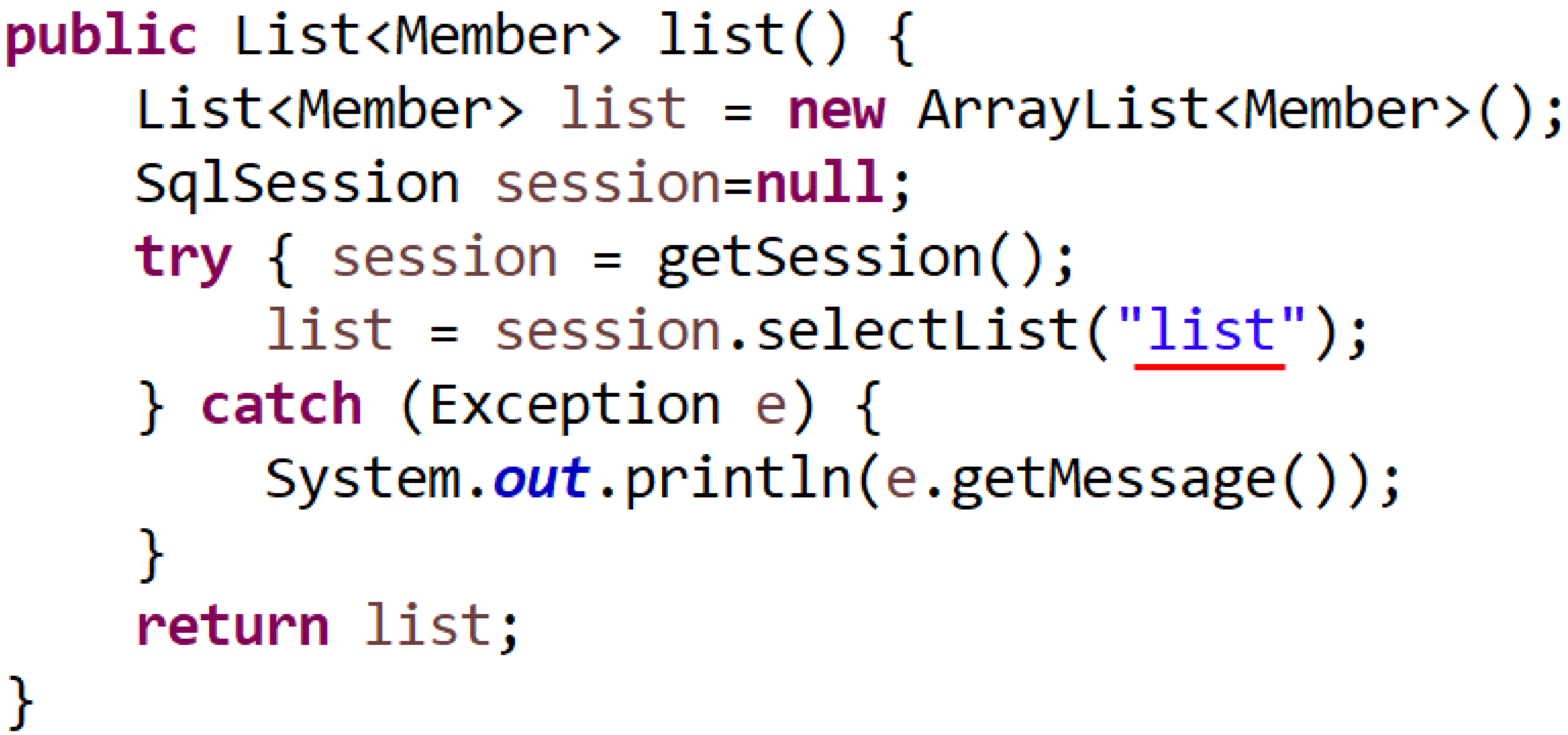
MemberDao.java (3/7)

```
public int chk(Member member) {
    int result = 0;
    SqlSession session=null;
    try { session = getSession();
        Member mem = (Member) session.selectOne("select", member.getId());
        if (mem.getId().equals(member.getId())) {
            result = -1;
            if (mem.getPassword().equals(member.getPassword())) {
                result = 1;
            }
        }
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return result;
}
```

MemberDao.java (4/7)

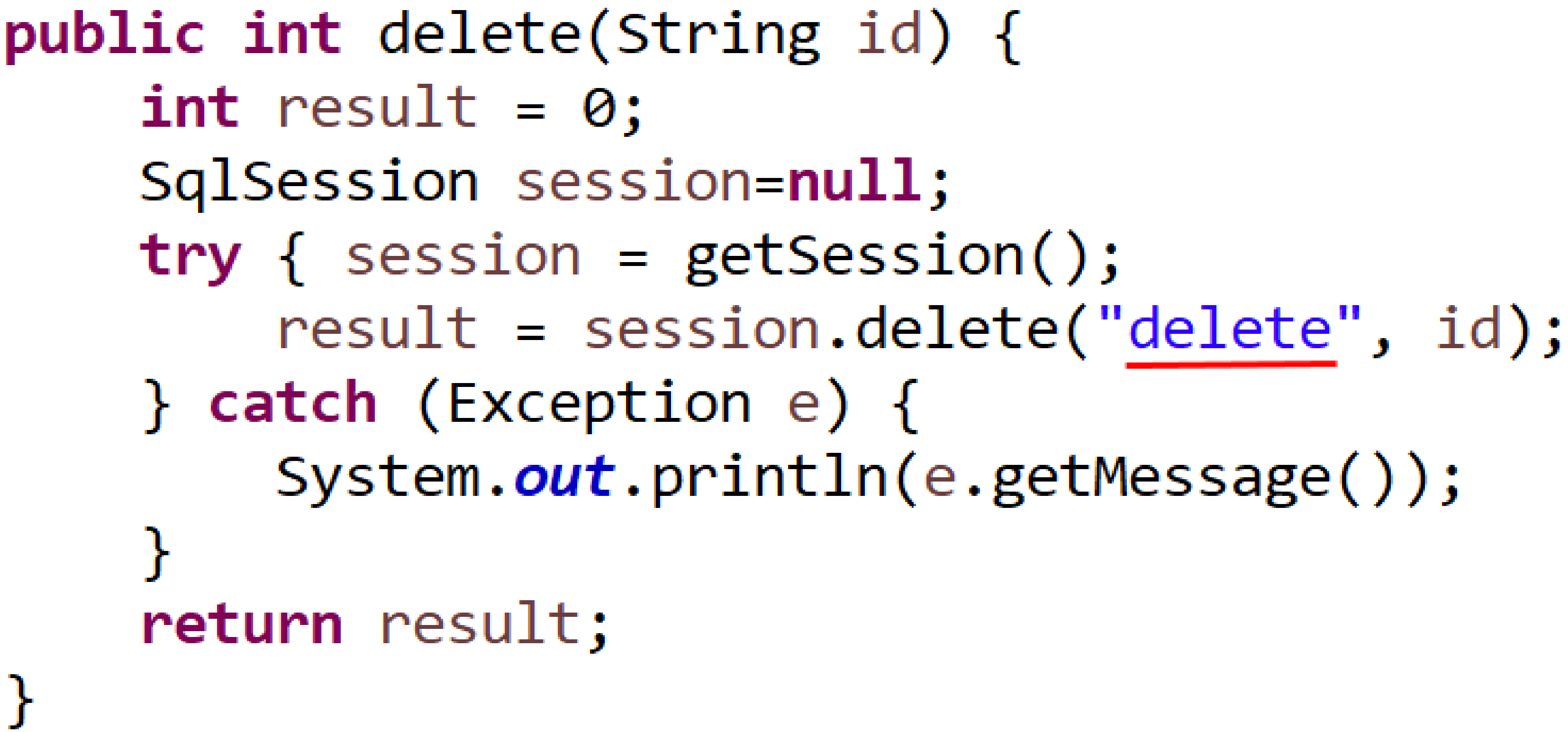
```java
public Member select(String id) throws SQLException {
    Member mem = null;
    SqlSession session=null;
    try { session = getSession();
    mem = (Member) session.selectOne("select", id);
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return mem;
}
```

MemberDao.java (5/7)



```java
public List<Member> list() {
    List<Member> list = new ArrayList<Member>();
    SqlSession session=null;
    try { session = getSession();
        list = session.selectList("list");
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return list;
}
```

MemberDao.java (6/7)

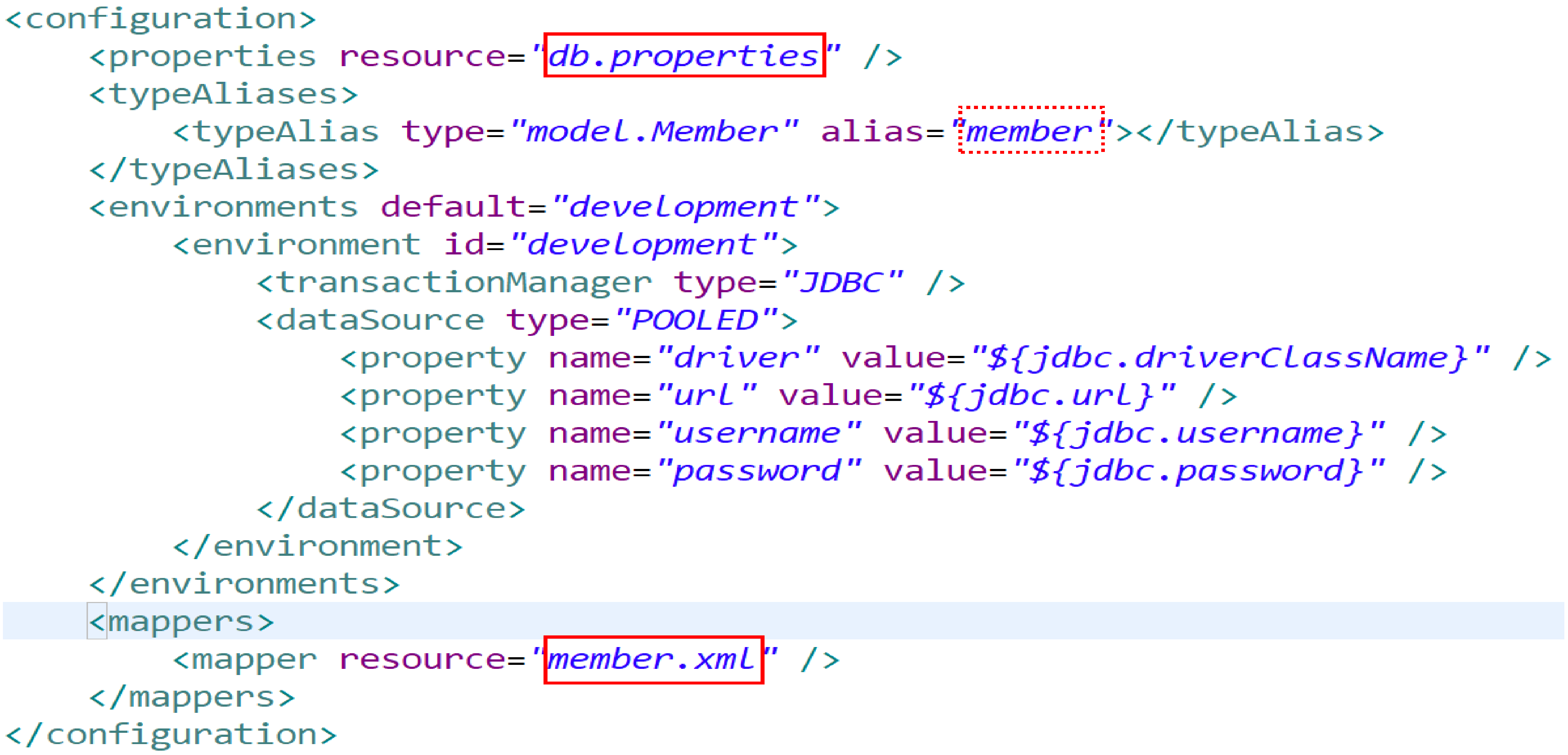


```
public int delete(String id) {
    int result = 0;
    SqlSession session=null;
    try { session = getSession();
        result = session.delete("delete", id);
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return result;
}
```

MemberDao.java (7/7)

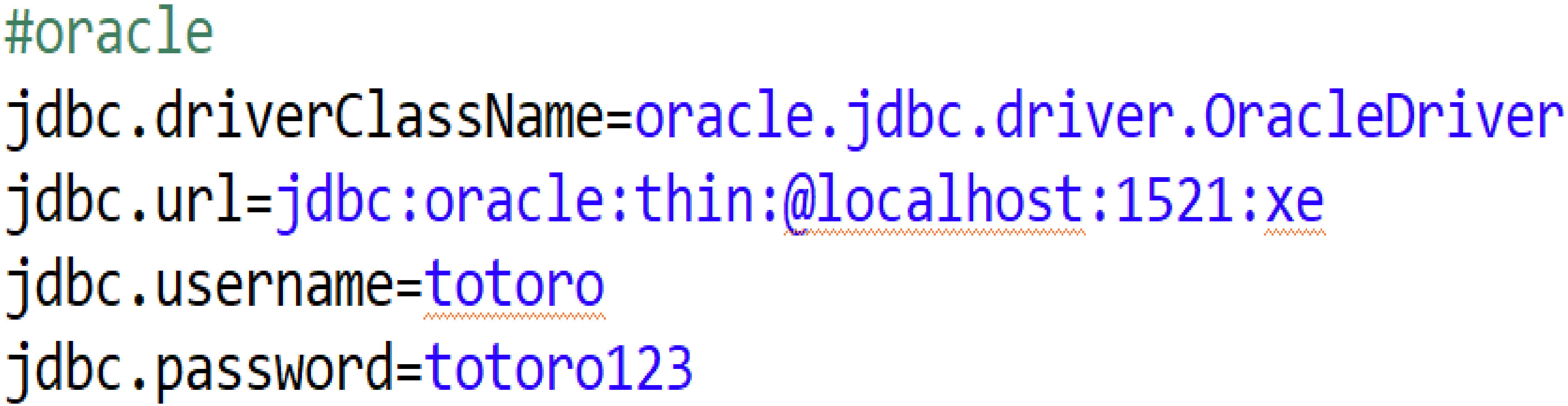
```
public int update(Member mem) {
    int result = 0;
    SqlSession session=null;
    try { session = getSession();
        result = session.update("update", mem);
    } catch (Exception e) {
        System.out.println(e.getMessage());
    }
    return result;
}
```

mybatis-config.xml



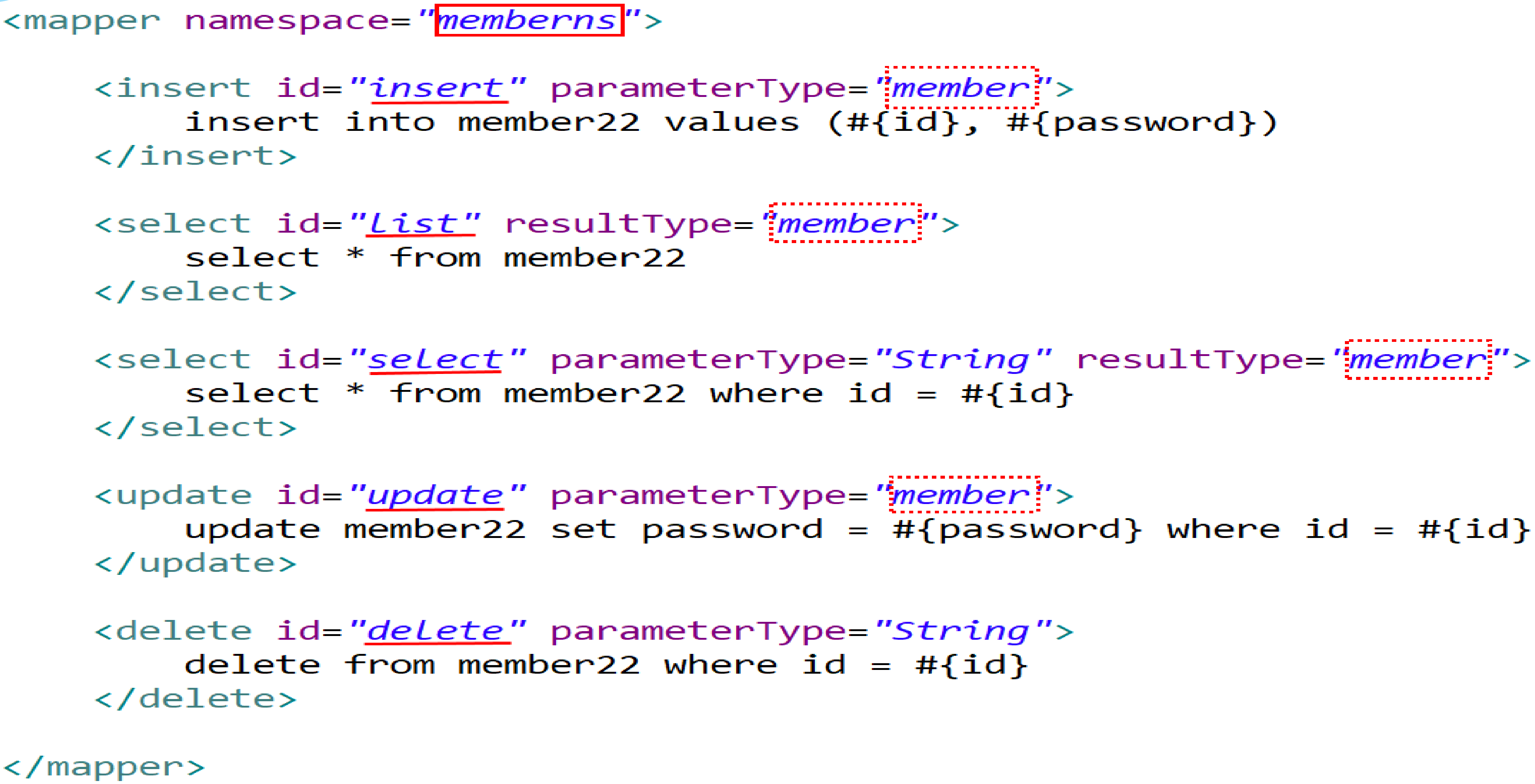
```xml
<configuration>
    <properties resource="db.properties" />
    <typeAliases>
        <typeAlias type="model.Member" alias="member"></typeAlias>
    </typeAliases>
    <environments default="development">
        <environment id="development">
            <transactionManager type="JDBC" />
            <dataSource type="POOLED">
                <property name="driver" value="${jdbc.driverClassName}" />
                <property name="url" value="${jdbc.url}" />
                <property name="username" value="${jdbc.username}" />
                <property name="password" value="${jdbc.password}" />
            </dataSource>
        </environment>
    </environments>
    <mappers>
        <mapper resource="member.xml" />
    </mappers>
</configuration>
```

db.properties



```
#oracle
jdbc.driverClassName=oracle.jdbc.driver.OracleDriver
jdbc.url=jdbc:oracle:thin:@localhost:1521:xe
jdbc.username=totoro
jdbc.password=totoro123
```

member.xml



```
<mapper namespace="memberns">

    <insert id="insert" parameterType="member">
        insert into member22 values (#{id}, #{password})
    </insert>

    <select id="list" resultType="member">
        select * from member22
    </select>

    <select id="select" parameterType="String" resultType="member">
        select * from member22 where id = #{id}
    </select>

    <update id="update" parameterType="member">
        update member22 set password = #{password} where id = #{id}
    </update>

    <delete id="delete" parameterType="String">
        delete from member22 where id = #{id}
    </delete>

</mapper>
```