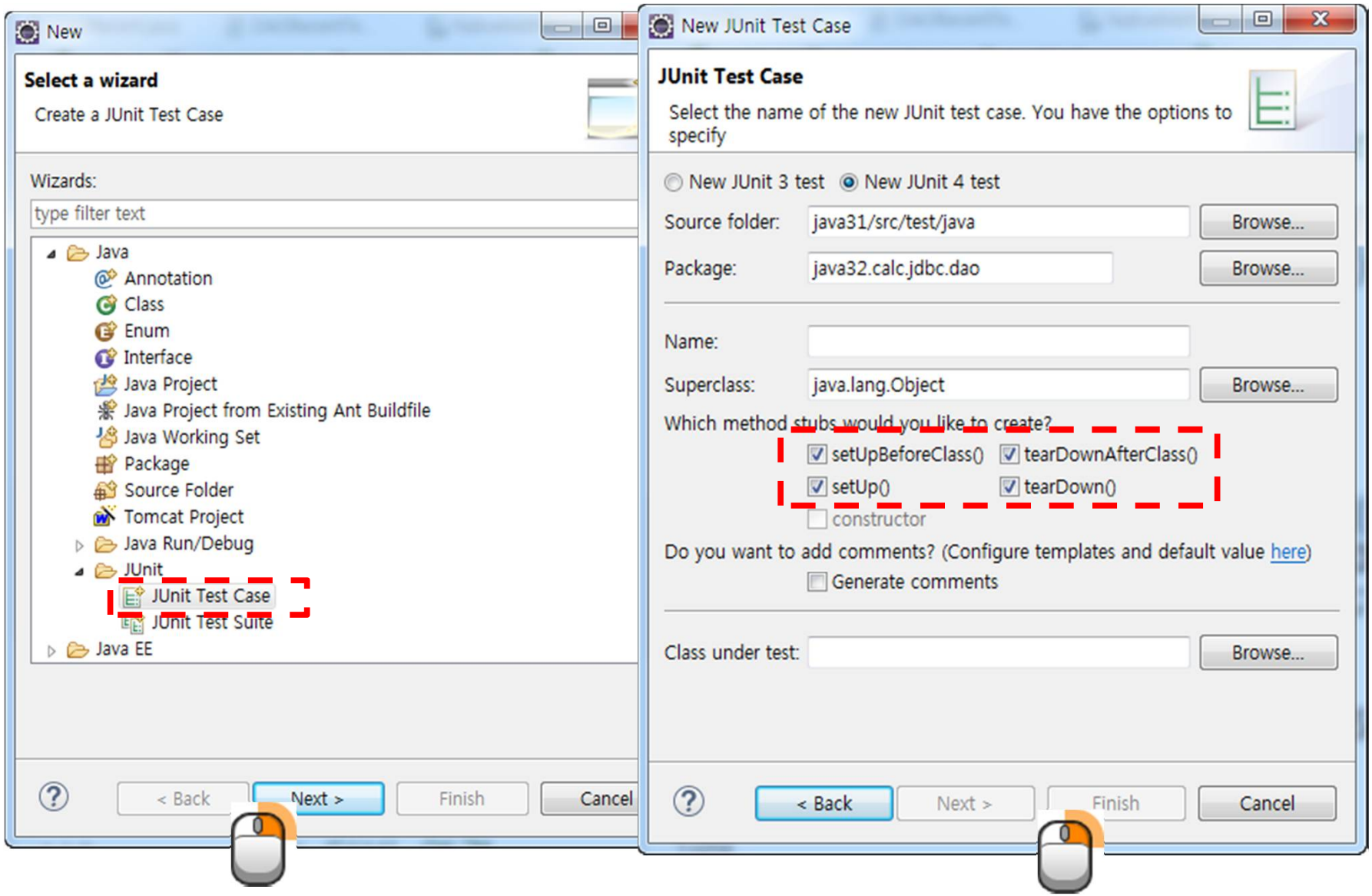
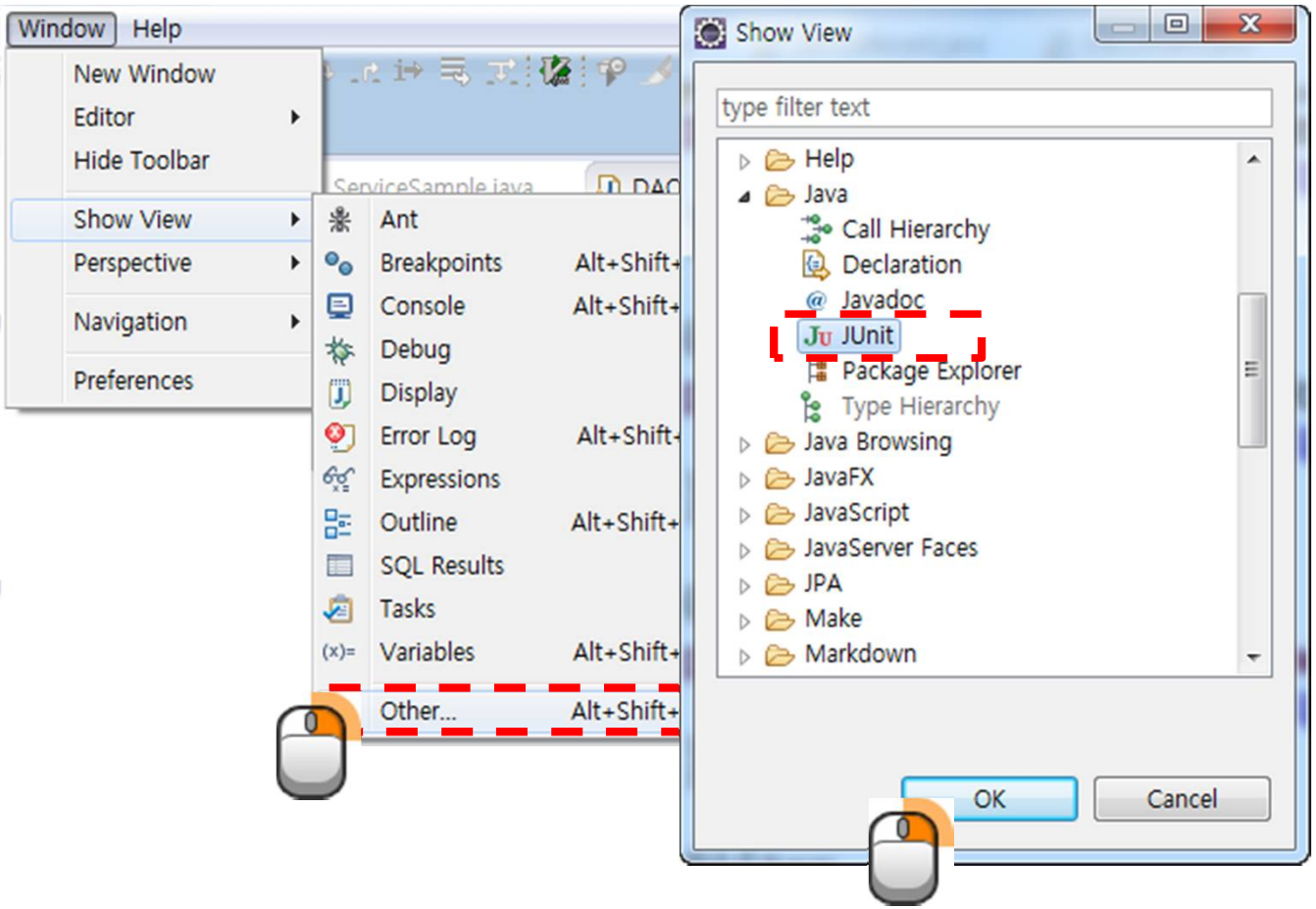
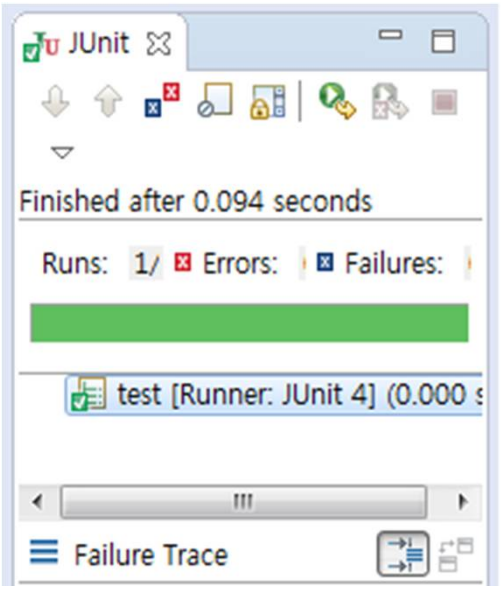
# JUnit 테스트

# JUnit Test Case 추가

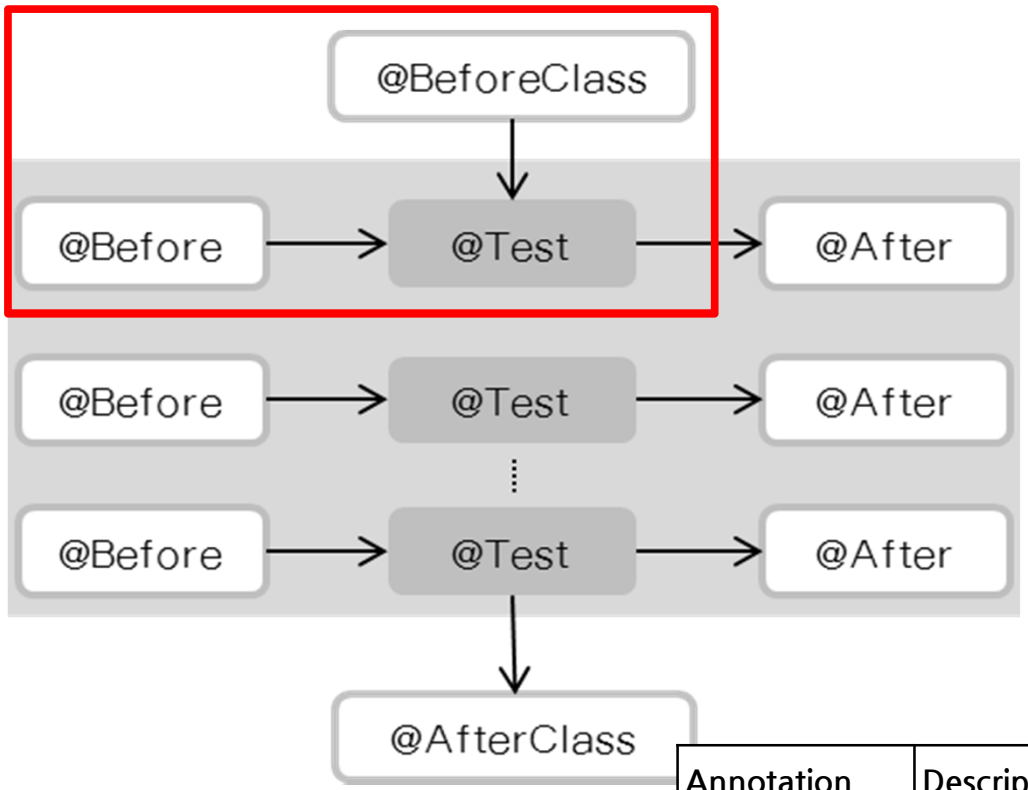


# JUnit Test Case 추가



# JUnit annotations




| Annotation | Description |
|---|---|
| @Test | The Test annotation tells JUnit that the public void method to which it is attached can be run as a test case. |
| @BeforeClass | Annotating a public static void method with @BeforeClass ca uses it to be run once before any of the test methods in the c lass. |
| @Before | Several tests need similar objects created before they can run . Annotating a public void method with @Before causes that method to be run before each Test method. |

# JUnit assert 주요 메서드

| 메서드명 | 설명 |
|---|---|
| assertNull(a); | 객체 A가 null이 아님을 확인한다. |
| assertNotNull(a); | 객체 A가 null이 아님을 확인한다. |
| assertEquals(a, b); | 객체 A와 B가 일치함을 확인한다. |
| assertNotEquals(a, b); | |
| assertSame(a, b); | 객체 A와 B가 같은 값임을 확인한다. |
| assertNotSame(a, b); | |
| assertTrue(a); | 조건 A가 참인가를 확인한다. |
| assertFalse(a); | 조건 A가 참인가를 확인한다. |
| assertArrayEquals(a, b); | 배열 A와 B가 일치함을 확인한다. |

**단정문 assertEquals와 assertSame의 차이점**

- assertEquals는 두 값이 같은지를 비교하는 단정문.
- assertSame은 두 객체가 동일한 객체인지 주소값으로 비교하는 단정문.

# MyBatis

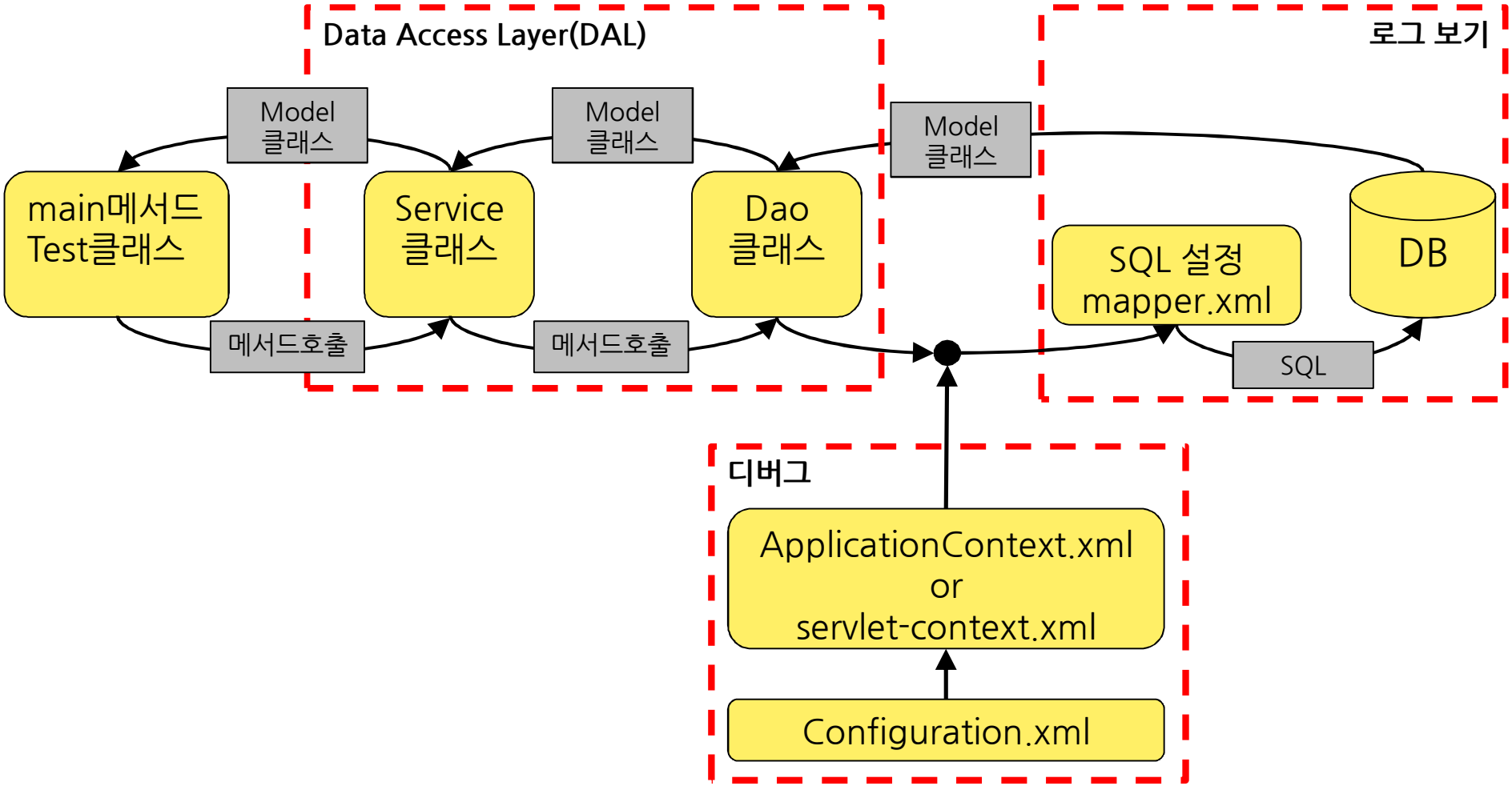
1. 데이터베이스 테이블 생성
2. gradle로 프로젝트 생성
   - build.gradle 수정
   - gradle >> refresh 실행
3. src/main/resources 폴더에 아래 파일  추가
   - log4j.properties 파일 생성
4. 스프링 설정 파일 생성
   - ApplicationContext.xml 파일 생성
   - Configuration.xml 파일 생성
5. src/main/resources/mapper/mapperBook.xml 파일 생성
   - mapperBook.xml 파일을 Configuration.xml 에 등록
6. Model 클래스 생성
7. IBook 인터페이스,
8. DaoBook 클래스 생성
9. ServiceBook 클래스 생성
10. JUnit Test 클래스 생성

# JDBC vs MyBatis

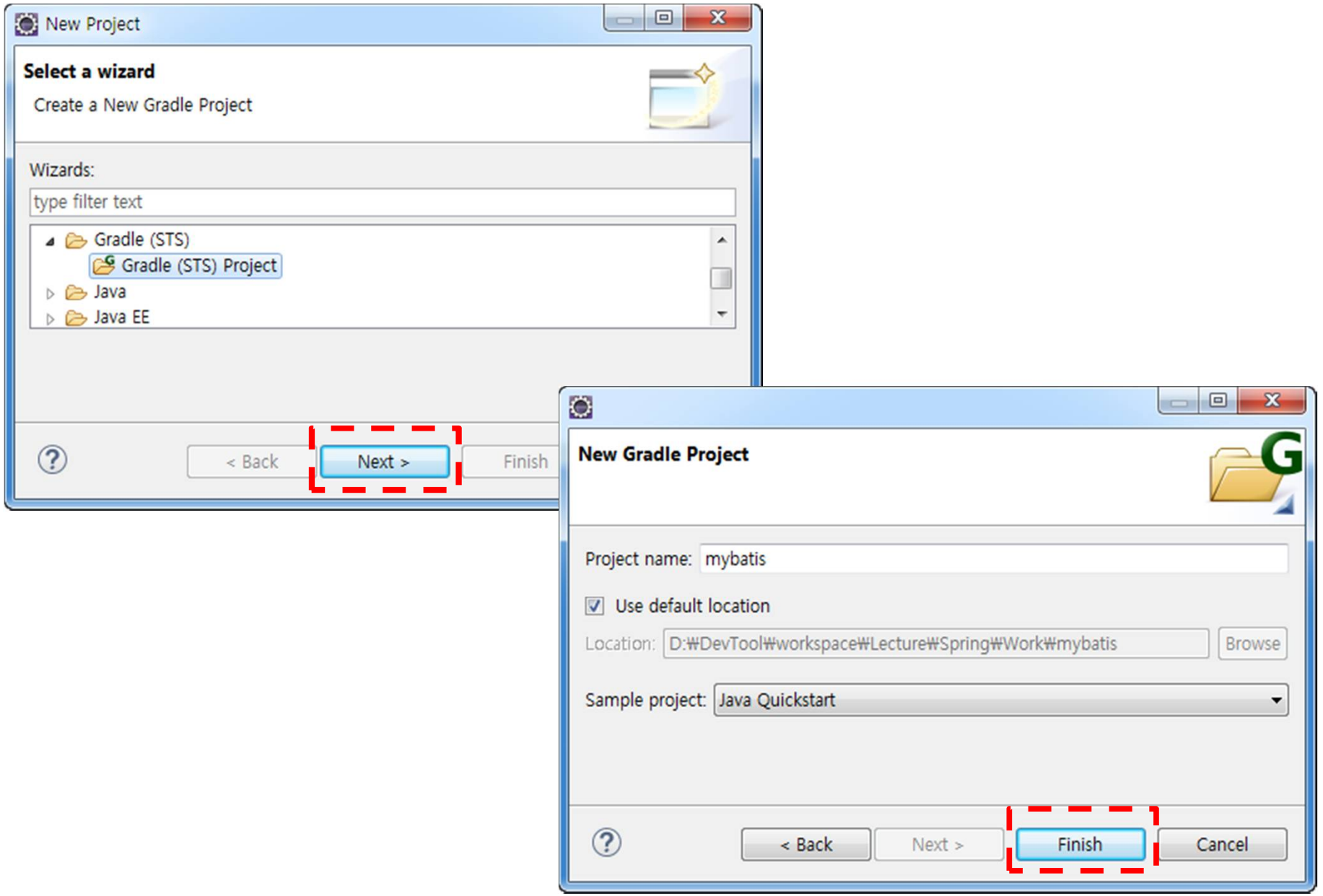
```
String query = "SELECT * FROM book WHERE bookid = ? ";

PreparedStatement stmt = conn.prepareStatement(query);
stmt.setString(1, bookname );

rs = stmt.executeQuery();
```

```
<select id="getSQLSelectEqual" parameterType="string" resultType="ModelBook">
    SELECT * FROM book
    WHERE bookname = #{bookname}
    ORDER BY bookid ASC
</select>
```

# MyBatis 데이터 처리 과정



# gradle로 프로젝트 생성

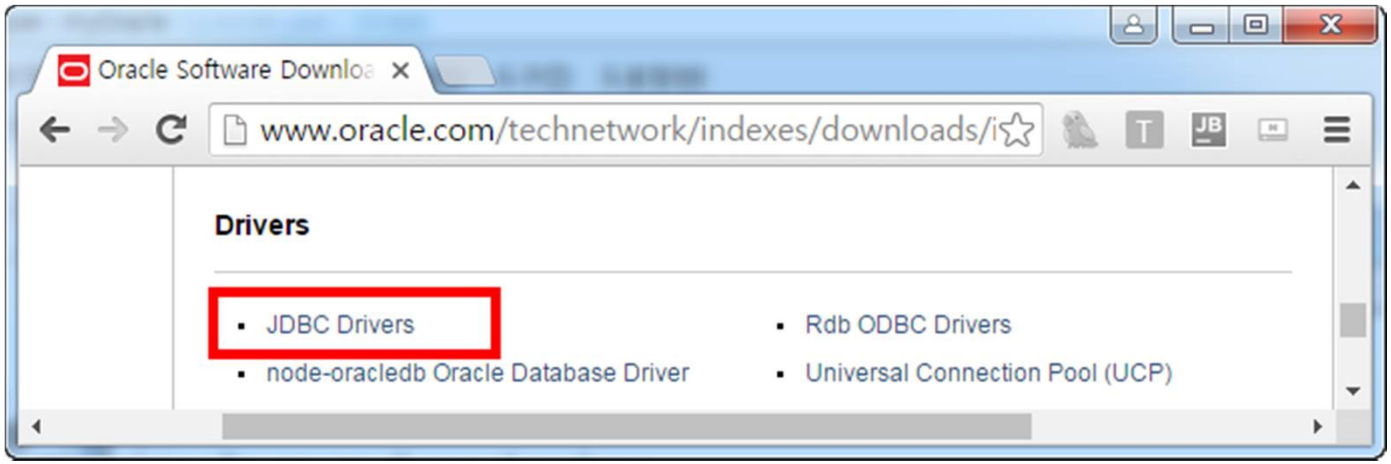


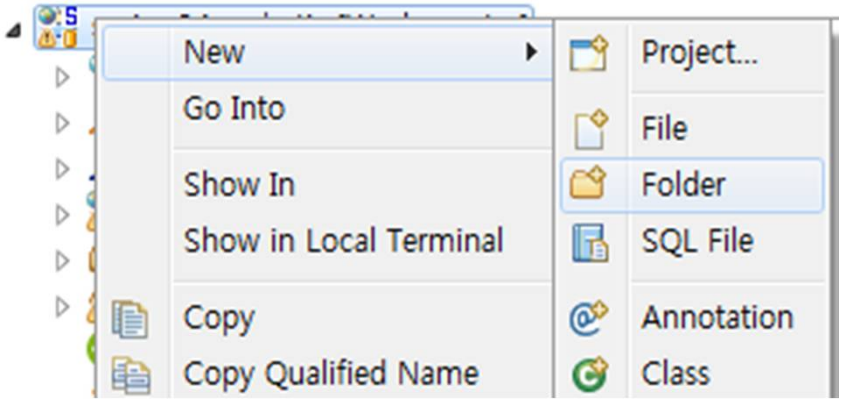
# Oracle JDBC 드라이버 추가하기

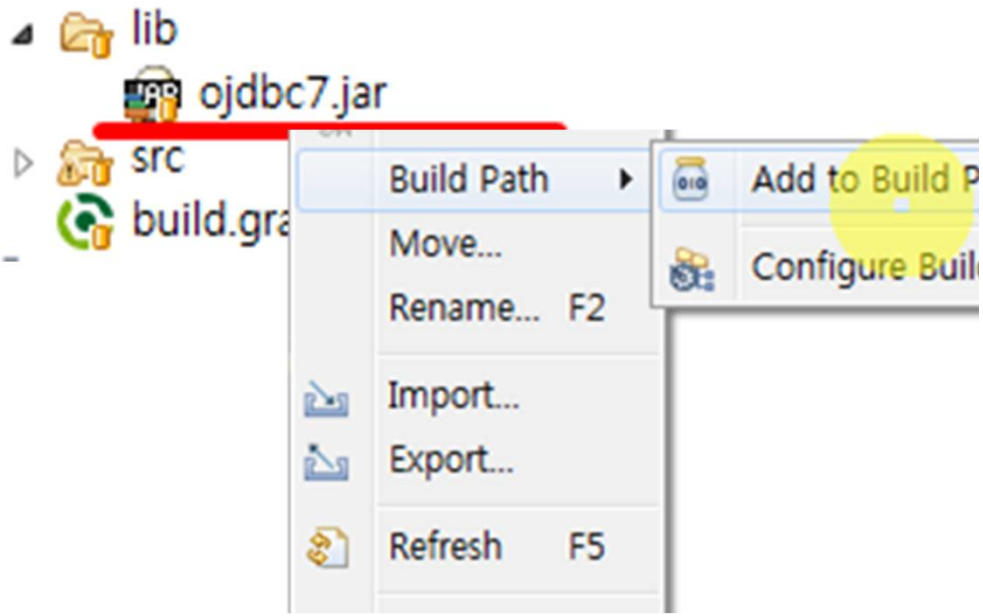
1. Oracle JDBC 드라이버 다운로드

   https://www.oracle.com/downloads/ 에서 드라이버를 다운로드 받는다. 단, jar 파일이면 압축을 풀지 마시오.
2. 프로젝트에 lib 폴더 생성
3. 다운로드 받은 ojdbc.jar를 lib 폴더로 복사한다.
4. JDBC를 Build Path에 추가하기

# Oracle JDBC 드라이버 추가하기



# build.gradle 수정

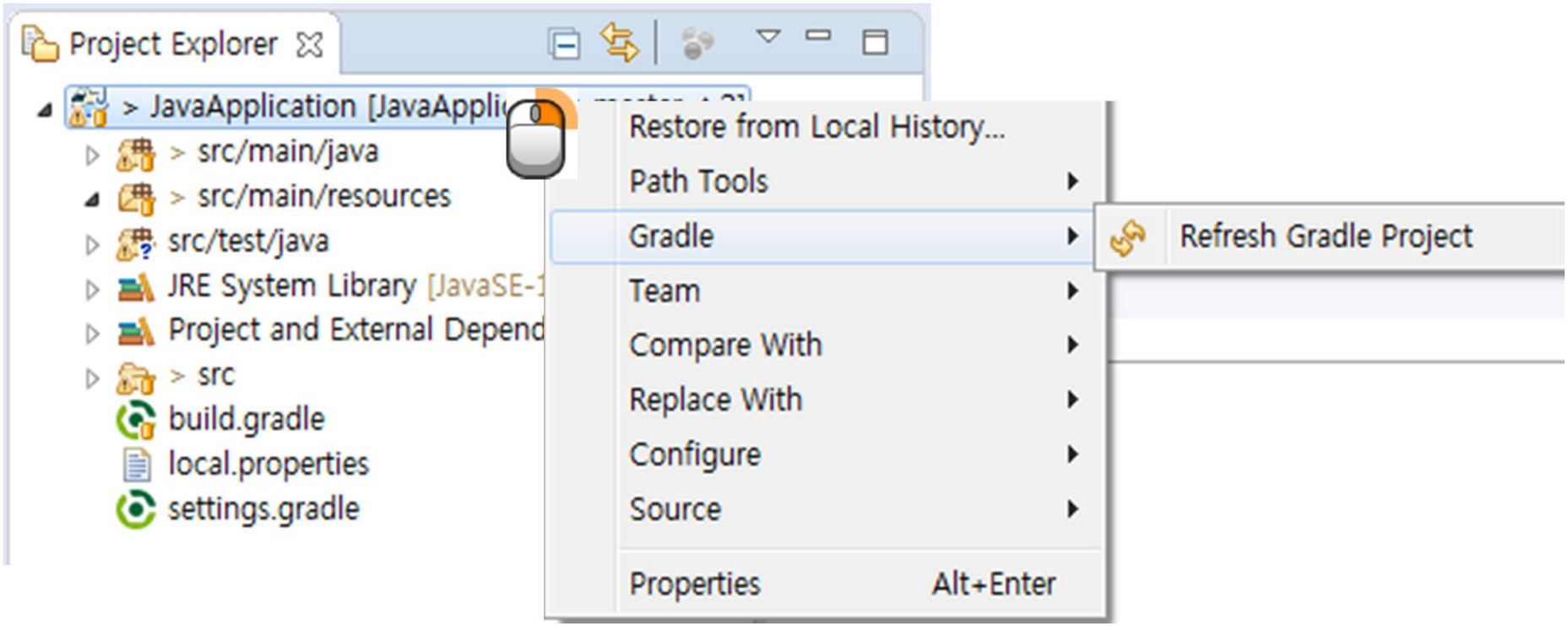
build.gradle

```
66 dependencies {
67
68     compile fileTree(dir: "lib", include: ["*.jar"])
69
70     // log 라이브러리
71     compile 'org.slf4j:slf4j-api:1.7.12'
72     compile 'org.slf4j:slf4j-log4j12:1.7.21'
73     compile 'org.slf4j:log4jdbc3:1.1'
74     compile 'log4j:log4j:1.2.17'
75     compile 'com.googlecode.log4jdbc:log4jdbc:1.2'
76
77     // spring 라이브러리
78     compile "org.springframework:spring-core:4.1.7.RELEASE"
79     compile "org.springframework:spring-beans:4.1.7.RELEASE"
80     compile "org.springframework:spring-context:4.1.7.RELEASE"
81     compile "org.springframework:spring-webmvc:4.1.7.RELEASE"
82     compile "org.springframework:spring-aop:4.1.7.RELEASE"
83     compile "org.springframework:spring-jdbc:4.1.7.RELEASE"
84     compile "org.springframework:spring-tx:4.1.7.RELEASE"
85     compile "org.springframework:spring-aspects:4.1.7.RELEASE"
86
87     // mysql 라이브러리
88     compile 'mysql:mysql-connector-java:5.1.38'
89
90     // mybatis 라이브러리
91     compile 'org.mybatis:mybatis:3.2.8'
92     compile 'org.mybatis:mybatis-spring:1.2.2'
93
94     // Apache Commons package
95     compile "org.apache.commons:commons-lang3:3.4"
96     compile "org.apache.commons:commons-dbcp2:2.0"
97
98     testCompile 'junit:junit:4.12'
99 }
```

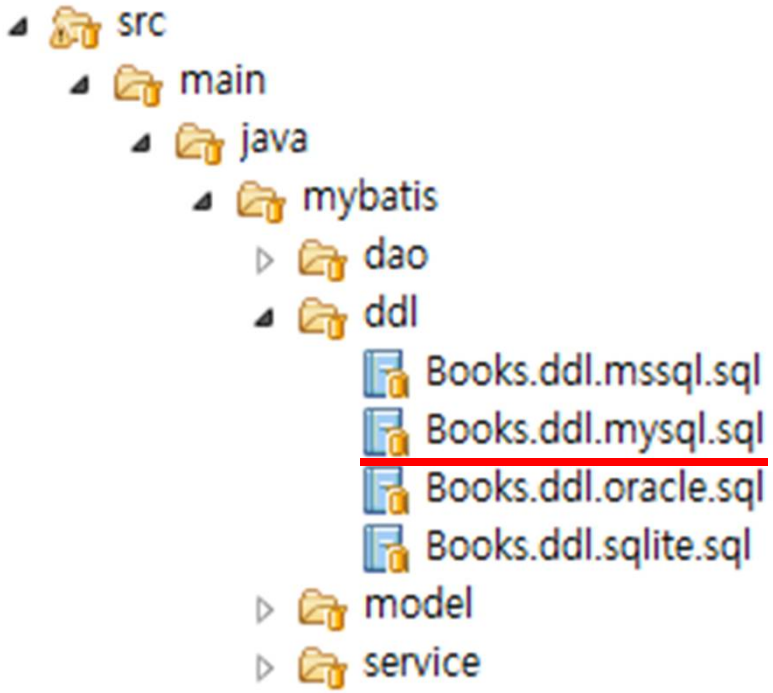
```
// log library
slf4j-api
slf4j-log4j12
log4jdbc3
log4j
log4jdbc

// spring 라이브러리
spring-core
spring-beans
spring-context
spring-webmvc
spring-aop
spring-jdbc
spring-tx
spring-aspects

// mysql connector
mysql-connector-java

// mybatis library
mybatis
mybatis-spring

// Apache Commons package
commons-lang3
commons-dbcp2
```

# gradle refresh 실행

- build.gradle 이 수정되면 반드시 아래 과정을 반복해야 한다.



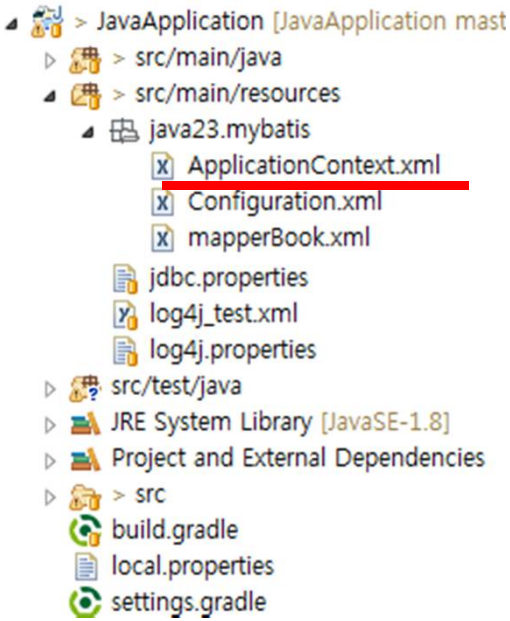
# 데이터베이스 테이블 생성




```
-- book 테이블 제거하기
BEGIN EXECUTE IMMEDIATE 'DROP TABLE book';
EXCEPTION WHEN OTHERS THEN NULL; END;
/


-- book 테이블 생성
CREATE TABLE book (
      book_id     NUMBER(10)  GENERATED AS IDENTITY
    , title       VARCHAR(50)
    , publisher   VARCHAR(30)
    , year        VARCHAR(10)
    , price       NUMBER(10)
    , dtm         DATE
    , use_yn      NUMBER(1)
    , authid      NUMBER(10)

    , PRIMARY KEY(book_id)
);
```

# ApplicatonContext.xml 생성

```
<?xml version="1.0" encoding="UTF-8"?>
<beans:beans xmlns="http://www.springframework.org/schema/mvc
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:beans="http://www.springframework.org/schema/beans"
    xmlns:context="http://www.springframework.org/schema/context"
    xmlns:aop="http://www.springframework.org/schema/aop"
    xmlns:tx="http://www.springframework.org/schema/tx"
    xmlns:p="http://www.springframework.org/schema/p"

    xsi:schemaLocation="http://www.springframework.org/schema/mvc
    http://www.springframework.org/schema/mvc/spring-mvc.xsd
        http://www.springframework.org/schema/beans
        http://www.springframework.org/schema/beans/spring-beans.xsd
        http://www.springframework.org/schema/context
        http://www.springframework.org/schema/context/spring-context.xsd

        http://www.springframework.org/schema/aop
        http://www.springframework.org/schema/aop/spring-aop.xsd
        http://www.springframework.org/schema/tx
        http://www.springframework.org/schema/tx/spring-tx.xsd">
```



# 트랜잭션 설정

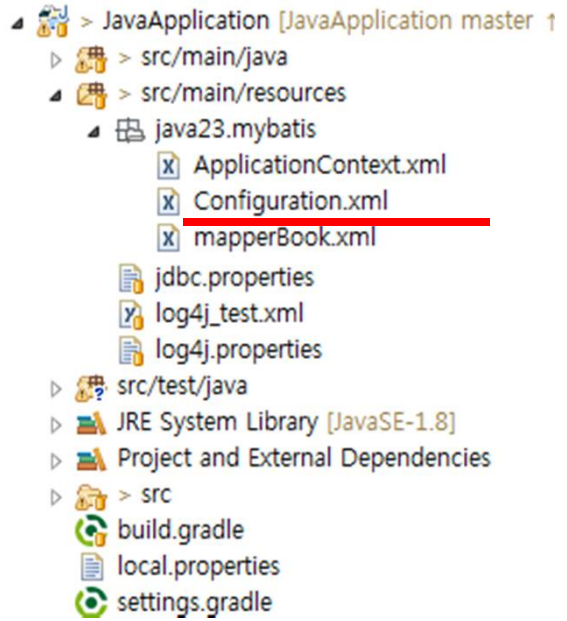
```
<!-- step4. 트랜잭션 설정 :  commit, rollback -->
<beans:bean id="transactionManager"
            class="org.springframework.jdbc.datasource.DataSourceTransactionManager">
    <beans:property name="dataSource" ref="dataSource" />
</beans:bean>
<!-- step4.1 실질적으로 트랜잭션 advice가 어디서 필요한지 알려줌 -->
<aop:config proxy-target-class="true">
    <!-- 패키지 mybatis. 이하의 모든 메서드에 pointcut을 걸음. -->
    <aop:pointcut id="controllerTx"
                  expression="execution(public * *..*Service*.*(..))" />
    <aop:advisor pointcut-ref="controllerTx"  advice-ref="txAdvice"  />
</aop:config>
<!-- step4.2 Transaction 메서드 설정 -->
<tx:advice id="txAdvice" transaction-manager="transactionManager">
    <tx:attributes>
        <tx:method name="insert*"       rollback-for="RuntimeException" />
        <tx:method name="update*"       rollback-for="RuntimeException" />
        <tx:method name="delete*"       rollback-for="RuntimeException" />
        <tx:method name="select*"       read-only="true" />
    </tx:attributes>
</tx:advice>
```

# 트랜잭션 설정

```
expression="execution(public  *  *..*Service*.*(..))"
```

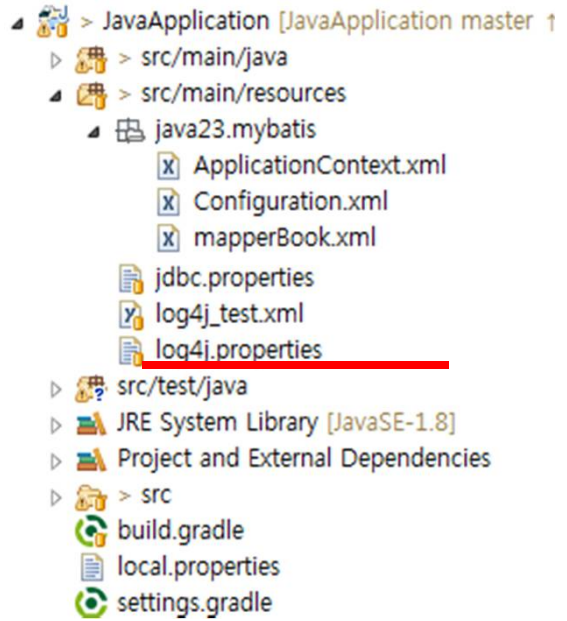
# Configuration.xml 생성 및 설정

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE configuration PUBLIC "-//mybatis.org//DTD Config 3.0//EN"
     "http://mybatis.org/dtd/mybatis-3-config.dtd">

<configuration>
  <settings>
      <setting name="jdbcTypeForNull" value="NULL" />
  </settings>

  <!-- Model 클래스의 패키지명을 등록한다. -->
  <typeAliases>
      <package name="java23.mybatis.model" />
  </typeAliases>

  <!-- sql 이 저장되는 xml 파일 등록: 주의 사항은 경로로 설정해야 한다. -->
  <mappers>
      <mapper resource="mapper/mapperBook.xml" />
  </mappers>

</configuration>
```



# log4j.properties 생성

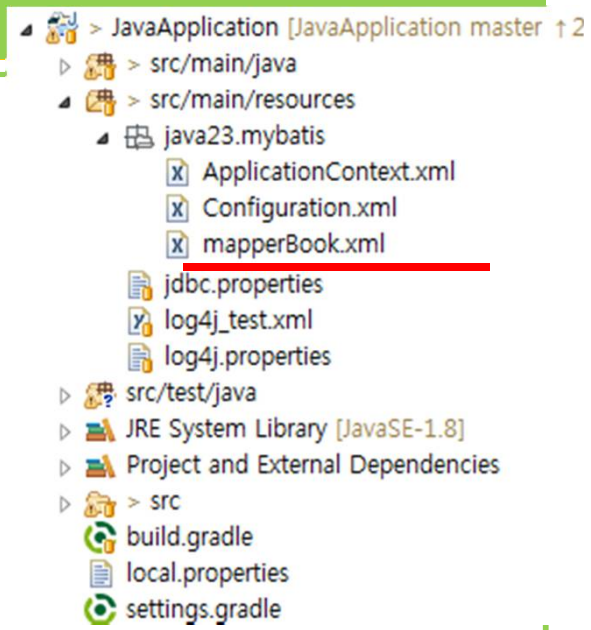
```
#############################################
### Rules reminder:
### DEBUG < INFO < WARN < ERROR < FATAL
#############################################


#############################################
### Root Logger로 stout, rolling으로 셋팅
### 최상위 카테고리에 DEBUG로 레벨 설정
### appender로 stdout, rolling을 정의
#############################################
log4j.rootLogger=DEBUG, stout, rolling, sql


#############################################
### console 설정
#############################################

#### 콘솔에 뿌려줌
log4j.appender.stout=org.apache.log4j.ConsoleAppender

#### DEBUG 이상 레벨에서만 찍는다.
log4j.appender.stout.Threshold=DEBUG
```



# mapper 파일 생성

- src/main/resources/mapper/mapperBook.xml 파일 생성

# mapperBook.xml 생성(1/3)

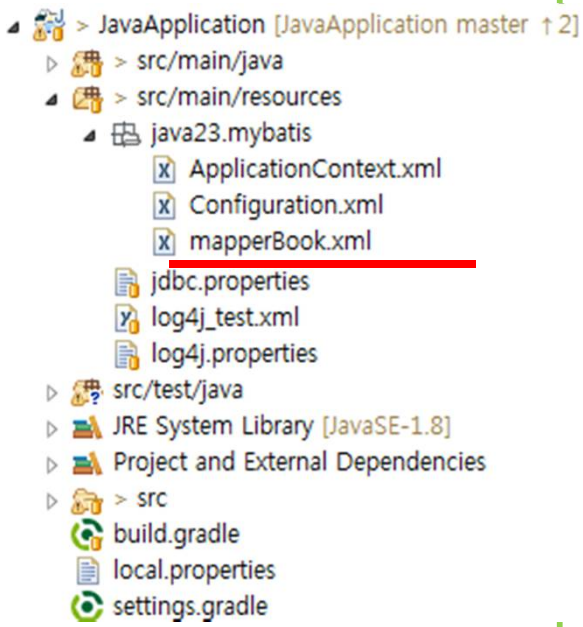



```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
       "http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace="mapper.mapperBook">

    <select id="selectAll" resultType="ModelBook" >
        SELECT * FROM book ORDER BY bookid ASC
    </select>

    <select id="selectEqual" parameterType="String" resultType="ModelBook">
        SELECT * FROM book where bookname like #{bookname}
    </select>

    <select id="selectEqual" parameterType="String" resultType="ModelBook">
        SELECT * FROM book where bookname = #{bookname}
    </select>

    <insert id="insert" parameterType="ModelBook" >
        INSERT INTO BOOK( BOOKNAME, PUBLISHER, YEAR, PRICE, DTM, USE_YN, AUTHID )
        VALUES(#{bookname},#{publisher},#{year},#{price},#{dtm},#{use_yn},#{authid} )
    </insert>
</mapper>
```

# mapperBook.xml 생성(2/3)

- src/main/resources/mapper/mapperBook.xml 파일 생성

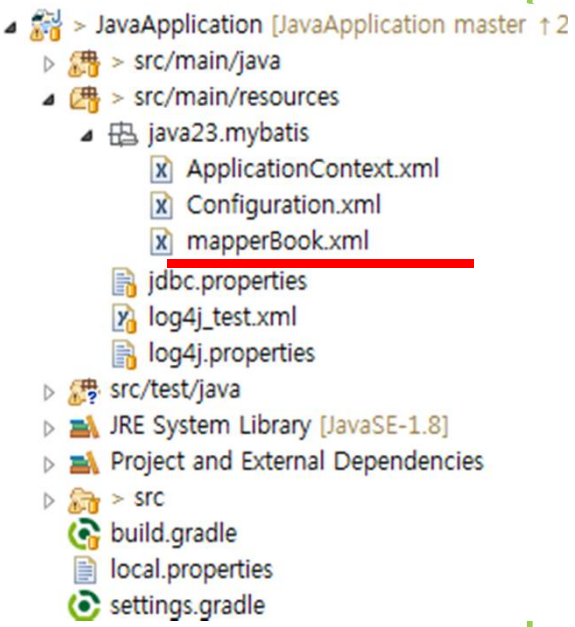
```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
       "http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace="mapper. mapperBook">

    <update id="update" parameterType="hashmap" >
         UPDATE BOOK
            SET BOOKNAME    = #{updateValue.bookname}
              , PUBLISHER   = #{updateValue.publisher}
              , YEAR        = #{updateValue.year}
              , PRICE       = #{updateValue.price}
              , DTM         = #{updateValue.dtm}
              , USE_YN      = #{updateValue.use_yn}
              , AUTHID      = #{updateValue.authid}
            WHERE 1 = 1
              <if test="searchValue.bookid != null" >
              AND BOOKID    = #{searchValue.bookid}
              </if>
              <if test="searchValue.bookname != null">
              AND BOOKNAME  = #{searchValue.bookname}
              </if>
    </update>
</mapper>
```



# mapperBook.xml 생성(3/3)

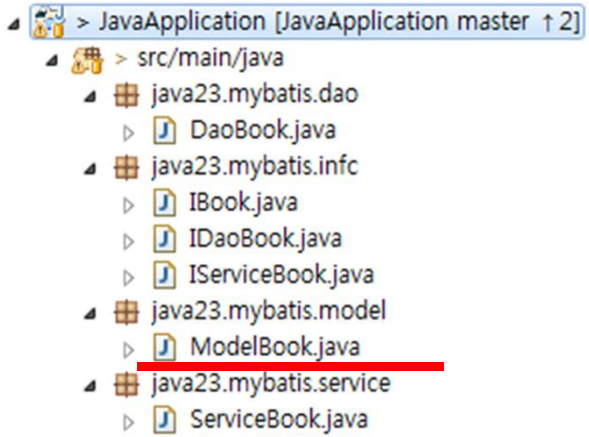
- src/main/resources/mapper/mapperBook.xml 파일 생성

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
       "http://mybatis.org/dtd/mybatis-3-mapper.dtd">

<mapper namespace="mapper.mapperBook">

    <delete id="delete" parameterType="ModelBook" >
         DELETE FROM BOOK
            WHERE 1 = 1
              <if test="bookid != null" >
              AND BOOKID    = #{bookid}
              </if>
              <if test="bookname != null">
              AND BOOKNAME  = #{bookname}
              </if>
    </delete>

</mapper>
```



# Model 클래스 생성

```
public class ModelBook {
    private Integer  bookid    = null ;
    private String   bookname  = "" ;
    private String   publisher = "" ;
    private String   year      = "" ;
    private Integer  price     = null ;
    private Date     dtm       = null ;
    private Boolean  use_yn    = null ;
    private Integer  authid    = null ;
```

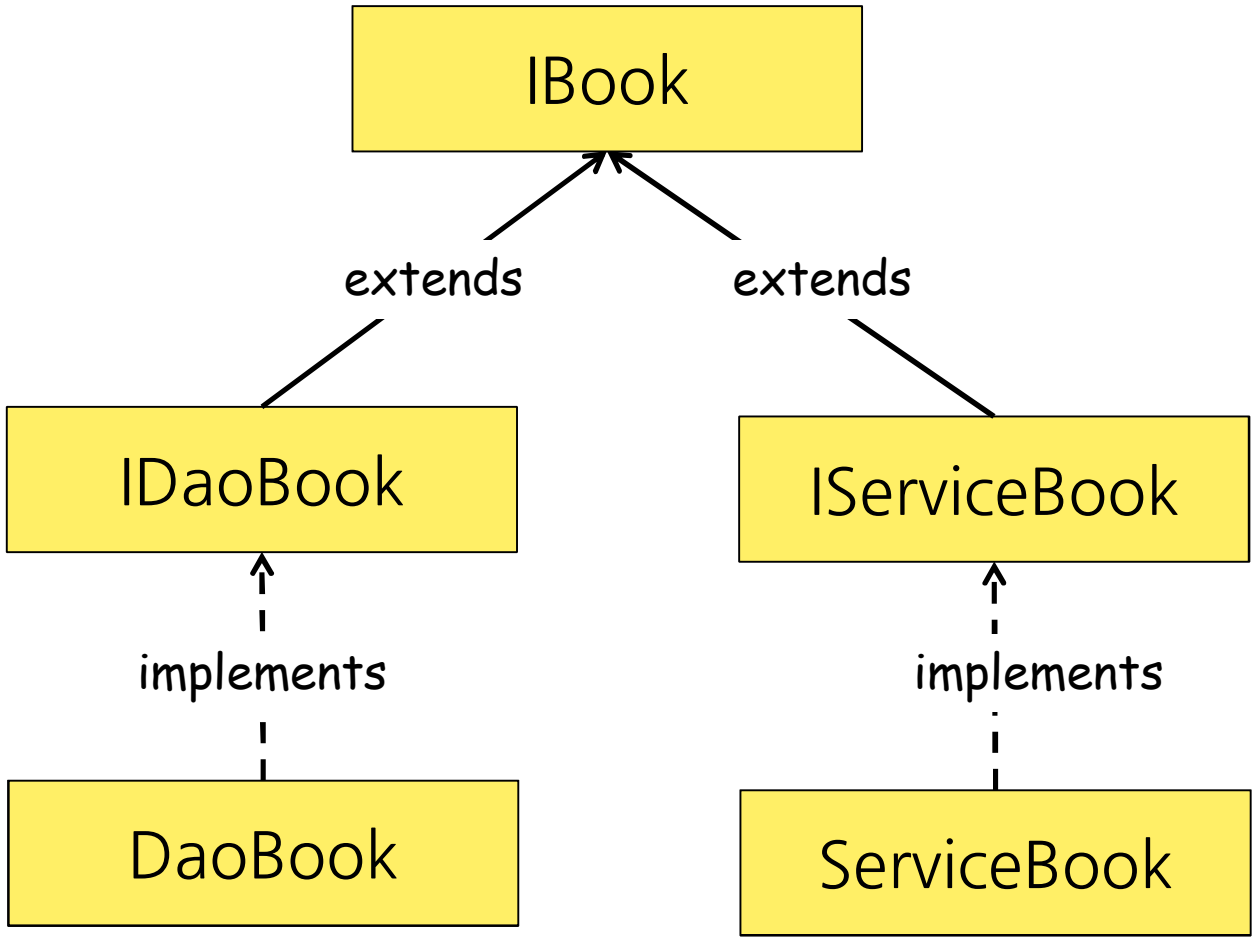



1. 필드 선언
2. getter / setter 만들기
3. Constructor 만들기
4. toString 만들기

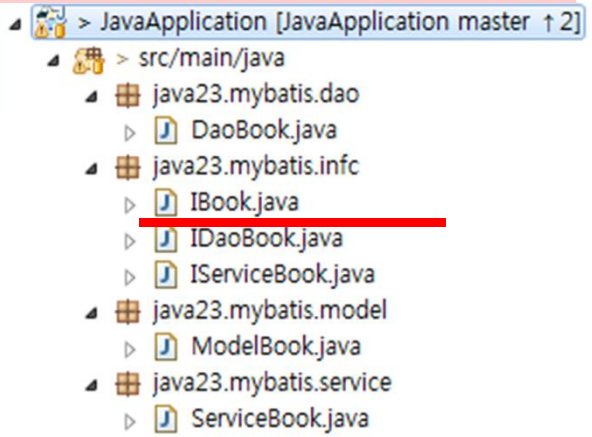
```
}
```

**# 모델 클래스를 만들 때는 필드 이름을 테이블 컬럼명과 동일하게 만들어야 한다.**

# Book 인터페이스 구조

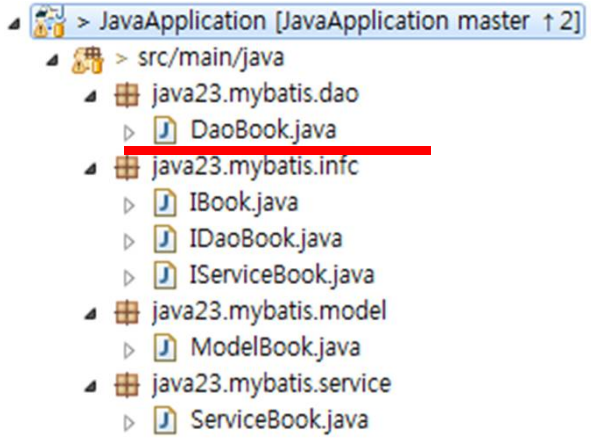


# IBook 인터페이스 만들기




```
public interface IBook {

    int getCount(ModelBook book) throws Exception;

    int getMaxBookid() throws Exception;

    List<ModelBook> selectAll(ModelBook book) throws Exception;

    List<ModelBook> selectLike(ModelBook book) throws Exception;

    List<ModelBook> selectEqual(ModelBook book) throws Exception;

    int insert(ModelBook book) throws Exception;

    int insertMap(String bookname, Date dtm, int authid) throws Exception;

    int update(ModelBook wherebook, ModelBook setbook ) throws Exception;

    int delete(ModelBook book) throws Exception;

    List<ModelBook> selectDynamic(ModelBook book) throws Exception;
}
```

# Dao 클래스 생성




```
@Repository("daobook")
public class DaoBook implements IBook {

    @Autowired
    @Qualifier("sqlSession")
    private SqlSession session;

}
```

# 빨간 글씨 부분을  추가.
SqlSession 은 java.sql.Connection과 같은 역할

# DaoBook.selectEqual() 메서드

```
@Override
public List<ModelBook> selectEqual(String bookname) {
    List<ModelBook> result  = null;

    result = session.selectList("mapper.mapperBook.selectEqual", bookname );

    return result;
}
```

```
<mapper namespace="mapper.mapperBook">


    <select id="selectEqual"      parameterType="String"    resultType="ModelBook">
        SELECT * FROM book where bookname = #{bookname}
    </select>

</mapper>
```

# DaoBook.insert() 메서드

```
@Override
public int insert(ModelBook book) {

    int result = 0 ;
    result = session.insert("mapper.mapperBook.insert", book);
    return result;
}
```

```
<mapper namespace="mapper.mapperBook">

    <insert      id="insert"                          parameterType="ModelBook" >
        INSERT INTO BOOK( BOOKNAME, PUBLISHER , YEAR , PRICE , DTM , USE_YN , AUTHID)
        VALUES( #{bookname},#{publisher},#{year},#{price},#{dtm},#{use_yn},#{authid} )
    </insert>
</mapper>
```

# DaoBook.insertMap() 메서드

```java
@Override
public int insertMap(String bookname, Date dtm, int authid) throws Exception {
    int result = -1;
    Map<String, Object> map = new HashMap<>();
    map.put("bookname", bookname);
    map.put("dtm"     , dtm     );
    map.put("authid"  , authid  );
    result = session.insert("mapper.mapperBook.insertMap", map);
    return result;
}
```

```xml
<mapper namespace="mapper.mapperBook">

    <insert      id="insert"                                    parameterType="ModelBook" >
        INSERT INTO BOOK( BOOKNAME    , DTM   , AUTHID    )
               VALUES( #{bookname},#{dtm},#{authid} )
    </insert>
</mapper>
```

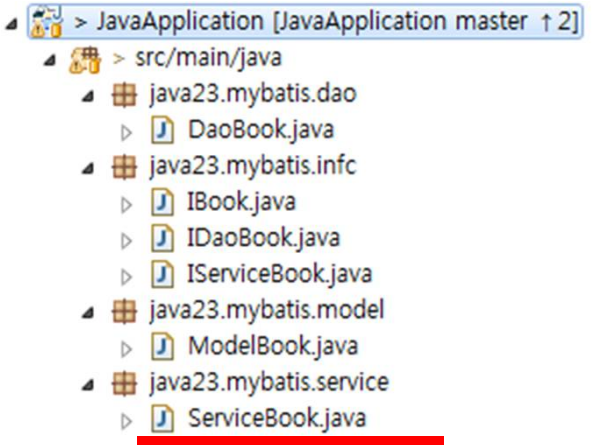
## 아래의 Dao 메서드를 작성하시오

- getCount(ModelBook book)
- getMaxBookid()
- selectAll(ModelBook book)
- selectLike(ModelBook book)
- update(ModelBook wherebook, ModelBook setbook )
- delete(ModelBook book)
- selectDynamic(ModelBook book)

# Service 클래스 생성

```
@Service("servicebook")
public class ServiceBook implements IServiceBook {

    private static Logger logger = LoggerFactory.getLogger( ServiceBook.class );

    @Autowired
    @Qualifier("daobook")
    private IDaoBook dao;

}
```

# 빨간 글씨 부분을 추가.



## ServiceBook.selectEqual() 메서드

```
@Override
public List<ModelBook> selectEqual(ModelBook book) throws Exception
{

    List<ModelBook> result = null;

    try {
        result = dao.selectEqual(book);
    } catch (Exception e) {
        logger.error( "selectEqual " + e.getMessage() );
    }

    return result;
}
```

## ServiceBook.insert() 메서드

```
@Override
public int insert(ModelBook book) throws Exception {

    int result = -1;

    try {
        result = dao.insert(book);
    } catch (Exception e) {
        logger.error( "insert " + e.getMessage() );
    }

    return result;
}
```

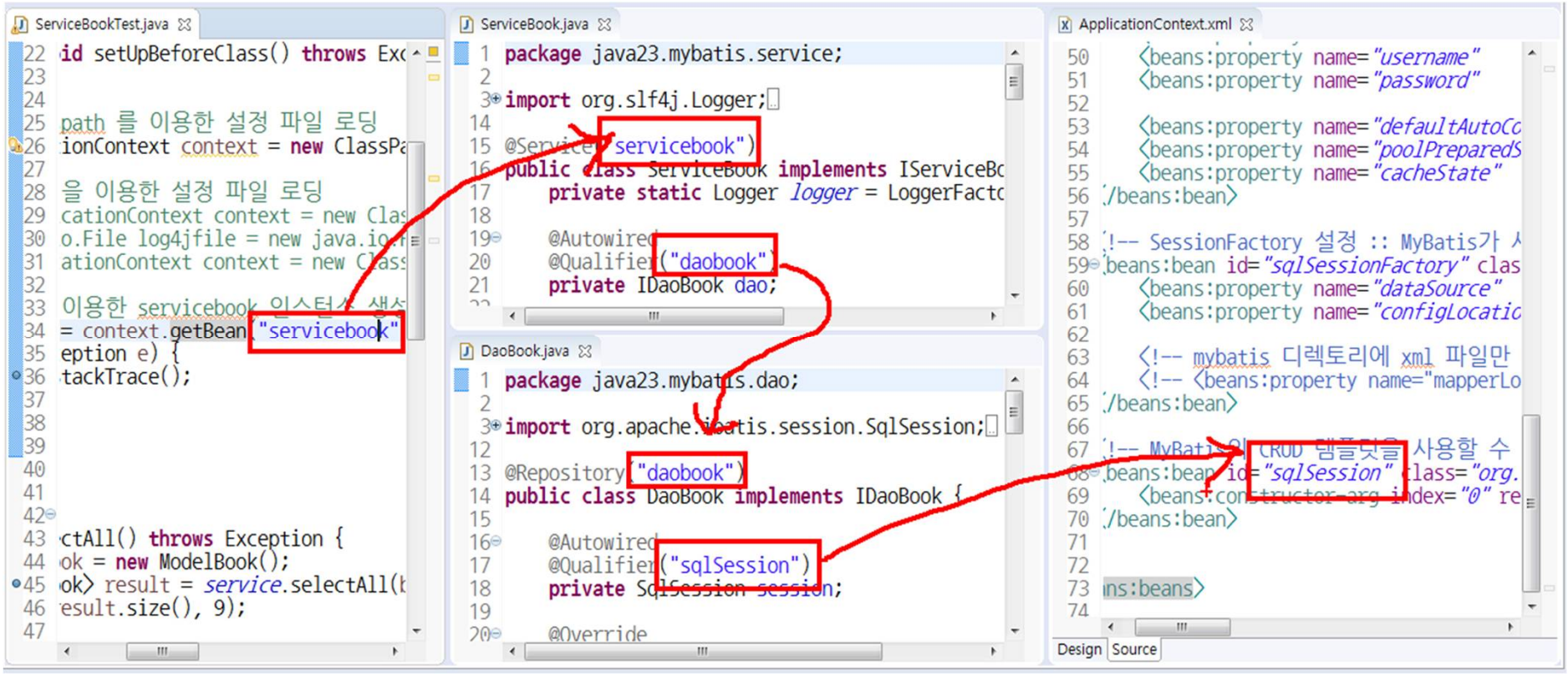
## ServiceBook.insertMap() 메서드

```
@Override
public int insertMap(String bookname, Date dtm, int authid)
        throws Exception {
    int result = -1;
    try {
        result = dao.insertMap(bookname, dtm, authid);
    } catch (Exception e) {
        logger.error( "insertMap " + e.getMessage() );
    }
    return result;
}
```

## 아래의 Service 메서드를 작성하시오

- getCount(ModelBook book)
- getMaxBookid()
- selectAll(ModelBook book)
- selectLike(ModelBook book)
- update(ModelBook wherebook, ModelBook setbook )
- delete(ModelBook book)
- selectDynamic(ModelBook book)

# 실행 순서


ServiceBookTest.java
id setUpBeforeClass() throws Exc
path 를 이용한 설정 파일 로딩
ionContext context = new ClassPa
을 이용한 설정 파일 로딩
cationContext context = new Clas
o.File log4jfile = new java.io.
ationContext context = new Class
이용한 servicebook 인스턴스 생성
= context.getBean("servicebook"
eption e) {
tackTrace();
ctAll() throws Exception {
ok = new ModelBook();
ok> result = service.selectAll(b
esult.size(), 9);
ServiceBook.java
package java23.mybatis.service;
import org.slf4j.Logger;
@Service("servicebook")
public class ServiceBook implements IServiceBo
private static Logger logger = LoggerFacto
@Autowired
@Qualifier("daobook")
private IDaoBook dao;
DaoBook.java
package java23.mybatis.dao;
import org.apache.ibatis.session.SqlSession;
@Repository("daobook")
public class DaoBook implements IDaoBook {
@Autowired
@Qualifier("sqlSession")
private SqlSession session;
@Override
ApplicationContext.xml
<beans:property name="username"
<beans:property name="password"
<beans:property name="defaultAutoCo
<beans:property name="poolPreparedS
<beans:property name="cacheState"
/beans:bean>
!-- SessionFactory 설정 :: MyBatis가 사
beans:bean id="sqlSessionFactory" clas
<beans:property name="dataSource"
<beans:property name="configLocatio
<!-- mybatis 디렉토리에 xml 파일만
<!-- <beans:property name="mapperLo
/beans:bean>
!-- MyBatis의 CRUD 템플릿을 사용할 수
beans:bean id="sqlSession" class="org.
<beans:constructor-arg index="0" re
/beans:bean>
ns:beans>
Design
Source

# Map을 이용하는 경우의 실행 순서

ServiceBookTest.java

```
84    @Test
85    public void insertMap() throws Exception {
86        int result = service.insertMap("test", Date.valueOf("2017-01-01"), 10);
87        assertSame(result, 1);
88    }
```

ServiceBook.java

```
79    @Override
80    public int insertMap(String bookname, Date dtm, int authid) throws Exception {
81        int result = -1;
82        try {
83            result = dao.insertMap(bookname, dtm, authid);
84        } catch (Exception e) {
85            logger.error( "insertMap " + e.getMessage() );
86        }
87        return result;
88    }
```

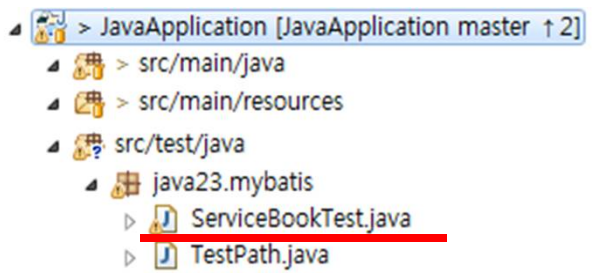
DaoBook.java

```
61    @Override
62    public int insertMap(String bookname, Date dtm, int authid) throws Exception {
63        int result = -1;
64        Map<String, Object> map = new HashMap<>();
65        map.put("bookname", bookname);
66        map.put("dtm"     , dtm     );
67        map.put("authid"  , authid  );
68        result = session.insert("mapper.mapperBook.insertMap", map);
69        return result;
70    }
```

mapperBook.xml

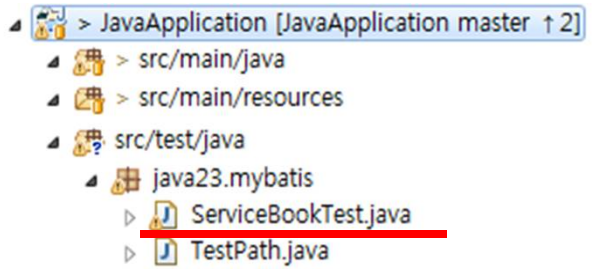
```
24    <insert id="insertMap" parameterType="hashmap">
25        INSERT INTO BOOK(  BOOKNAME  ,DTM  ,AUTHID)
26                  VALUES( #{bookname},#{dtm},#{authid})
27    </insert>
```

# 7. JUnit Test 클래스 생성




```
public class ServiceBookTest {
    private static ServiceBook service = null;

    @BeforeClass
    public static void setUpBeforeClass() throws Exception {

        // classpath 를 이용한 설정 파일 로딩
        ApplicationContext context = new
ClassPathXmlApplicationContext("classpath:ApplicationContext.xml");

        // file 을 이용한 설정 파일 로딩
        // ApplicationContext context = new
ClassPathXmlApplicationContext("file:src/main/resources/ApplicationContext.xml")
;

        // DI를 이용한 servicebook 인스턴스 생성
        service = context.getBean("servicebook", ServiceBook.class);
    }
}
```

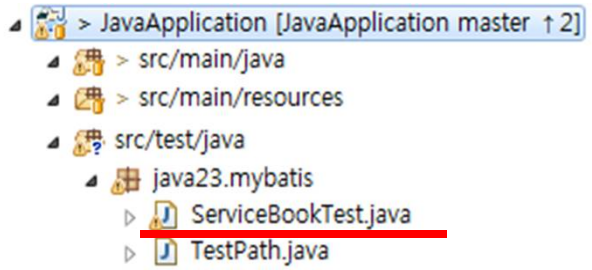
# 7. JUnit Test 클래스 생성




```
public class TestServiceBook {

    @Test
    public void selectAll() {
        ModelBook book = new ModelBook();
        List<ModelBook> result = service.selectAll(book);
        assertSame(result.size(), 14);
    }

    @Test
    public void selectEqual() {
        ModelBook book = new ModelBook();
        book.setBookname("First SQL");
        List<ModelBook> result = service.selectEqual(book);
        assertSame(result.size(), 1);
    }
}
```

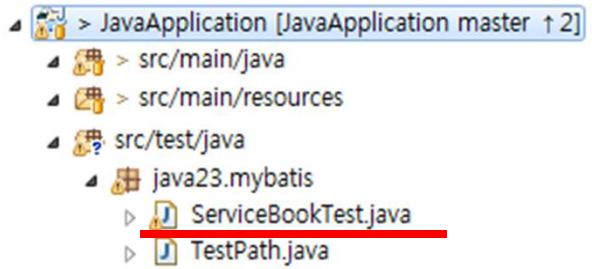
## 테스트 코드를 작성하시오.

```
public class TestServiceBook {

    @Test
    public void selectLike() {

        // 테스트 코드를 작성하시오.

    }
}
```



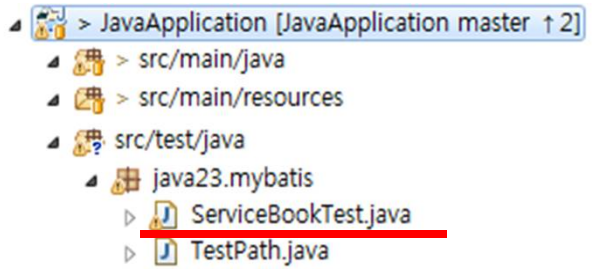
## 7. JUnit Test 클래스 생성

```
public class TestServiceBook {

    @Test
    public void insert() {
        ModelBook book = new ModelBook();
        book.setBookname("test");
        book.setDtm(Date.valueOf("2016-11-12") );
        book.setPrice(10000);
        book.setPublisher("내가");
        book.setUse_yn(true);
        book.setYear("2016");
        book.setAuthid(10);

        int result = service.insert(book);
        assertSame(result, 1);
    }
}
```



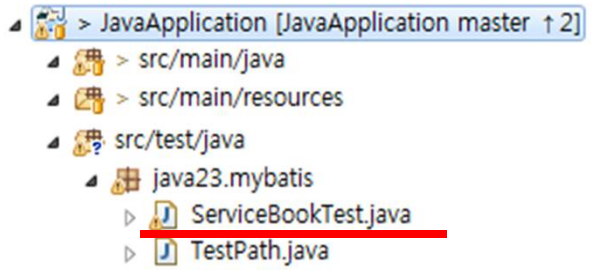
## 7. JUnit Test 클래스 생성

```
public class TestServiceBook {

    @Test
    public void insertMap() {
        ModelBook book = new ModelBook();

        String bookname = "test";
        java.util.Date dtm = "2016-11-12";
        int authid = 10 ;

        int result = service.insertMap( bookname, dtm, authid );
        assertSame(result, 1);
    }
}
```



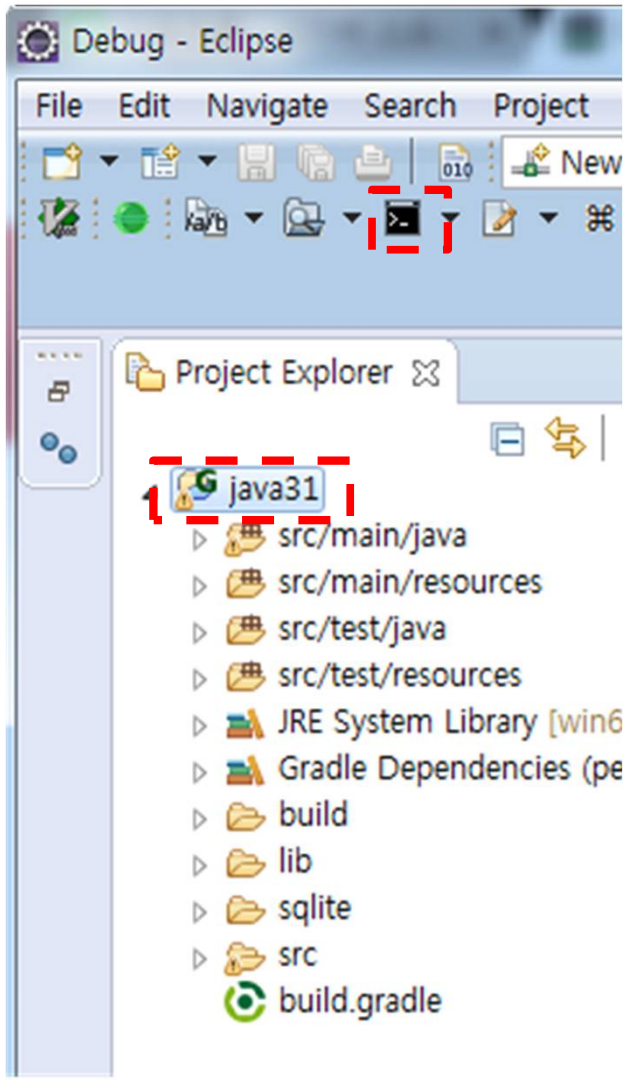
## 테스트 코드를 작성하시오.

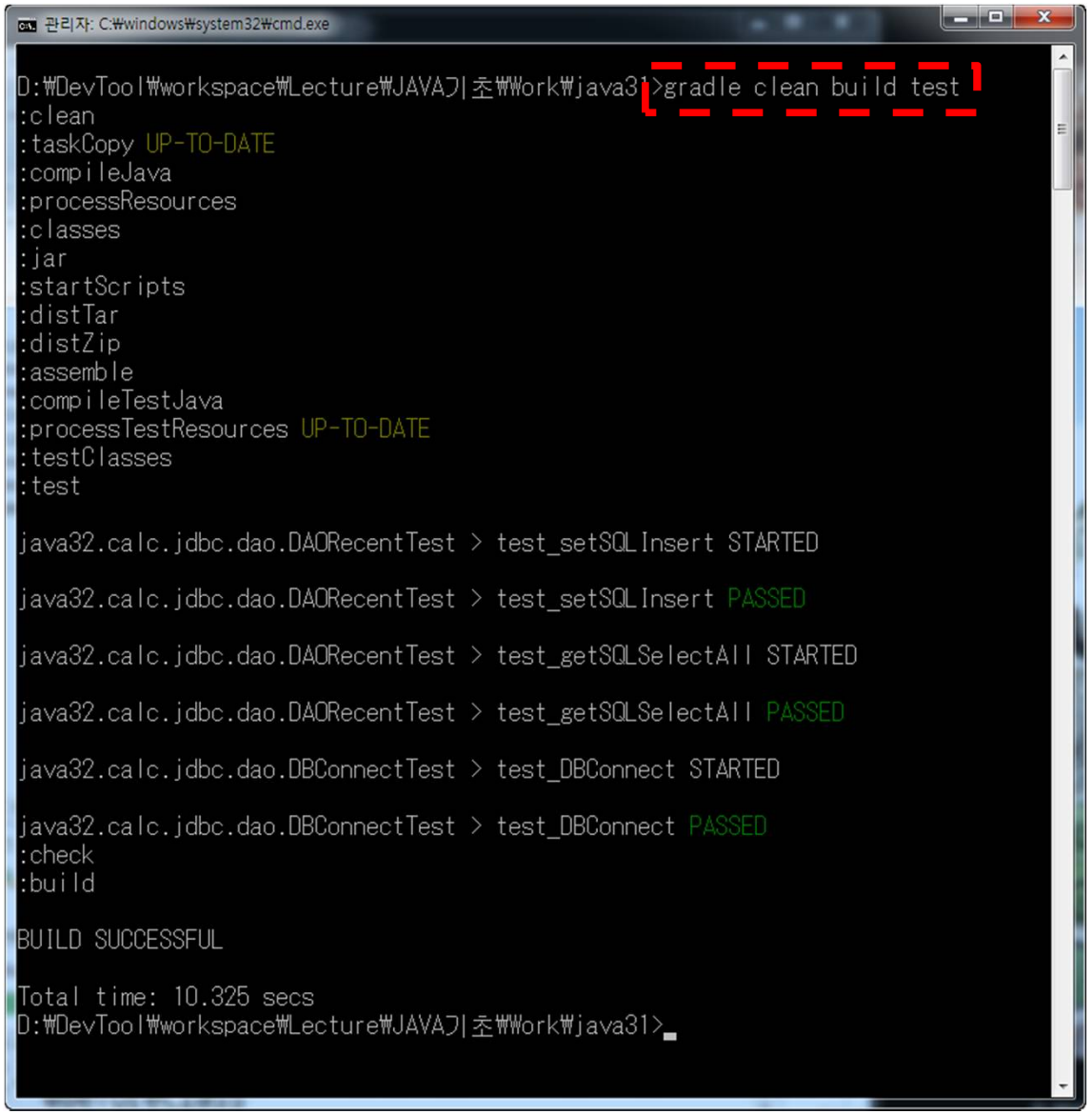
```
public class TestServiceBook {

    @Test
    public void update() {
        // 테스트 코드를 작성하시오.
    }

    @Test
    public void delete() {
        // 테스트 코드를 작성하시오.
    }
}
```



# gradle

# gradle로 build와 test 하기



# DbUnit 테스트

# 통합 테스트

1. 허드슨을 이용한 통합 테스트
2. TeamCity를 이용한 통합 테스트

# The End

- 팀 프로젝트
- 기간: 17.05.29~17.06.02
- springboard DAL 모듈 만들기
    1. 인터페이스
    2. Dao 클래스
    3. Servcie 클래스
    4. JUnit 테스트 코드 작성

## mapperBoard 만들기

- 테이블 생성
- mapperBoard.xml 만들기
- Model 만들기
- Configuration.xml 수정

---

- 인터페이스 만들기
- Dao 만들기
- Service 만들기
- 테스트 코드 만들기

---

- Spring DI 적용
- Git Hub 에 소스 올리기

## mapperUser 만들기

- TB_USER 테이블 생성
- mapperUser.xml 만들기
- ModelUser.java 만들기
- Configuration.xml 수정

---

- **IDaoUser.java** 와 DaoUser.java 만들기
- IServiceUser.java 와 ServiceUser.java 만들기
- JUnit으로 TestServiceUser.java 만들기

---

- mapperBoard.xml 의 getArticleList  수정
  - 기존 쿼리에 TB_User 테이블 left join 추가
- Spring DI 적용
- Git Hub 에 소스 올리기

# Spring DI 적용

- DaoUser.java 수정
  - 클래스에 @Repository 적용
  - 필드에 @Autowired 적용

- ServiceUser.java 수정
  - 클래스에 @Service 적용
  - 필드에 @Autowired 적용

- ApplicationContext.xml 생성

- Confiuguration.xml 수정

- TestServiceUser.java 수정
  - 뒷장에 이어서

# Spring DI 적용

- TestServiceUser.java 수정

```
public class TestServiceUser {

    private static ApplicationContext context = null;
    private static IServiceUser userservice = null;

    @BeforeClass
    public static void setUpBeforeClass() throws Exception {
        context = new ClassPathXmlApplicationContext(
                                        "classpath:ApplicationContext.xml");

        userservice = context.getBean("userservice", IServiceUser.class);
    }

    @AfterClass
    public static void tearDownAfterClass() throws Exception {
        //((ClassPathXmlApplicationContext)context).close();
    }

}
```