



자바-오라클 연동

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Oracle 설치

❖ Oracle 다운로드 및 설치

<https://www.oracle.com/kr/downloads/#category-database>

The screenshot shows the Oracle Downloads page with a grid of category buttons. The '데이터베이스' (Database) button is highlighted with a red border. Below the grid, the '데이터베이스' section is expanded, displaying a list of database products.

데이터베이스			
Audit Vault and Database Firewall	<u>Database Express Edition</u>	NoSQL Database	Secure Backup
Berkeley DB	데이터베이스 모바일 서버	Oracle Blockchain Platform Enterprise Edition	Secure Backup Cloud Module for Amazon S3
Big Data Connectors	Grid Infrastructure	R 배포판	SOC 1
클러스터 검증 유틸리티	Instant Client	Rdb 제품	TimesTen In-Memory Database
<u>Database Enterprise/Standard Edition</u>	MySQL		

Oracle 계정

❖ Oracle 계정

DBA 계정 : sys, system

교육용 계정 : scott, hr

계 정	암 호	설 명
SYS	oracle	DBA
SYSTEM	oracle	DBA
SCOTT	tiger	교육용 계정
HR	tiger	교육용 계정

Oracle 접속

- ❖ Oracle 접속
system 계정으로 oracle DB에 접속 해보자

```
c:\W> sqlplus system/oracle
```

```
SQL> show user
```

```
SQL> select * from tab; (테이블 목록출력)
```

```
SQL> quit; (종료)
```

Scott 계정

❖ Scott 계정 활성화

1. scott.sql 파일을 c드라이브에 저장한다.
2. system 계정으로 oracle 에 접속한다.
c:₩> sqlplus system/oracle
3. @명령으로 scott.sql파일을 실행한다.
SQL> @c:₩scott.sql
4. scott 계정의 비번을 tiger로 설정한다.
SQL> alter user scott identified by tiger;
5. scott계정으로 계정을 전환한다.
SQL> conn scott/tiger
6. 테이블 목록 확인
SQL> select * from tab;
7. oracle 종료
SQL> quit;

SQL(DDL)

❖ Table 생성

```
create table 테이블명 (컬럼명 데이터타입,  
                        컬럼명 데이터타입, .....);
```

```
create table member01(  
    id varchar2(20),  
    name varchar2(20),  
    address varchar2(50),  
    phone varchar2(20));
```

❖ 테이블 목록 확인

```
select * from tab;
```

SQL(DML)

❖ insert : 데이터 입력

형식: insert into 테이블명(컬럼1, 컬럼2,...) values(데이터1, 데이터2,...);

insert into 테이블명 values(데이터1, 데이터2,...);

ex) insert into dept01(deptno, dname, loc) values(10,'ACCOUNTING', 'NEW_YORK');
insert into dept01(dname, loc, deptno) values('RESEARCH', 'DALLAS', 20);
insert into dept01 values(30, 'SALES', 'CHICAGO');
insert into dept01 values(40, 'OPERATIONS','BOSTON');

SQL(DML)

❖ update : 데이터 수정

형식: update 테이블명 set 컬럼1=수정할값1,
컬럼2=수정할값2,...
where 조건절;

SQL(DML)

❖ delete : 데이터 삭제

형식: delete from 테이블명 where 조건절;

SQL(DML)

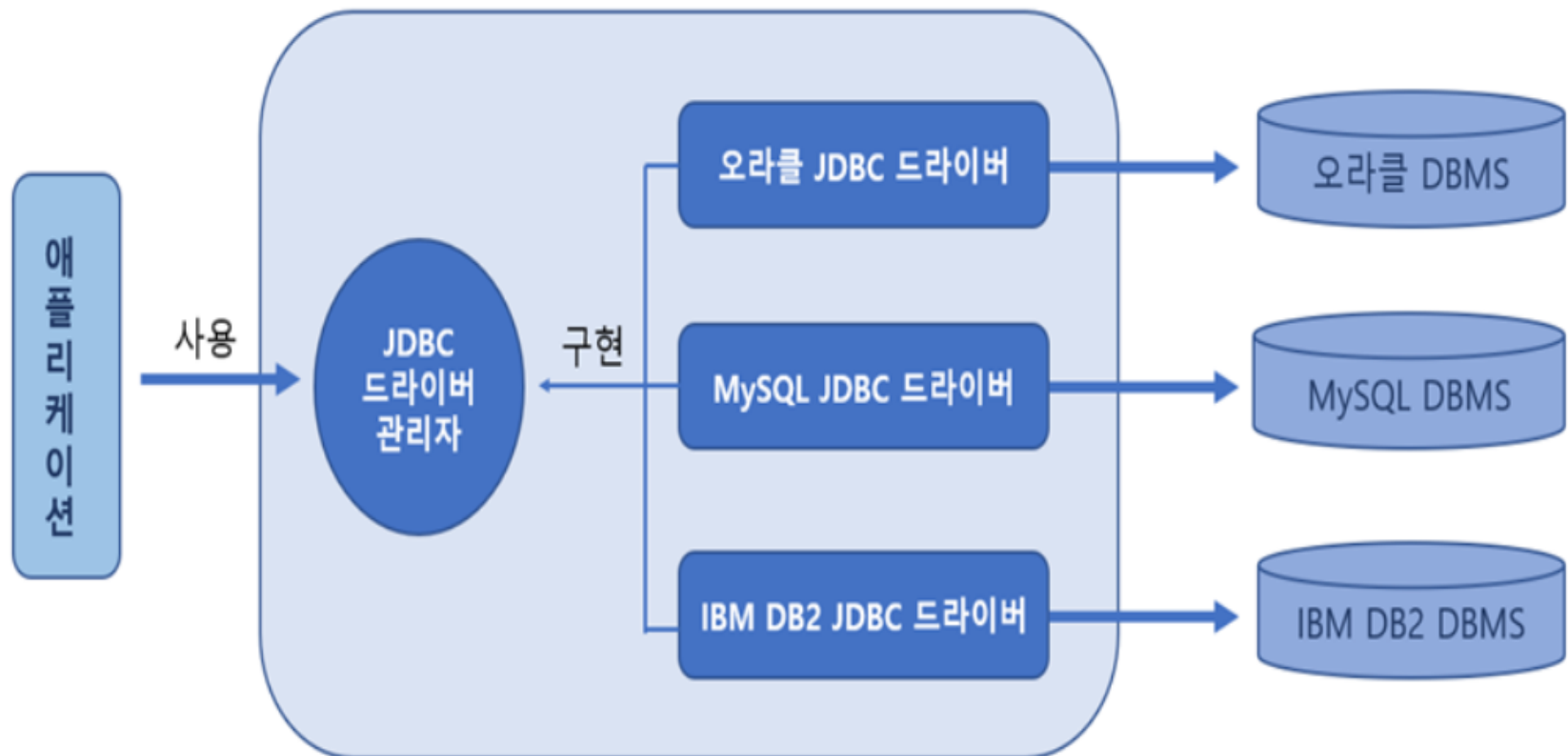
❖ select : 데이터 검색

형식 : select * from 테이블명;

select * from 테이블명 where 조건절;

JDBC

❖ JDBC(Java DataBase Connectivity)



JDBC

❖ JDBC(Java Database Connectivity)

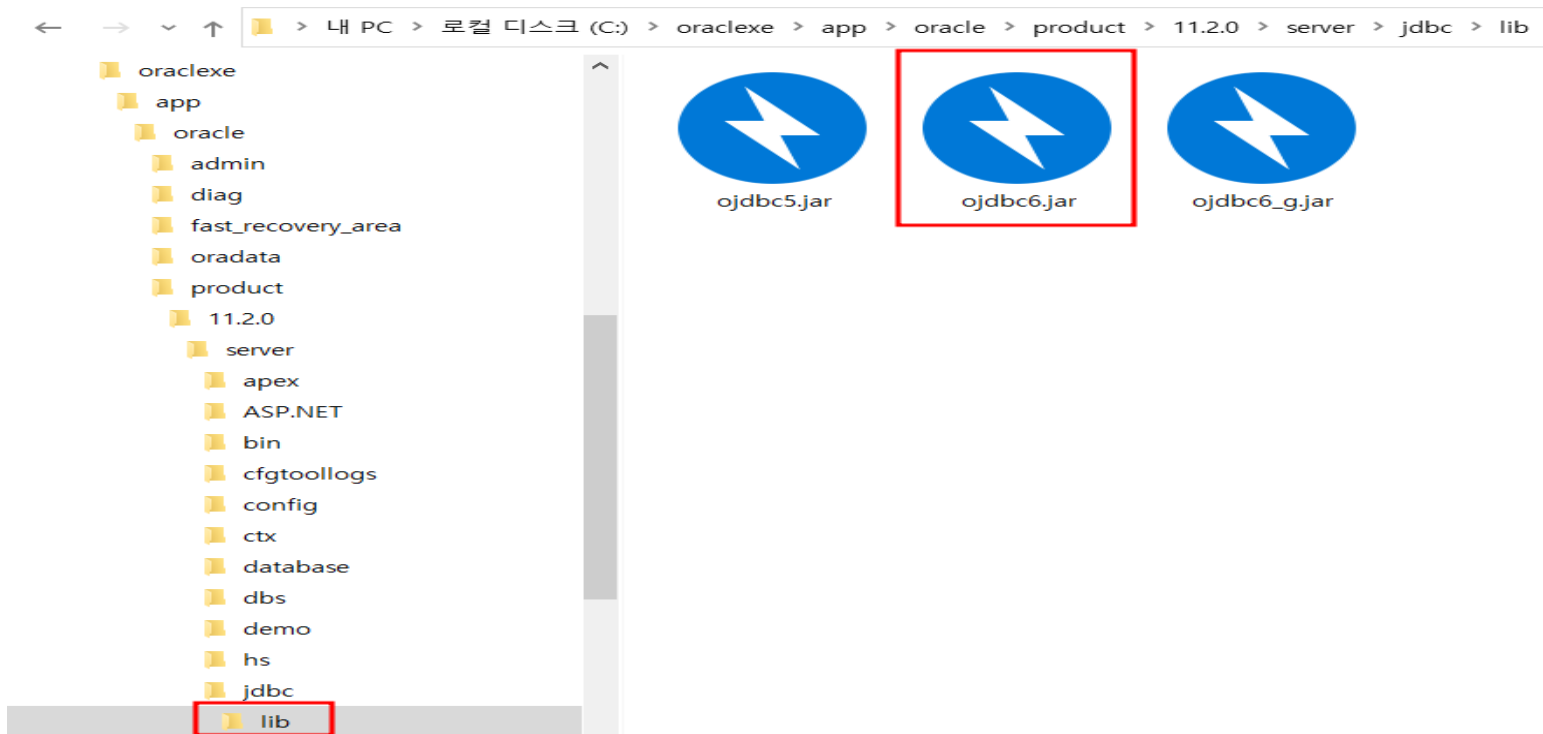
- JDBC는 자바 애플리케이션에서 표준화된 방법으로 다양한 데이터베이스에 접속할 수 있도록 설계된 인터페이스
- JDBC 스펙에 따라 데이터베이스 개발 회사는 자사 제품에 접속할 수 있는 JDBC 드라이버를 제공

JDBC Driver

❖ JDBC(Java Database Connectivity) 드라이버

1. Oracle 설치된 곳에서 구하기

C:\oracle\app\oracle\product\11.2.0\server\jdbc\lib\ojdbc6.jar









JDBC Driver

❖ JDBC(Java Database Connectivity) 드라이버

2. Oracle 홈페이지에서 구하기

<https://www.oracle.com/database/technologies/appdev/jdbc-downloads.html>

Name	Download	JDK Supported	Description
Oracle JDBC driver	 ojdbc11.jar	Implements JDBC 4.3 spec and certified with JDK11, JDK17, and JDK19	Oracle JDBC driver except classes for NLS support in Oracle Object and Collection types. (6,971,601 bytes) - (SHA1: a19cc23a15caea09f4883e938907129354239e75)
Oracle JDBC Driver	 ojdbc8.jar	Implements JDBC 4.2 spec and certified with <u>JDK8 and JDK11</u>	Oracle JDBC driver except classes for NLS support in Oracle Object and Collection types. (6,844,991 bytes) - (SHA1: 49acfb33ee776e43d2085e2fcc838778202a9128)
Universal Connection Pool (UCP) - ucp11.jar	 ucp11.jar	Certified with JDK11 and JDK17	Universal Connection Pool (UCP) to be used with ojdbc11.jar (1,513,648 bytes) - (SHA1: 0638ee573f2b7bf873702fae533f291099ac7681)
Universal Connection Pool (UCP)	 ucp.jar	Certified with JDK8 and JDK11	Universal Connection Pool (UCP) to be used with ojdbc8.jar (1,471,956 bytes) - (SHA1: 1b5300b30d54d091f7af7dc9070681c62fdad04c)
Zipped JDBC driver (ojdbc11.jar) and Companion Jars	 ojdbc11-full.tar.gz	Certified with JDK11 and JDK17	This archive contains ojdbc11.jar , ucp11.jar , Reactive Streams Ingest (rsi.jar), companion jars ¹ , JDBC, UCP, RSI Javadoc, and their Readmes. Refer to README.txt in the zip for details. (26,562,560 bytes) - (SHA1: 41204e77573e9d36397016a18b0abc932580c44f)
Zipped JDBC driver (ojdbc8.jar) and Companion Jars	 ojdbc8-full.tar.gz	Certified with JDK8 and JDK11	This archive contains ojdbc8.jar , ucp.jar , Reactive Streams Ingest (rsi.jar), companion jars ¹ , JDBC, UCP, RSI Javadoc, and their Readmes. Refer to README.txt in the zip for details. (25,907,200 bytes) - (SHA1: fed6c77364cb34cdd2e8236ec0a292a77d736e8d)

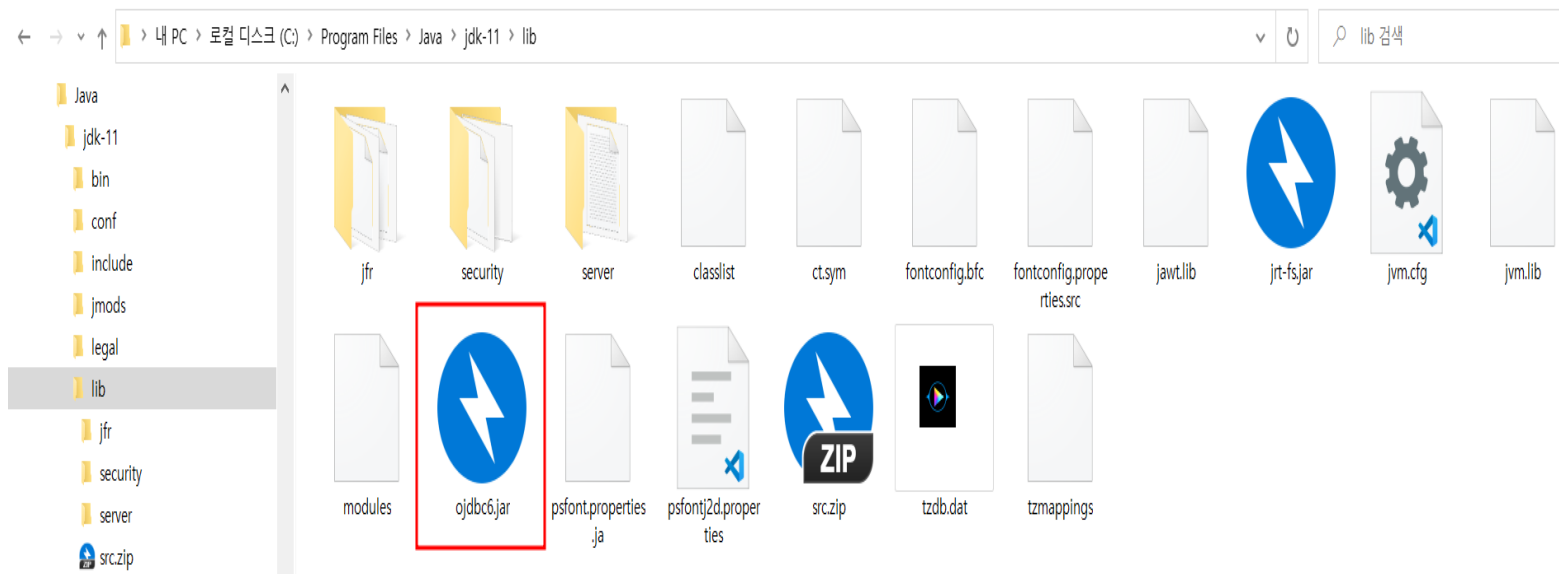
JDBC Driver

❖ JDBC(Java Database Connectivity) 드라이버

➤ JDBC 드라이버 저장하기

다운로드 받은 JDBC 드라이버는 아무 곳이나 저장해도 되지만, 우리는 **자바가 설치된 곳에** 저장하도록 하자.

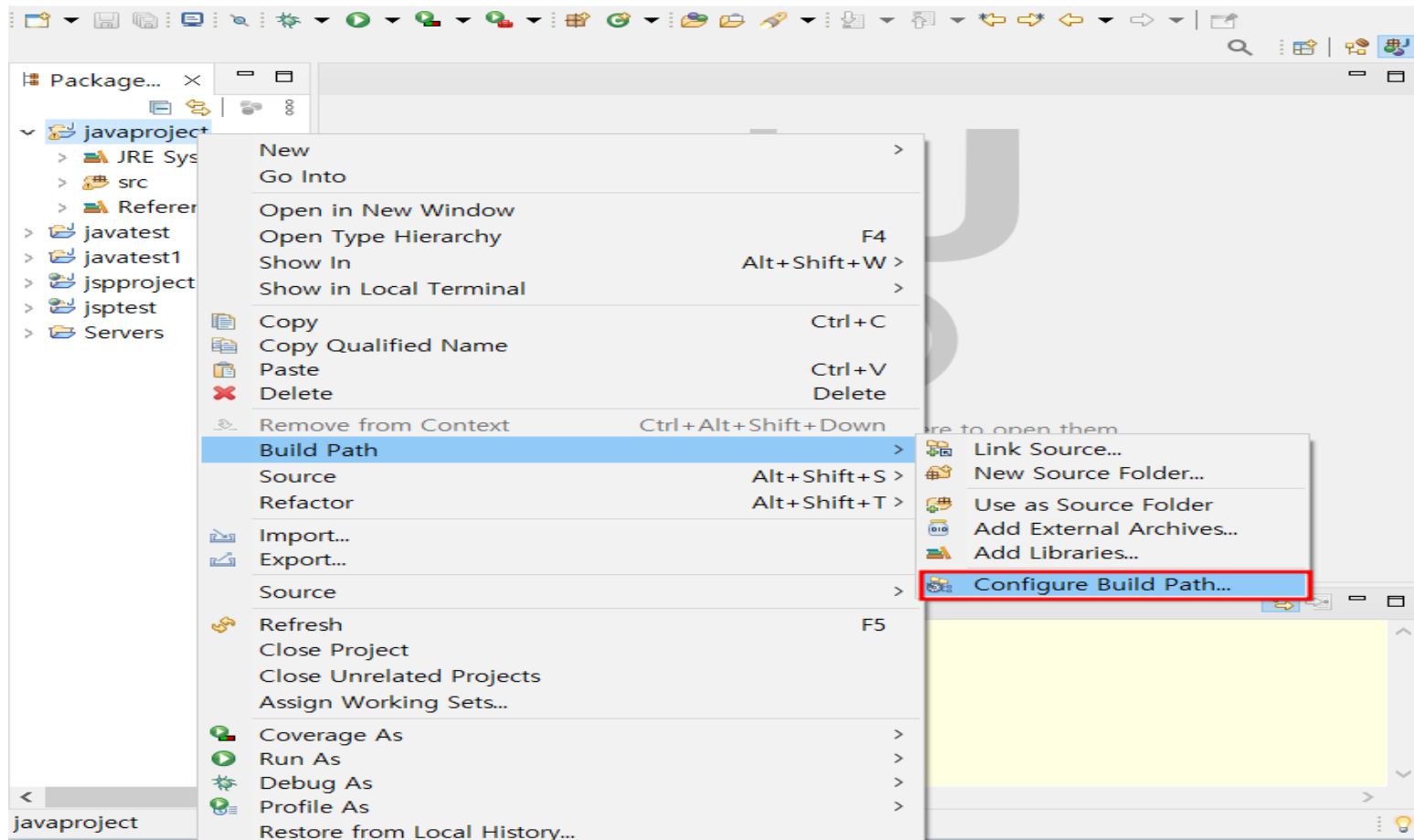
C:\Program Files\Java\jdk-11\lib



JDBC Driver

❖ JDBC 드라이버 PATH 설정

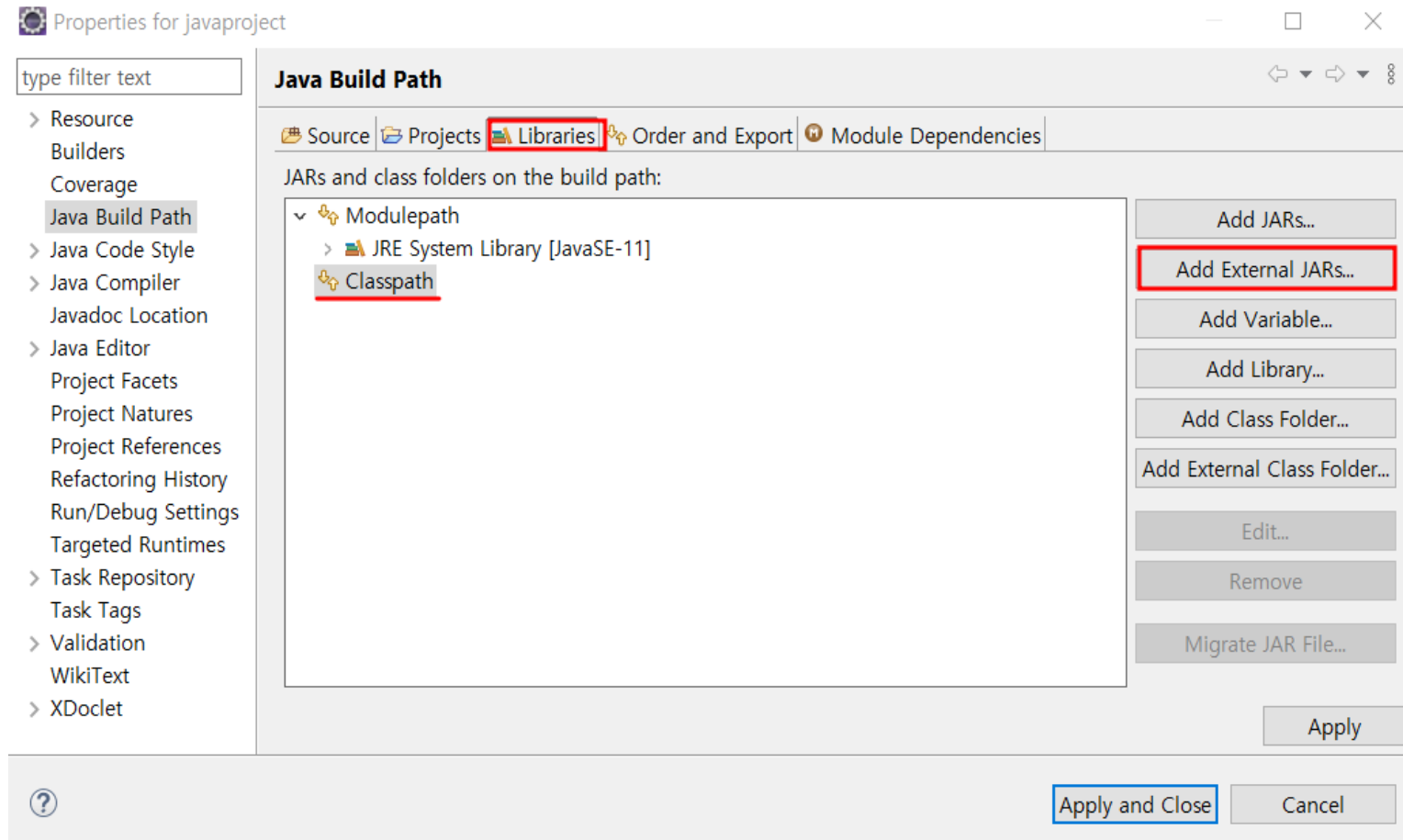
1. javaproject –Build Path – Configure Build Path... 클릭



JDBC Driver

JDBC 드라이버 PATH 설정

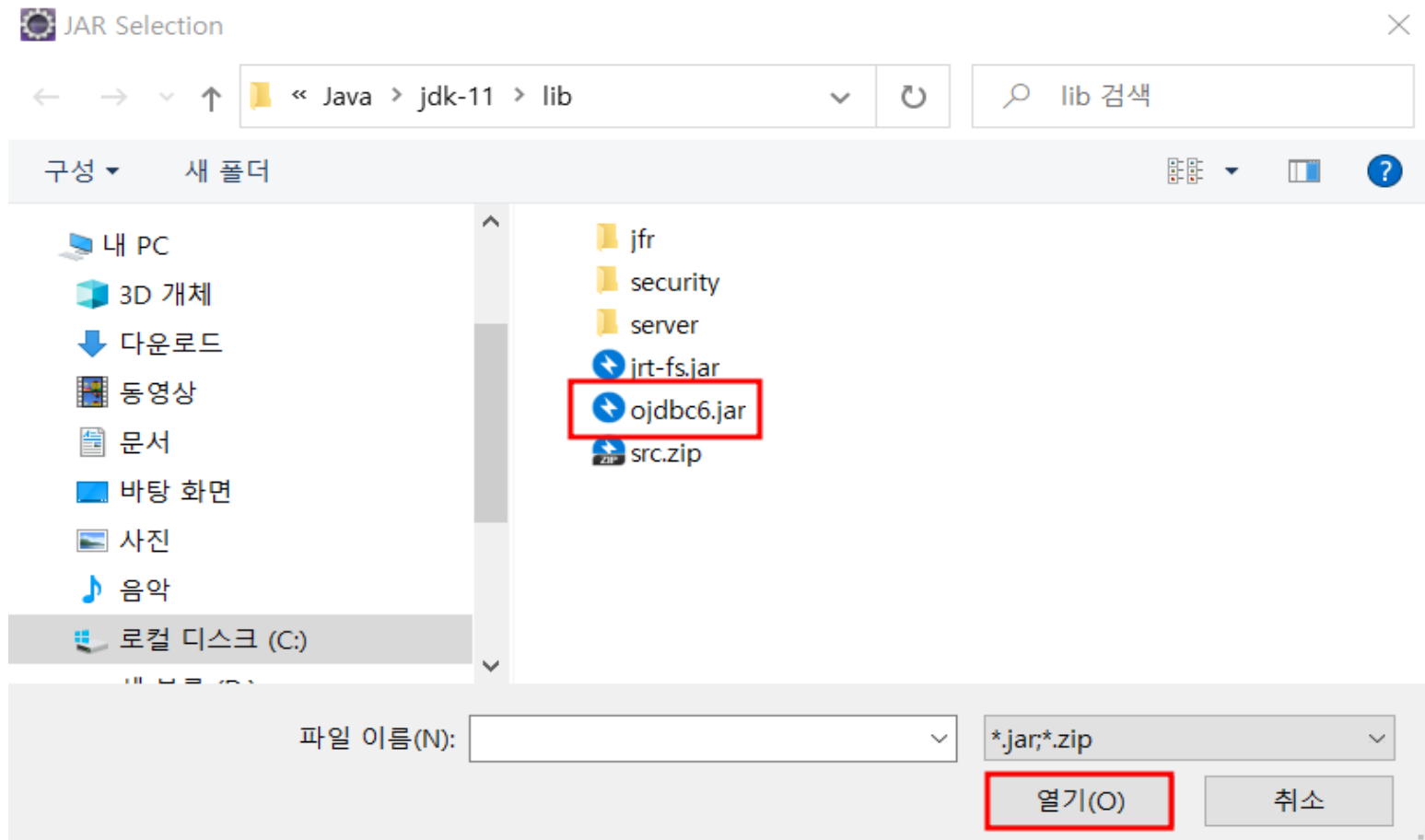
2. Library 탭 – Classpath 클릭 – Add External JARs... 클릭



JDBC Driver

❖ JDBC 드라이버 PATH 설정

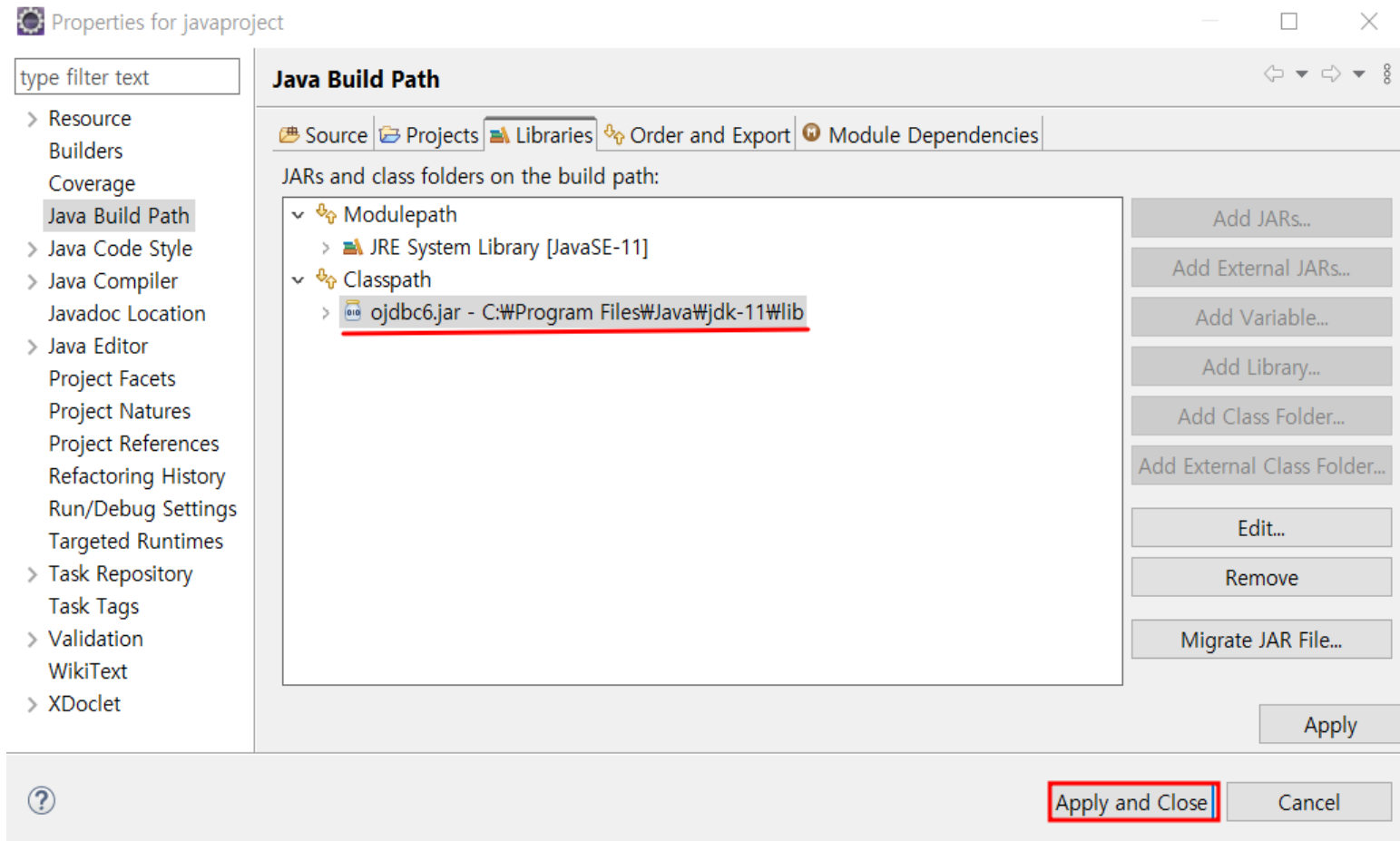
3. JDBC 드라이버 저장 위치에서 ojdbc6.jar 선택후 열기버튼 클릭



JDBC Driver

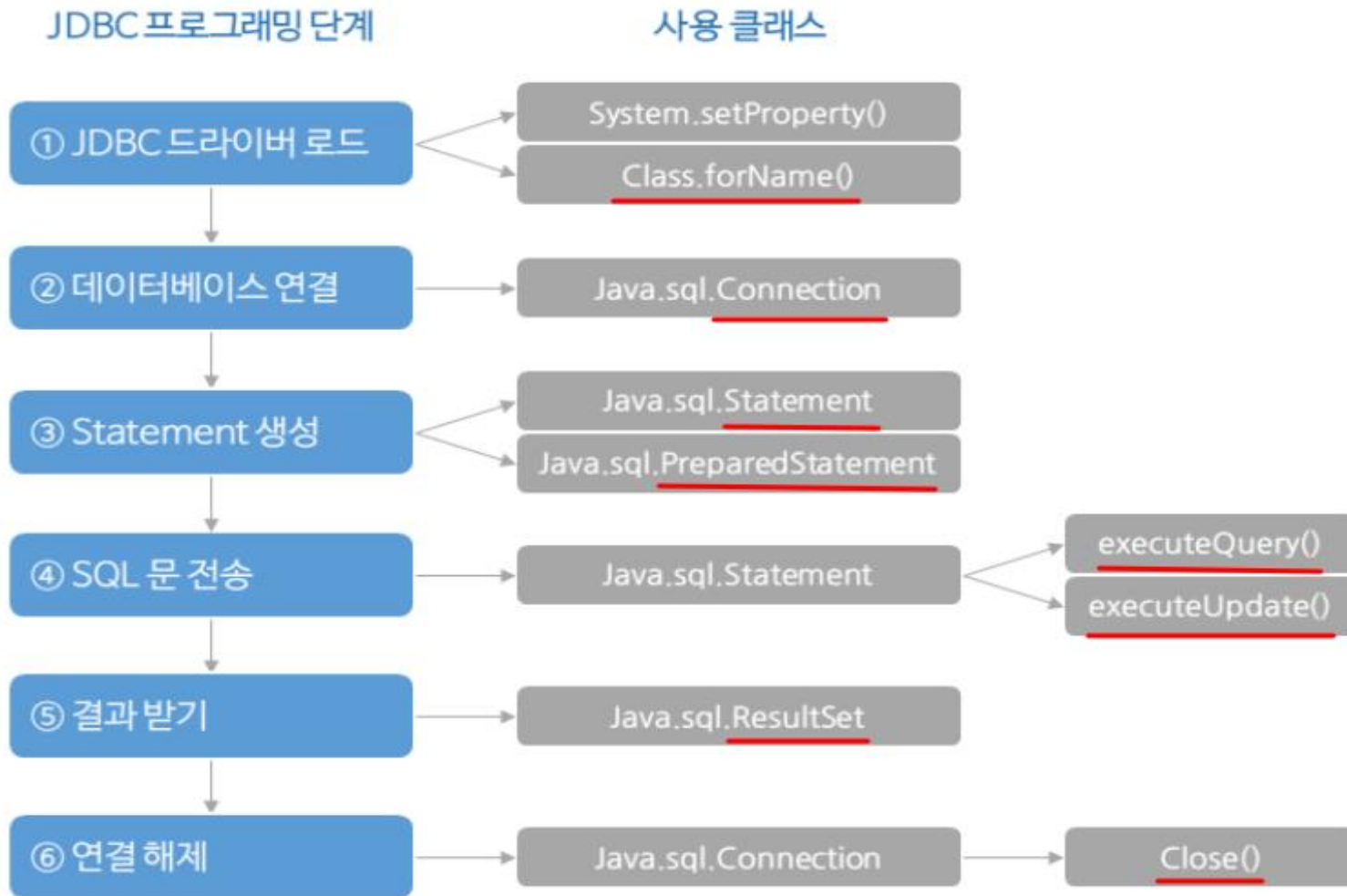
❖ JDBC 드라이버 PATH 설정

4. Classpath – ojdbc6.jar 추가되면 성공~!!



Java oracle 연동

❖ JDBC 프로그래밍 순서



SQL문 실행

❖ SQL문 실행 Method

SQL문

Method

select

-

ResultSet

executeQuery()

insert
update
delete

-

int

executeUpdate()

Java oracle 연동

❖ Java Oracle 연동 테스트

```
public class JDBC_Connection {  
  
    public static void main(String[] args) {  
        String driver = "oracle.jdbc.driver.OracleDriver";  
        String url = "jdbc:oracle:thin:@localhost:1521:xe";  
        Connection con = null;  
        try {  
            Class.forName(driver); // JDBC Driver Loading  
            con = DriverManager.getConnection(url, "scott", "tiger");  
            System.out.println("데이터베이스 연결 성공~!!");  
        } catch (Exception e) {  
            System.out.println("데이터베이스 연결 실패~!!");  
            e.printStackTrace();  
        } finally {  
            try {  
                if (con != null) con.close();  
            } catch (Exception e) {  
                System.out.println(e.getMessage());  
            }  
        }  
    }  
}
```

실습

❖ Table 생성

```
create table customer( no number(4) primary key,  
                        name varchar2(20),  
                        email varchar2(20),  
                        tel varchar2(20) );
```

❖ 테이블 목록 확인

```
select * from tab;
```