

〈12주차 실습〉

웹 프로그래밍

Web Programming

- 1) “https://dev.mysql.com/” 사이트에 접속
- 2) “MySQL Download” 클릭

The screenshot shows the MySQL Developer Zone website. The top navigation bar includes links to MySQL.COM, DOWNLOADS, DOCUMENTATION, and DEVELOPER ZONE. Below the navigation bar, there are four promotional cards for MySQL 8.0 and MySQL Database Service. On the left, a sidebar contains links to MySQL Database Service, MySQL Documentation, MySQL Downloads (highlighted with a red box and the word 'click'), MySQL Forums, MySQL Enterprise Edition, and MySQL Cluster CGE. The main content area displays 'MySQL Engineering Blogs' with several articles, including 'Setup Disaster Recovery for OCI MySQL Database Service' and 'How to import data from Microsoft SQL Server to MySQL Database Service'.

MySQL Database Service »

MySQL Documentation »

MySQL Downloads » click

MySQL Forums »

MySQL Enterprise Edition »

MySQL Cluster CGE »

MySQL Community Server

- 8.0.26 GA

MySQL Engineering Blogs

Setup Disaster Recovery for OCI MySQL Database Service

When you create a MySQL Database Service instance in OCI, you have the choice between 3 types: If you have minutes as RTO (Recovery Time Objective) in case of a failure, you must choose a High Availability instance that will deploy a Group Replication Cluster over 3 Availability Domains or 3...

How to import data from Microsoft SQL Server to MySQL Database Service

After having see how we can import data from PostgreSQL and Amazon Redshift, this time we will see how we can export data from Microsoft SQL Server and import it into MySQL Database Service in OCI. This time we will use something extra (for fun but also because it's practical): OCI Object...

How to import data from Amazon Redshift to MySQL Database Service

We saw in this previous post how to import data from PostgreSQL to MySQL Database Service. Using almost the same technique, we will now import data from Amazon Redshift and import it to a MDS instance. With Redshit we have two options to export the data to CSV files that can be imported to...

How to import data from PostgreSQL to MySQL Database Service

MySQL Database Service (aka MDS) is very popular and many users wants to benefit from the managed MySQL service and from MySQL

3) “MySQL Community Server” 클릭

MySQL Community Downloads

- MySQL Yum Repository
- MySQL APT Repository
- MySQL SUSE Repository
- **MySQL Community Server** **click**
- MySQL Cluster
- MySQL Router
- MySQL Shell
- MySQL Workbench
- MySQL Installer for Windows
- MySQL for Visual Studio
- C API (libmysqlclient)
- Connector/C++
- Connector/J
- Connector/NET
- Connector/Node.js
- Connector/ODBC
- Connector/Python
- MySQL Native Driver for PHP
- MySQL Benchmark Tool
- Time zone description tables
- Download Archives

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4) “Go to Download Page” 클릭

MySQL Community Downloads

MySQL Community Server

General Availability (GA) ReleasesArchives

MySQL Community Server 8.0.26

Select Operating System:
Microsoft Windows


Looking for previous GA versions?

Recommended Download:

MySQL Installer for Windows

All MySQL Products. For All Windows Platforms. In One Package.

Starting with MySQL 5.6 the MySQL Installer package replaces the standalone MSI packages.



Windows (x86, 32 & 64-bit), MySQL Installer MSI

[Go to Download Page >](#) **click**

Other Downloads:

Windows (x86, 64-bit), ZIP Archive (mysql-8.0.26-winx64.zip)	8.0.26	208.2M	Download
		MD5: db32c0669cc809abb465bb56e76c77a1 Signature	
Windows (x86, 64-bit), ZIP Archive Debug Binaries & Test Suite (mysql-8.0.26-winx64-debug-test.zip)	8.0.26	500.2M	Download
		MD5: 9226e8c02fec0671ca40a31bfe77ff11 Signature	

i We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

5) Community 버전 “Download” 클릭 (web-community 버전 아님)

MySQL Community Downloads

MySQL Installer

General Availability (GA) Releases

Archives



MySQL Installer 8.0.26

Select Operating System:

Microsoft Windows

Looking for previous GA versions?

Windows (x86, 32-bit), MSI Installer

8.0.26

2.4M

Download

(mysql-installer-web-community-8.0.26.0.msi)

MD5: eaddc383a742775a5b33a3783a4890fb | [Signature](#)

Windows (x86, 32-bit), MSI Installer

8.0.26

450.7M

Download

click

(mysql-installer-community-8.0.26.0.msi)

MD5: b5b8e6bc39f2b163b817264ae206b815 | [Signature](#)



We suggest that you use the [MD5 checksums](#) and [GnuPG signatures](#) to verify the integrity of the packages you download.

- 6) “No thanks, just start my download” 클릭
- 7) 다운로드 완료 후, 설치 파일 실행

MySQL Community Downloads

Login Now or Sign Up for a free account.

An Oracle Web Account provides you with the following advantages:

- Fast access to MySQL software downloads
- Download technical White Papers and Presentations
- Post messages in the MySQL Discussion Forums
- Report and track bugs in the MySQL bug system

Login »

using my Oracle Web account

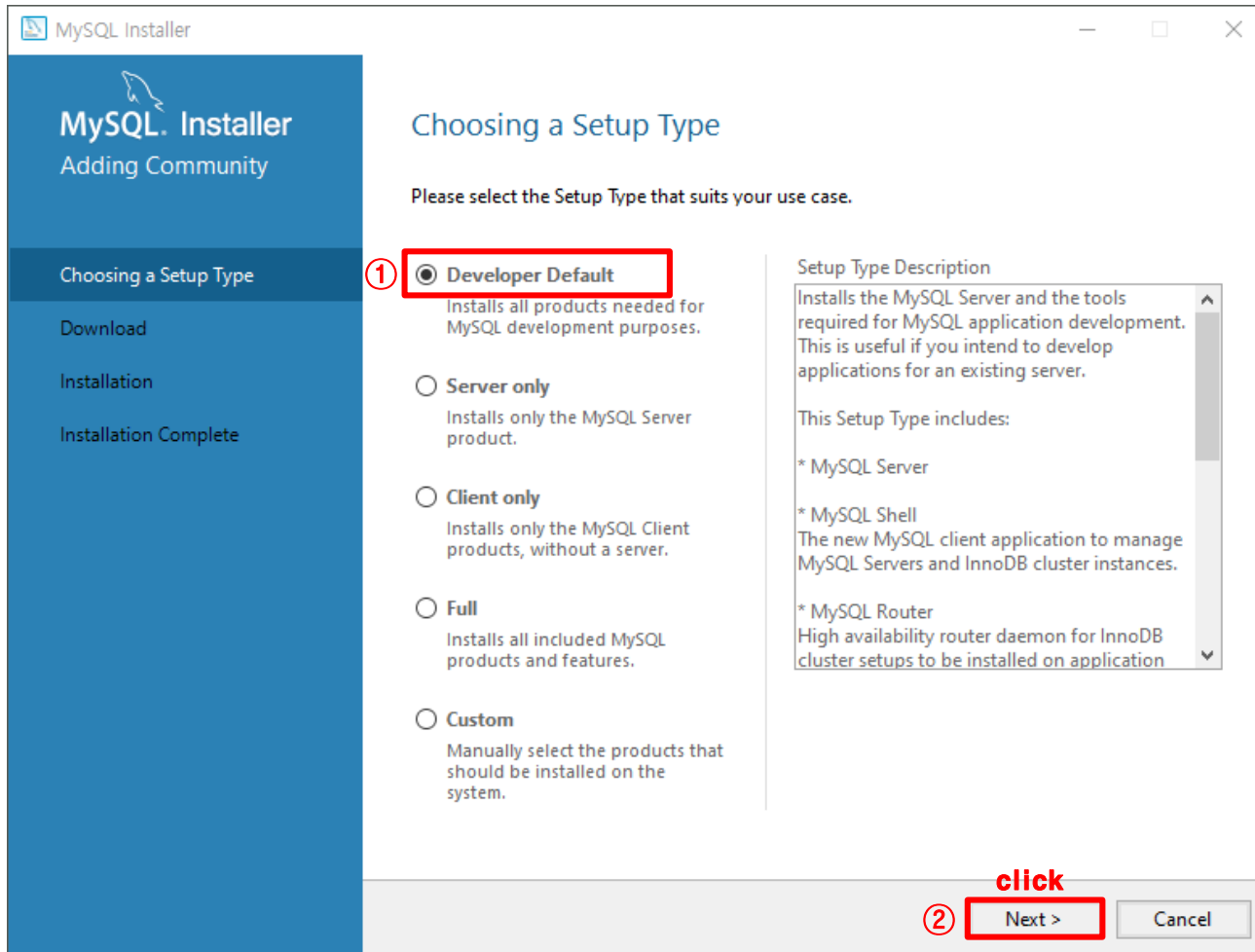
Sign Up »

for an Oracle Web account

MySQL.com is using Oracle SSO for authentication. If you already have an Oracle Web account, click the Login link. Otherwise, you can sign up for a free account by clicking the Sign Up link and following the instructions.

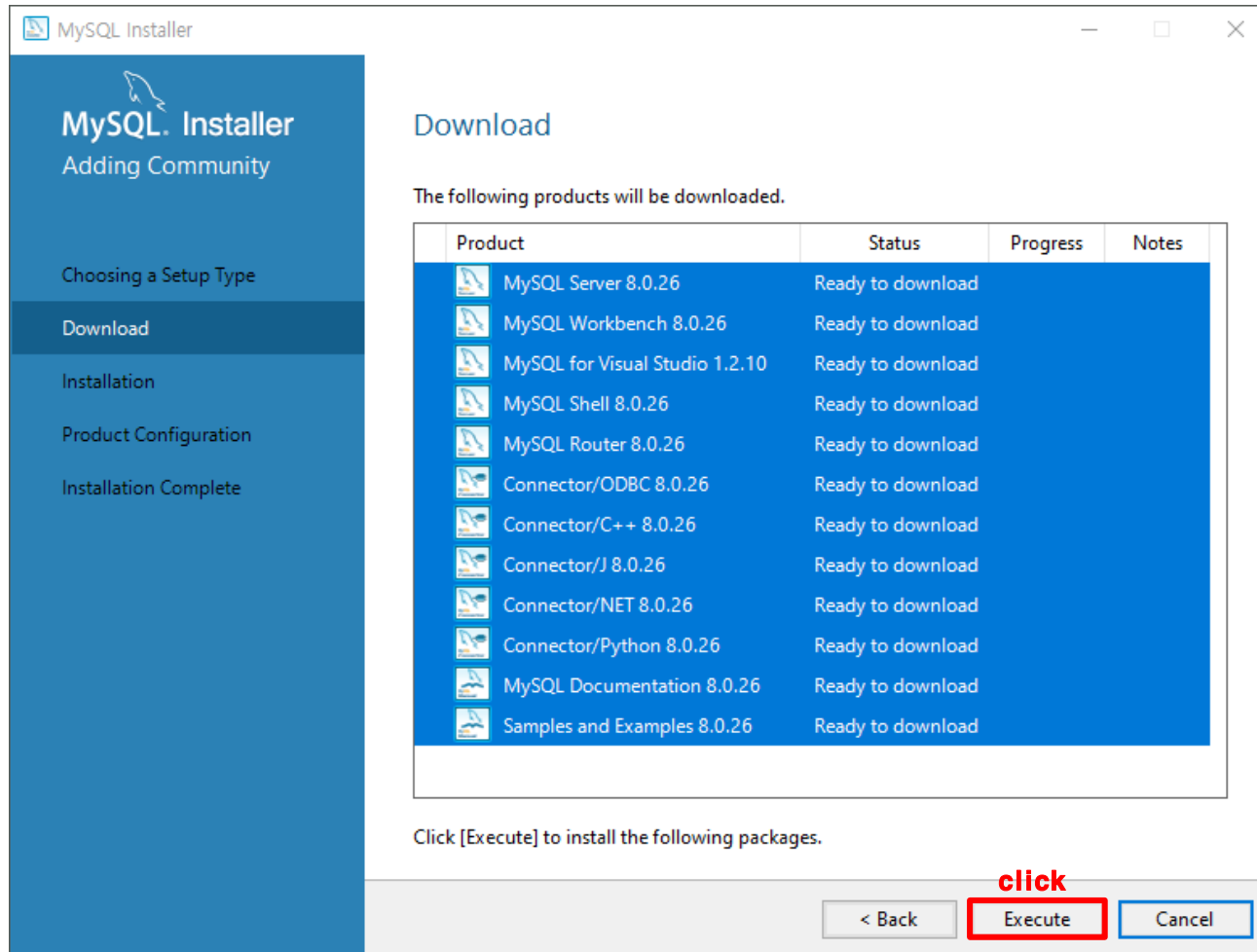
No thanks, just start my download. click

8) “Developer Default” 체크 → “Next” 클릭

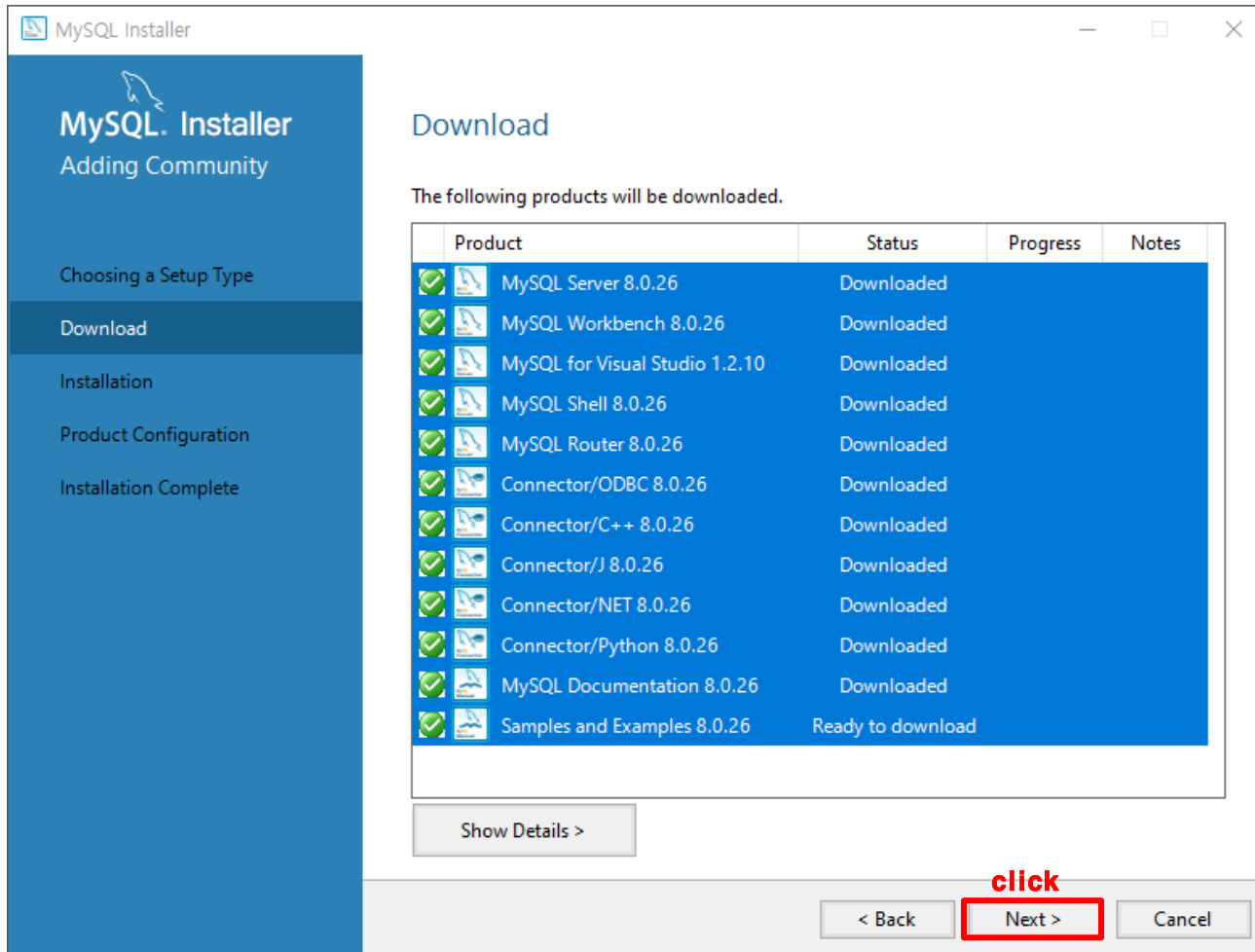


9) “Execute” 클릭

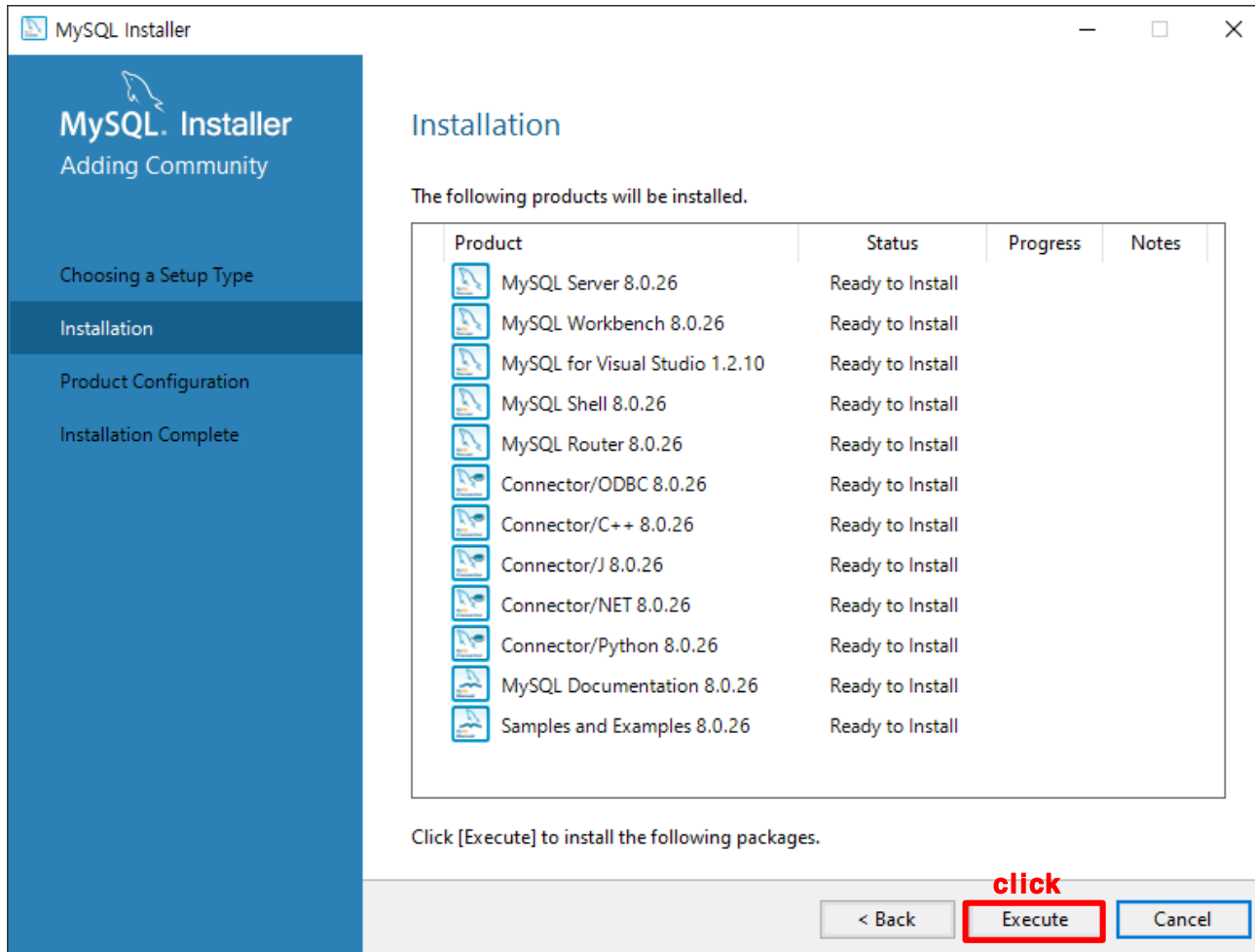
(설치 중 Error가 발생한 경우 Notes→Try again 클릭)



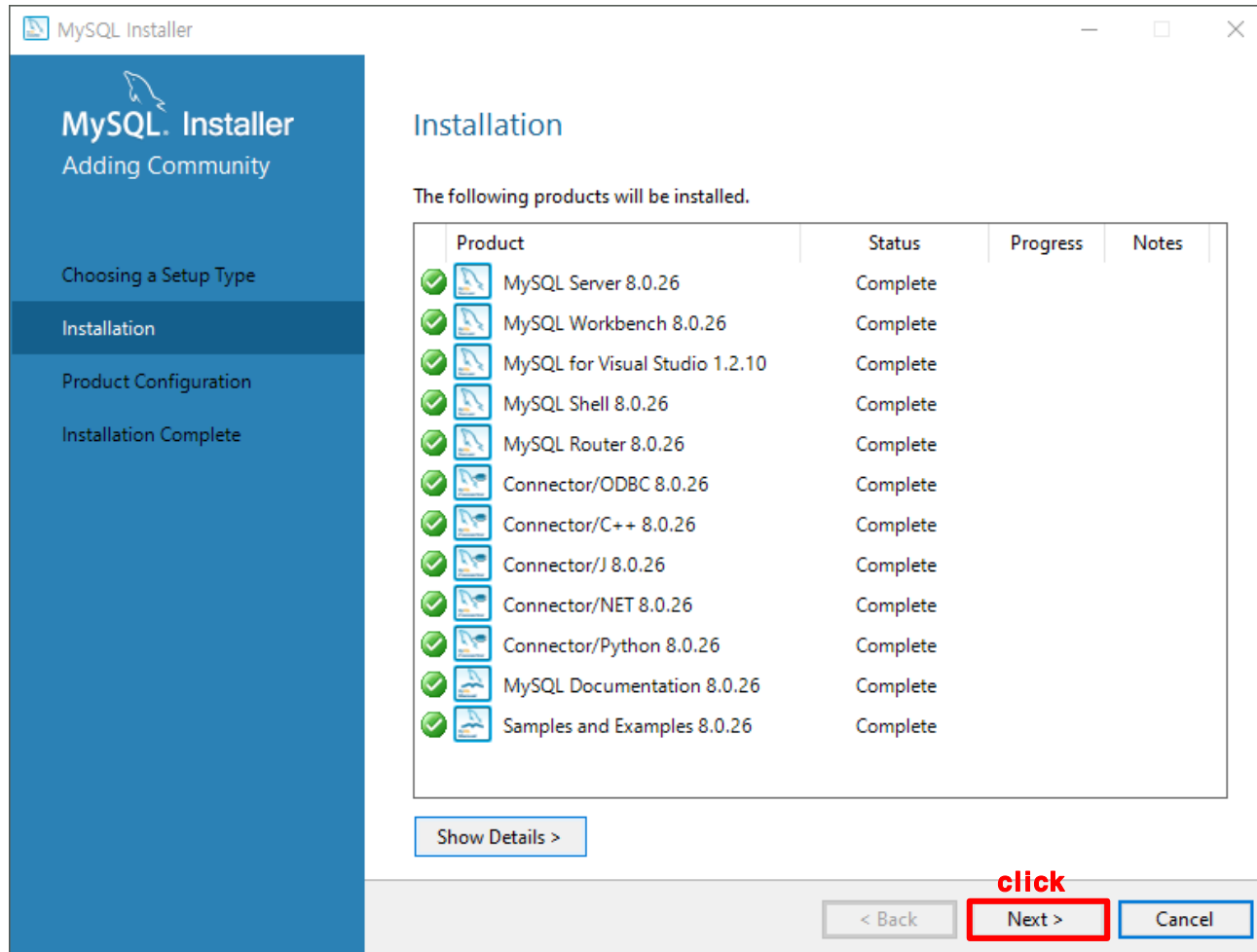
10) 설치 완료 후 “Next” 클릭



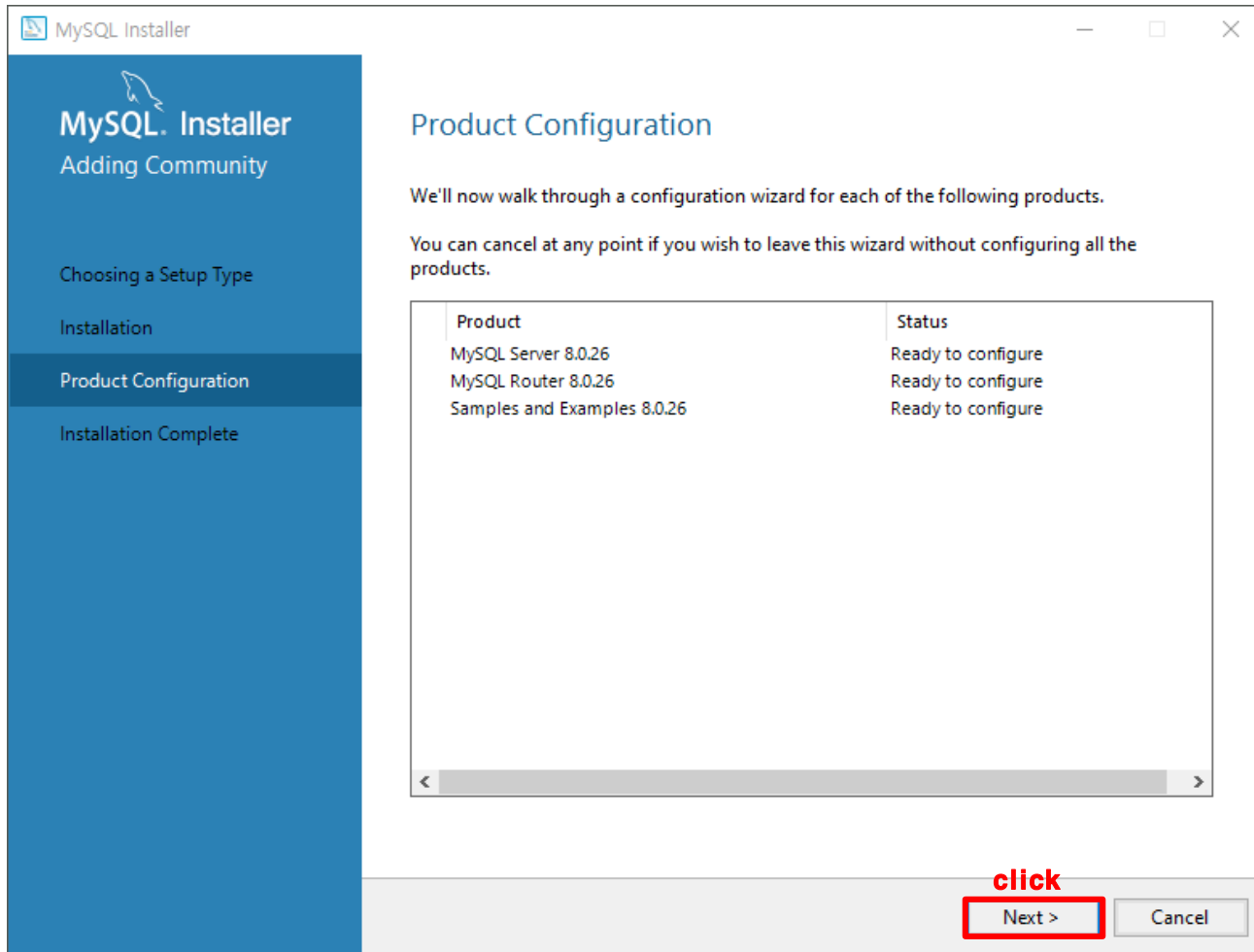
11) “Execute” 클릭



12) “Next” 클릭



13) “Next” 클릭



14) 접속 기본 설정 확인 후 “Next” 클릭

MySQL Installer

MySQL Server 8.0.26

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

Type and Networking

Server Configuration Type

Choose the correct server configuration type for this MySQL Server installation. This setting will define how much system resources are assigned to the MySQL Server instance.

Config Type: Development Computer

Connectivity

Use the following controls to select how you would like to connect to this server.

☒ TCP/IP Port: 3306 X Protocol Port: 33060

☒ Open Windows Firewall ports for network access

☐ Named Pipe Pipe Name: MYSQL

☐ Shared Memory Memory Name: MYSQL

Advanced Configuration

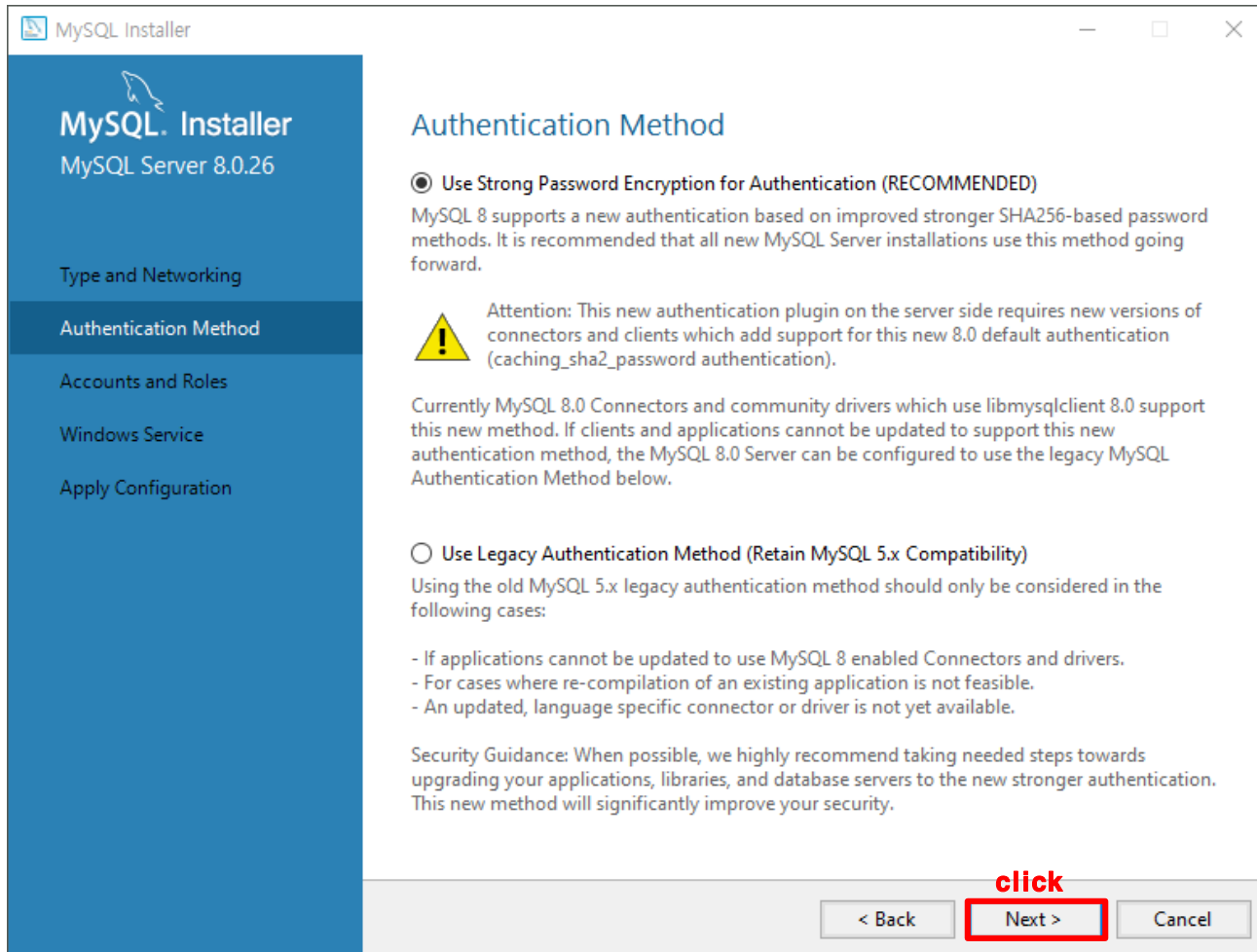
Select the check box below to get additional configuration pages where you can set advanced and logging options for this server instance.

☐ Show Advanced and Logging Options

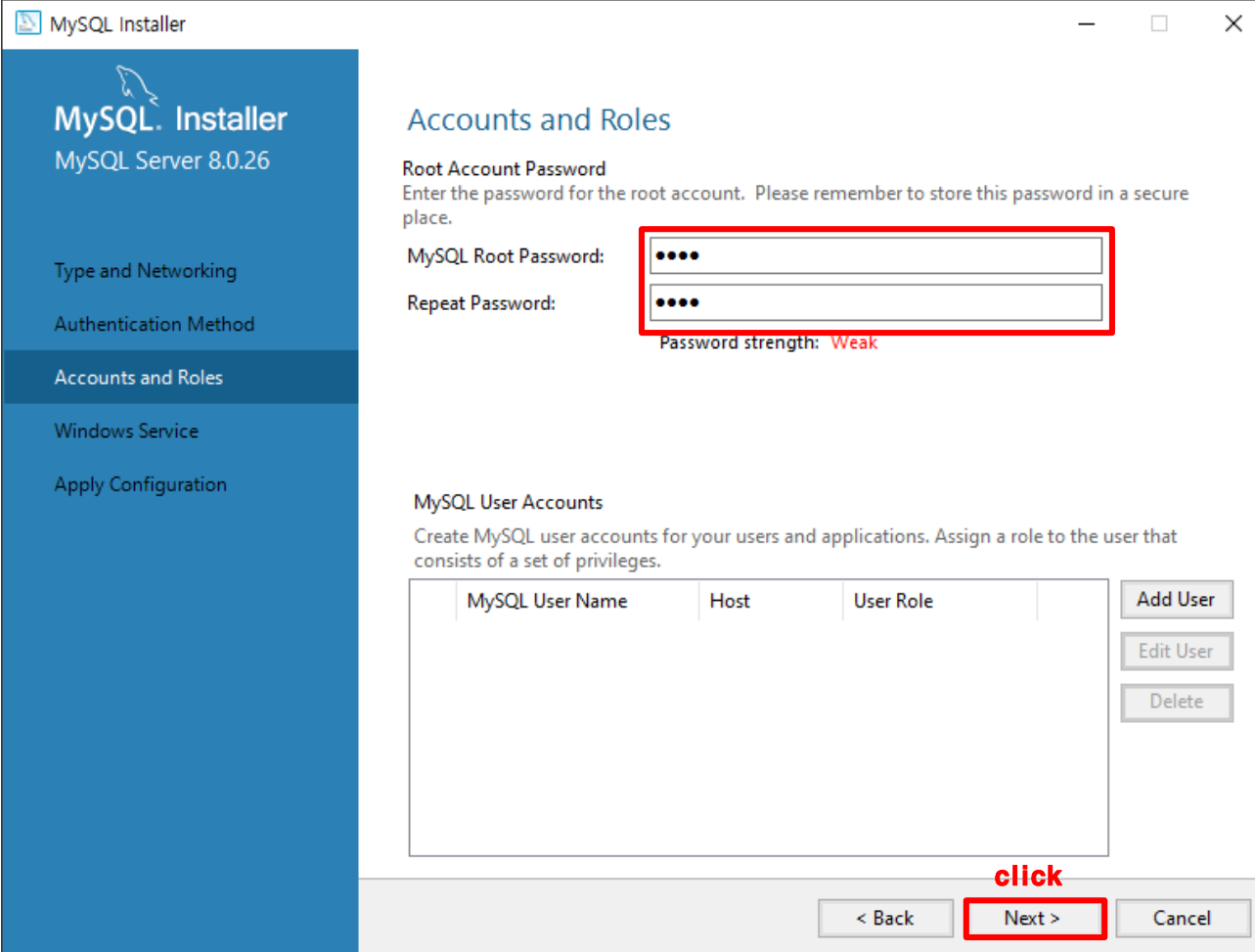
click

Next > Cancel

15) “Next” 클릭



16) Password “0000” 입력 → “Next” 클릭 (Password를 반드시 기억해야 함)



MySQL Installer

MySQL Server 8.0.26

Type and Networking

Authentication Method

Accounts and Roles

Windows Service

Apply Configuration

Accounts and Roles

Root Account Password
Enter the password for the root account. Please remember to store this password in a secure place.

MySQL Root Password:

Repeat Password:

Password strength: **Weak**

MySQL User Accounts

Create MySQL user accounts for your users and applications. Assign a role to the user that consists of a set of privileges.

MySQL User Name	Host	User Role
-----------------	------	-----------

Add User

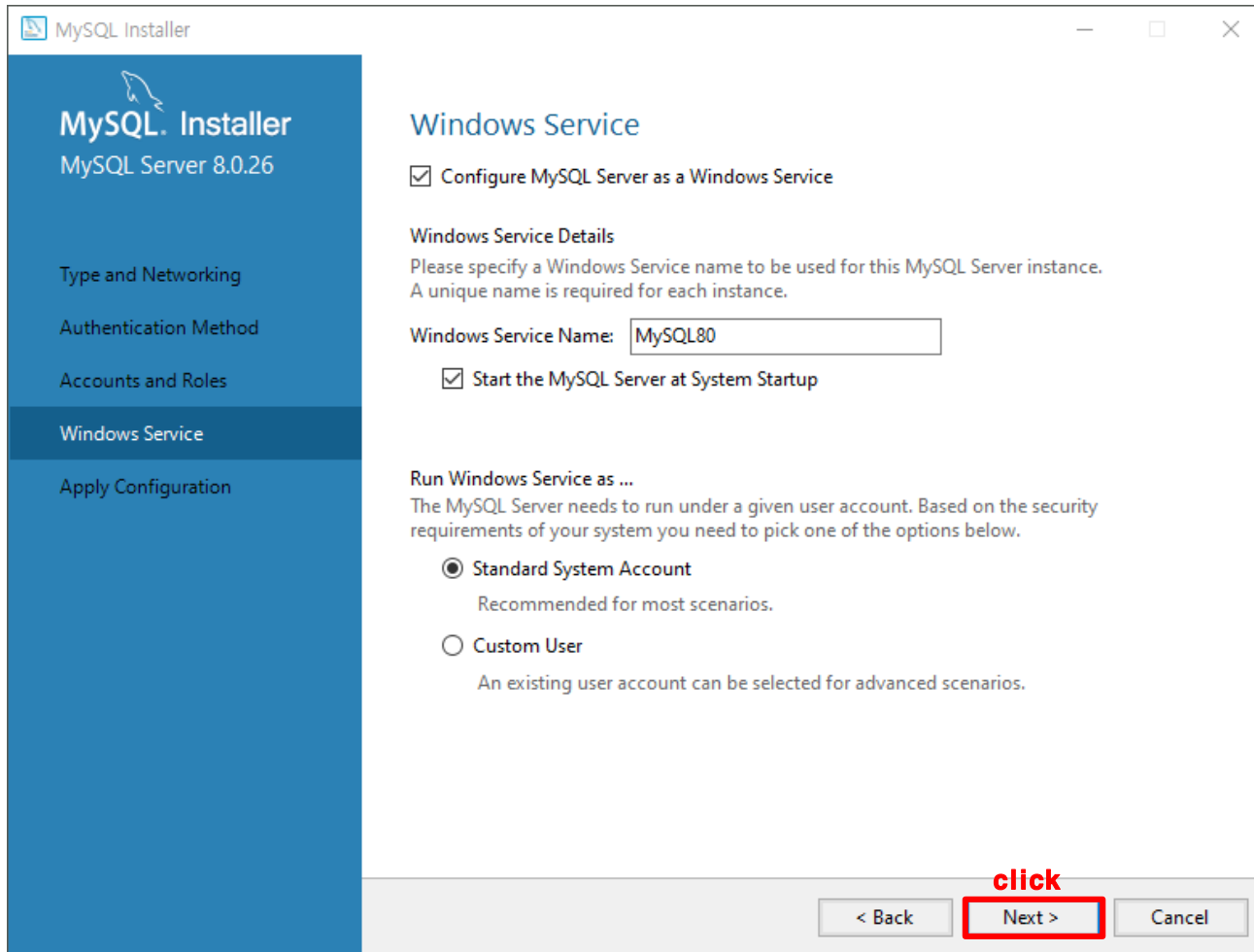
Edit User

Delete

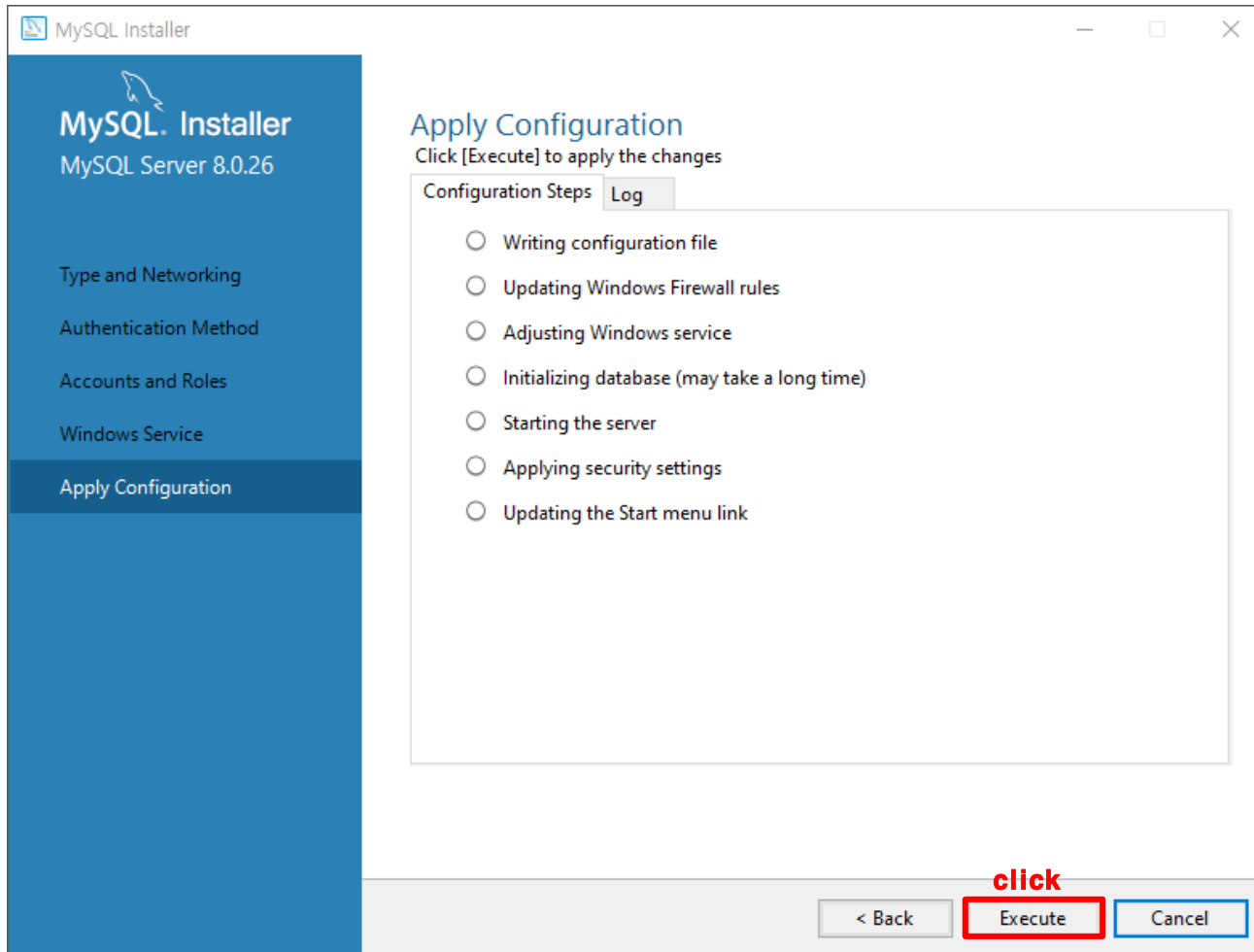
click

< Back **Next >** Cancel

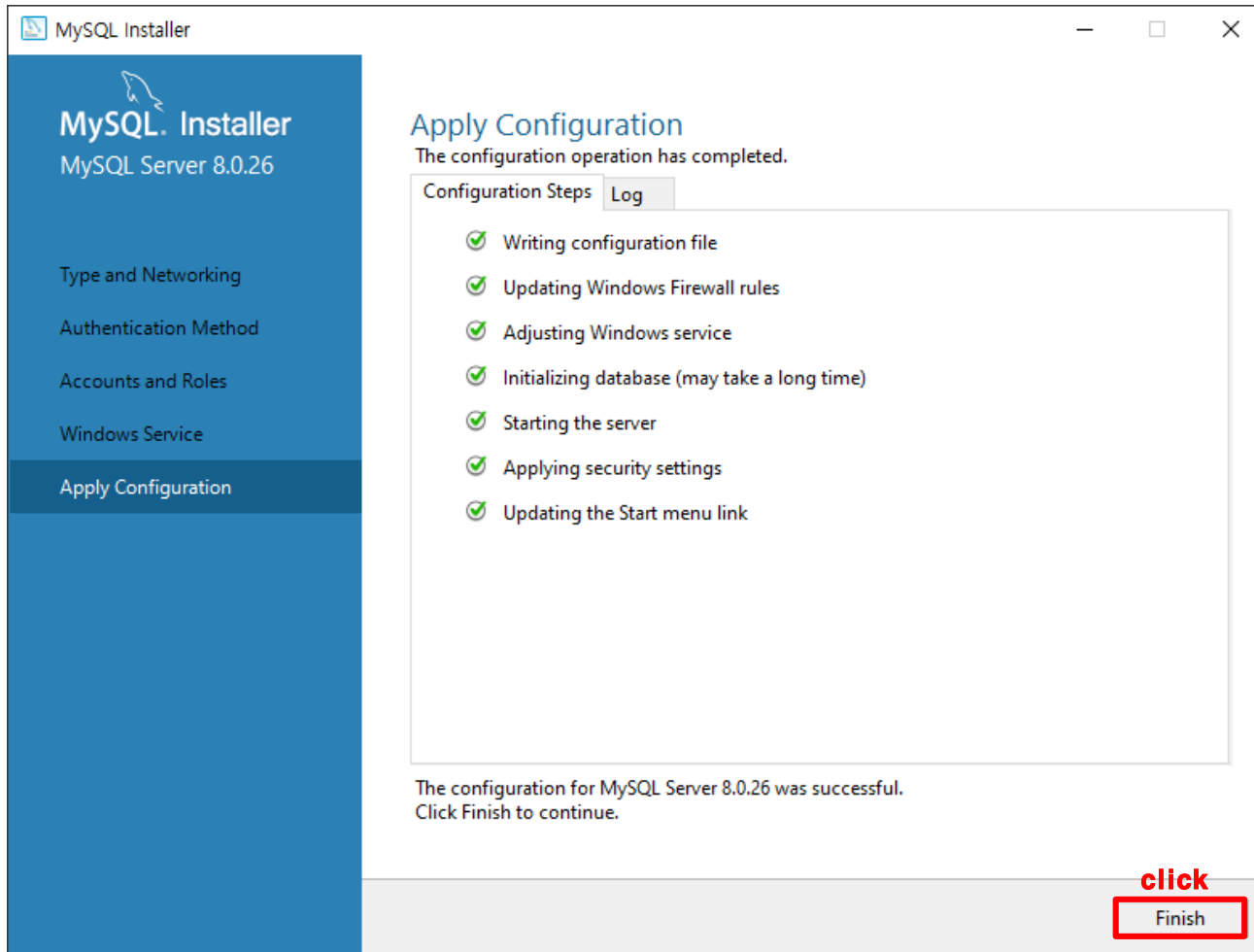
17) “Next” 클릭



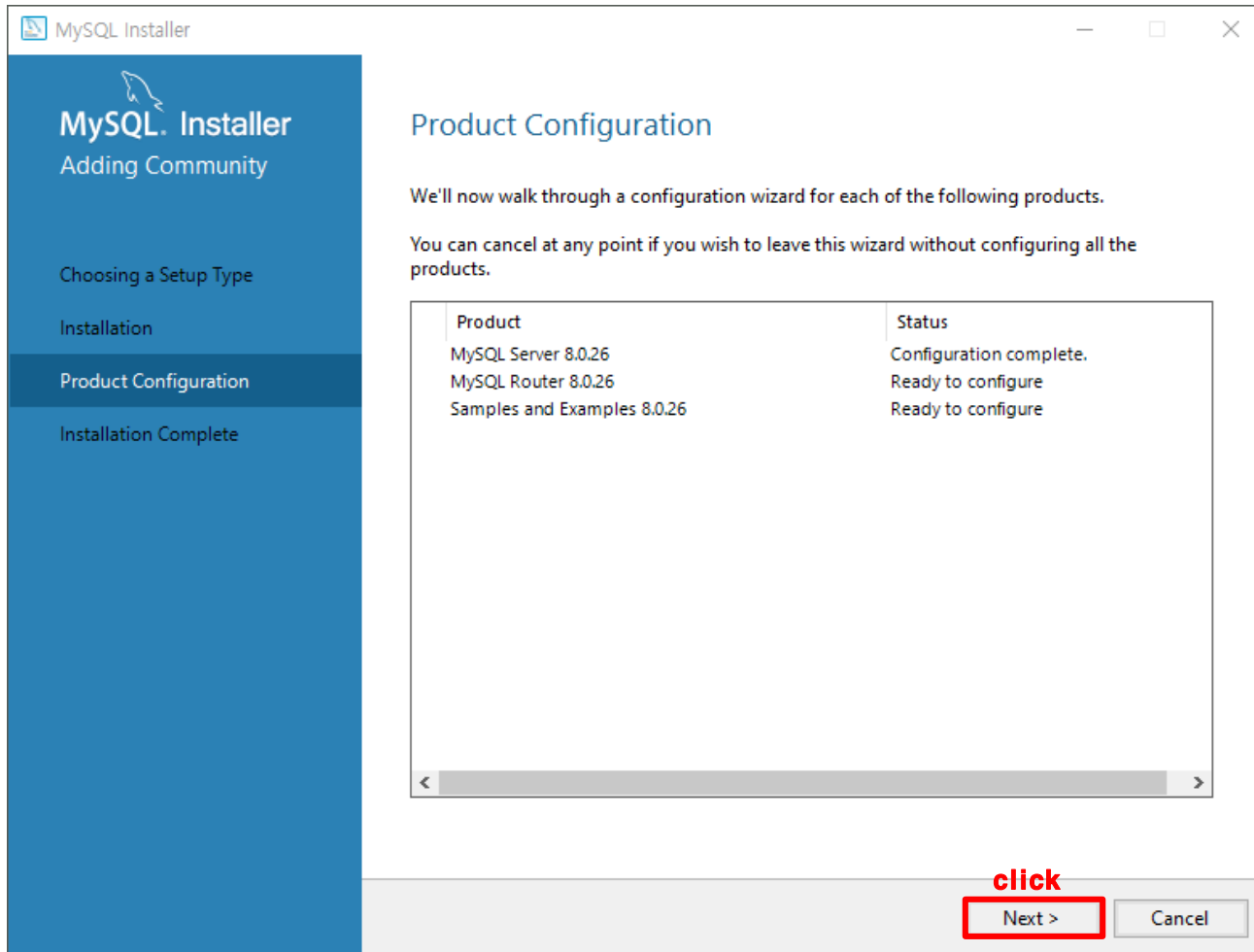
18) “Execute” 클릭



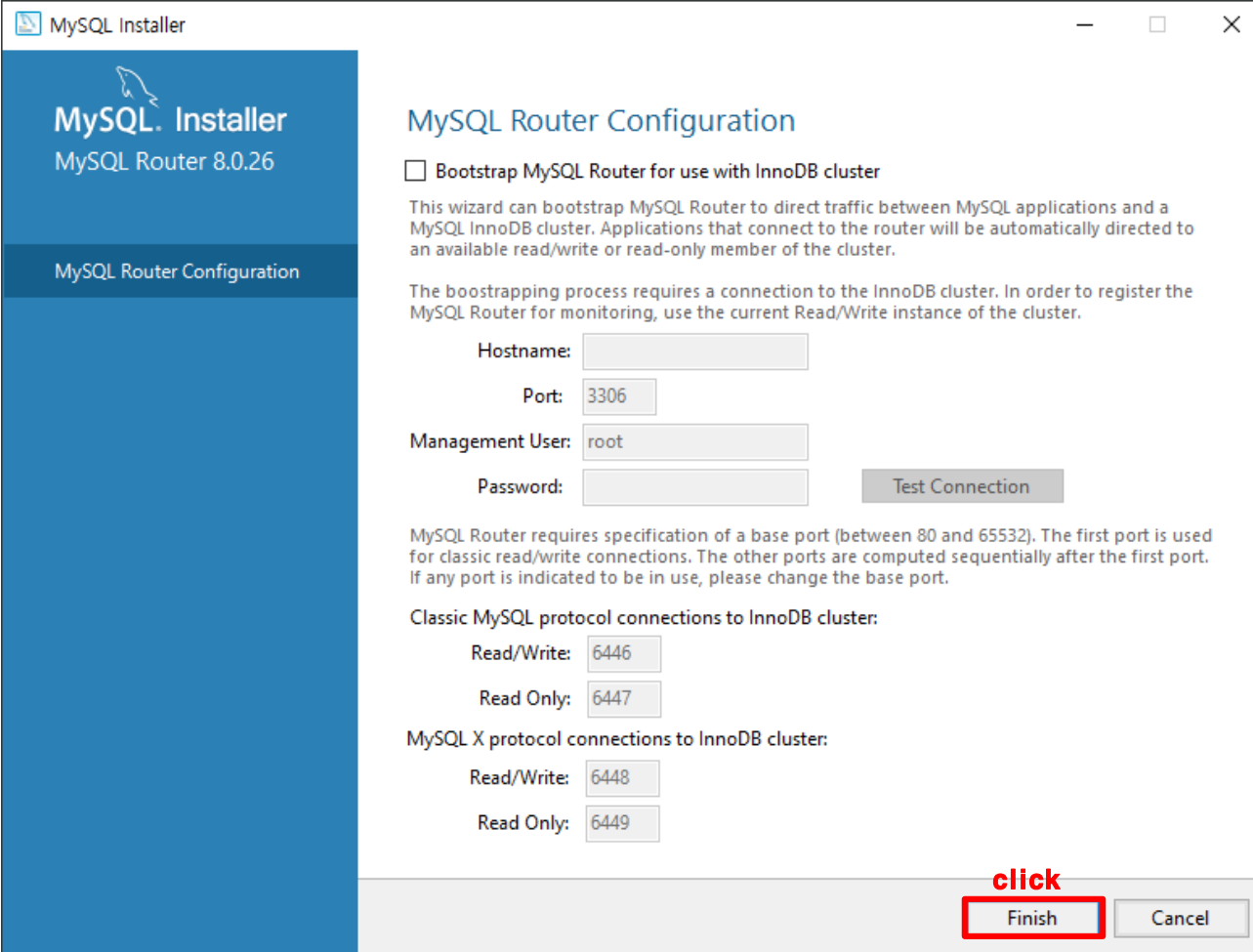
19) “Finish” 클릭



20) “Next” 클릭



21) “Finish” 클릭

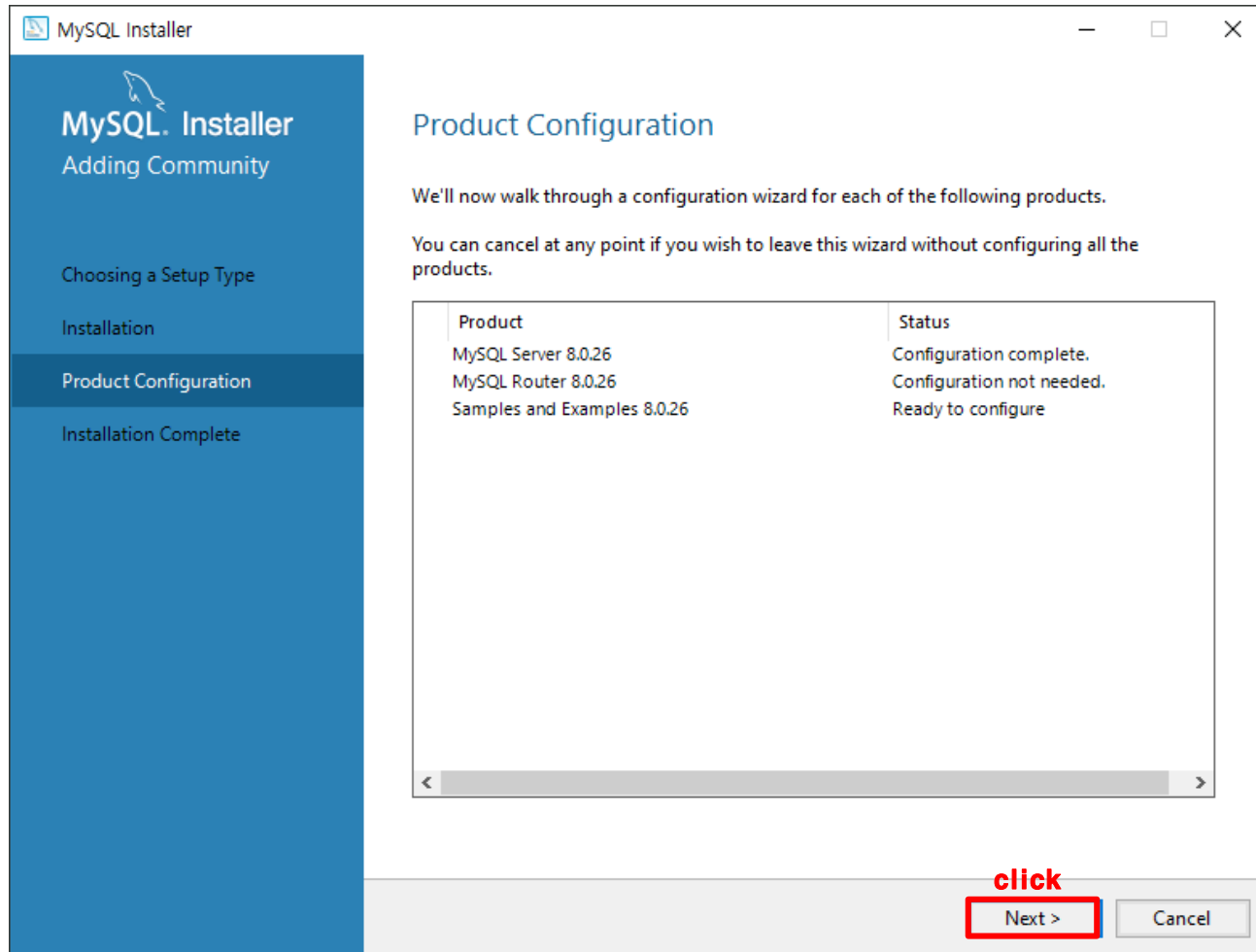


The image shows the 'MySQL Router Configuration' window of the MySQL Installer. The window has a blue sidebar on the left with the MySQL logo and the text 'MySQL. Installer' and 'MySQL Router 8.0.26'. The main area is white and contains the following configuration options:

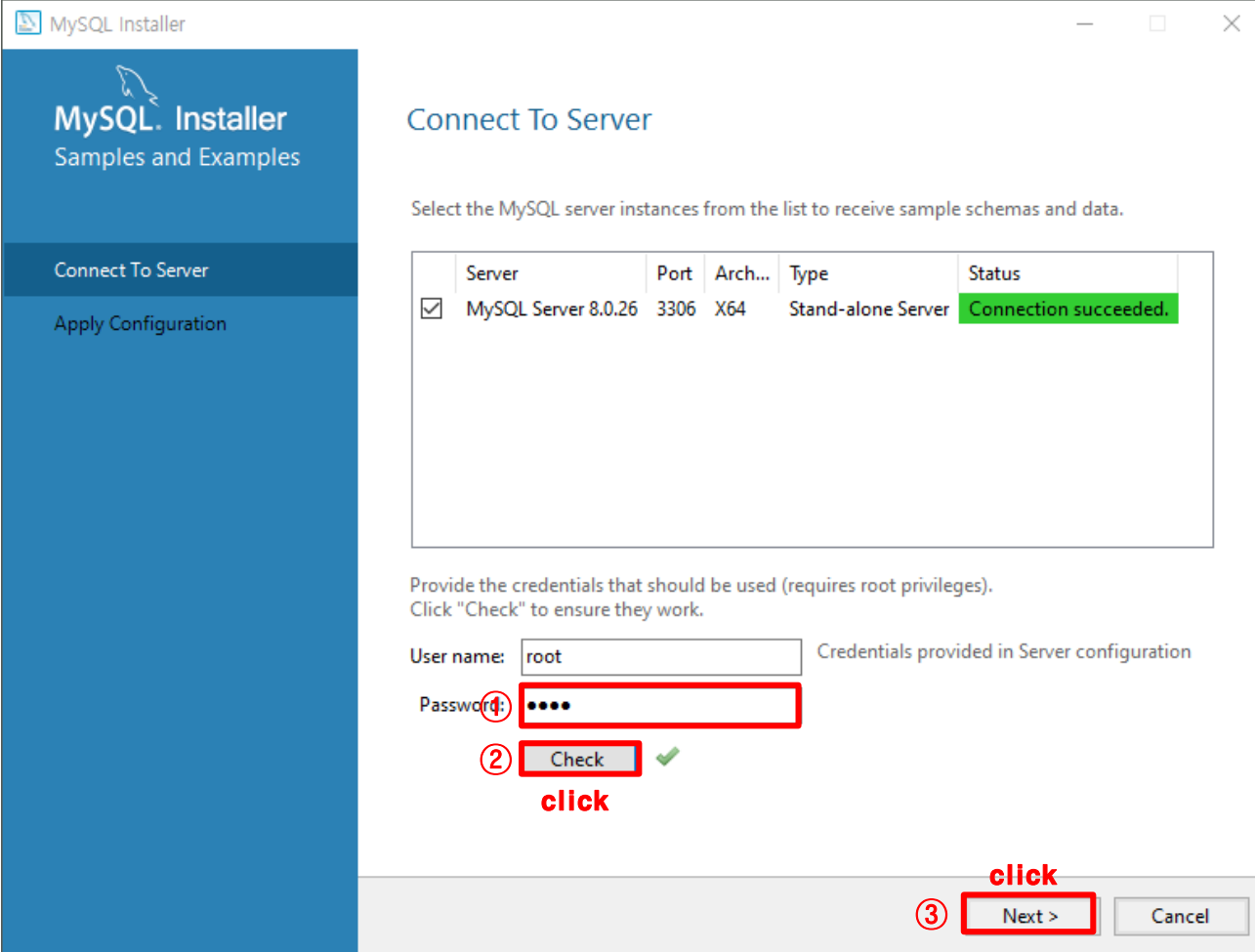
- ☐ Bootstrap MySQL Router for use with InnoDB cluster
- This wizard can bootstrap MySQL Router to direct traffic between MySQL applications and a MySQL InnoDB cluster. Applications that connect to the router will be automatically directed to an available read/write or read-only member of the cluster.
- The bootstrapping process requires a connection to the InnoDB cluster. In order to register the MySQL Router for monitoring, use the current Read/Write instance of the cluster.
- Hostname:
- Port:
- Management User:
- Password:
-
- MySQL Router requires specification of a base port (between 80 and 65532). The first port is used for classic read/write connections. The other ports are computed sequentially after the first port. If any port is indicated to be in use, please change the base port.
- Classic MySQL protocol connections to InnoDB cluster:
 - Read/Write:
 - Read Only:
- MySQL X protocol connections to InnoDB cluster:
 - Read/Write:
 - Read Only:

At the bottom right, there are two buttons: 'Finish' and 'Cancel'. The 'Finish' button is highlighted with a red box and the word 'click' in red text above it.

22) “Next” 클릭



23) Password 입력 후 “Check” 클릭 → “Next” 클릭 (Password는 16번 단계에서 설정한 Password)



The screenshot shows the 'Connect To Server' window in the MySQL Installer. The left sidebar has 'Connect To Server' selected. The main area shows a table with one server instance, 'MySQL Server 8.0.26', which is checked and has a status of 'Connection succeeded.'. Below the table, there are fields for 'User name' (root) and 'Password' (masked with dots). A red box highlights the 'Password' field. Below the password field, a red circle with the number '2' is next to the 'Check' button, which has a green checkmark next to it. The text 'click' is written in red below the 'Check' button. At the bottom right, a red circle with the number '3' is next to the 'Next >' button, which has a red box around it. The text 'click' is written in red above the 'Next >' button. The 'Cancel' button is also visible.

MySQL Installer

MySQL. Installer
Samples and Examples

Connect To Server

Apply Configuration

Connect To Server

Select the MySQL server instances from the list to receive sample schemas and data.

Server	Port	Arch...	Type	Status
<input checked="" type="checkbox"/> MySQL Server 8.0.26	3306	X64	Stand-alone Server	Connection succeeded.

Provide the credentials that should be used (requires root privileges).
Click "Check" to ensure they work.

User name: Credentials provided in Server configuration

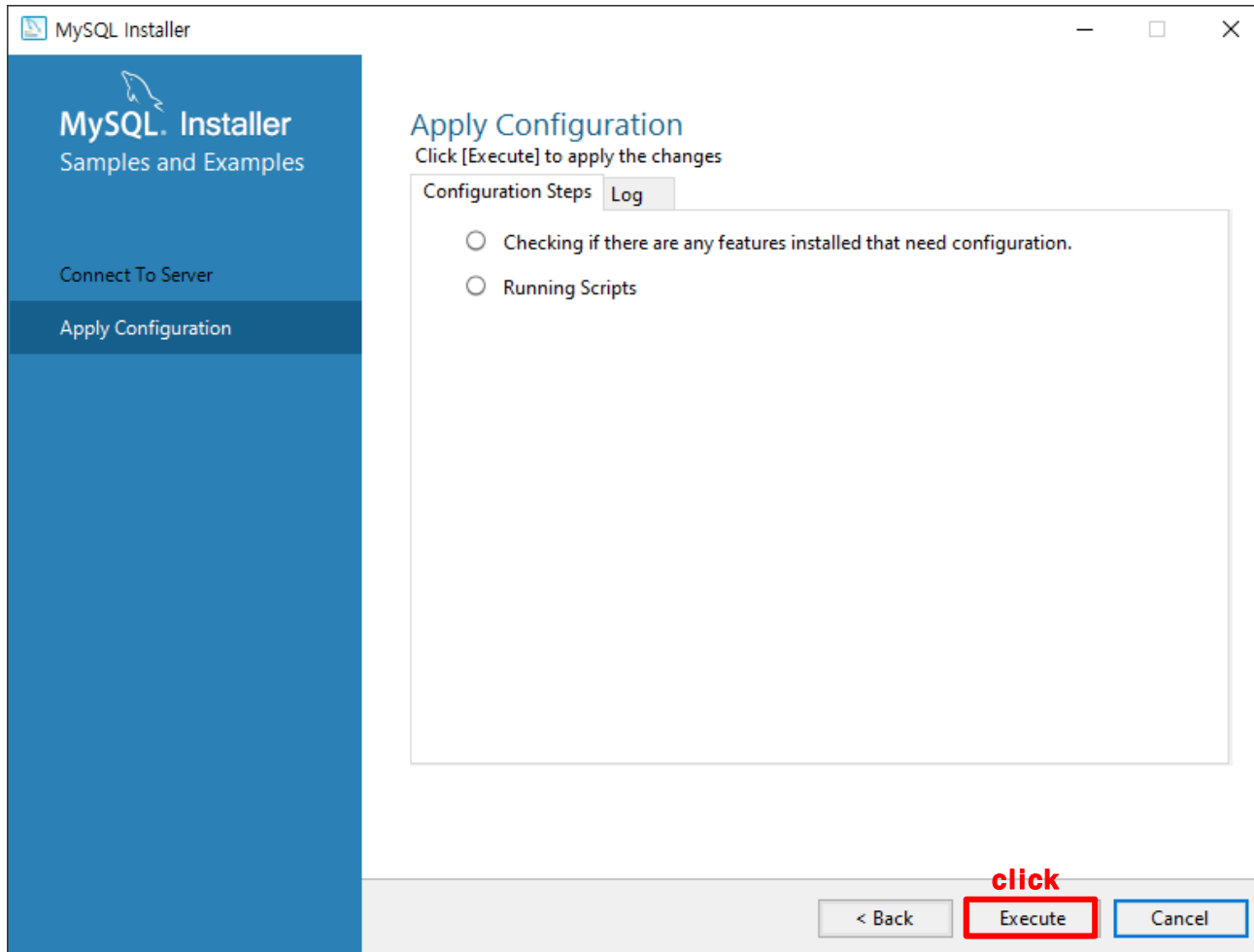
Password:

② ✓

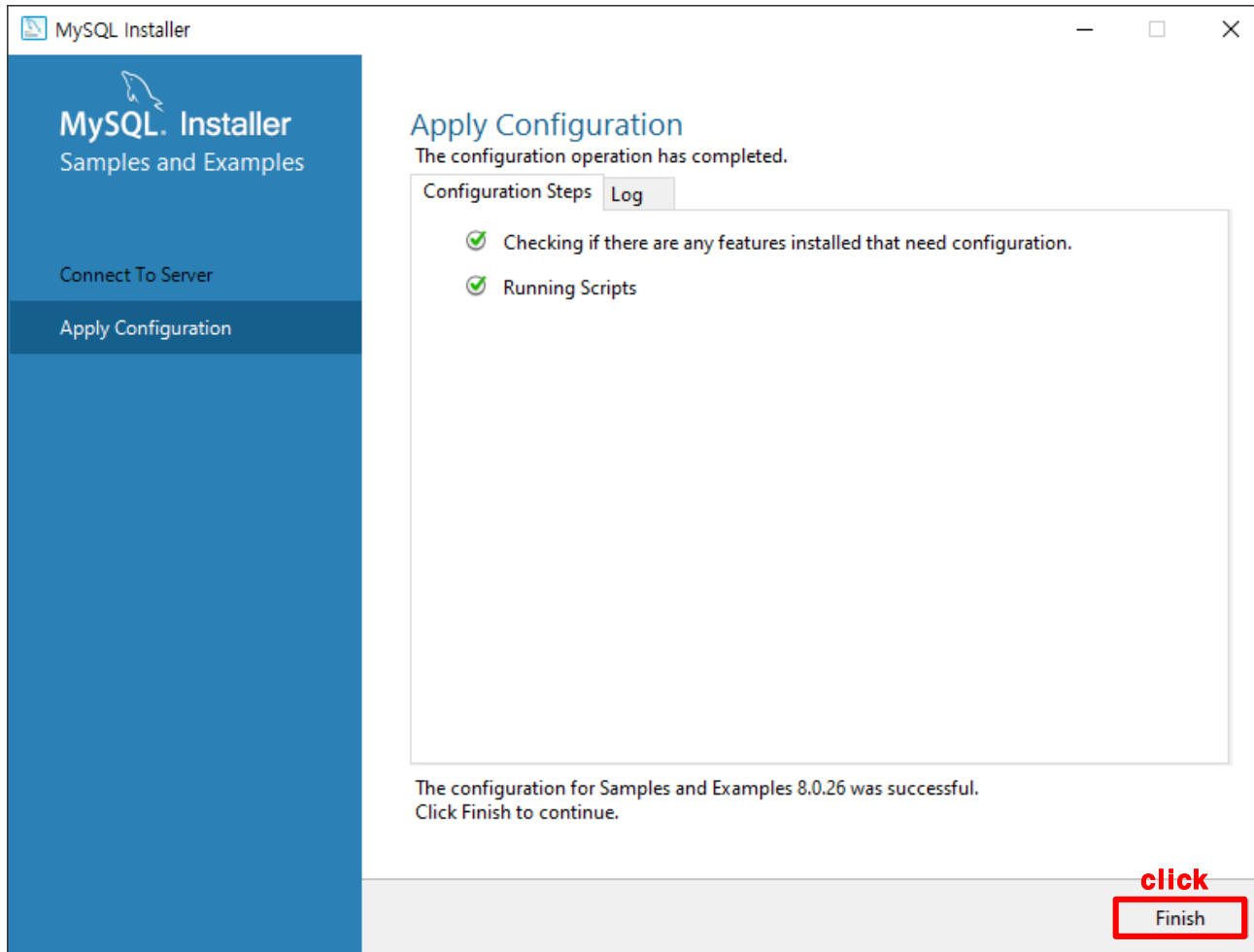
click

③ click

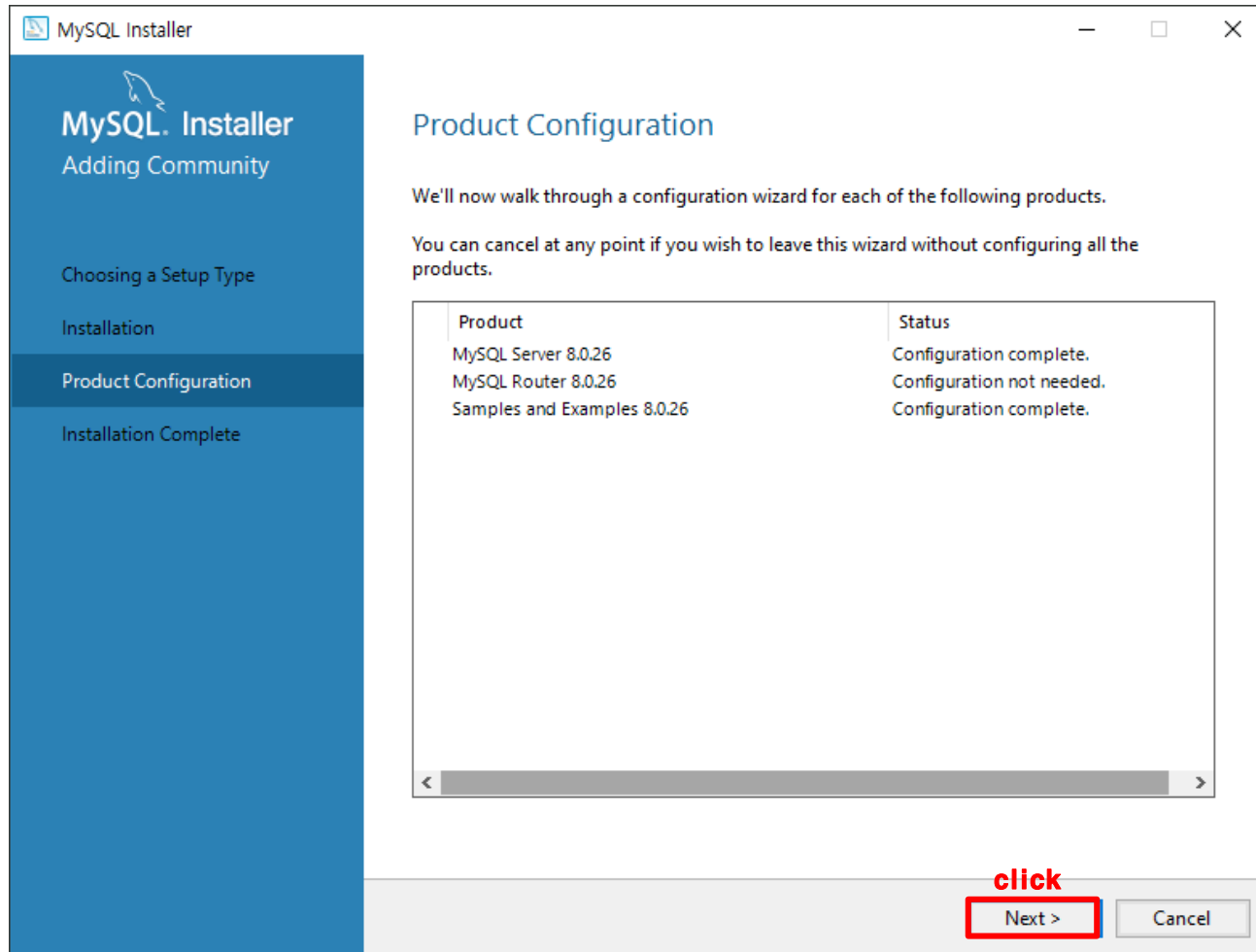
24) “Execute” 클릭



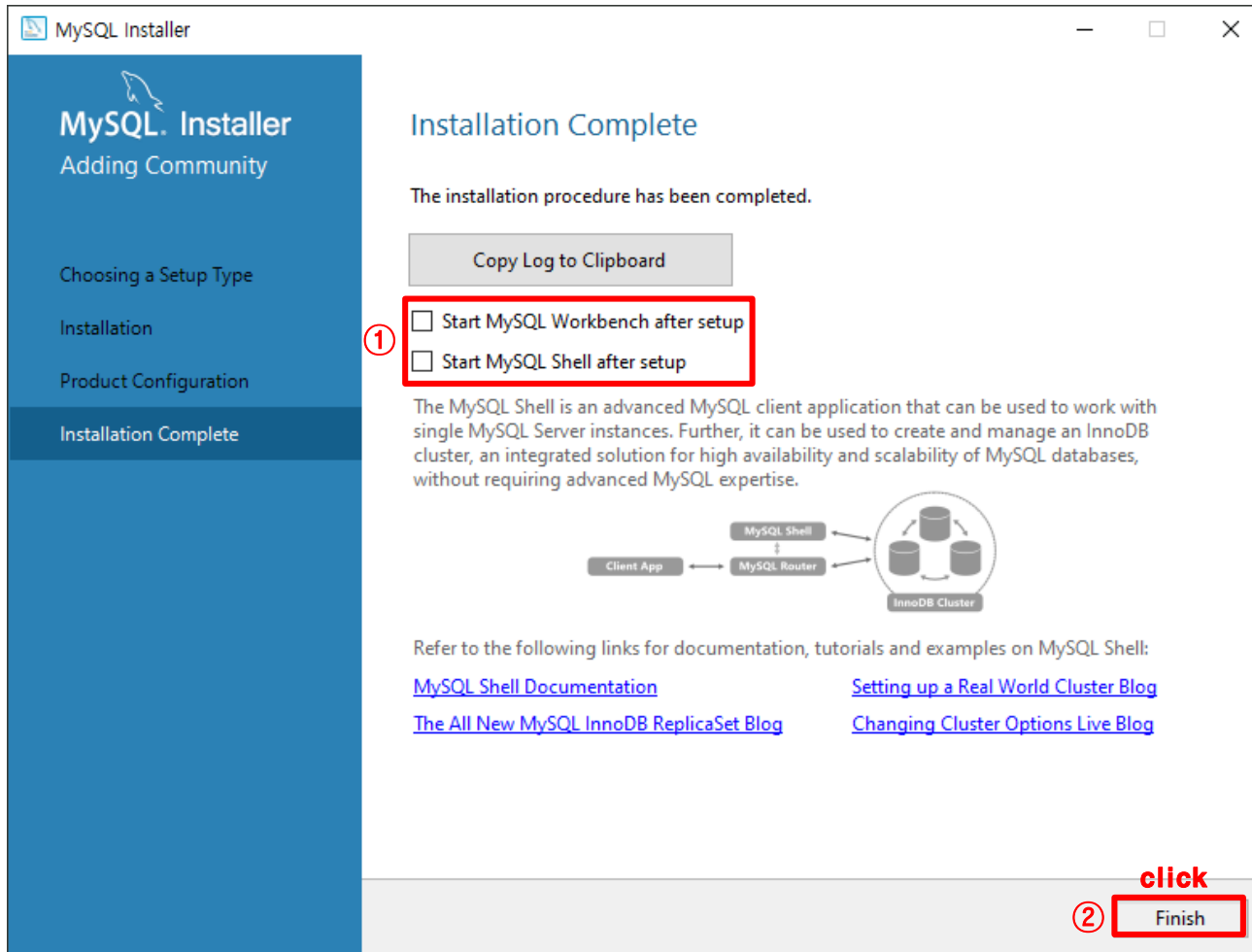
25) “Finish” 클릭



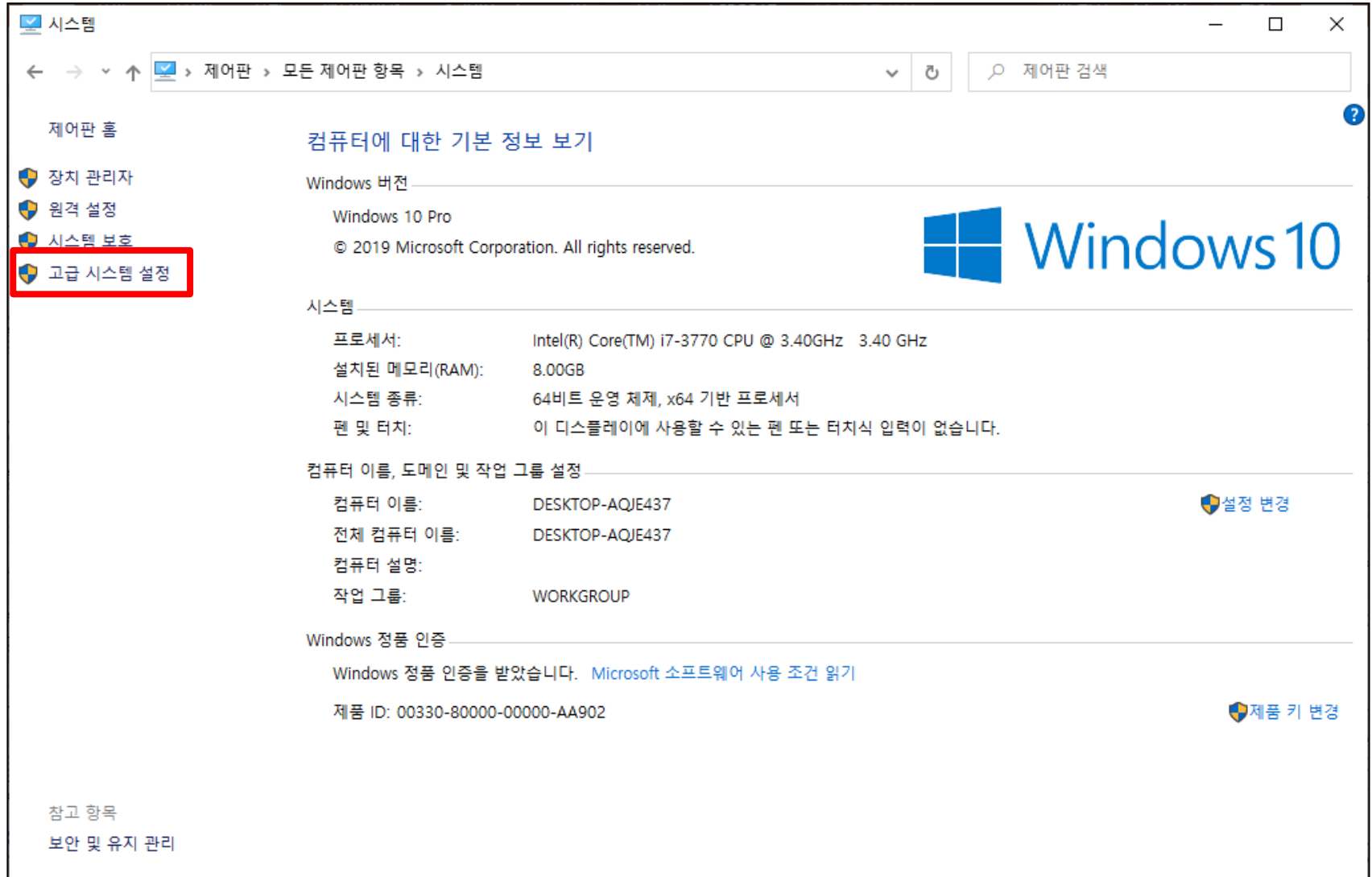
26) “Next” 클릭



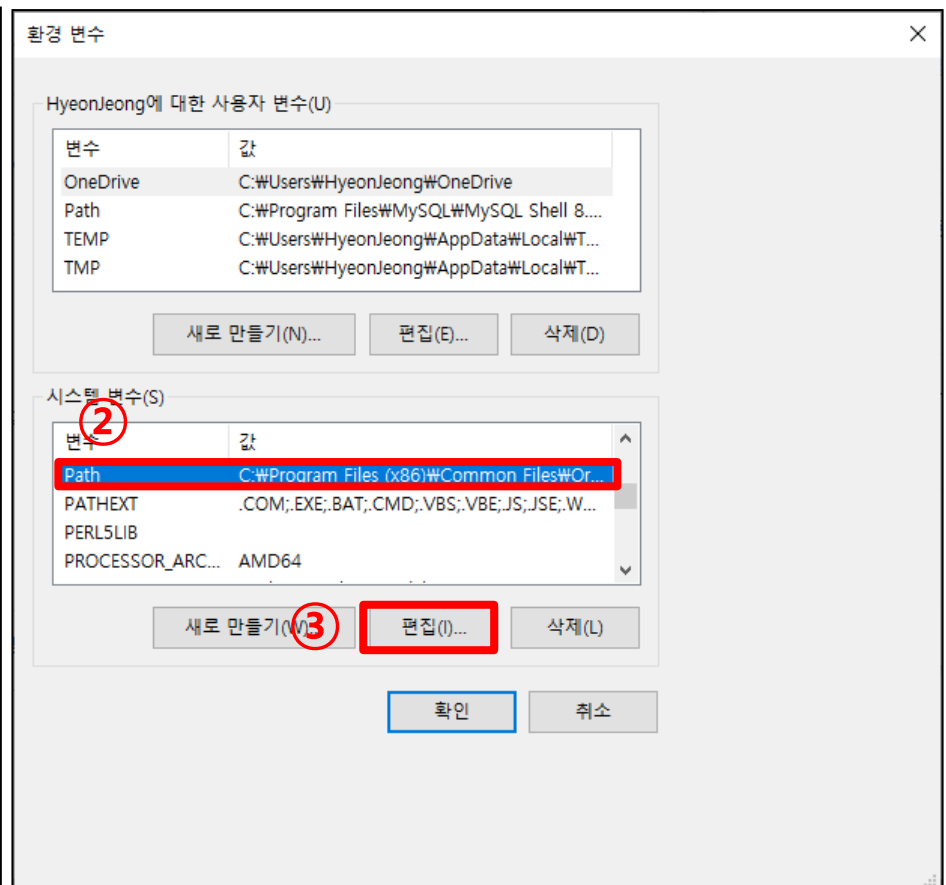
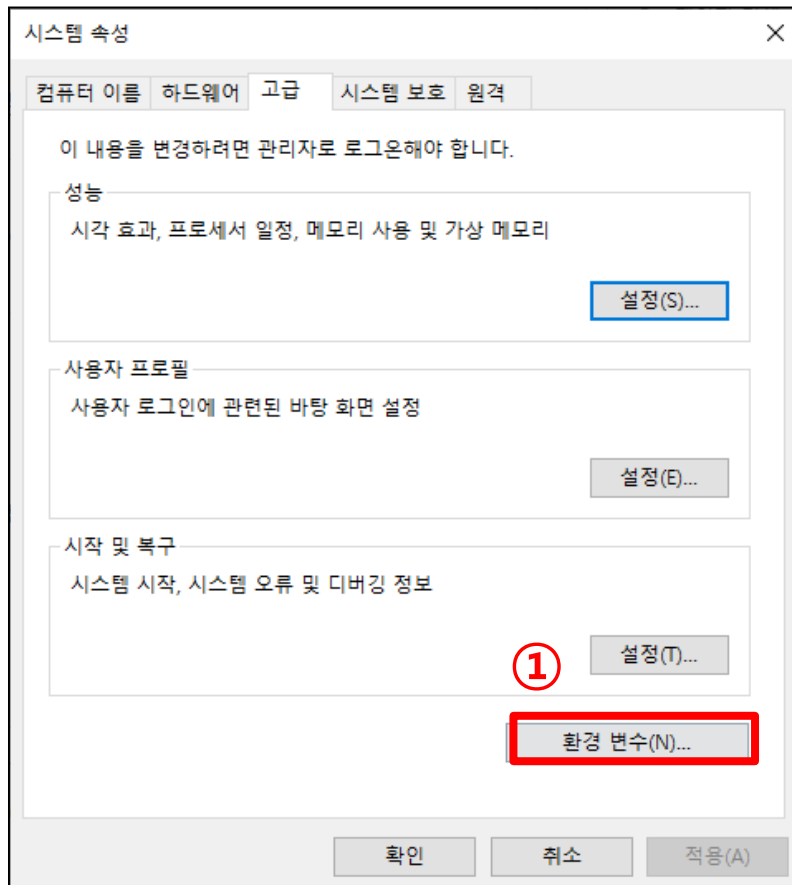
27) 체크박스 해제 → “Finish” 클릭



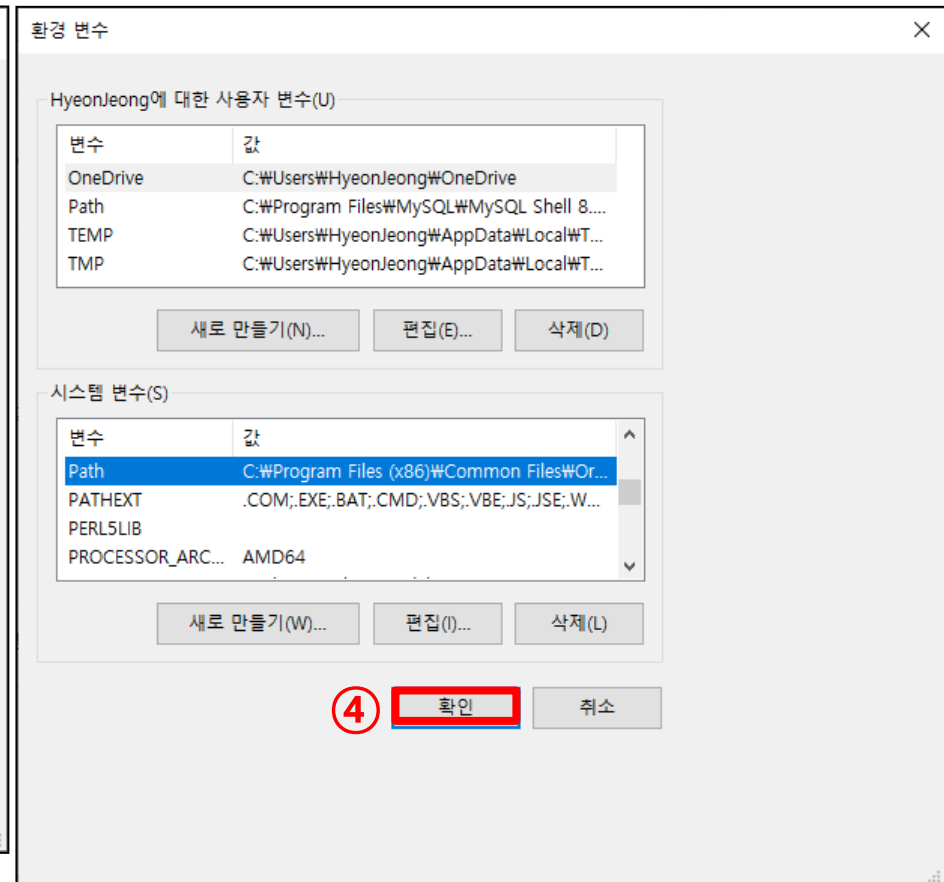
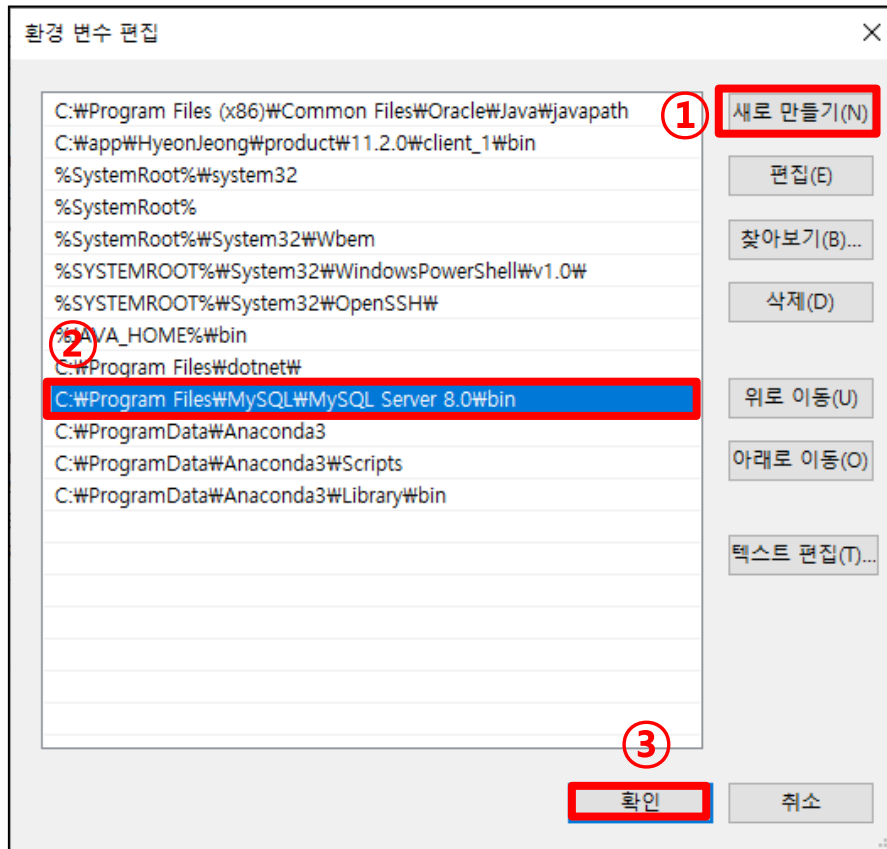
1) 환경 변수 설정을 위해 “고급 시스템 설정” 클릭



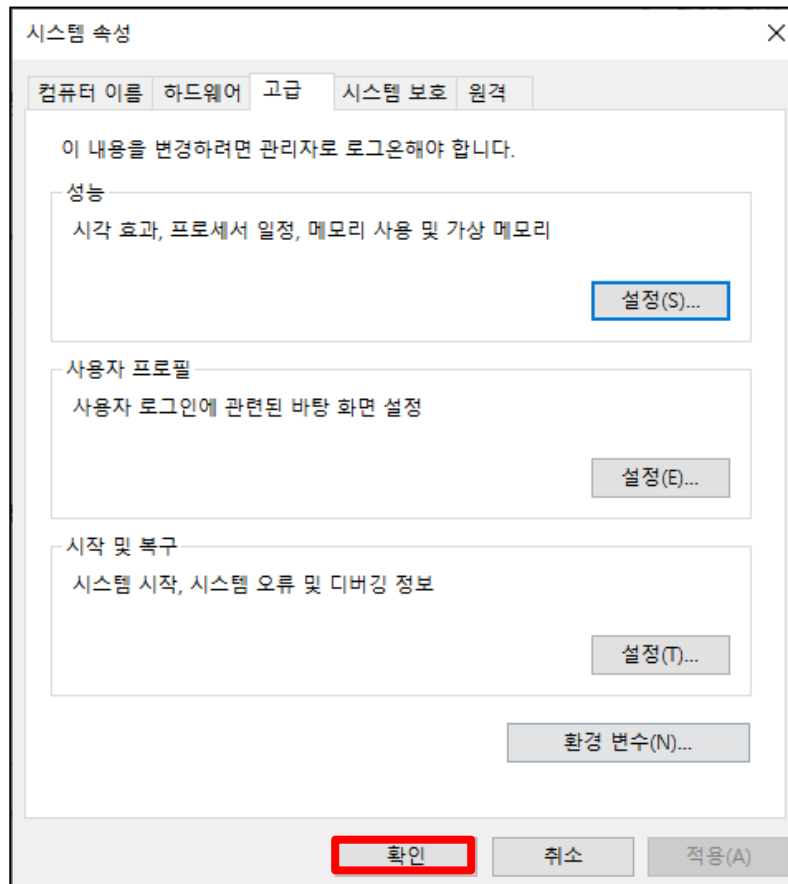
2) 환경변수 → 시스템 변수에서 “Path” 클릭 → “편집” 클릭
→ “새로 만들기” 클릭 → “MySQL 폴더\bin” 추가 → “확인” 클릭
→ “확인” 클릭



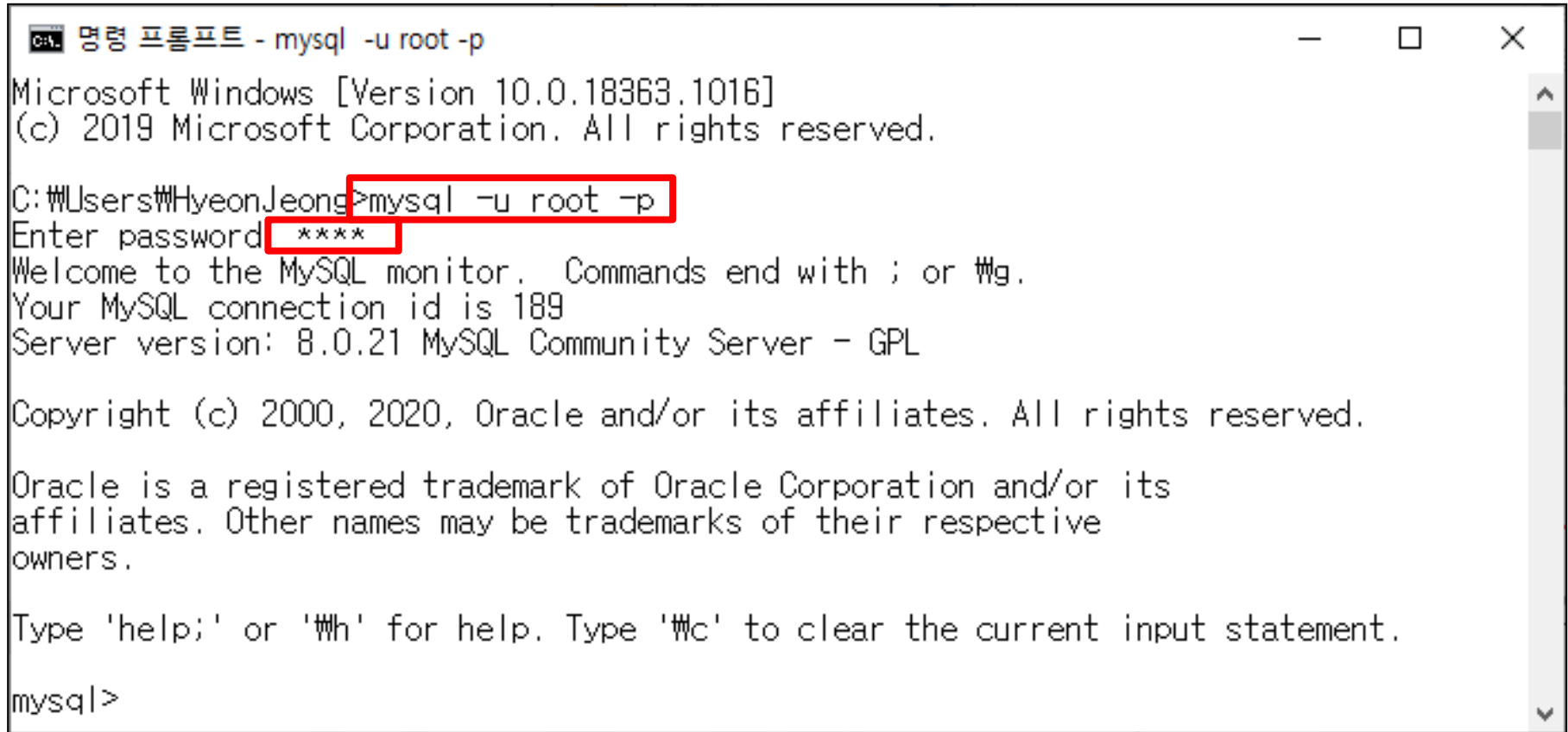
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→ “확인” 클릭



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→ “확인” 클릭 → “확인” 클릭



3) cmd 실행 → “mysql -u 계정 -p” 입력 → 비밀번호 입력



```
C:\> 명령 프롬프트 - mysql -u root -p
Microsoft Windows [Version 10.0.18363.1016]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\HyeonJeong>mysql -u root -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 189
Server version: 8.0.21 MySQL Community Server - GPL

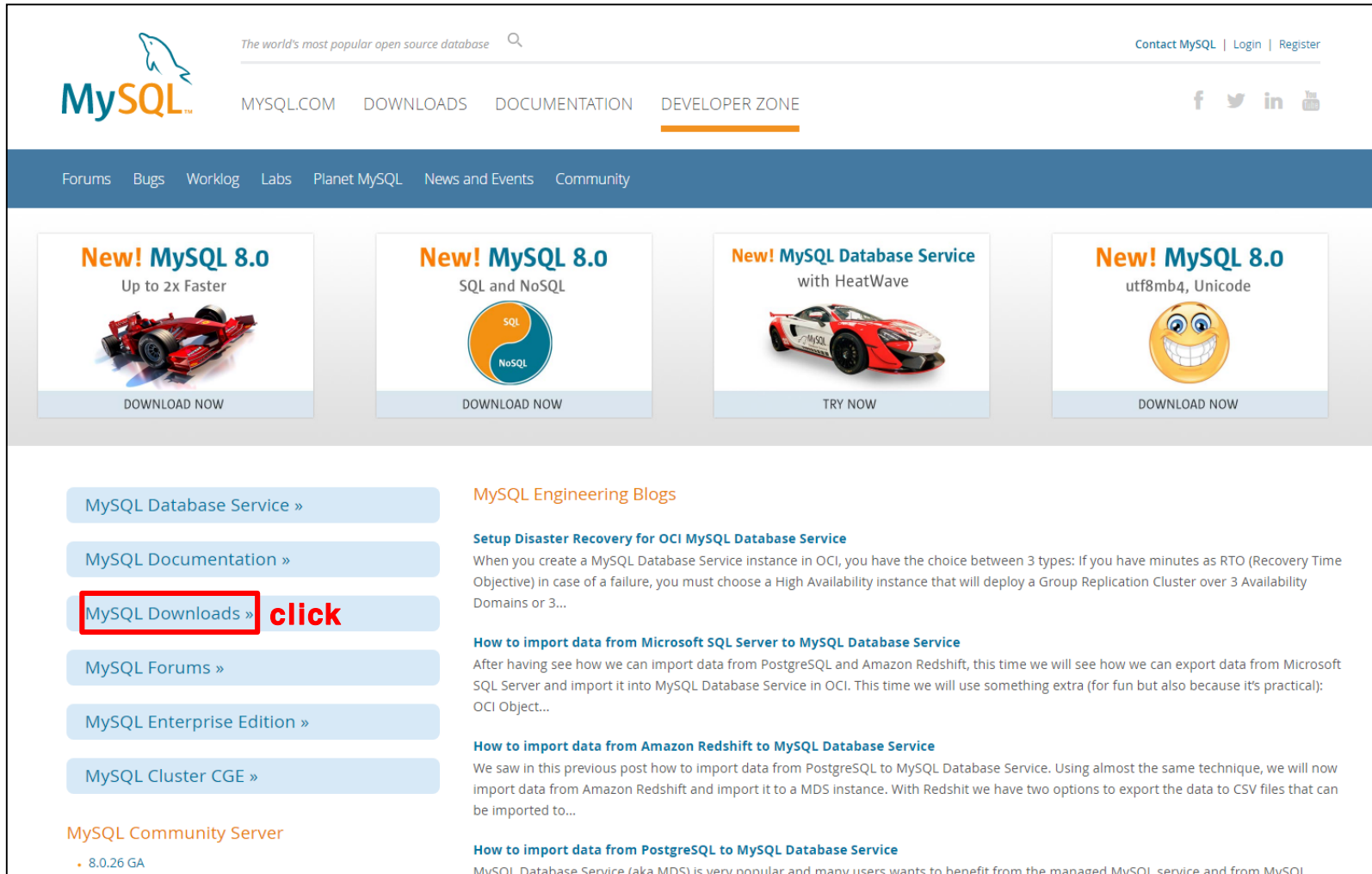
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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

1) “https://dev.mysql.com/” 접속 → “MySQL Downloads” 클릭



The screenshot shows the MySQL website homepage. At the top, there is a navigation bar with links for MySQL.COM, DOWNLOADS, DOCUMENTATION, and DEVELOPER ZONE. Below this is a blue banner with links for Forums, Bugs, Worklog, Labs, Planet MySQL, News and Events, and Community. The main content area features four promotional cards for MySQL 8.0 and MySQL Database Service. On the left, there is a sidebar with a list of links: MySQL Database Service », MySQL Documentation », MySQL Downloads » (highlighted with a red box and the word 'click'), MySQL Forums », MySQL Enterprise Edition », and MySQL Cluster CGE ». Below the sidebar, there is a section for MySQL Community Server with a link to 8.0.26 GA. The right side of the page contains a section for MySQL Engineering Blogs with several articles.

MySQL Database Service »

MySQL Documentation »

MySQL Downloads » click

MySQL Forums »

MySQL Enterprise Edition »

MySQL Cluster CGE »

MySQL Community Server

- 8.0.26 GA

MySQL Engineering Blogs

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How to import data from PostgreSQL to MySQL Database Service

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2) “Connector/J” 클릭

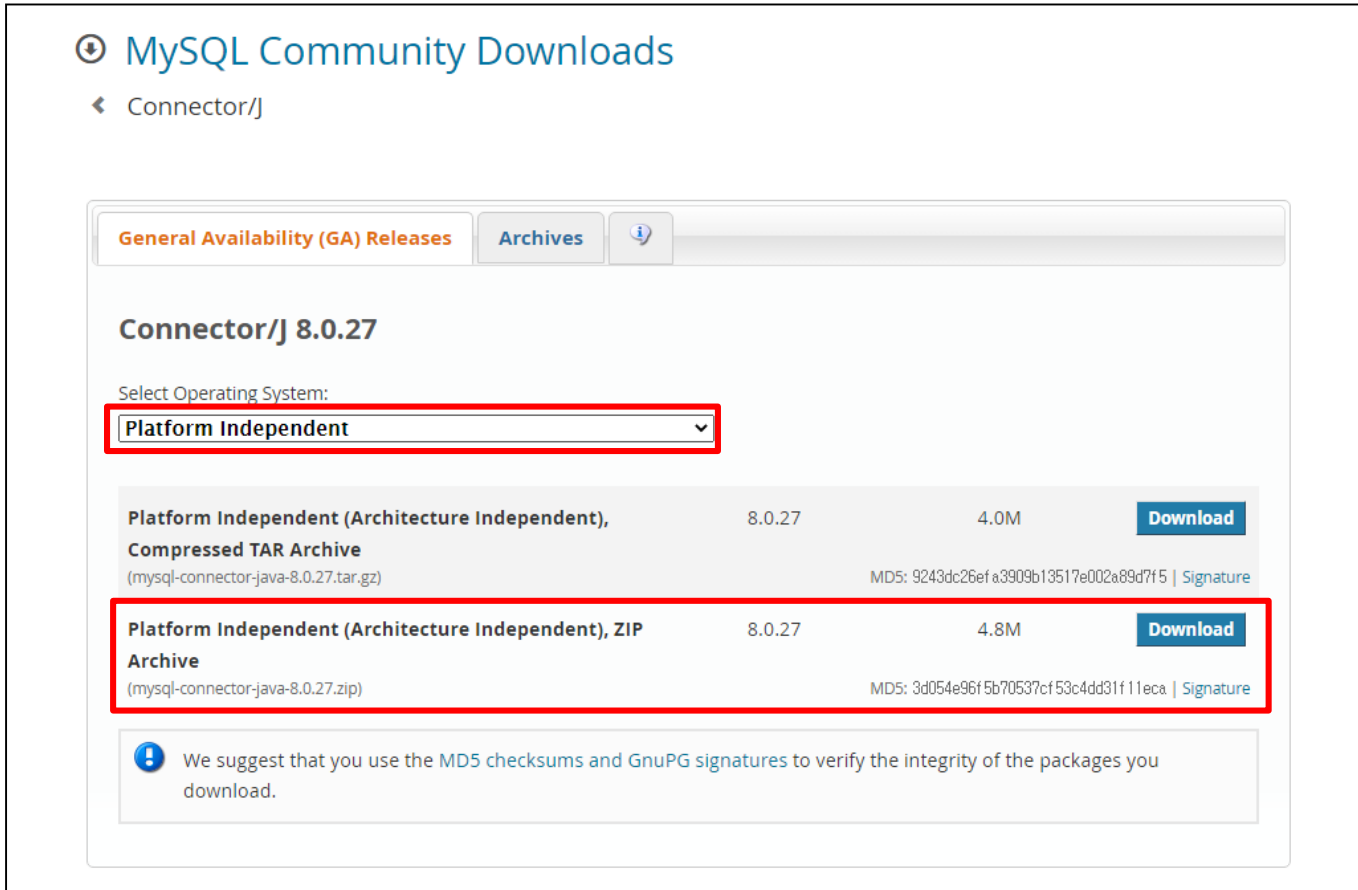
MySQL Community Downloads

- MySQL Yum Repository
- MySQL APT Repository
- MySQL SUSE Repository
- MySQL Community Server
- MySQL Cluster
- MySQL Router
- MySQL Shell
- MySQL Workbench
- MySQL Installer for Windows
- MySQL for Visual Studio
- C API (libmysqlclient)
- Connector/C++
- **Connector/J click**
- Connector/NET
- Connector/Node.js
- Connector/ODBC
- Connector/Python
- MySQL Native Driver for PHP
- MySQL Benchmark Tool
- Time zone description tables
- Download Archives

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3) Select Operating System 에서 “Platform Independent” 선택
→ Platform Independent (Architecture Independent), ZIP Archive의
“Download” 클릭



MySQL Community Downloads

Connector/J

General Availability (GA) Releases Archives

Connector/J 8.0.27

Select Operating System:

Platform Independent

Platform Independent (Architecture Independent), Compressed TAR Archive (mysql-connector-java-8.0.27.tar.gz)	8.0.27	4.0M	Download
Platform Independent (Architecture Independent), ZIP Archive (mysql-connector-java-8.0.27.zip)	8.0.27	4.8M	Download

MD5: 9243dc26efa3909b13517e002a89d7f5 | Signature

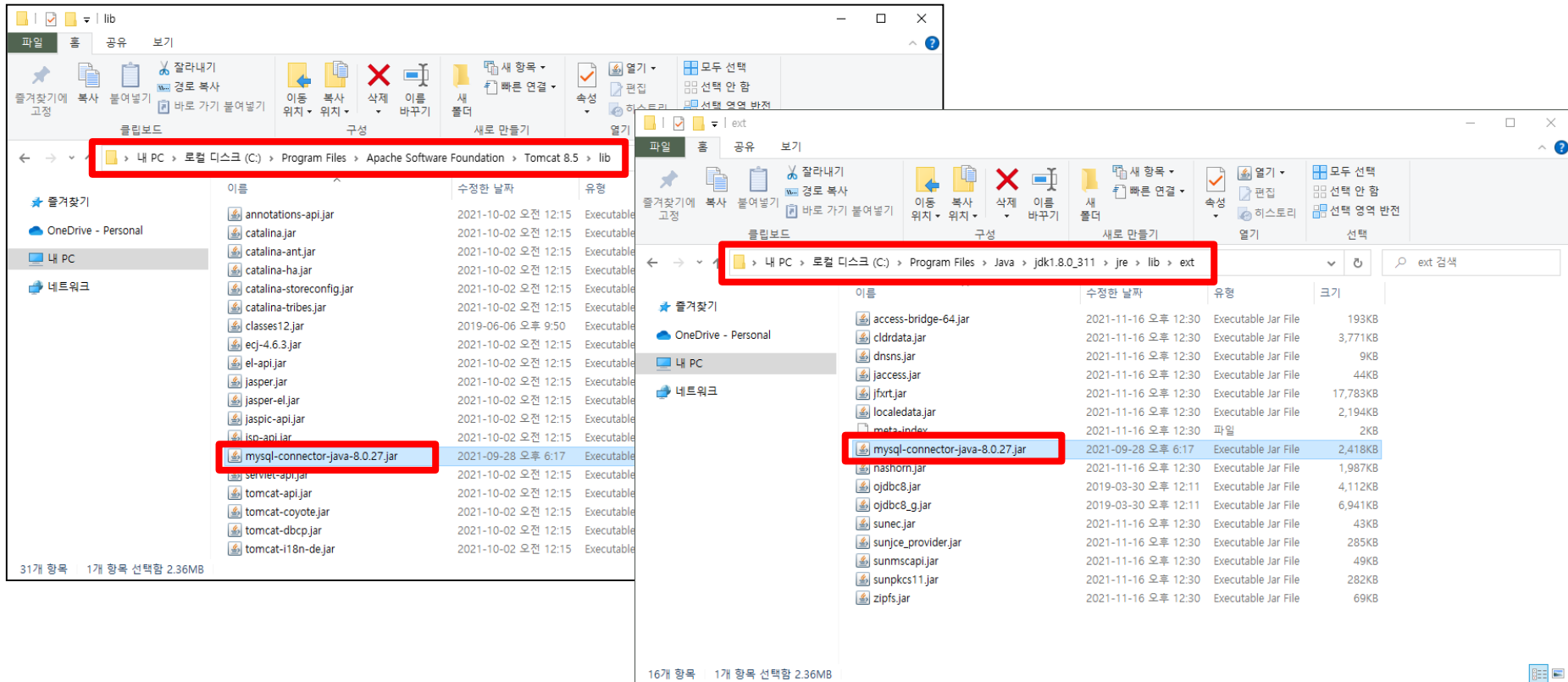
MD5: 3d054e96f5b70537cf53c4dd31f11eca | Signature

We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

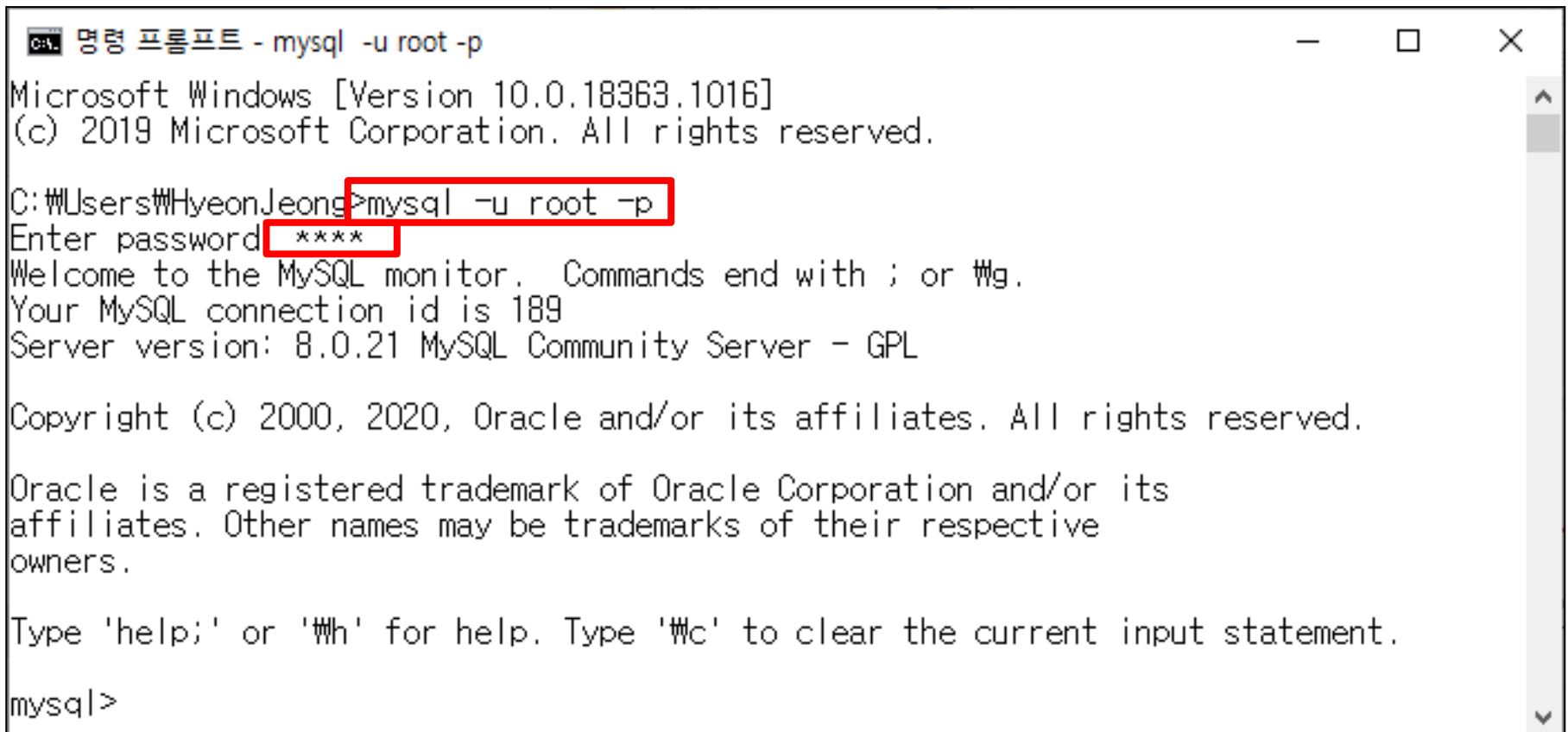
4) 다운로드 받은 파일 압축 해제

→ “mysql-connector-java-8.0.27.jar” 파일 복사

→ “Tomcat 설치 폴더\lib” 와 “자바 설치 위치\jre\lib\ext” 에
파일 붙여넣기



- root 계정 로그인 : cmd 실행 → “mysql -u 계정 -p” 입력 → 비밀번호 입력



```
명령 프롬프트 - mysql -u root -p
Microsoft Windows [Version 10.0.18363.1016]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\HyeonJeong>mysql -u root -p
Enter password: ****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 189
Server version: 8.0.21 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

■ 계정 생성

- **CREATE USER 'userID' @ 'localhost' IDENTIFIED WITH mysql_native_password BY '비밀번호';**

■ 권한 부여

- **grant all privileges on *.* to 'userID'@'%;**
→ **사용자에게 모든 DB 모든 테이블에 모든 권한 부여**
- **grant all privileges on DBname.* to 'userID'@'%' ;**
→ **사용자에게 특정 DB에 대한 모든 권한 부여**
- **grant select, insert, update on DBname.* to 'userID'@'%;**
→ **사용자에게 특정 DB에 대한 select,insert,update 권한 부여**
- **FLUSH PRIVILEGES; (권한 적용)**

■ 계정 생성

```
mysql> create user 'dbtest'@'localhost' identified with mysql_native_password by 'password';
Query OK, 0 rows affected (0.14 sec)

mysql> grant all privileges on *.* to 'dbtest'@'localhost';
Query OK, 0 rows affected (0.11 sec)

mysql> flush privileges;
Query OK, 0 rows affected (0.08 sec)

mysql>
```

■ 접속 확인

```
C:\Users\User>mysql -u dbtest -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 79
Server version: 8.0.13 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

- 데이터베이스 생성

```
CREATE DATABASE database_name;
```

- 데이터베이스 사용

- 현재 사용할 데이터베이스 지정

```
USE database_name;
```

- 전체 데이터베이스 조회

```
SHOW DATABASES;
```

■ 데이터베이스 생성

```
mysql> create database test;  
Query OK, 1 row affected (0.01 sec)
```

■ 데이터베이스 사용

- 현재 사용할 데이터베이스 지정

```
mysql> use test;  
Database changed
```

■ 전체 데이터베이스 조회

```
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| information_schema |  
| address_db |  
| board_db |  
| mysql |  
| opinion_db |  
| performance_schema |  
| sakila |  
| sys |  
| test |  
| world |  
+-----+  
10 rows in set (0.00 sec)
```


- 사용 중인 데이터베이스의 전체 테이블 조회

```
SHOW TABLE STATUS;    // 현재 데이터베이스에 있는 테이블 정보
```

```
SHOW TABLES;          // 테이블 이름만 조회
```

- 데이터베이스 삭제

```
DROP DATABASE database_name;
```

- 사용 중인 데이터베이스의 전체 테이블 조회

```
mysql> show tables;  
Empty set (0.00 sec)
```

- 데이터베이스 삭제

```
mysql> drop database test;  
Query OK, 0 rows affected (0.00 sec)
```

■ 테이블 생성 문법

```
CREATE TABLE table_name (  
    (컬럼)    (데이터타입)    (제약조건)  
    column1 datatype NOT NULL,  
    column2 datatype,  
    .....  
    PRIMARY KEY(column1),  
    FOREIGN KEY(column2) REFERENCES table2 (column));
```

- **table_name** : 테이블 이름
- **column** : 컬럼 이름
- **datatype** : 컬럼의 데이터 타입
- **PRIMARY KEY** : 기본키 설정 (NOT NULL 지정)
- **FOREIGN KEY(column2) REFERENCES table2(column)** : 테이블 (table2)의 기본키(column)를 참조할 때 외래키 설정

- 테이블 생성

```
mysql> create table test(  
-> id int,  
-> name varchar(20),  
-> age int,  
-> primary key(id)  
-> );  
Query OK, 0 rows affected (0.29 sec)
```

- 테이블 조회

```
SELECT * FROM table_name;
```

- 테이블 스키마 구조 확인

```
DESC table_name;
```

- 테이블 조회

```
mysql> select * from test;  
Empty set (0.00 sec)
```

- 테이블 스키마 구조 확인

```
mysql> desc test;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	
name	varchar(20)	YES		NULL	
age	int(11)	YES		NULL	

```
3 rows in set (0.03 sec)
```

■ 데이터 삽입 문법

- 실제 데이터는 VALUES 괄호()안에 입력하고 문자열은 단일 따옴표 (' ')로 둘러쌘
- ","로 각각의 데이터 구분
- 테이블 이름 옆에 ()생략 시에는 자동으로 모든 컬럼을 VALUES()안에 입력

```
INSERT INTO table_name (column1, column2, ....)  
VALUE (데이터1, 데이터2, .... );
```

- table_name : 테이블 이름
- column : 컬럼 이름
- data : 데이터 값

- 데이터 수정 문법

```
UPDATE table_name
```

```
SET column1 = 값(수정사항), column2 = 값, ...
```

```
[WHERE 조건];
```

- 데이터 삭제 문법

```
DELETE
```

```
FROM table_name
```

```
[WHERE 조건];
```


■ 데이터 삽입 문법

```
mysql> insert into test values(1, '웹', 23);  
Query OK, 1 row affected (0.05 sec)  
  
mysql> insert into test values(2, '프로그래밍', 24);  
Query OK, 1 row affected (0.05 sec)  
  
mysql> insert into test values(3, '수업', 25);  
Query OK, 1 row affected (0.05 sec)
```

■ 데이터 수정 문법

```
mysql> update test  
-> set name = '홍길동'  
-> where id = 3;  
Query OK, 1 row affected (0.03 sec)  
Rows matched: 1 Changed: 1 Warnings: 0
```

■ 데이터 삭제 문법

```
mysql> delete from test  
-> where id = 1;  
Query OK, 1 row affected (0.03 sec)
```

■ 테이블 삭제 문법

```
DROP TABLE table_name [CASCADE CONSTRAINTS];
```

(테이블) (제약조건)

- **CASCADE CONSTRAINTS** : 외래키에 의해 참조되는 기본키를 포함한 테이블일 경우 기본키를 참조하던 외래키 조건도 같이 삭제

■ 테이블 삭제

```
mysql> drop table test;
```

Query OK, 0 rows affected (0.12 sec)

■ Java.sql 패키지 import

사용 예

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

- 데이터베이스 연동에 필요한 자바의 클래스와 인터페이스 import

■ JDBC 드라이버 로드

사용 예

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

- MySQL의 JDBC 드라이버를 로드함

■ 데이터베이스 경로 지정

사용 예

```
String jdbcurl = "jdbc:mysql://localhost:3306/database_name?serverTimezone=UTC";
```

- JSP 페이지에서 사용할 데이터베이스 이름을 포함하는 URL 을 변수에 저장

■ Connection 객체 생성

사용 예

```
Connection conn = DriverManager.getConnection(jdbcurl,"계정","패스워드");
```

- Connection 객체를 생성하여 데이터베이스에 연결하는 과정
- 데이터베이스 경로와 사용자 계정, 패스워드를 통해 접속

■ Statement 객체 생성

사용 예

```
Statement stmt = conn.createStatement();
```

- SQL문을 실행하기 위한 Statement 객체 생성

■ SQL문 설정

사용 예 `String sql1 = "select * from table_name";`

- 테이블의 모든 열을 검색하는 SQL 문을 sql1 변수에 배정

사용 예 `String sql2 = "update test set age = age + 1 where id = 3";`

- test 테이블에서 id 가 3인 행의 age 값을 1 증가시키는 SQL 문을 sql2 변수에 배정

■ SQL문 실행

사용 예 `ResultSet re = stmt.executeQuery(sql1);`

- 검색을 수행하는 executeQuery 메소드를 사용하여 sql1 검색문을 실행하고, 결과를 ResultSet 객체 변수에 저장

사용 예 `stmt.executeUpdate(sql2);`

- 갱신을 수행하는 executeUpdate 메소드를 사용하여 sql2 갱신문을 실행

■ ResultSet 객체 사용

사용 예

```
while(re.next()){  
    <%= rs.getSting("id") %>  
    <%= rs.getString("name") %>  
    <%= rs.getString("age") %>  
}
```

- while문과 ResultSet 객체의 next 메소드를 이용하여 검색된 행을 하나씩 순서대로 이동하면서, 각 행의 id, name, age 열의 값을 getSting 메소드를 활용하여 출력

■ 예외 처리

사용 예

```
out.println("DB 연동 오류입니다. : " + e.getMessage());
```

- try 블록을 사용하여 예외가 발생하면, 위의 예와 같이 오류 메시지 출력

■ ResultSet 객체 주요 메소드

- `stmt = conn.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_UPDATABLE);`

메소드	설명
<code>Next()</code>	다음 레코드로 이동
<code>Previous()</code>	이전 레코드로 이동
<code>First()</code>	처음 레코드로 이동
<code>Last()</code>	마지막 레코드로 이동
<code>beforeFirst()</code>	처음 레코드의 이전으로 이동
<code>AfterLast()</code>	마지막 레코드의 다음으로 이동
<code>getRow()</code>	현재 레코드의 행 번호 반환

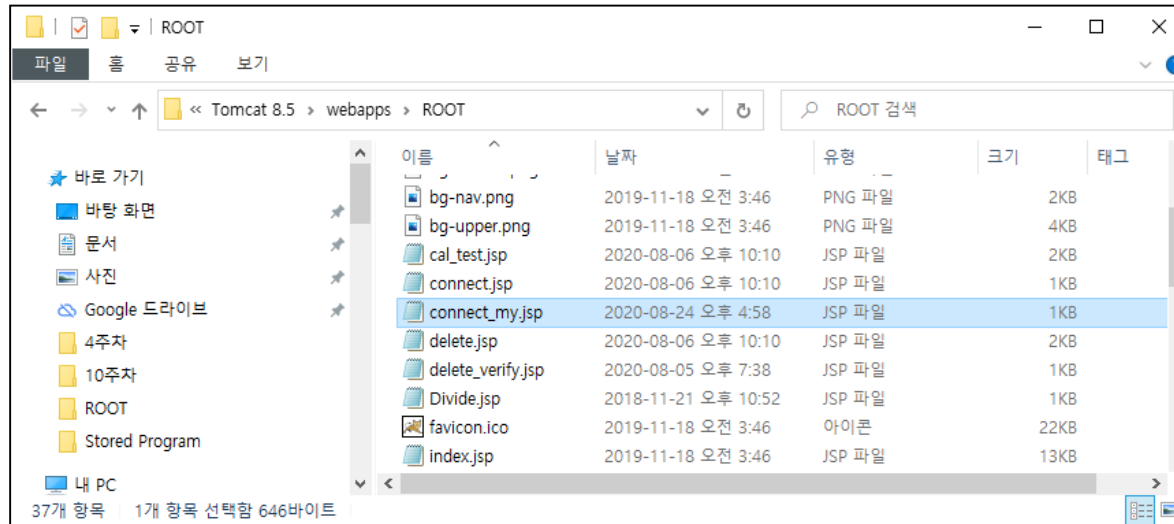
■ 연결할 데이터베이스 생성

```
mysql> CREATE DATABASE wptest;  
Query OK, 1 row affected (0.01 sec)
```

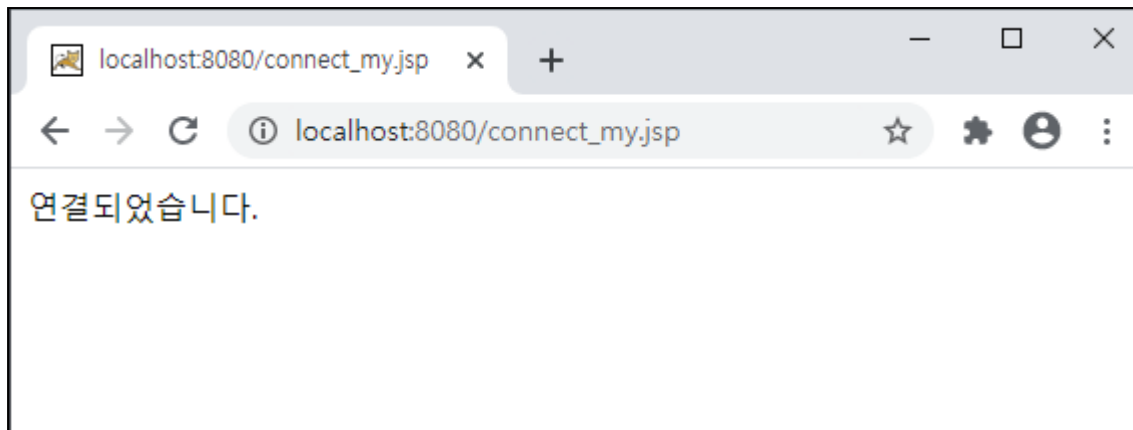
■ connect_my.jsp (DB명, 계정, 비밀번호는 생성한 DB와 계정에 맞게 작성)

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8"%>  
<%@ page import="java.sql.*"%>  
<%  
    String jdbcurl = "jdbc:mysql://localhost:3306/wptest?serverTimezone=UTC";  
  
    Boolean connect = false;  
  
    try{  
        Class.forName("com.mysql.jdbc.Driver");  
        Connection conn = DriverManager.getConnection(jdbcurl, "root", "0000");  
        connect = true;  
    }  
    catch(Exception e){  
        connect = false;  
        out.print(e);  
    }  
%>  
<html>  
    <head></head>  
    <body>  
        <% if(connect==true){out.print("연결되었습니다.");}  
  
        else{out.print("연결에 실패하였습니다.");} %>  
    </body>  
</html>
```


■ Tomcat 폴더 구성



■ 연결 성공 시 화면



■ 연결할 데이터베이스와 테이블 생성

```
mysql> USE wptest;
Database changed
mysql> CREATE TABLE address_tbl(
  ->     student_id VARCHAR(15),
  ->     name VARCHAR(15),
  ->     address VARCHAR(50),
  ->     e_mail VARCHAR(30),
  ->     PRIMARY KEY(student_id)
  -> );
Query OK, 0 rows affected (0.15 sec)
```

■ 데이터 삽입 및 확인

```
mysql> INSERT INTO address_tbl VALUES('2018123456', '홍길동', 'hong@hong.hong', '데이터베이스 연구실 5128호');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SELECT * FROM address_tbl;
```

student_id	name	address	e_mail
2018123456	홍길동	hong@hong.hong	데이터베이스 연구실 5128호

1 row in set (0.00 sec)

- jdbc-test.jsp (DB명, 계정, 비밀번호는 생성한 DB와 계정에 맞게 작성)

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8"%>
<%@ page import="java.sql.*"%>
<html>
<body>
<center>
<h1> 주소록 </h1>
<table border="1" align="center">
  <tr>
    <td align="center"> Student_ID </td>
    <td align="center"> Name </td>
    <td align="center"> E-mail </td>
    <td align="center"> Address </td>
  </tr>

  <%
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;

    try {
      Class.forName("com.mysql.jdbc.Driver");
      String jdbcurl = "jdbc:mysql://localhost:3306/wptest?serverTimezone=UTC";
      conn = DriverManager.getConnection(jdbcurl, "root", "0000");
      stmt = conn.createStatement();
      String sql = "select * from address_tbl";
      rs = stmt.executeQuery(sql);
    }
  <%>
```

- jdbc-test.jsp (DB명, 계정, 비밀번호는 생성한 DB와 계정에 맞게 작성)

```
        catch(Exception e) {
            out.println("DB 연동 오류입니다. : " + e.getMessage());
        }

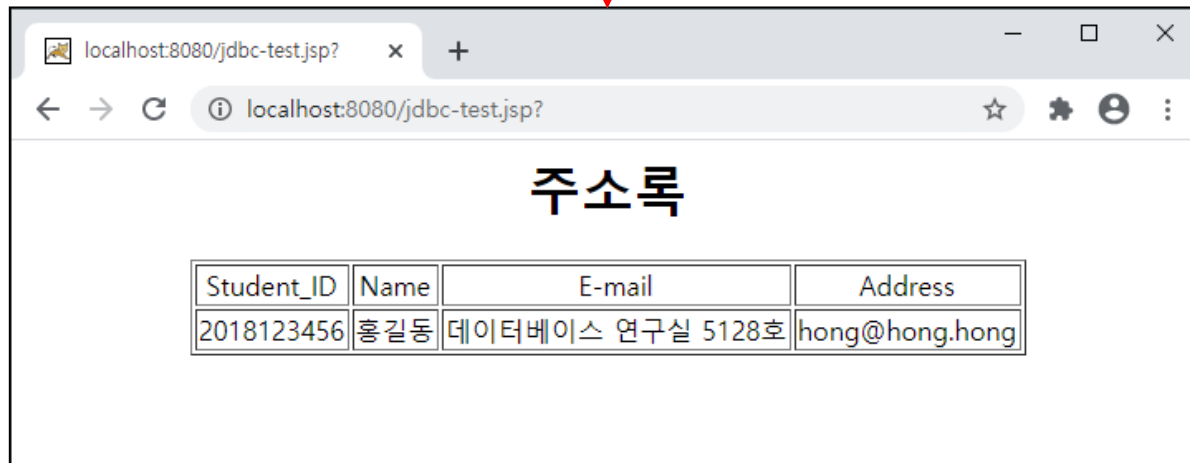
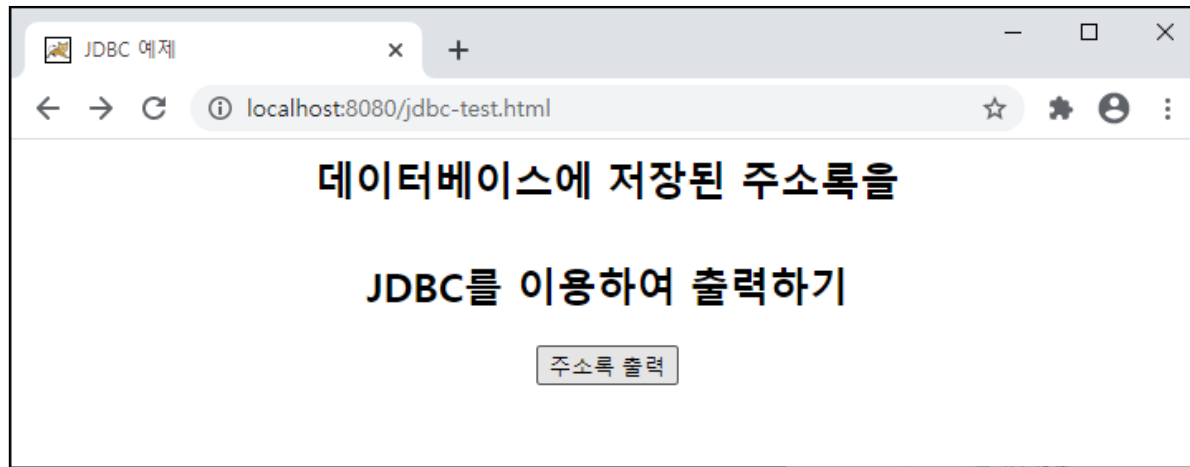
        while(rs.next()) {
%>
            <tr>
                <td align="center"><%= rs.getString("student_id") %></td>
                <td align="center"><%= rs.getString("name") %></td>
                <td align="center"><%= rs.getString("e_mail") %></td>
                <td align="center"><%= rs.getString("address") %></td>
            </tr>
        <%
        }
    %>
</table>|
    <%
        stmt.close();
        conn.close();
    %>
</center>
</body>
</html>
```

- jdbc-test.html

```
<html>
  <head> <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
  <title> JDBC 예제 </title> </head>
  <body>
    <center>
      <h2>
        데이터베이스에 저장된 주소록을 <br><br> JDBC를 이용하여 출력하기
      </h2>

      <form action="jdbc-test.jsp" method="get">
        <input type="submit" value="주소록 출력">
      </form>
    </center>
  </body>
</html>
```

■ 연결 성공 시 화면



- 연결할 데이터베이스와 테이블 생성 (사용한 이름에 따라 jsp코드에서 필요한 부분(DB명, 테이블명, sql문 등) 수정 필요)

```
mysql> USE wptest;  
Database changed  
mysql> CREATE TABLE opinion_tbl(  
-> id INT,  
-> fruit VARCHAR(15),  
-> sum INT,  
-> PRIMARY KEY(id)  
-> );  
Query OK, 0 rows affected (0.05 sec)
```

열 이름	데이터 타입	설명
id	int	고유번호(기본키)
fruit	varchar(15)	과일
sum	int	응답 수

테이블 구조

```
mysql> DESC opinion_tbl;
```

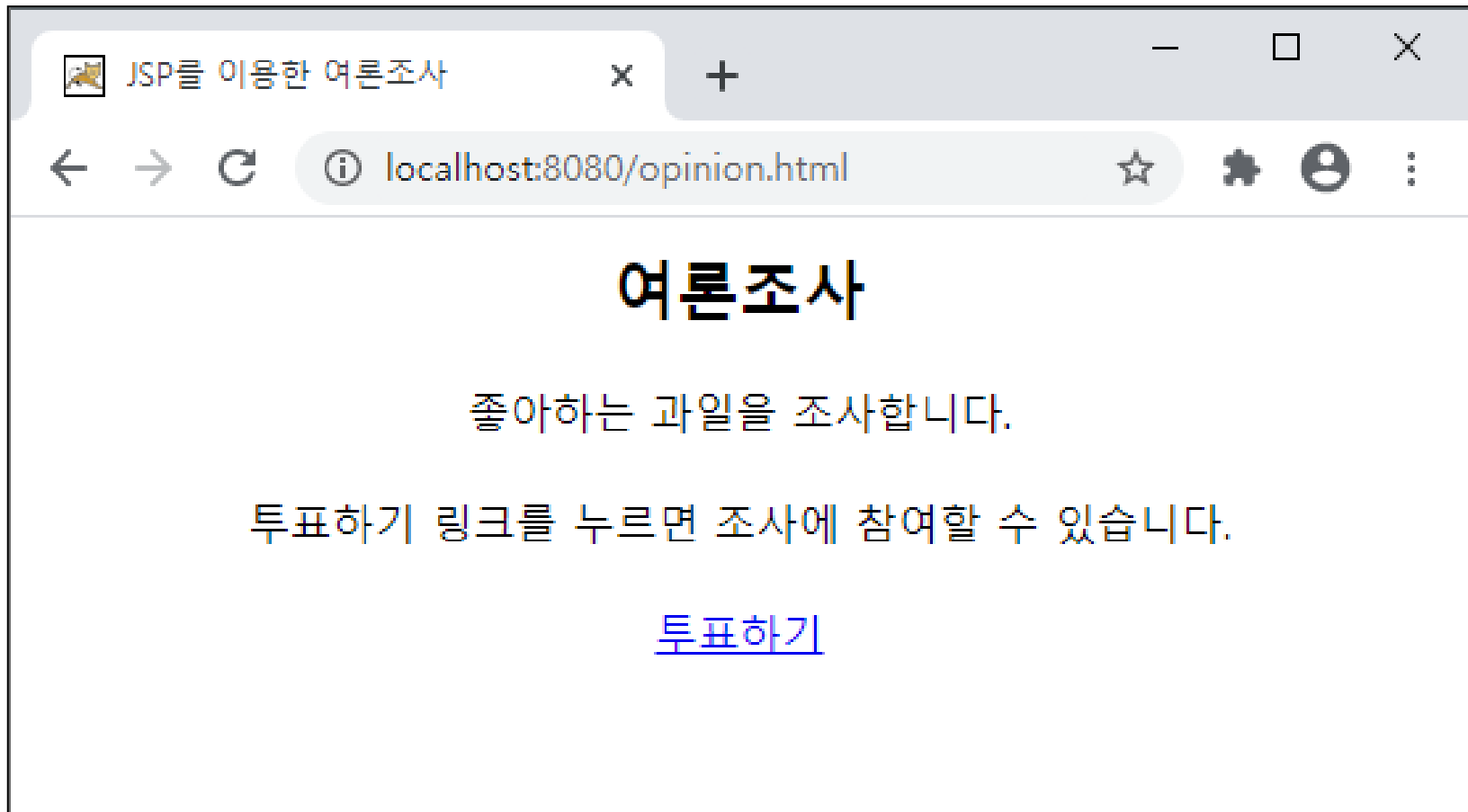
Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
fruit	varchar(15)	YES		NULL	
sum	int	YES		NULL	

```
3 rows in set (0.02 sec)
```

■ opinion.html

```
<html>
  <head> <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <title> JSP를 이용한 여론조사 </title> </head>
  <body>
    <center>
      <table border=0>
        <tr>
          <td align="center">
            <h2> 여론조사 </h2>
            <font size ="3">좋아하는 과일을 조사합니다.</font> <br> <br>
            <font size ="3">투표하기 링크를 누르면 조사에 참여할 수 있습니다.</font> <br> <br>
            <a href="opinion-poll.html"> 투표하기 </a>
          </td>
        </tr>
      </table>
    </center>
  </body>
</html>
```

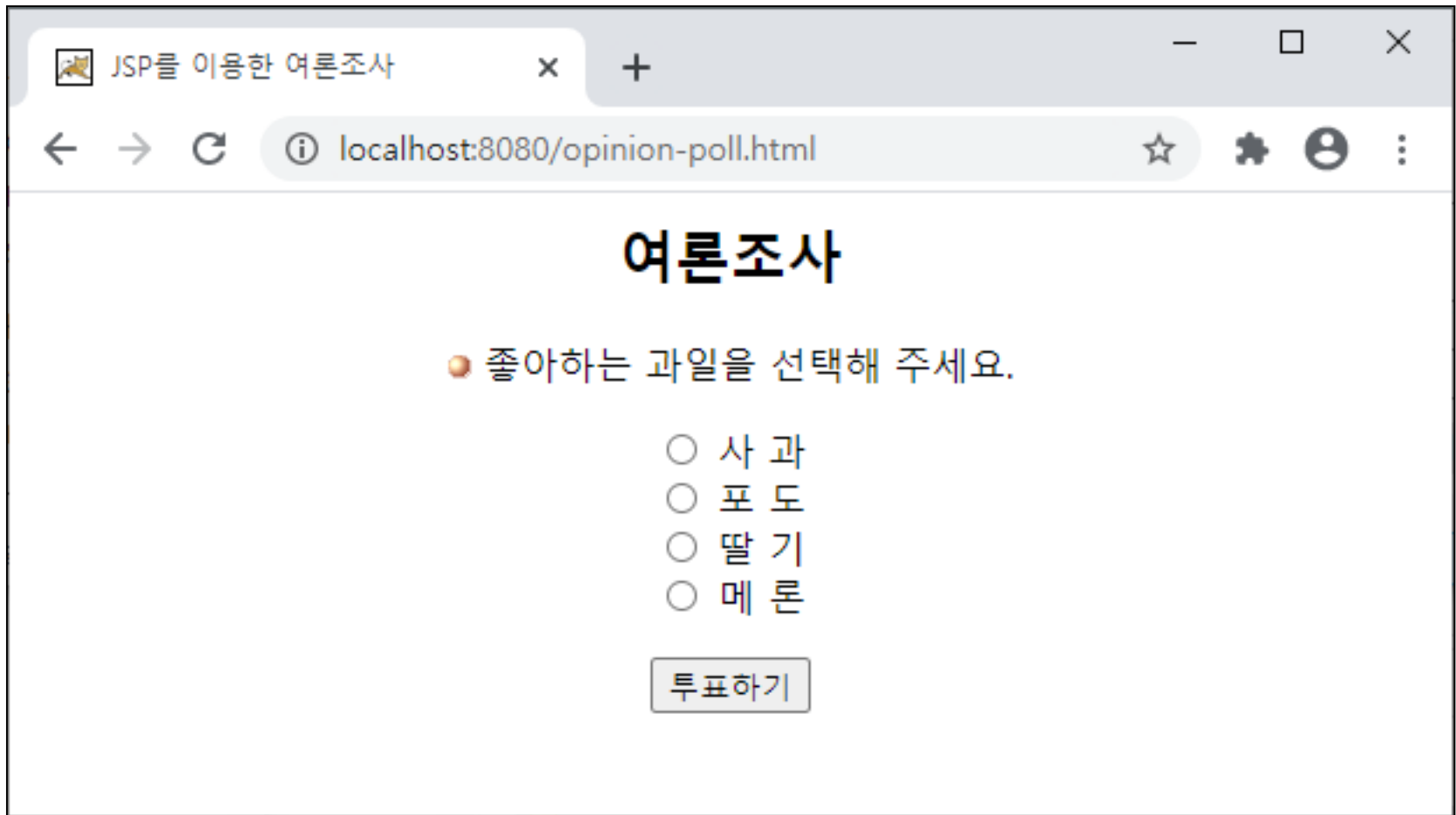

- 연결 성공 시 화면 : 여론 조사 초기 화면(opinion.html)



■ opinion-poll.html

```
<html>
  <head> <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
    <title> JSP를 이용한 여론조사 </title> </head>
  <body>
    <center>
      <table border=0>
        <tr> <td align="center">
          <h2> 여론조사 </h2>
          <form action="opinion-result.jsp" method="post">
             좋아하는 과일을 선택해 주세요. <p>
            <input type="radio" name="opinion_id" value="0"> 사 과 <br>
            <input type="radio" name="opinion_id" value="1"> 포 도 <br>
            <input type="radio" name="opinion_id" value="2"> 딸 기 <br>
            <input type="radio" name="opinion_id" value="3"> 메 론 <p>
              <input type="submit" value="투표하기">
            </form>
          </td> </tr>
        </table>
      </center>
    </body>
  </html>
```

- 연결 성공 시 화면 : 의견 입력 화면(opinion-poll.html)



JSP를 이용한 여론조사

localhost:8080/opinion-poll.html

여론조사

● 좋아하는 과일을 선택해 주세요.

☐ 사과
☐ 포도
☐ 딸기
☐ 메론

투표하기

■ opinion-result.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<%@ page import="java.sql.*"%>
<%@ page import="java.text.*"%>
<% request.setCharacterEncoding("euc-kr"); %>

<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title> JSP를 이용한 여론조사 </title></head>
<body>
<%
    int choice_id,i;
    int opinion[]={0,0,0,0};
    float total, rate[]={0,0,0,0};
    String choice="";
    String fruit[]{"사과","포도","딸기","메론"};
    String opinion_id = request.getParameter("opinion_id");

    Connection conn=null;
    Statement stmt=null;
    String sql=null;
    ResultSet rs=null;

    try {
        Class.forName("com.mysql.jdbc.Driver");
        String jdbcurl = "jdbc:mysql://localhost:3306/wpctest?serverTimezone=UTC";
        conn = DriverManager.getConnection(jdbcurl, "root", "0000");
        stmt = conn.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_UPDATABLE);
        sql = "select * from opinion_tbl";
        rs = stmt.executeQuery(sql);
    }
```

■ opinion-result.jsp

```
catch(Exception e) {
    out.println("DB 연동 오류입니다. : " + e.getMessage() );
}

if(!rs.next()) {
    for(i=0;i<4;i++) {
        String sql1 = "insert into opinion_tbl values (" + i + "," + fruit[i] + ",0)";
        try{
            stmt.executeUpdate(sql1);
        }catch(Exception e) {
            out.println("DB 연동 오류입니다. : " + e.getMessage() );
        }
    }
}
else {
    rs.previous();
    i=0;
    while(rs.next()) {
        opinion[i] = Integer.parseInt(rs.getString("sum"));
        System.out.println(opinion[0]);
        i++;
    }

    if(opinion_id != null) {
        String sql2 = "update opinion_tbl set sum = sum + 1 where id = " + opinion_id;
        try{
            stmt.executeUpdate(sql2);
        }catch(Exception e) {
            out.println("DB 연동 오류입니다. : " + e.getMessage() );
        }
    }

    choice_id = Integer.parseInt(opinion_id);
    opinion[choice_id] += 1;

    total = opinion[0] + opinion[1] + opinion[2] + opinion[3];
}
```

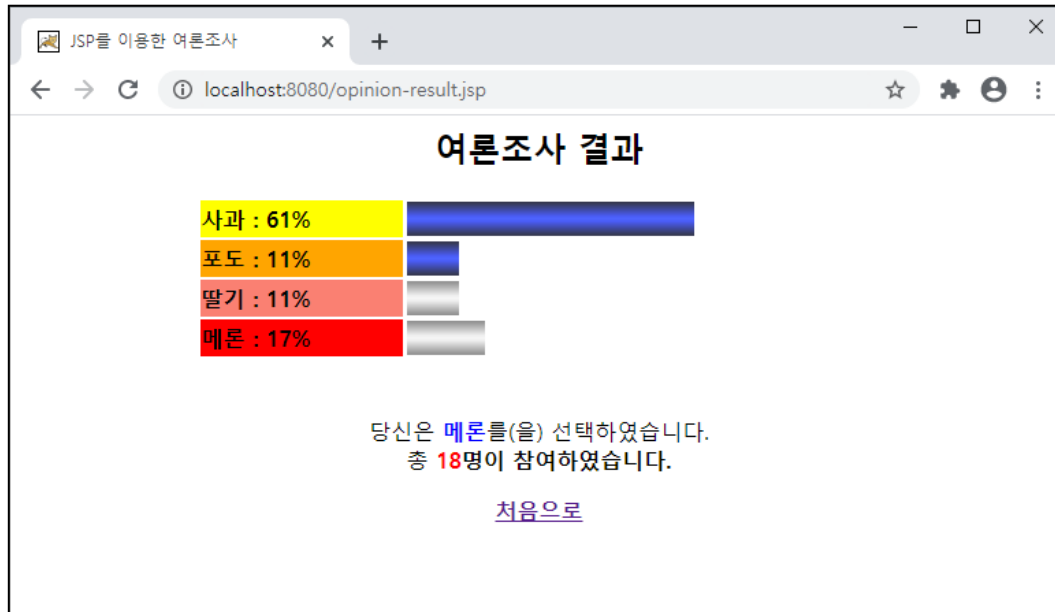
■ opinion-result.jsp

```
        for(i=0;i<4;i++)
            rate[i] = (opinion[i]/ total)*100;
%>

<center>
<h2> 여론조사 결과 </h2>
<table border=0 width= 500>
    <tr>
        <td bgcolor = "yellow" width= "30%"> <b> 사과 : <%=Math.round(rate[0])%>%</b> </td>
        <td><img src= " image/blue_pole.gif" width=<%=rate[0]%>% height="25"></td>
    </tr>
    <tr>
        <td bgcolor = "orange" > <b> 포도 : <%=Math.round(rate[1])%>%</b> </td>
        <td><img src= " image/blue_pole.gif" width=<%=rate[1]%>% height="25"></td>
    </tr>
    <tr>
        <td bgcolor = "salmon" > <b> 딸기 : <%=Math.round(rate[2])%>%</b> </td>
        <td><img src= " image/white_pole.gif" width=<%=rate[2]%>% height="25"></td>
    </tr>
    <tr>
        <td bgcolor = "red" > <b> 메론 : <%=Math.round(rate[3])%>%</b> </td>
        <td><img src= " image/white_pole.gif" width=<%=rate[3]%>% height="25"></td>
    </tr>
</table><br><br>

당신은 <font color=blue><b><%=fruit[choice_id]%></b></font>를(을) 선택하셨습니다.<br>
총 <b><font color="red"><%=Math.round(total)%></font><b>명이 참여하셨습니다.<p>
<a href="opinion.html"> 처음으로 </a>
</center>
</body>
</html>
```

■ 연결 성공 시 화면 : 여론 조사 결과 화면(opinion-result.jsp)



■ opinion_tbl 조회

```
mysql> select * from opinion_tbl;
```

id	fruit	sum
0	사과	11
1	포도	2
2	딸기	2
3	메론	3

4 rows in set (0.00 sec)

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 사용 계정 : root, 계정 비밀번호 : 0000
- 데이터베이스명 : wptest
- 테이블 명 : board_tbl

테이블 구조

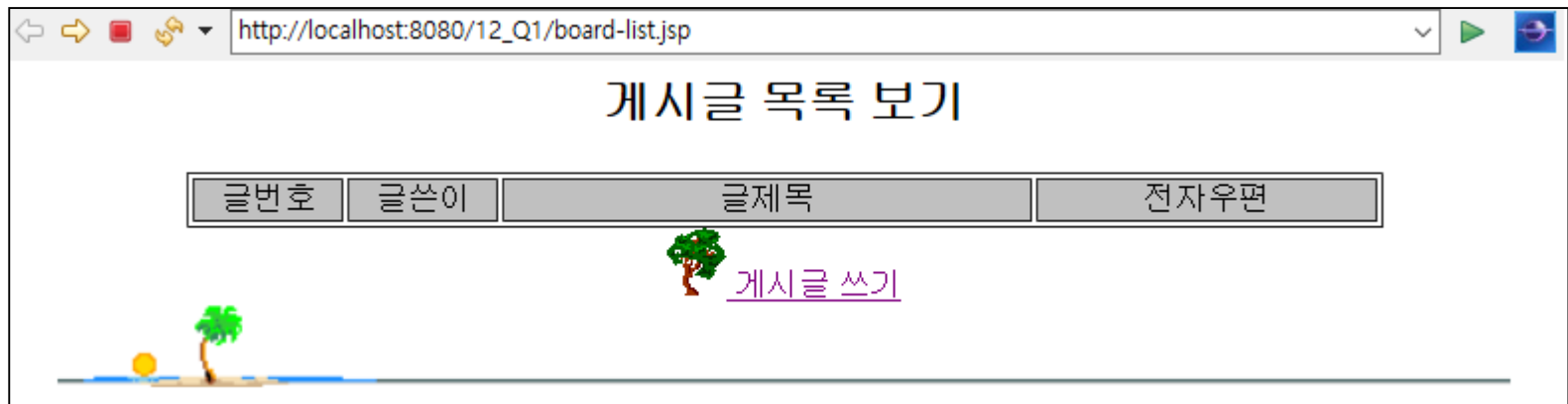
```
mysql> desc board_tbl;
```

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
name	varchar(20)	YES		NULL	
e_mail	varchar(40)	YES		NULL	
title	varchar(40)	YES		NULL	
content	varchar(100)	YES		NULL	
passwd	varchar(10)	YES		NULL	
ref	int	YES		NULL	

```
7 rows in set (0.01 sec)
```


Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 메인 화면 : board-list.jsp



Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- “게시글 쓰기” 클릭 후 화면 : board-insert.jsp
- “게시글 목록 보기” 를 클릭하면 메인 화면으로 돌아감
- “다시쓰기” 를 클릭하면 쓴 글이 지워짐

게시판


글쓴이 :

메일주소 :

글제목 :

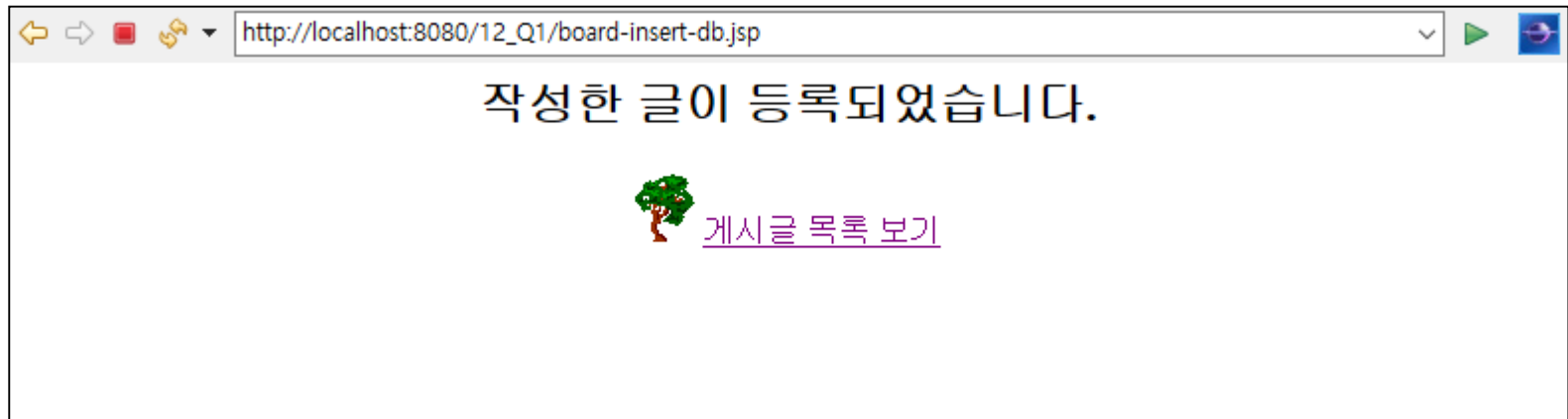
글내용 :

패스워드 :

 [게시글 목록 보기](#)

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 글 작성 후 “등록하기” 클릭 후 화면 : board-insert-db.jsp
- “게시글 목록 보기” 를 클릭하면 메인 화면으로 돌아감



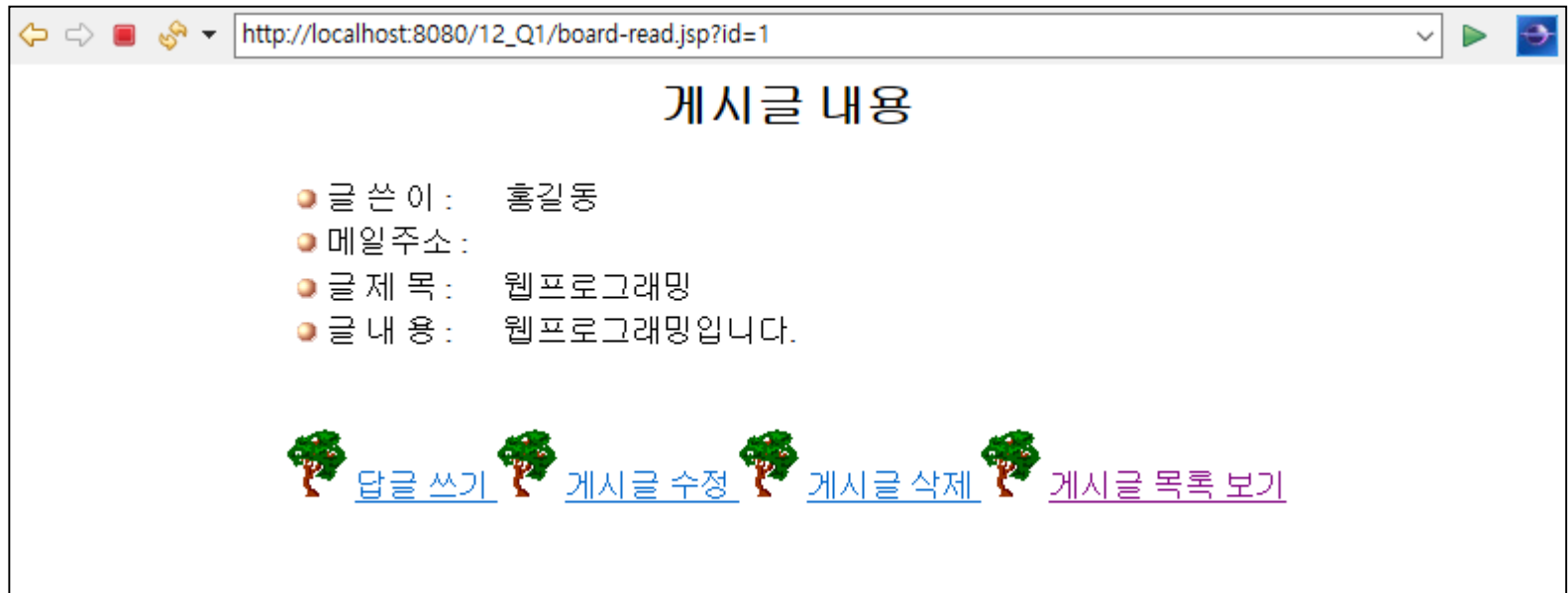
Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 게시글 등록 후 메인 화면



Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 글제목 클릭 후 화면 : board-read.jsp
- “게시글 목록 보기” 를 클릭할 경우 메인 화면으로 돌아감



Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- “답글 쓰기” 를 클릭할 경우 답글 작성 가능
- 답글 작성 후 메인 화면

게시판

글쓴이 :

메일주소 :

글제목 :

글내용 :

패스워드 :

 [게시글 목록 보기](#)



게시글 목록 보기

글번호	글쓴이	글제목	전자우편
2	홍길동	웹프로그래밍	
1	김철수	데이터베이스	

 [게시글 쓰기](#)



Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- “게시글 수정” 과 “게시글 삭제” 클릭 후 화면
- 패스워드를 입력하면 수정과 삭제 가능
- 패스워드가 없다면 입력하지 않고 삭제와 수정 가능

패스워드를 입력하시오.

패스워드 :

 [수정 취소](#)

패스워드를 입력하시오

패스워드 :

 [삭제 취소](#)

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- “게시글 수정” 화면, 취소를 누르면 게시글 내용으로 돌아감
- “게시글 삭제” 후 화면, 취소를 누르면 게시글 내용으로 돌아감



게시글 수정

글쓴이 : 홍길동

메일주소 :

글제목 : 웹프로그래밍

글내용 : 웹프로그래밍입니다.

등록하기 다시쓰기

 취소

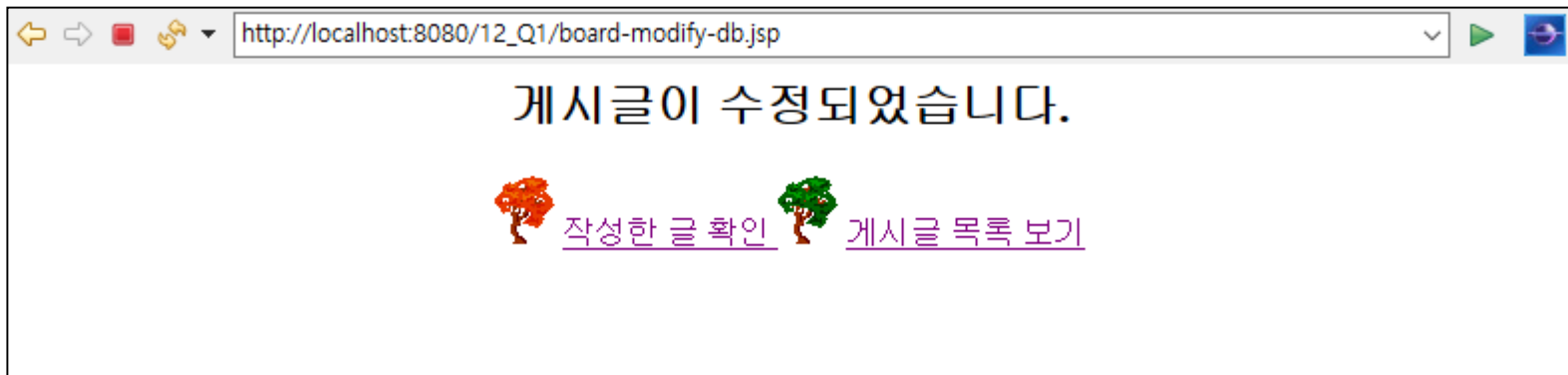


게시글이 삭제되었습니다.

 [게시글 목록 보기](#)

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- 게시글 수정 후 화면
- 잘못된 비밀번호 입력 후 화면



Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-list.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<head><title> 게시판 </title></head>
<body>
<center><h2> 게시물 목록 보기 </h2></center>
<center>
<table border="1" align="center" width="603">
<tr>
<td align="center" bgcolor="silver" width="75"> 글번호 </td>
<td align="center" bgcolor="silver" width="75"> 글쓴이 </td>
<td align="center" bgcolor="silver" width="275"> 글제목 </td>
<td align="center" bgcolor="silver" width="175"> 전자우편 </td>
</tr>
<%
int id, ref;
int rownum = 0;
Connection conn = null;
Statement stmt = null;
String sql = null;
ResultSet rs = null;

try {
Class.forName("com.mysql.jdbc.Driver");
String url = "jdbc:mysql://localhost:3306/wptest?serverTimezone=UTC";
conn = DriverManager.getConnection(url, "root", "0000");
stmt = conn.createStatement(ResultSet.TYPE_SCROLL_SENSITIVE, ResultSet.CONCUR_UPDATABLE);
sql = "select * from board_tbl order by ref desc, id asc ";
rs = stmt.executeQuery(sql);
}
catch(Exception e) {
out.println("DB 연동 오류입니다. : " + e.getMessage());
}

rs.last();
rownum = rs.getRow();
rs.beforeFirst();

while(rs.next())
{
id = Integer.parseInt(rs.getString("id"));
ref = Integer.parseInt(rs.getString("ref"));
%>
```

```
<tr>
</tr>
</tr>
</table>

 <a href="board-insert.jsp"> 게시물 쓰기 </a>
<%
stmt.close();
conn.close();
%>

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

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-insert.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<head><title> 게시판 </title></head>
<body>
<center>
<h2>게시판</h2>
<table border="0">
<tr>
<td> 글쓴이 : </td>
<td><input type="text" name="name" size="15"></td>
</tr>
<tr>
<td> 메일주소 : </td>
<td><input type="text" name="e_mail" size="30"></td>
</tr>
<tr>
<td> 글제목 : </td>
<td><input type="text" name="title" size="50"></td>
</tr>
<tr>
<td colspan="2"> 글내용 : </td>
<td><textarea name="content" cols="65" rows="4"></textarea></td>
</tr>
<tr>
<td colspan="2"> 비밀번호 : </td>
<td><input type="password" name="passwd" size="10" maxlength="8"></td>
</tr>
</table><br><br>
<input type="submit" value="등록하기">
<input type="reset" value="다시쓰기">
```

```
<%
String flag = request.getParameter("flag");
if("r".equals(flag)){ %>
<input type="hidden" name="ref" value="<%= request.getParameter("ref") %>">
<input type="hidden" name="reply" value="y">
<% } else %>
<input type="hidden" name="reply" value="n">
</form>


<a href="board-list.jsp"> 게시글 목록 보기 </a><br>

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

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-insert-db.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<%@ page import="java.text.*" %>
<% request.setCharacterEncoding("utf-8"); %>

<html>
<body>
<%
    int temp = 0, cnt ;
    int new_id = 0, ref = 0;
    String name, e_mail, title, content, passwd, reply;
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;
    String sql_update;

    try {
        [Redacted Code Block]
    }
    catch(Exception e) {
        out.println("DB 연동 오류입니다. : " + e.getMessage());
    }

    while(rs.next()) {
        cnt = Integer.parseInt(rs.getString("cnt"));
        if(cnt != 0)
            new_id = Integer.parseInt(rs.getString("max_id"));
    }
}
```

```
new_id++;
name = request.getParameter("name");
e_mail = request.getParameter("e_mail");
title = request.getParameter("title");
content = request.getParameter("content");
passwd = request.getParameter("passwd");
reply = request.getParameter("reply");

if("y".equals(reply)) {
    ref = Integer.parseInt(request.getParameter("ref"));
} else {
    ref = new_id;
}

sql_update = [Redacted Code Block]

try {
    [Redacted Code Block]
}
catch(Exception e) {
    out.println("DB 연동 오류입니다. : " + e.getMessage());
}
%>
<center>
<h2> 작성한 글이 등록되었습니다. </h2>

<a href="board-list.jsp"> 게시물 목록 보기 </a>
</center>
</body>
</html>
```

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-delete-db.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<html>
<body>
<%
    int id;
    String passwd = "", sql, sql1;
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;
    id = Integer.parseInt(request.getParameter("id"));

    try {
        [redacted]
    }
    catch(Exception e) {
        out.println("DB 연동 오류입니다. : " + e.getMessage());
    }

    passwd = request.getParameter("passwd");
    while(rs.next()) {
        if(!passwd.equals(rs.getString("passwd")))
        {
            [redacted]
        }
    }

    %>
<center><h2> 잘못 입력된 패스워드입니다. </h2>

<a href="board-read.jsp?id=<%= request.getParameter("id") %>"> 뒤로 </a>
</center>
```

```
<%
    }
    else
    {
        [redacted]
    }
    try {
        stmt.executeUpdate(sql1);
    }
    catch(Exception e) {
        out.println("DB 연동 오류입니다. : " + e.getMessage());
    }

    %>
<center><h2> 게시글이 삭제되었습니다. </h2>

<a href="board-list.jsp"> 게시글 목록 보기</a>
</center>
<%
    break;
}

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

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-delete-pwd.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<html>
<head><title> 게시글 삭제 </title></head>
<body>
<center><h2> 패스워드를 입력하시오 </h2><br><br>
<form action="board-delete-db.jsp" method="post">

<input type="submit" value="삭제하기">
<input type="reset" value="다시쓰기">
</form>

<a href="board-read.jsp?id=<%= request.getParameter("id") %>"> 삭제 취소 </a>

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

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-read.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<head><title> 게시판 </title></head>
<body>
<center><h2> 게시물 내용 </h2></center>
<center>
<%
    int id, ref = 0;
    String name = "", e_mail = "", title = "", content = "";
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;

    id = Integer.parseInt(request.getParameter("id"));

    try {
        [Redacted Code Block]
    }
    catch(Exception e) {
        out.println("DB 연동 오류입니다. : " + e.getMessage());
    }

    while(rs.next()) {
        [Redacted Code Block]
    }
%>
```

```
<table border="0" width="500">
<tr>
<td width="100"> 글 쓴 이 : </td>
<td><%= name %></td>
</tr>
<tr>
<td> 메일주소 : </td>
<td><%= e_mail %></td>
</tr>
<tr>
<td> 글 제 목 : </td>
<td><%= title %></td>
</tr>
<tr>
<td> 글 내 용 : </td>
<td><%= content %></td>
</tr>
</table><br><br>

<a href="board-insert.jsp?ref=<%= ref %>&flag=r"> 답글 쓰기 </a>


<a href="board-modify-pwd.jsp?id=<%= id %>"> 게시물 수정 </a>


<a href="board-delete-pwd.jsp?id=<%= id %>"> 게시물 삭제 </a>


<a href="board-list.jsp"> 게시물 목록 보기 </a>
</body>
</html>
```

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-modify.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<body>
<%
    int id;
    String name = "", e_mail = "", title = "", content = "", passwd = "";
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;
    id = Integer.parseInt(request.getParameter("id"));

    try {
        <div style="border: 2px solid red; height: 100px; width: 300px; margin: 10px 0;">
```

```
<center><h2> 게시물 수정 </h2><br><br>
<form action="board-modify-db.jsp" method="post">
<table border="0">
<tr>
<td> 글 쓴 이 : </td>
<td><input type="text" name="name" size="15" value="<%= rs.getString("name") %>"></td>
</tr>
<tr>
<td> 메일주소 : </td>
<td><input type="text" name="e_mail" size="30" value="<%= rs.getString("e_mail") %>"></td>
</tr>
<tr>
<td> 글 제목 : </td>
<td><input type="text" name="title" size="50" value="<%= rs.getString("title") %>"></td>
</tr>
<tr>
<td align="top"> 글 내용 : </td>
<td><textarea name="content" cols="65" rows="4"><%= rs.getString("content") %></textarea></td>
</tr>
</table><br><br>

<input type="hidden" name="id" value="<%= request.getParameter("id") %>">

<input type="submit" value="등록하기">
<input type="reset" value="다시쓰기">
</form>


<a href="board-read.jsp?id=<%= request.getParameter("id") %>"> 취소 </a>
</center>
<%
    }
    %>
</body>
</html>
```


Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-modify-db.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<%@ page import="java.sql.*" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<body>
<%
    int id;
    String name = "", e_mail = "", title = "", content = "";
    Connection conn = null;
    Statement stmt = null;
    ResultSet rs = null;

    id = 

    try {
        Class.forName("com.mysql.jdbc.Driver");
        String url = "jdbc:mysql://localhost:3306/wptest?serverTimezone=UTC";
        conn = DriverManager.getConnection(url, "root", "0000");
        stmt = conn.createStatement();
        String sql_update = "update board_tbl set name = " + name + ", e_mail = "
        + e_mail + ", title = " + title + ", content = " + content + " where id = " + id ;
        stmt.executeUpdate(sql_update);
    }
    catch(Exception e) {
        out.println("DB 연동 오류입니다. : " + e.getMessage());
    }
%>

<center><h2> 게시글이 수정되었습니다. </h2>


<a href="board-list.jsp"> 게시글 목록 보기 </a>
</center>
</body>
</html>
```

Q1. 아래와 같은 테이블을 만들고 다음과 같이 작동하는 JSP 파일을 작성하시오.

- Board-modify-pwd.jsp

```
<%@ page language="java" contentType="text/html; charset=utf-8" pageEncoding="utf-8" %>
<% request.setCharacterEncoding("utf-8"); %>
<html>
<head><title> 게시물 수정 </title></head>
<body>
  <center><h2> 패스워드를 입력하시오. </h2><br><br>

  <form action="board-modify.jsp" method="post">
    <table border="0">
      <tr>
        <td> 패스워드 : </td>
        <td><input type="password" name="passwd" size="30"></td>
        <td><input type="hidden" name="id" value="<%= request.getParameter("id") %>"></td>
      </tr>
    </table><br><br>

    <input type="submit" value="수정하기">
    <input type="reset" value="다시쓰기">
  </form>

  
  <a href="board-read.jsp?id=<%= request.getParameter("id") %>"> 수정 취소 </a>

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

- 제출 방식 : E-Class를 통하여 제출
- 제출 내용 : 프로젝트 파일을 압축한 war파일
작성한 테이블 쿼리를 저장한 txt파일
- 제출 형식 : ZIP File
- 제목 형식 : 학번_이름_주차
 - ex) 학번_홍길동_12주차.zip
- 제출 기한 : 11월 20일(토) 23시 59분까지
 - 연장 제출 불허