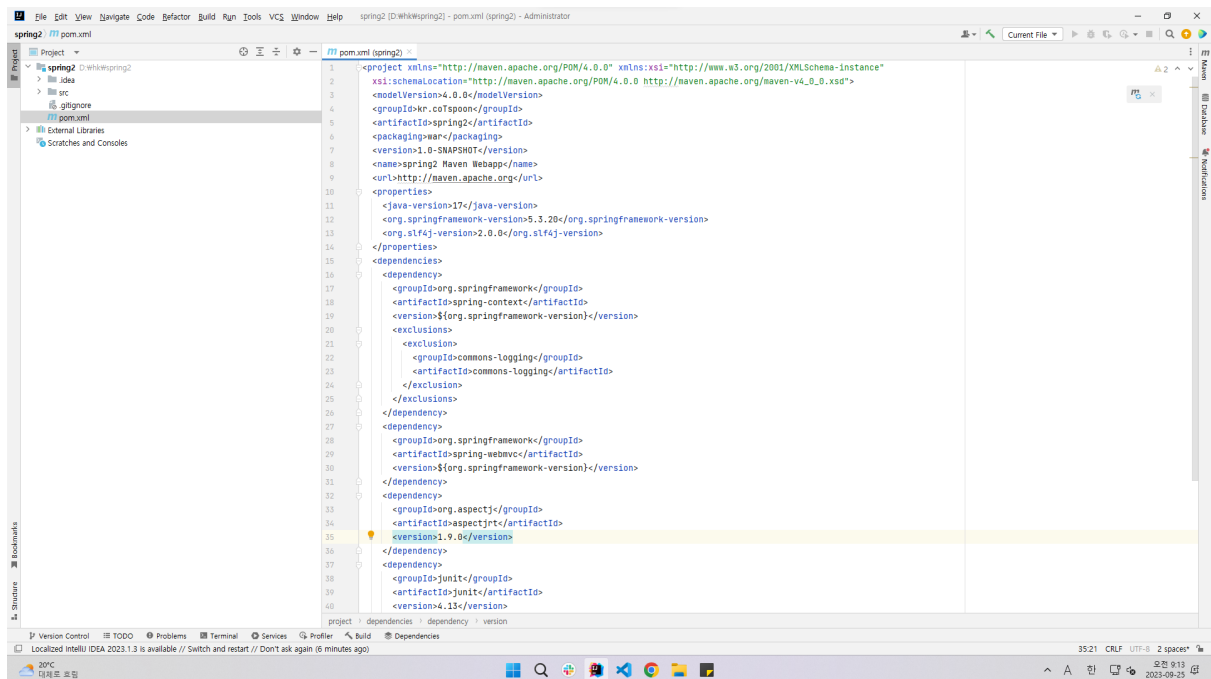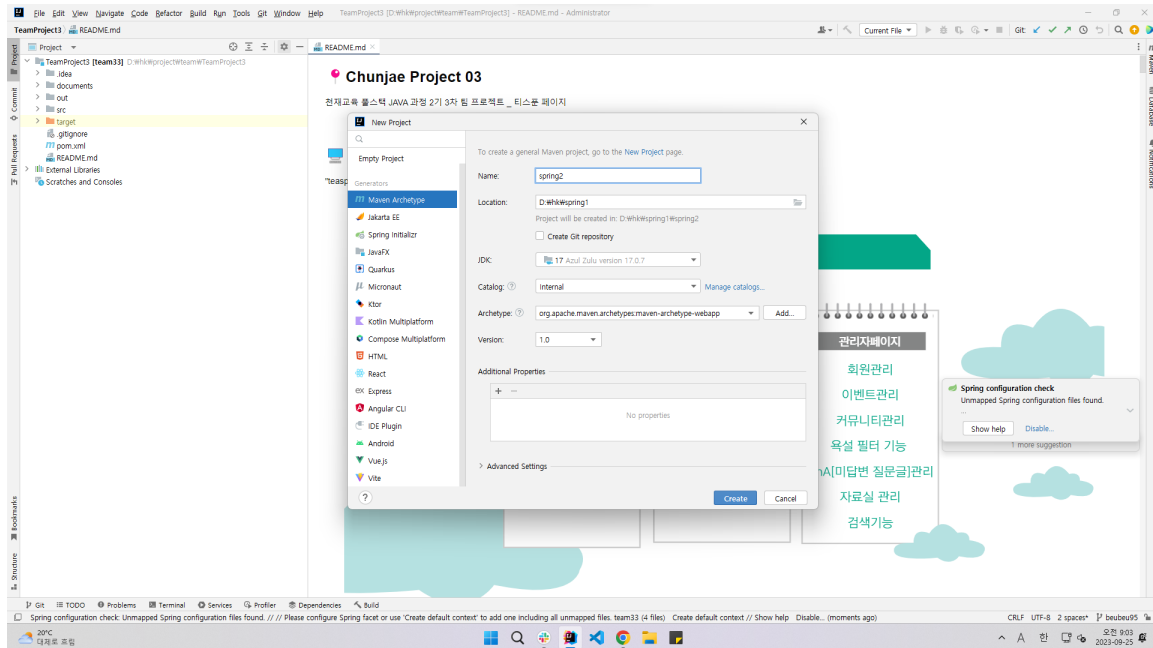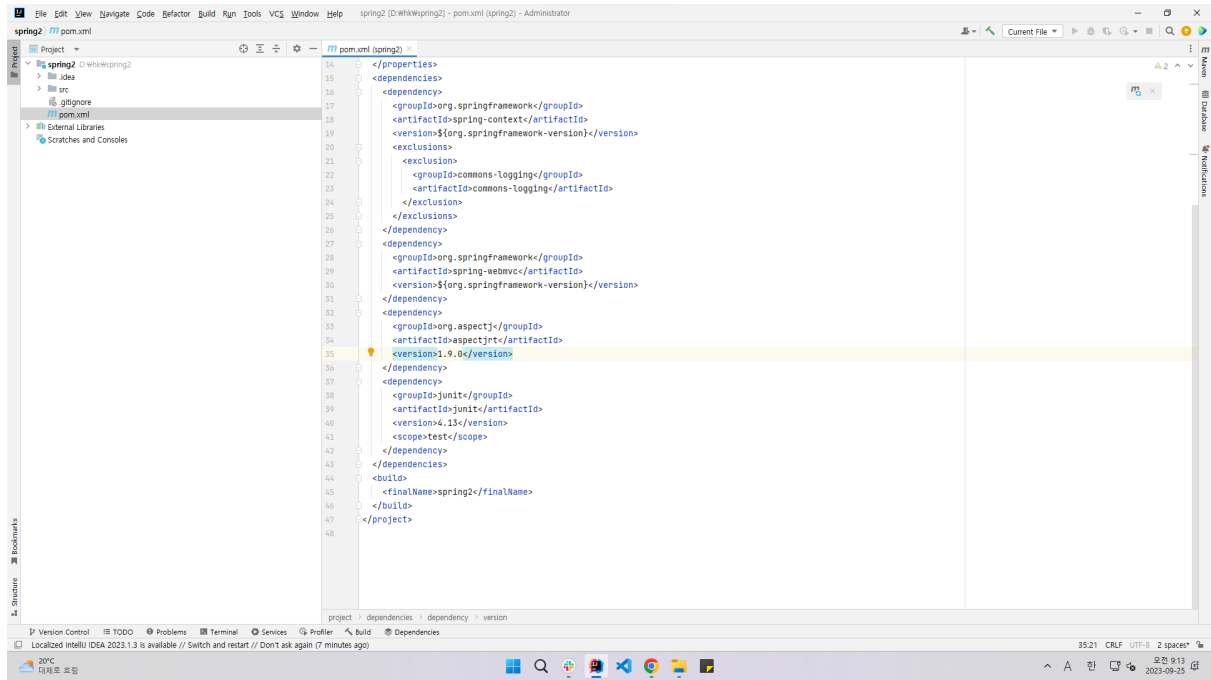# spring2

```xml
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>org.study2</groupId>
  <artifactId>study2</artifactId>
  <packaging>war</packaging>
  <version>1.0-SNAPSHOT</version>
  <name>study2 Maven Webapp</name>
  <url>http://maven.apache.org</url>
  <properties>
    <java-version>17</java-version>
    <org.springframework-version>5.3.20</org.springframework-version>
    <org.slf4j-version>2.0.0</org.slf4j-version>
  </properties>
  <dependencies>
    <dependency>
      <groupId>org.springframework</groupId>
      <artifactId>spring-context</artifactId>
      <version>${org.springframework-version}</version>
      <exclusions>
        <exclusion>
          <groupId>commons-logging</groupId>
          <artifactId>commons-logging</artifactId>
        </exclusion>
      </exclusions>
    </dependency>
    <dependency>
      <groupId>org.springframework</groupId>
      <artifactId>spring-webmvc</artifactId>
      <version>${org.springframework-version}</version>
    </dependency>
    <dependency>
      <groupId>org.aspectj</groupId>
      <artifactId>aspectjrt</artifactId>
      <version>1.9.0</version>
    </dependency>
```

```xml
      <dependency>
        <groupId>junit</groupId>
        <artifactId>junit</artifactId>
        <version>4.13</version>
        <scope>test</scope>
      </dependency>
      <!-- slf4j and log4j -->
      <dependency>
        <groupId>org.slf4j</groupId>
        <artifactId>slf4j-api</artifactId>
        <version>${org.slf4j-version}</version>
      </dependency>
      <dependency>
        <groupId>org.slf4j</groupId>
        <artifactId>jcl-over-slf4j</artifactId>
        <version>${org.slf4j-version}</version>
        <scope>runtime</scope>
      </dependency>
      <dependency>
        <groupId>org.slf4j</groupId>
        <artifactId>slf4j-log4j12</artifactId>
        <version>${org.slf4j-version}</version>
        <scope>runtime</scope>
      </dependency>
      <dependency>
        <groupId>log4j</groupId>
        <artifactId>log4j</artifactId>
        <version>1.2.15</version>
        <exclusions>
          <exclusion>
            <groupId>javax.mail</groupId>
            <artifactId>mail</artifactId>
          </exclusion>
          <exclusion>
            <groupId>javax.jms</groupId>
            <artifactId>jms</artifactId>
          </exclusion>
          <exclusion>
            <groupId>com.sun.jdmk</groupId>
            <artifactId>jmxtools</artifactId>
          </exclusion>
          <exclusion>
            <groupId>com.sun.jmx</groupId>
            <artifactId>jmxri</artifactId>
          </exclusion>
        </exclusions>
        <scope>runtime</scope>
      </dependency>
    </dependencies>
    <build>
      <finalName>study2</finalName>
      <plugins>
        <plugin>
          <artifactId>maven-eclipse-plugin</artifactId>
          <version>2.9</version>
          <configuration>
            <additionalProjectnatures>
              <projectnature>org.springframework.ide.eclipse.core.springnature</projectnature>
            </additionalProjectnatures>
            <additionalBuildcommands>
              <buildcommand>org.springframework.ide.eclipse.core.springbuilder</buildcommand>
            </additionalBuildcommands>
            <downloadSources>true</downloadSources>
            <downloadJavadocs>true</downloadJavadocs>
          </configuration>
```
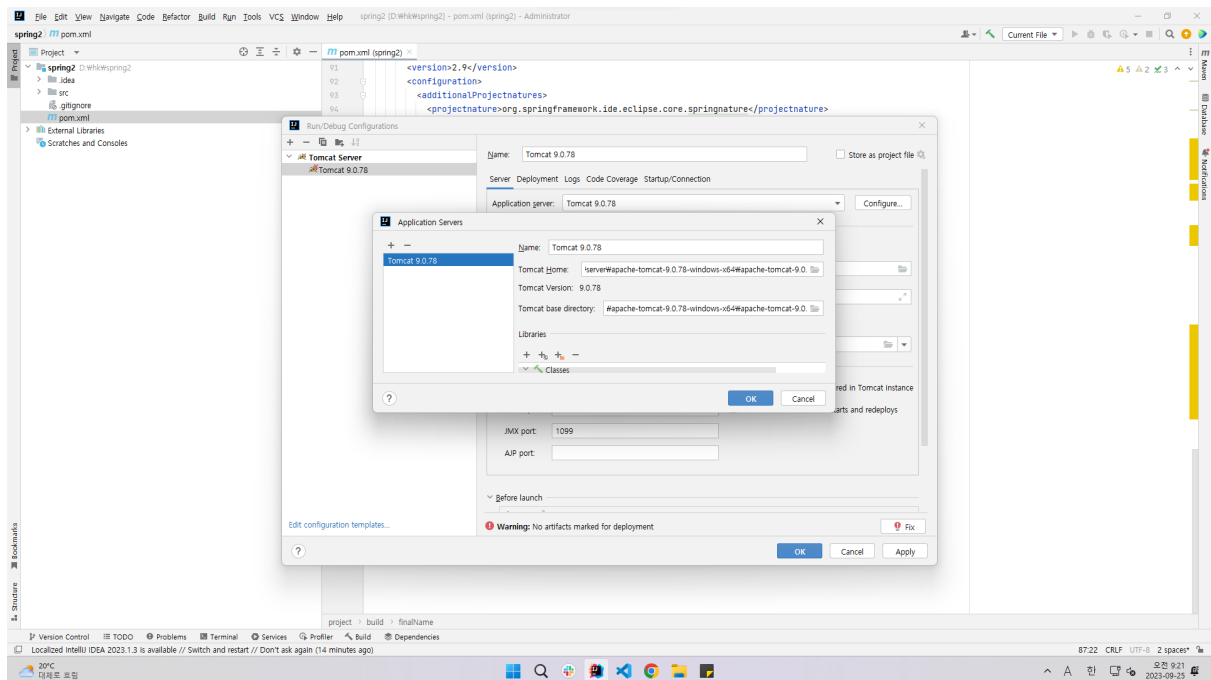
```
    </plugin>
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-compiler-plugin</artifactId>
      <version>2.5.1</version>
      <configuration>
        <source>17</source>
        <target>17</target>
        <compilerArgument>-Xlint:all</compilerArgument>
        <showWarnings>true</showWarnings>
        <showDeprecation>true</showDeprecation>
      </configuration>
    </plugin>
    <plugin>
      <groupId>org.codehaus.mojo</groupId>
      <artifactId>exec-maven-plugin</artifactId>
      <version>1.2.1</version>
      <configuration>
        <mainClass>org.test.int1.Main</mainClass>
      </configuration>
    </plugin>
    </plugins>
  </build>
</project>
```
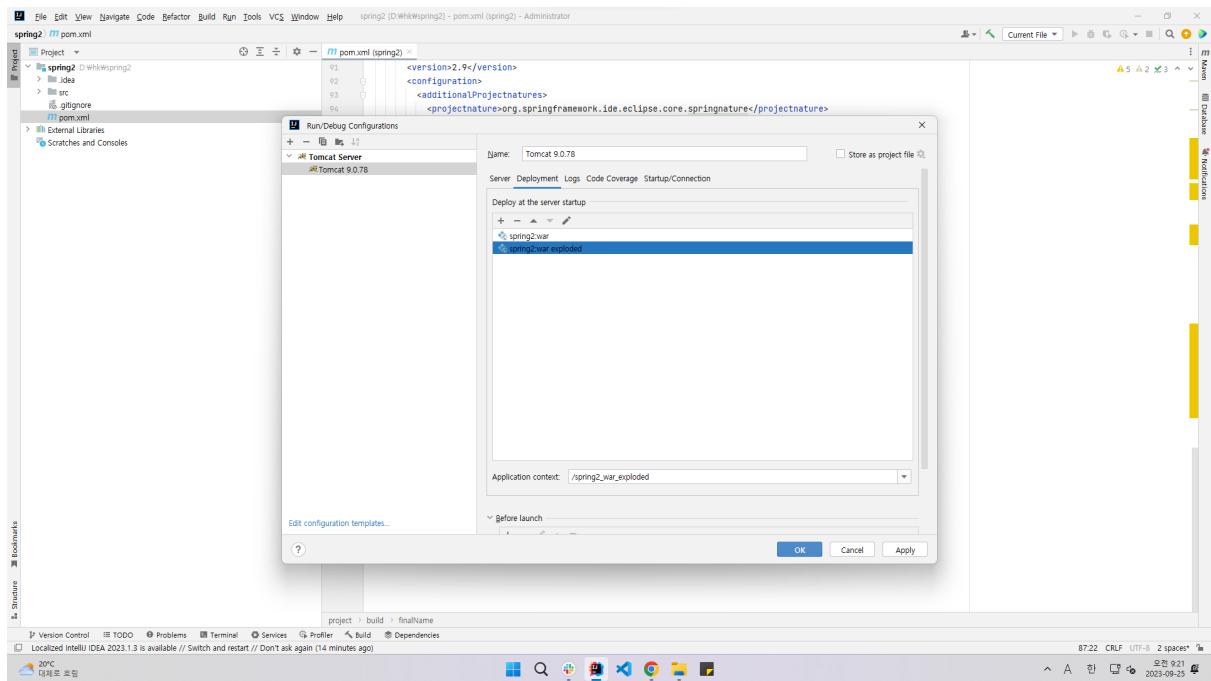
```
○  ⬚ 관리자: Command Prompt (M  ×   +  ∨                                    —  ▢  ✕

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

MariaDB [(none)]> use haebeop
Database changed
MariaDB [haebeop]> create table emp(emp_no int, first_name varchar(100));
Query OK, 0 rows affected (0.038 sec)

MariaDB [haebeop]> show variables like 'autocommit%';
+---------------+-------+
| Variable_name | Value |
+---------------+-------+
| autocommit    | ON    |
+---------------+-------+
1 row in set (0.009 sec)

MariaDB [haebeop]> set autocommit = false;
Query OK, 0 rows affected (0.004 sec)

MariaDB [haebeop]> show variables like 'autocommit%';
+---------------+-------+
| Variable_name | Value |
+---------------+-------+
| autocommit    | OFF   |
+---------------+-------+
1 row in set (0.001 sec)

MariaDB [haebeop]>
```

```
MariaDB [haebeop]> show variables like 'tx_isolation';
+---------------+------------------+
| Variable_name | Value            |
+---------------+------------------+
| tx_isolation  | REPEATABLE-READ  |
+---------------+------------------+
1 row in set (0.001 sec)

MariaDB [haebeop]> set tx_isolation = 'READ-UNCOMMITTED';
Query OK, 0 rows affected (0.001 sec)

MariaDB [haebeop]> show variables like 'tx_isolation';
+---------------+------------------+
| Variable_name | Value            |
+---------------+------------------+
| tx_isolation  | READ-UNCOMMITTED |
+---------------+------------------+
1 row in set (0.001 sec)

MariaDB [haebeop]>
```

```
MariaDB [haebeop]> insert into emp values(1001, 'kim');
Query OK, 1 row affected (0.015 sec)

MariaDB [haebeop]> select * from emp;
+--------+------------+
| emp_no | first_name |
+--------+------------+
|   1001 | kim        |
+--------+------------+
1 row in set (0.002 sec)

MariaDB [haebeop]>
```

```
MariaDB [haebeop]> rollback;
Query OK, 0 rows affected (0.003 sec)

MariaDB [haebeop]> select * from emp;
Empty set (0.001 sec)

MariaDB [haebeop]> BEGIN
    -> ;
Query OK, 0 rows affected (0.000 sec)

MariaDB [haebeop]> insert into emp values(1001,'kim');
Query OK, 1 row affected (0.001 sec)

MariaDB [haebeop]> select * from emp;
+--------+------------+
| emp_no | first_name |
+--------+------------+
|   1001 | kim        |
+--------+------------+
1 row in set (0.001 sec)

MariaDB [haebeop]> commit;
Query OK, 0 rows affected (0.003 sec)

MariaDB [haebeop]> 
```

→ 고립화수준

- autocommit 설정값 확인

show variables like 'autocommit%';

- autocommit 설정 또는 해제

SET AUTOCOMMIT = TRUE; --> 설정

SET AUTOCOMMIT = FALSE; --> 해제

- 트랜잭션의 격리 수준(Isolation level) - 세션에 따른 격리 수준 레벨

- READ UNCOMMITTED(커밋되지 않은 읽기) - 해당 세션에서만 커밋되지 않은 것을 읽게 하는 수준

- READ COMMITTED(커밋된 읽기) - 외부 세션에서만 적용되며, 세션 관계없이 커밋된 것만 읽게 하는 수준

- REPEATABLE READ(반복 가능한 읽기) - 한 세션에서 읽고 있을 경우 다른 세션에서도 읽을 수 있는 수준

- SERIALIZABLE(직렬화 가능) - 한 세션에서 읽고 있을 경우 다른 세션에서는 읽을 수 없는 수준

- 트랜잭션의 격리 수준(Isolation level) 확인

show variables like 'tx_isolation';

- 트랜잭션 격리 수준 변경

set tx_isolation = 'READ-UNCOMMITTED';

insert into emp values(1001, 'kim');

select * from emp;

+--------+------------+

| emp_no | first_name |

+--------+------------+

| 1001 | kim |

+--------+-----------+

다른 세션에서도 실행해보면,

select * from emp;

Empty set (0.000 sec)

rollback;

select * from emp;

Empty set (0.000 sec)

BEGIN;

insert into emp values(1001, 'kim');

select * from emp;

+--------+-----------+

| emp_no | first_name |

+--------+-----------+

| 1001 | kim |

+--------+-----------+

commit;

다른 세션에서도 실행해보면,

select * from emp;

+--------+-----------+

| emp_no | first_name |

+--------+-----------+

| 1001 | kim |

+--------+-----------+