Database Lab

CSE 3104

Session 09

Objective: Building a Java application with SQL Server.
Let's try building a Java application with SQL server.
IDE: Eclipse
Database Server: SQL Server
Programming Language: Java

Connection to SQL Server Database with Java:
For connecting java application with the sql server database, you need to follow the following steps to perform database connectivity. In this example we are using Sql Server as the database. So we need to know following information for the SQL Server database:

1. **Driver class:** The driver class for the SQL Server database is **mssql-jdbc-9.4.0.jre16**.

2. **Connection URL:** The connection URL for the SQL Server database is `jdbc:sqlserver://localhost\\SQLEXPRESS01:1433;databaseName=AUST` where jdbc is the API, sqlserver is the database, localhost is the server name on which sql server is running, we may also use IP address, 1433 is the port number and AUST is the database name. We may use any database, in such case, you need to replace the AUST with your database name.

3. **Username:** The name of the user by which we have connected to the database server using SQL Server Authentication mode.

4. **Password:** Password is given by the user at the time of installing the SQL Server database. In this example, we are going to use **123456789** as the password.

A code fragment for connecting with database named AUST has been provided.

```
package net.codejava.sql;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;

public class Javatosql {

	public static void main(String[] args) throws SQLException {
```

```
        String url = "jdbc:sqlserver://REZWAN-
        MUID\\SQLEXPRESS01:1433;databaseName=AUST";
        String user = "Muid";
        String password = "123456789";
        Connection connection = DriverManager.getConnection(url, user, password);
        }

}
```

Downloading The JDBC Driver:

To connect java application with the SQL Server database, SQL Server JDBC driver is required to be loaded.

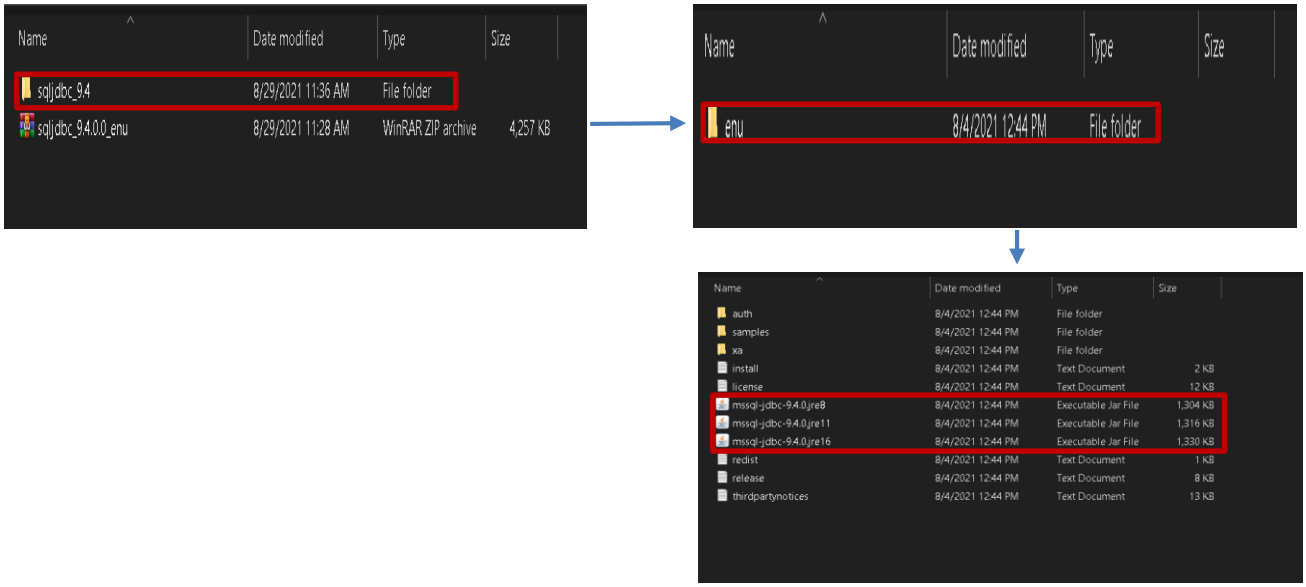
-Download SQL Server JDBC Driver: [Click here to download]

-Select the zip file and download it:

-Go the the location where you have downloaded the zipped file.

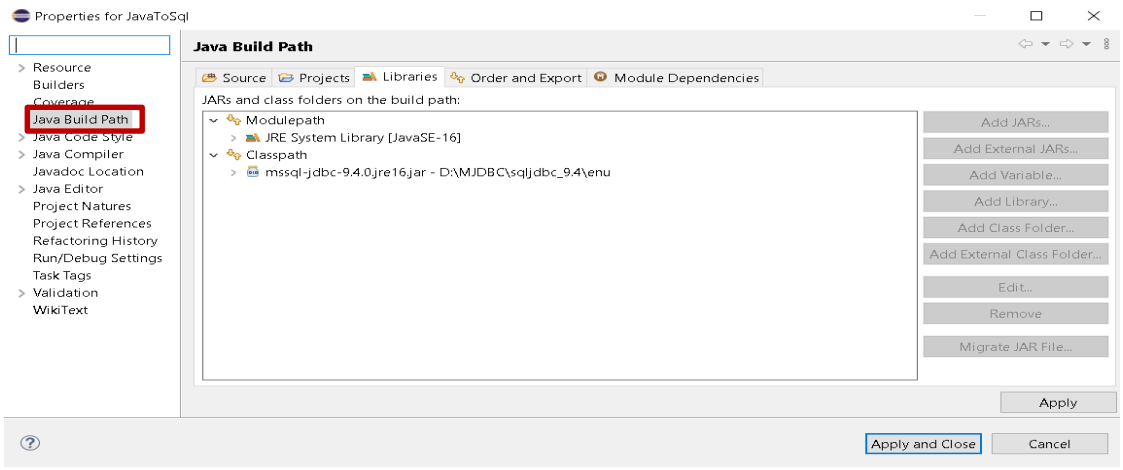
-Extract it.

-Go the corresponding files, you will find your JDBC driver:

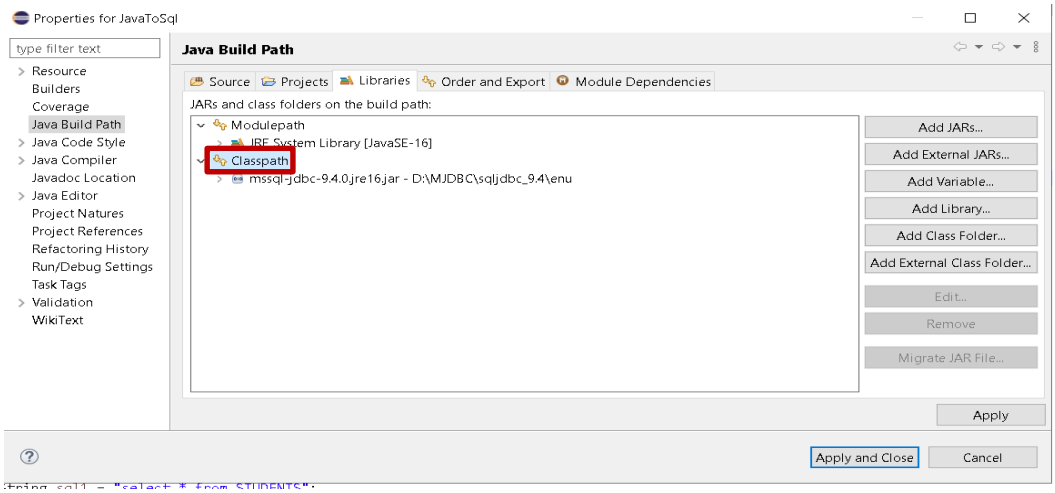


Adding JDBC Driver to the Java Project:

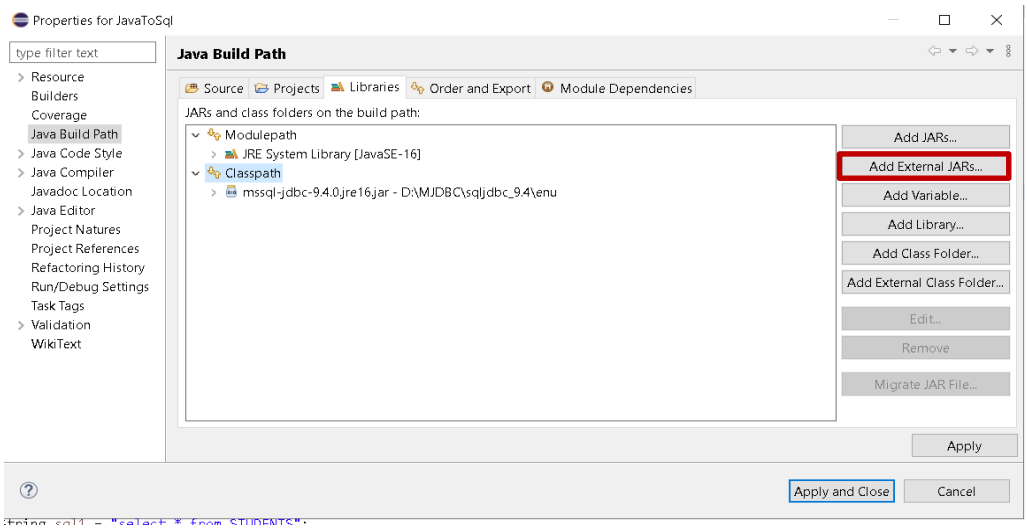
- Right click one the java project
- Go the properties
- Click on “Java Build Path”



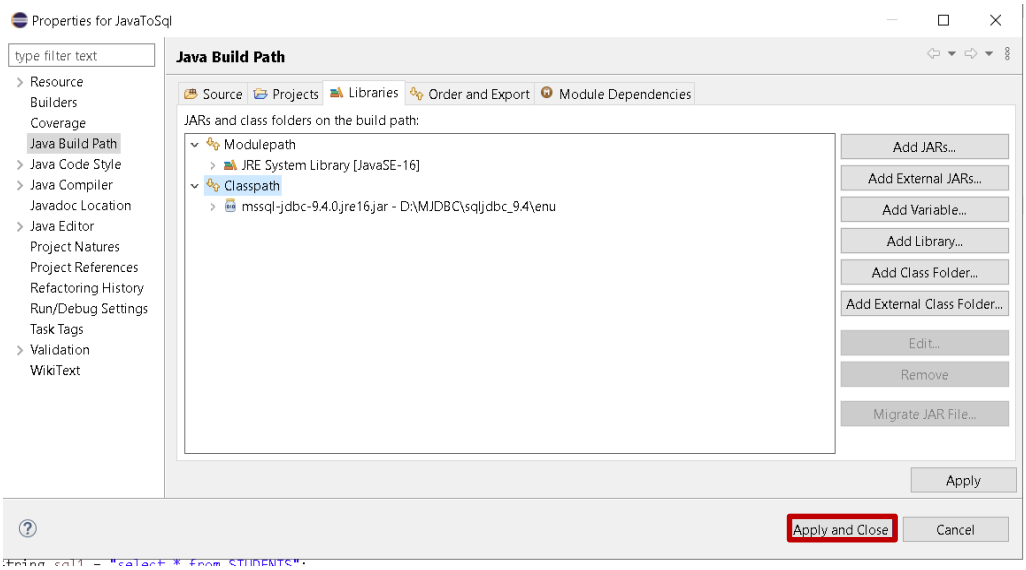
- Click on “Classpath”



- Now click on “Add External Jars”



- Now you can select the JDBC driver (.jar file) from the location of your driver.
- Lastly click one apply and close



Inserting data into the database:

A sample code:

```
package net.codejava.sql;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class Javatosql {

     public static void main(String[] args) throws SQLException {

     String url = "jdbc:sqlserver://REZWAN-
MUID\\SQLEXPRESS01:1433;databaseName=AUST";
     String user = "Muid";
     String password = "123456789";
     try {

               Connection connection =
          DriverManager.getConnection(url,user,password);

          String sql = "INSERT INTO STUDENTS (ID, NAME, AGE,
          ADDRESS)" +"VALUES (4, 'TAZWAR', 22, 'ALLAHABAD')";
```

```
            Statement statement = connection.createStatement();
            int rows =statement.executeUpdate(sql);

            if (rows>0) { System.out.println("Row has been
inserted"); }

            connection.close();
            }
            catch(SQLException e){

                System.out.println("oops you are having a bad day");
                e.printStackTrace();
            }


        }

}
```