

Java Netbeans and Microsoft SQL connection guide.

1. Install SQL server and SQL Management Studio (already installed on lab PCs).
2. Open SQL Management server and select Database Server, choose windows authentication and select create.
3. Create Database and a simple table.
 - a. Click on New Query option
 - b. Write query to create a Database and table i.e.

```
Create database test1;

create table users(
name varchar(50),
age int)

insert into users(name,age) values('mohsin', 23);
insert into users(name,age) values('ali', 20);

select * from users;
```

- c. You can select a part of the query and execute it separately (step by step).
4. Open SQL server configuration manager (Separate application)
 - a. Select network configuration
 - b. Select Protocols for MSSQL server
 - i. Enable TCP/IP (if not already enabled)
 - ii. Select IP addresses option
 1. IPALL (add these values if these are not already set)
 - a. TCP Dynamic ports 54629
 - b. TCP port 1433
 - iii. Select SQL Server Services
 1. Restart SQL server (if you have made any of the above changes)
5. (optional for sql authentication) Security -> login -> new login
 - a. Add name, pass, select database
 - b. Right click new login -> properties -> server roles -> select sysadmin
 - c. Right click database -> properties -> security -> sql server and win auth
 - d. Restart sql
6. Open Netbeans
7. Download SQL JDBC.jar file
8. <https://repo1.maven.org/maven2/com/microsoft/sqlserver/mssql-jdbc/7.2.1.jre11/>
9. Netbeans -> right click on database select new database connection
 - a. From drop down select Microsoft SQL if available
 - b. If Microsoft SQL is not already available then click on new driver and select downloaded jre file and select next
 - c. Provide database details in next window
 - d. Select Test connection

- e. If connection failed then
 - i. Add following code
 - 1. encrypt=true;trustServerCertificate=true
 - 2. Try SQL authentication if not connected with windows authentication for SQL authentication steps are provided in step 5.
 - f. Click finish
- 10. Netbeans -> create new application (also include option for lib)
 - a. Services -> Db -> properties and copy Driver class, database url
 - b. Review the following code for understanding for basic db connection and query execution.
 - c. Add jdbc library in case of class not found error.

```
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.ResultSetMetaData;
/**
 *
 * @author Dev
 */
public class JavaApplication2 {

    public static void main(String[] args) {
        try{
            String url
            ="jdbc:sqlserver://localhost\\SQLEXPRESS:1433;databaseName=test1;encrypt=tr
            ue;trustServerCertificate=true;";
            String userName = "admin";
            String password = "password";

            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
            //Driver class
            Connection conn = DriverManager.getConnection(url, userName,
            password);
            System.out.println("DB: ");
            if(!conn.isClosed()){; // false if connected
            System.out.println("DataBase connected");
            } else {
            System.out.println("DataBase not connected");
            }
        }
    }
}
```

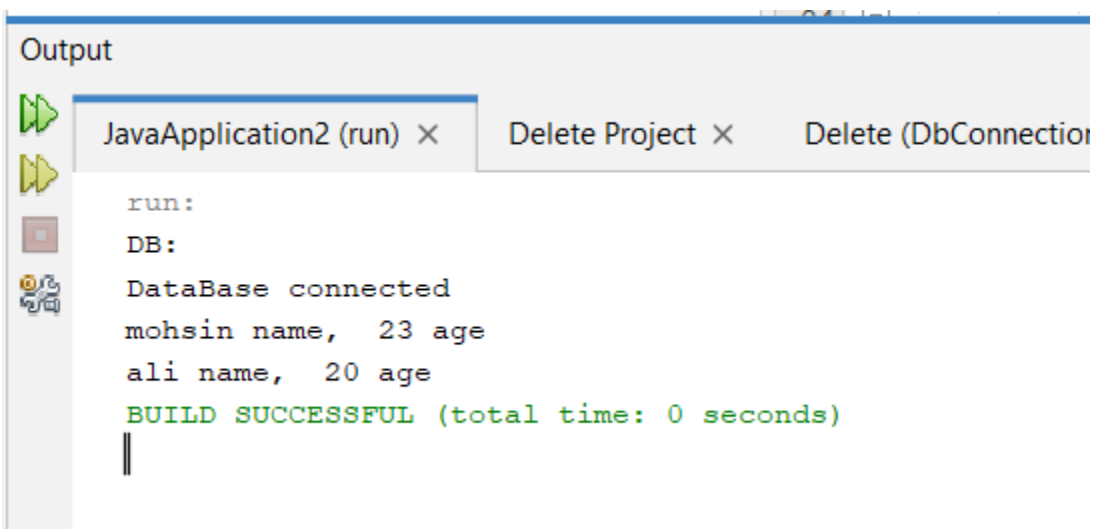
```

String query = "SELECT * FROM users";
PreparedStatement pst = conn.prepareStatement(query);
ResultSet resultSet = pst.executeQuery();

ResultSetMetaData rsmd = resultSet.getMetaData();
int columnsNumber = rsmd.getColumnCount();
while (resultSet.next()) {
    for (int i = 1; i <= columnsNumber; i++) {
        if (i > 1) System.out.print(", ");
        String columnValue = resultSet.getString(i);
        System.out.print(columnValue + " " +
rsmd.getColumnLabel(i));
    }
    System.out.println("");
}

}
catch(SQLException e){
    System.out.println("SQL exception " + e.getMessage());
}
catch(ClassNotFoundException e) {
    System.out.println("Class not found " + e.getMessage());
}
}
}

```



```

Output
run:
DB:
DataBase connected
mohsin name, 23 age
ali name, 20 age
BUILD SUCCESSFUL (total time: 0 seconds)

```