

## What is JDBC?

**JDBC = Java Database Connectivity**

It is an **API (set of rules + classes)** in Java that allows Java programs to talk to databases like MySQL, Oracle, PostgreSQL, etc.

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## Simple meaning

Think like this:

Java Program → JDBC → MySQL Database

- Java cannot directly talk to MySQL
- JDBC acts as a **translator / bridge**

## Step 1:- Mysql database setup:-

### Create a Database

Open MySQL and run:

```
CREATE DATABASE companydb;
```

```
USE companydb;
```

```
CREATE TABLE employees (  
    id INT PRIMARY KEY AUTO_INCREMENT,  
    name VARCHAR(100),  
    department VARCHAR(50)  
);
```

```
INSERT INTO employees(name, department)  
VALUES ('John', 'IT');
```

```
SELECT * FROM employees;
```

In your windows command prompt:-

```
C:\Users\Big Data>cd "C:\Program Files\MySQL\MySQL Server 8.0\bin"

C:\Program Files\MySQL\MySQL Server 8.0\bin>mysql -u root -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.44 MySQL Community Server - GPL
```

```
mysql> CREATE DATABASE companydb;
Query OK, 1 row affected (0.48 sec)

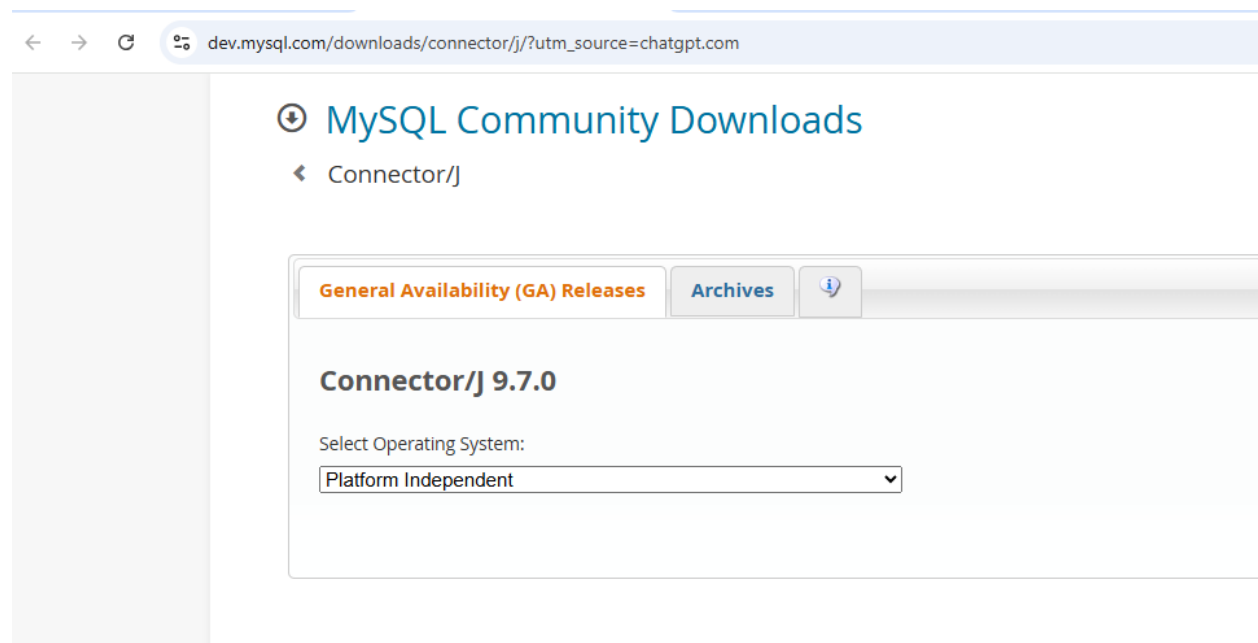
mysql> USE companydb;
Database changed
mysql> CREATE TABLE employees ( id INT PRIMARY KEY AUTO_INCREMENT, name VARCHAR(100), department VARCHAR(50));
Query OK, 0 rows affected (0.77 sec)

mysql> INSERT INTO employees(name, department)VALUES ('John', 'IT');
Query OK, 1 row affected (0.09 sec)

mysql> SELECT * FROM employees;
+----+-----+-----+
| id | name | department |
+----+-----+-----+
|  1 | John | IT          |
+----+-----+-----+
1 row in set (0.01 sec)
```

And download jdbc connector for mysql from

[https://dev.mysql.com/downloads/connector/j/?utm\\_source=chatgpt.com](https://dev.mysql.com/downloads/connector/j/?utm_source=chatgpt.com)



## Step 2:- DatabaseConnectionTest.java file :-

```
import java.sql.*;
```

```
public class DatabaseConnectionTest {
```

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

```
        try {
```

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

```
            String url =
```

```
"jdbc:mysql://localhost:3306/companydb?useSSL=false&allowPublicKeyRetrieval=true&serverTimezone=UTC";
```

```
            Connection con = DriverManager.getConnection(
```

```
                url,
```

```
                "root",
```

```
                "Rscoe@1989"
```

```
            );
```

```
        System.out.println("Connected Successfully!");

        con.close();

    } catch (Exception e) {
        e.printStackTrace();
    }
}
}
```

## Check Your Folder Structure

For example:

```
D:\
└─ java\
    ├── DatabaseConnectionTest.java
    ├── DatabaseConnectionTest.class
    └── mysql-connector-j-9.7.0.jar
```

### 1 Go to your folder

```
cd D:\java
```

---

### 2 Compile (IMPORTANT STEP)

```
javac -cp ".;mysql-connector-j-9.7.0.jar" DatabaseConnectionTest.java
```

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### 3 Run program (MOST IMPORTANT)

```
java -cp ".;mysql-connector-j-9.7.0.jar" DatabaseConnectionTest
```

as shown below :-

```
D:\java>javac -cp ".;mysql-connector-j-9.7.0.jar" DatabaseConnectionTest.java
D:\java>java -cp ".;mysql-connector-j-9.7.0.jar" DatabaseConnectionTest
Connected Successfully!
```

#### Insert data example `InsertData.java` :-

```
import java.sql.*;

public class InsertData {

    public static void main(String[] args) {

        try {

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

            Connection con = DriverManager.getConnection(

                "jdbc:mysql://localhost:3306/companydb?useSSL=false&allowPublicKeyRetrieval=true&serverTimezone=UTC",

                "root",

                "Rscoe@1989"

            );

            String sql = "INSERT INTO employees (name, department) VALUES (?, ?)";

            PreparedStatement ps = con.prepareStatement(sql);

            ps.setString(1, "Rahul");
```

```
ps.setString(2, "IT");

int rows = ps.executeUpdate();

System.out.println(rows + " row inserted successfully!");

con.close();

} catch (Exception e) {
    e.printStackTrace();
}
}
```

How to run file:-

```
D:\java>javac -cp ".;mysql-connector-j-9.7.0.jar" InsertData.java
D:\java>java -cp ".;mysql-connector-j-9.7.0.jar" InsertData
1 row inserted successfully!
```

```
D:\java\DatabaseConnectionTest.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
server.js app.js Person.ts input.css index.html dail-info.html flex3.html DatabaseConnectionTest.java
1 import java.sql.*;
2
3 public class DatabaseConnectionTest {
4
5     public static void main(String[] args) {
6
7         try {
8             Class.forName("com.mysql.cj.jdbc.Driver");
9
10            String url = "jdbc:mysql://localhost:3306/companydb?useS
11
12            Connection con = DriverManager.getConnection(
13                url,
14                "root",
15                "Rscoe@1989"
16            );
17
18            System.out.println("Connected Successfully!");
19
20            con.close();
21
22        } catch (Exception e) {
23            e.printStackTrace();
24        }
25    }
26 }
```

And

```
D:\java\InsertData.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
server.js app.js Person.js input.css index.html Gail-info.html Gail-3.html DatabaseConnectionTest.java InsertData.java
1 import java.sql.*;
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5     public static void main(String[] args) {
6
7         try {
8             Class.forName("com.mysql.cj.jdbc.Driver");
9
10            Connection con = DriverManager.getConnection(
11                "jdbc:mysql://localhost:3306/companydb?useSSL=false&allowPublicKeyRetrieval=true&serverTimezone=UTC",
12                "root",
13                "Rscoc@1989"
14            );
15
16            String sql = "INSERT INTO employees (name, department) VALUES (?, ?)";
17
18            PreparedStatement ps = con.prepareStatement(sql);
19
20            ps.setString(1, "Rahul");
21            ps.setString(2, "IT");
22
23            int rows = ps.executeUpdate();
24
25            System.out.println(rows + " row inserted successfully!");
26
27            con.close();
28
29        } catch (Exception e) {
30            e.printStackTrace();
31        }
32    }
33 }
```

Activate Windows  
Go to Settings to activate Windows.

Java source file length: 884 lines: 33 Ln: 33 Col: 2 Pos: 885 Windows (CR LF) UTF-8 1:48 PM 6/1/2026

## **☒ Option 1 (BEST): Set CLASSPATH once (Windows)**

This lets you run Java normally.

### **Step 1: Set classpath in CMD (temporary)**

```
set CLASSPATH=.;mysql-connector-j-9.7.0.jar
```

---

### **Step 2: Now compile normally**

```
javac DatabaseConnectionTest.java
```

---

### **Step 3: Run normally**

```
java DatabaseConnectionTest
```

No need to write `-cp` again.

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**But this is temporary (only current CMD window)**

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## Option 2 (PERMANENT FIX)

Set CLASSPATH in Windows environment variables:

### Steps:

1. Search: **Environment Variables**
2. Open → “Edit the system environment variables”
3. Click → **Environment Variables**
4. Under System Variables → Click **New**
5. Add:

Variable name: CLASSPATH

Variable value: .;D:\java\mysql-connector-j-9.7.0.jar

6. Click OK → restart CMD

## Option 3 (EASIEST & PROFESSIONAL): Use IDE

Use:

IntelliJ IDEA

or

Eclipse IDE

### Benefits:

- ✓ No classpath commands
- ✓ Just click RUN ►
- ✓ Auto JDBC setup
- ✓ Industry standard