

## Lecture 5: Connecting Java and Database

### Complete Connection Code:

```
import java.sql.*;

public class DemoJdbc {
    public static void main(String[] args) {
        // Database connection parameters
        String url = "jdbc:postgresql://localhost:5432/demo";
        String username = "postgres";
        String password = "0000"; // Your PostgreSQL password

        Connection conn = null;

        try {
            // Step 1: Load and register driver
            Class.forName("org.postgresql.Driver");
            System.out.println("Driver loaded successfully");

            // Step 2: Create connection
            conn = DriverManager.getConnection(url, username, password);
            System.out.println("Connection established successfully");

        } catch (ClassNotFoundException e) {
            System.out.println("Driver not found: " + e.getMessage());
        } catch (SQLException e) {
            System.out.println("Connection failed: " + e.getMessage());
        } finally {
            // Step 3: Close connection
            try {
                if (conn != null && !conn.isClosed()) {
                    conn.close();
                    System.out.println("Connection closed");
                }
            } catch (SQLException e) {
                System.out.println("Error closing connection: " + e.getMessage());
            }
        }
    }
}
```

### Connection URL Format:

jdbc:postgresql://hostname:port/database\_name

- **hostname:** Server address (localhost for local machine)

- **port:** PostgreSQL port (default: 5432)
- **database\_name:** Name of your database

### **Common Connection Issues:**

1. **Driver not found:** Ensure JDBC driver is in the classpath.
2. **Connection refused:** Check if PostgreSQL service is running
3. **Authentication failed:** Verify username/password
4. **Database not found:** Ensure database exists