

## Lecture 3: JDBC Setup – The 7 Steps

### The Seven Essential Steps to Connect with JDBC:

1. **Import Package:** Import necessary JDBC classes
2. **Load Driver:** Load the database driver class
3. **Register Driver:** Register driver with DriverManager
4. **Create Connection:** Establish connection to database
5. **Create Statement:** Create statement object for SQL execution
6. **Execute Statement:** Execute SQL queries/updates
7. **Close Connection:** Release database resources

### Detailed Explanation:

#### Step 1: Import Package

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

This imports all JDBC-related classes including Connection, Statement, ResultSet, etc.

#### Steps 2 & 3: Load and Register Driver

```
Class.forName("org.postgresql.Driver");
```

This loads the PostgreSQL driver class and automatically registers it with DriverManager.

#### Step 4: Create Connection

```
Connection conn = DriverManager.getConnection(url, username, password);
```

Establishes actual connection to the database.

#### Step 5: Create Statement

```
Statement stmt = conn.createStatement();
```

Creates a statement object to execute SQL commands.

#### Step 6: Execute Statement

- `executeQuery()`: For SELECT statements (returns ResultSet)
- `executeUpdate()`: For INSERT, UPDATE, DELETE (returns int)
- `execute()`: For any SQL statement (returns boolean)

#### Step 7: Close Connection

```
conn.close();
```

Always close connections to free up database resources.

