

# CDAC MUMBAI

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Module: Web-Based Java Programming  
Assignment 1

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## JDBC Assignment: Student Management System

### Objective:

Create a simple **Student Management System** using Java and JDBC that allows you to perform basic CRUD (Create, Read, Update, Delete) operations on a MySQL database.

### Requirements:

#### 1. Database Setup:

- Create a MySQL database named `school_db`.
- Create a table named **students** with the following columns:

```
CREATE TABLE students (id INT PRIMARY KEY AUTO_INCREMENT, name  
VARCHAR(100) NOT NULL, age INT NOT NULL, grade VARCHAR(10), email  
VARCHAR(100) UNIQUE );
```

#### 2. Java Application Features: Implement a Java console-based application with the following features:

- Add Student: Insert a new student record into the **students** table.
- View All Students: Retrieve and display all student records from the table.
- Update Student Details: Update the details of an existing student based on the `id`.
- Delete Student: Delete a student record based on the `id`.
- Search Student: Search for a student by name or email.

#### 3. Technical Requirements:

- Use JDBC for database connectivity.
- Use PreparedStatement for executing SQL queries to prevent SQL injection.
- Use Exception Handling to manage database errors.
- Close all database resources (Connection, PreparedStatement, ResultSet) in a finally block or use try-with-resources.