1. Open MySQL Workbench, and click into any of your existing connections. If you do not have a connection, click the add sign next to “MySQL Connections” to create one. In this example, I will use my “Lab” connection. Click into it. (Note: sometimes MySQL Workbench prompt the user to enter password, this password is the one you entered during Lab9’s MySQL installation on page 6 of the lab instruction)
2. Once get into a connection, create a new SQL file by clicking the button on top left corner, as pointed by the red arrow in the picture.
3. Put the following code into the newly created SQL file. The code can also be found on course website. (Grades.sql) Then click on the yellow thunder button to execute the SQL file.

```
DROP DATABASE if exists StudentGrades;

CREATE DATABASE StudentGrades;

USE StudentGrades;

CREATE TABLE Student
(
    studentID int(11) primary key not null auto_increment,
   _fname varchar(10) not null,
    lname varchar(10) not null
);

INSERT INTO Student (fname, lname) VALUES ('Sheldon', 'Cooper');
INSERT INTO Student (fname, lname) VALUES ('Leonard', 'Hofstadter');
INSERT INTO Student (fname, lname) VALUES ('Howard', 'Wolowitz');
INSERT INTO Student (fname, lname) VALUES ('Rajesh', 'Koothrappali');

CREATE TABLE class
(
    classID int(11) primary key not null auto_increment,
    prefix varchar(10) not null,
    number int(6) not null
);

INSERT INTO Class (prefix, number) VALUES ('CSCI', 100);
INSERT INTO Class (prefix, number) VALUES ('CSCI', 201);
INSERT INTO Class (prefix, number) VALUES ('BE', 142);

CREATE TABLE Grade
(
    gradeID int(11) primary key not null auto_increment,
    studentID int(11) not null,
    classID int(11) not null,
    letterGrade VARCHAR(2) not null,
    FOREIGN KEY (studentID) REFERENCES Student(studentID),
    FOREIGN KEY (classID) REFERENCES Class(classID)
);

INSERT INTO Grade (studentID, classID, letterGrade) VALUES (1, 1, 'A');
INSERT INTO Grade (studentID, classID, letterGrade) VALUES (1, 2, 'A');
INSERT INTO Grade (studentID, classID, letterGrade) VALUES (1, 3, 'A');
INSERT INTO Grade (studentID, classID, letterGrade) VALUES (1, 4, 'A');
```

![MySQL Workbench](image)
4. After the execution, a new StudentGrades schema should be created. If you can’t see it, click the refresh button next to “SCHEMAS”
5. Download “MySQL JDBC Driver” from course website. Then open Eclipse, create a new Java Project (JDBCTest). And right click on the project name, go to “Properties”.
6. Go to “Java Build Path” -> “Add External JARs”. And load the “MySQL JDBC Driver” you just downloaded.
6. After loading the external JAR, a Referenced Libraries will be added in your project. Create a new class “JDBCTest” inside the project, and put the following code into this class. The code can also be found on course website (JDBCTest.java). If your MySQL workbench requires a password, put “&password=[your password]” on line 13. This password is the one you entered during Lab9’s MySQL installation on page 6 of the lab instruction. If you don’t have a password, just leave it empty.

```java
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class JDBCTest {
    public static void main(String[] args) {
        try {
            Class.forName("com.mysql.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/StudentGrades?user=root");
            String name = "Student";
            Statement st = con.createStatement();
            String sql = "SELECT * FROM Student WHERE name = ?";
            PreparedStatement ps = con.prepareStatement(sql);
            ps.setString(1, name); // Set value in the prepared statement
            ResultSet rs = ps.executeQuery();
            while (rs.next()) {
                String firstName = rs.getString("firstName");
                String lastName = rs.getString("lastName");
                System.out.println("Student ID: "+ rs.getString("studentID"));
                System.out.println("First Name: "+ firstName);
                System.out.println("Last Name: "+ lastName);
                System.out.println("Score: " + rs.getString("score"));
            }
            st.close();
        } catch (SQLException e) {
            System.out.println("SQLException: " + e.getMessage());
        } catch (ClassNotFoundException e) {
            System.out.println("ClassNotFoundException: " + e.getMessage());
        }
    }
}
```
7. Run your program, the console should output

```java
fname = Sheldon
Iname = Cooper
studentID = 1
```

Congratulations. You have successfully connected a MySQL database with a java project. 😊