| Experiment No.9 |
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| Demonstrate Database Connectivity. |
| Date of Performance: |
| Date of Submission: |

**Aim :-** Write a java program to connect Java application with the MySQL database

**Objective :-** To learn database connectivity

## Theory:

Database used : MySql

1. Driver class: The driver class for the mysql database is com.mysql.jdbc.Driver.
2. Connection URL: The connection URL for the mysql database is jdbc:mysql://localhost:3306/loan management where jdbc is the API, mysql is the database, localhost is the server name on which mysql is running, can also use IP address, 3306 is the port number and loan management is the database name.
3. Username: The default username for the mysql database is Hiren.
4. Password: It is the password given by the user at the time of installing the mysql database. Password used is" ".

To connect a Java application with the MySQL database, follow the following steps.

- First create a database and then create a table in the mysql database.
- To connect java application with the mysql database, mysqlconnector.jar file is required to be loaded.
- download the jar file mysql-connector.jar
- add the jar file to the same folder as the java program.
- Compile and run the java program to retrieve data from the database.

**Implementation**:

Main.java

```java
package com.company;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;

public class Main {
    // JDBC URL, username, and password of MySQL server
    private static final String JDBC_URL = "jdbc:mysql://localhost:3306/studentdb";
    private static final String USERNAME = "user1";
    private static final String PASSWORD = "password1";

    public static void main(String[] args) {
        // Establish a connection
        try (Connection connection = DriverManager.getConnection(JDBC_URL, USERNAME, PASSWORD)) {
            if (connection != null) {
                System.out.println("Connected to the database!");
                // You can perform database operations here
            } else {
                System.out.println("Failed to make connection!");
            }
        } catch (SQLException e) {
            System.err.println("Connection failed!");
            e.printStackTrace();
        }
    }
}
```

**Conclusion:** Data has been retrieved successfully from a table by establishing database connectivity of java program with mysql database.

l. Explain steps to connect a java application with the MySQL database.

Ans.: Download and install MySQL Connector/J.

Include the MySQL Connector/J JAR file in your Java project.

Import the necessary classes from the java.sql package.

Use the 'DriverManager.getConnection()' method to establish a connection to the MySQL database.

Provide the JDBC URL, username, and password for authentication.

Perform database operations using Statement or PreparedStatement objects.

Close the connection and resources after completing the database operations.