**Program 1**

// Create JDBC connection to MySQL Database server

import java.sql.\*;

public class Connect {

public static void main (String[] args)

{

Connection conn = null;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance (); // This is depricated

//Class.forName ("com.mysql.cj.jdbc.Driver").newInstance ();// This is the newest driver

conn = DriverManager.getConnection (url, userName, password);

System.out.println ("Database connection established");

}

catch (Exception e)

{

System.err.println ("Cannot connect to database server:"+e);

}

finally

{

if (conn != null) {

try {

conn.close ();

System.out.println ("Database connection terminated:");

} catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}

**Program 2**

// Create table in MySQL database using JDBC

import java.sql.\*;

import java.sql.ResultSet;

public class CreateTable{

public static void main (String[] args) {

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

String TableName;

try {

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

//Creating table

stmt.execute("create table Java(Roll Integer primary key, Name Varchar(30), Marks Integer not null, Grade Varchar(2))");

} catch (SQLException ex){

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (Exception e){

System.err.println ("Cannot connect to database server");

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) {}

rs = null;

}

if (stmt != null) {

try {

stmt.close();

} catch (SQLException sqlEx) {}

stmt = null;

}

if (conn != null) {

try {

conn.close ();

} catch (Exception e) { /\* Ignore code for closing errors \*/ }

}

}

}

}

**Program 3**

// Insert data in MySQL database using JDBC

import java.sql.\*;

import java.sql.ResultSet;

public class InsertRecord{

public static void main (String[] args){

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

String NameString, RollString, MarksString, GradeString;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

stmt.execute("insert into Java values (01,'Humera', 75, 'A')");

stmt.execute("insert into Java values(02,'Qasim', 85, 'EX')");

stmt.execute("insert into Java values(03,'Tauseef', 65, 'B')");

stmt.execute("insert into Java values(04,'Rimsha', 78, 'A')");

}

catch (SQLException ex){

// handle any errors

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (Exception e){

System.err.println ("Cannot connect to database server");

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) { } // ignore

rs = null;

}

if (stmt != null) {

try {

stmt.close();

} catch (SQLException sqlEx) { } // ignore

stmt = null;

}

if (conn != null) {

try {

conn.close ();// System.out.println ("Database connection terminated");

} catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}

**Program 4**

// Update data in MySQL database using JDBC

import java.sql.\*;

import java.sql.ResultSet;

public class UpdateRecord{

public static void main (String[] args){

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

String NameString, RollString, MarksString, GradeString;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

stmt.execute("update Java set Name='Humera Sana' where Name='Humera'");

//stmt.execute("update JavaCourse set Marks=85, Grade='Ex' where Name='Debasis'");

}

catch (SQLException ex){

// handle any errors

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (Exception e){

System.err.println ("Cannot connect to database server");

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) { } // ignore

rs = null;

}

if (stmt != null) {

try {

stmt.close();

} catch (SQLException sqlEx) { } // ignore

stmt = null;

}

if (conn != null) {

try {

conn.close ();

// System.out.println ("Database connection terminated");

} catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}

**Program 5**

// Delete table data in MySQL database using JDBC

import java.sql.\*;

import java.sql.ResultSet;

public class DeleteRecord{

public static void main (String[] args){

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

String NameString, RollString, MarksString, GradeString;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

stmt.execute("delete from Java where marks <66");

//stmt.execute("delete from JavaCourse");

}

catch (SQLException ex){

// handle any errors

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (Exception e){

System.err.println ("Cannot connect to database server:"+e);

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) { } // ignore

rs = null;

}

if (stmt != null) {

try {

stmt.close();

} catch (SQLException sqlEx) { } // ignore

stmt = null;

}

if (conn != null) {

try {

conn.close ();

// System.out.println ("Database connection terminated");

}

catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}

**Program 6**

// Drop a table in MySQL database using JDBC

import java.sql.\*;

import java.sql.ResultSet;

public class DropTable{

public static void main (String[] args){

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

String NameString, RollString, MarksString, GradeString;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

stmt.execute("drop table JavaCourse");

}

catch (SQLException ex){

// handle any errors

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (Exception e){

System.err.println ("Cannot connect to database server:"+e);

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) { } // ignore

rs = null;

}

if (stmt != null) {

try {

stmt.close();

} catch (SQLException sqlEx) { } // ignore

stmt = null;

}

if (conn != null) {

try {

conn.close ();

// System.out.println ("Database connection terminated");

}

catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}

**Program 7**

//A program to select all data present in a table and calculate average marks

import java.sql.\*;

import java.sql.ResultSet;

public class AverageMarks {

public static void main (String[] args){

Connection conn = null;

Statement stmt = null;

ResultSet rs = null;

int TotalMarks=0, Num\_Student=0;

float Avg\_Marks;

String NameString, RollString, MarksString, GradeString;

try{

String userName = "root";

String password = "root";

String url = "jdbc:mysql://localhost:3306/test";

Class.forName ("com.mysql.jdbc.Driver").newInstance();

conn = DriverManager.getConnection (url, userName, password);

stmt = conn.createStatement();

stmt.execute("SELECT \* FROM Java");

rs = stmt.getResultSet();

System.out.println("\n\n ------- Results ---------\n");

while (rs.next()) {

NameString = rs.getString("Name");

RollString = rs.getString("Roll");

MarksString = rs.getString("Marks");

GradeString = rs.getString("Grade");

TotalMarks = TotalMarks + Integer.parseInt(MarksString);

System.out.println("Name: = "+NameString+"\t\t"+"Roll: = "+RollString+"\t\t"+"Marks: = "+MarksString+"\t\t"+"Grade: = "+GradeString+"\n");

} //end while

rs.last();

Num\_Student = rs.getRow();

Avg\_Marks = TotalMarks / Num\_Student;

System.out.println("\n\n ------- AVERAGE Marks = "+Avg\_Marks+"--------");

}

catch (SQLException ex){

// handle any errors

System.out.println("SQLException: " + ex.getMessage());

System.out.println("SQLState: " + ex.getSQLState());

System.out.println("VendorError: " + ex.getErrorCode());

}

catch (ArithmeticException e) {

System.out.println("Division by zero.");

}

catch (Exception e) {

System.err.println ("Cannot connect to database server");

}

finally {

if (rs != null) {

try {

rs.close();

} catch (SQLException sqlEx) { } // ignore

rs = null;

}

if (conn != null) {

try {

conn.close ();

// System.out.println ("Database connection terminated");

}

catch (Exception e) { /\* ignore close errors \*/ }

}

}

}

}