Lab 4 Results Screenshots:

Note: My SQL and Visual Studio Code was used to run and test this code

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Code copied and pasted from java file:

/\*

MySQL and Visual Studio Code was used to create and test this program.

Daniel Santamaria

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import java.sql.\*;

import java.util.Scanner;

public class PomonaTransitSystem {

static final String DB\_URL = "jdbc:mysql://127.0.0.1/transit";

static final String USER = "root";

static final String PASS = "password";

public static *void* main(String[] *args*) {

// Open a connection

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();){

//For repeated runs...

stmt.executeUpdate("DROP DATABASE TRANSIT");

System.out.println("Database deleted successfully...");

stmt.executeUpdate("CREATE DATABASE TRANSIT");

System.out.println("Database created successfully...");

stmt.executeUpdate("USE TRANSIT");

System.out.println("Database used successfully...");

//Create the Tables

CreateTable("CREATE TABLE TRIP " +

"(TripNumber INTEGER not NULL, " +

" StartLocationName VARCHAR(255), " +

" DestinationName VARCHAR(255), " +

" PRIMARY KEY ( TripNumber ))", "TRIP" );

CreateTable("CREATE TABLE TRIPOFFERING " +

"(TripNumber INTEGER not NULL, " +

" Date DATE, " +

" ScheduledStartTime VARCHAR(255), " +

" ScheduledArrivalTime VARCHAR(255), " +

" DriverName VARCHAR(255), " +

" BusID INTEGER, " +

" PRIMARY KEY ( TripNumber, Date, ScheduledStartTime ))", "TRIPOFFERING");

CreateTable ("CREATE TABLE BUS " +

"(BusID INTEGER not NULL, " +

" Model VARCHAR(255), " +

" Year VARCHAR(255)," +

" PRIMARY KEY ( BusID ))", "BUS");

CreateTable("CREATE TABLE DRIVER " +

"(DriverName VARCHAR(255) not NULL, " +

" DriverTelephoneNumber VARCHAR(255), " +

" PRIMARY KEY ( DriverName ))", "DRIVER");

CreateTable("CREATE TABLE STOP " +

"(StopNumber INTEGER not NULL, " +

" StopAddress VARCHAR(255), " +

" PRIMARY KEY ( StopNumber ))", "STOP");

CreateTable("CREATE TABLE ACTUALTRIPSTOPINFO " +

"(TripNumber INTEGER not NULL, " +

" Date DATE, " +

" ScheduledStartTime VARCHAR(255), " +

" StopNumber INTEGER, " +

" ScheduledArrivalTime VARCHAR(255), " +

" ActualStartTime VARCHAR(255), " +

" ActualArrivalTime VARCHAR(255), " +

" NumberOfPassengerIn INTEGER, " +

" NumberOfPassengerOut INTEGER, " +

" PRIMARY KEY ( TripNumber, Date, ScheduledStartTime, StopNumber ))", "ACTUALTRIPSTOPINFO");

CreateTable("CREATE TABLE TRIPSTOPINFO " +

"(TripNumber INTEGER not NULL, " +

" StopNumber INTEGER, " +

" SequenceNumber INTEGER, " +

" DrivingTime VARCHAR(255), " +

" PRIMARY KEY ( TripNumber, StopNumber ))", "TRIPSTOPINFO");

System.out.println("inserting test data into tables...");

InsertTestData(); // insert example data

promptEnterKey();

//Task 1 Displaying the schedule of all trips for a given key

Task1();

promptEnterKey();

//Task 2 TripOffering

Task2();

promptEnterKey();

//Task 3 Displaying stops of a given trip

Task3();

promptEnterKey();

//Task 4 Displaying the weekly schedule of a given driver and date

Task4();

promptEnterKey();

//Task 5 Adding a drive

Task5();

promptEnterKey();

//Task 6 Adding a Bus

Task6();

promptEnterKey();

//Task 7 Deleting a Bus

Task7();

promptEnterKey();

//Task 8: Recording actual data of given trip offering

Task8();

} catch (SQLException e) {

e.printStackTrace();

}

}

public static *void* CreateTable(String *Query*, String *TableName*) {

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

stmt.executeUpdate(*Query*);

System.out.println("Created "+ *TableName* +" table in given database...");

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* InsertDataTable(String *TableName*, String *Data*) {

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

stmt.executeUpdate("INSERT INTO " + *TableName* + " VALUES (" + *Data* + ")");

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* InsertTestData() {

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

InsertDataTable("TRIP", "1, \"LocationA\", \"DestinA\"");

InsertDataTable("TRIP", "2, \"LocationB\", \"DestinB\"");

InsertDataTable("TRIP", "3, \"LocationC\", \"DestinC\"");

InsertDataTable("TRIP", "4, \"LocationD\", \"DestinD\"");

InsertDataTable("TRIP", "5, \"LocationE\", \"DestinE\"");

//DATE: YYYY-MM-DD

InsertDataTable("TRIPOFFERING", "1, \"2021-12-02\", \"10:00AM\", \"11:00AM\", \"Daniel San\", 1234");

InsertDataTable("TRIPOFFERING", "2, \"2021-11-30\", \"2:15PM\", \"3:15PM\", \"John Dee\", 2222");

InsertDataTable("TRIPOFFERING", "3, \"2021-11-30\", \"11:30AM\", \"12:30PM\", \"Eddie Reed\", 3333");

InsertDataTable("TRIPOFFERING", "4, \"2021-11-05\", \"6:00PM\", \"7:00PM\", \"Maria Lopez\", 1111");

InsertDataTable("TRIPOFFERING", "5, \"2021-12-13\", \"5:45PM\", \"6:45PM\", \"Daniel San\", 1234");

InsertDataTable("BUS", "1234, \"2XMinibus\", \"2015\"");

InsertDataTable("BUS", "1111, \"3TrSingleDeck\", \"2013\"");

InsertDataTable("BUS", "2222, \"4XMinibus\", \"2018\"");

InsertDataTable("BUS", "3333, \"12BNCoach\", \"2017\"");

InsertDataTable("DRIVER", "\"Daniel San\", \"909-123-4567\"");

InsertDataTable("DRIVER", "\"John Dee\", \"909-111-2222\"");

InsertDataTable("DRIVER", "\"Eddie Reed\", \"909-333-4444\"");

InsertDataTable("DRIVER", "\"Maria Lopez\", \"909-555-6666\"");

InsertDataTable("STOP", "01, \"301 S Garey Ave\"");

InsertDataTable("STOP", "02, \"200 W. Second Street\"");

InsertDataTable("STOP", "03, \"3801 W Temple Ave\"");

InsertDataTable("STOP", "04, \"1101 W McKinley Ave\"");

InsertDataTable("STOP", "05, \"2640 Pomona Blvd\"");

InsertDataTable("STOP", "06, \"281 S Thomas St\"");

InsertDataTable("ACTUALTRIPSTOPINFO", "1, \"2021-12-02\", \"10:00AM\", 01, \"11:00AM\"" +

", \"10:05AM\", \"11:10AM\", 5, 4");

InsertDataTable("ACTUALTRIPSTOPINFO", "2, \"2021-11-30\", \"2:15PM\", 02, \"3:15PM\"" +

", \"2:16PM\", \"3:20APM\", 7, 6");

InsertDataTable("ACTUALTRIPSTOPINFO", "3, \"2021-11-30\", \"11:30AM\", 03, \"12:30PM\"" +

", \"11:35PM\", \"12:29AM\", 8, 4");

InsertDataTable("ACTUALTRIPSTOPINFO", "4, \"2021-11-05\", \"6:00PM\", 04, \"7:00PM\"" +

", \"6:03PM\", \"7:01PM\", 6, 1");

InsertDataTable("ACTUALTRIPSTOPINFO", "5, \"2021-12-13\", \"5:45PM\", 05, \"6:45PM\"" +

", \"5:45PM\", \"6:47PM\", 7, 2");

InsertDataTable("TRIPSTOPINFO", "1, 01, 1234, \"0.5hr\"");

InsertDataTable("TRIPSTOPINFO", "2, 02, 4321, \"0.4hr\"");

InsertDataTable("TRIPSTOPINFO", "3, 03, 1122, \"0.5hr\"");

InsertDataTable("TRIPSTOPINFO", "4, 04, 2211, \"0.3hr\"");

InsertDataTable("TRIPSTOPINFO", "5, 05, 3311, \"0.5hr\"");

System.out.println("Test Data successfully inserted...");

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task1(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

String TASK1 = "SELECT T.StartLocationName, T.DestinationName, O.Date, O.ScheduledStartTime, " +

"O.ScheduledArrivalTime, O.DriverName, O.BusID " +

"FROM Trip AS T INNER JOIN TripOffering as O ON T.TripNumber = O.TripNumber";

System.out.println("Task 1 SELECT Query:\n");

ResultSet rs = stmt.executeQuery(TASK1);

//Extract data from result set

while (rs.next()) {

// Retrieve by column name

System.out.print("Starting Location: " + rs.getString("StartLocationName"));

System.out.print(", Destination: " + rs.getString("DestinationName"));

System.out.print(", Date: " + rs.getDate("Date"));

System.out.print(", Scheduled Start Time: " + rs.getString("ScheduledStartTime"));

System.out.print(", Scheduled Arrival Time: " + rs.getString("ScheduledArrivalTime"));

System.out.print(", Driver Name: " + rs.getString("DriverName"));

System.out.println(", Bus ID: " + rs.getInt("BusID"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task2(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

//Task 2a

String TASK2a = "DELETE " +

"FROM TripOffering " +

"WHERE TripNumber = 3 AND Date = \"2021-11-30\" AND ScheduledStartTime = \"11:30AM\"";

System.out.println("\nTask 2a: Deletion on TRIPOFFERING Based on TripNumber=3, Date=2021-11-30, 11:30AM...");

stmt.executeUpdate(TASK2a);

System.out.println("Deletion successful!");

promptEnterKey();

//Task 2b

System.out.println("\nTask 2b: Add a set of trip offerings");

InsertDataTable("TRIPOFFERING", "3, \"2021-10-28\", \"9:00AM\", \"9:50AM\", \"John Dee\", 3333");

System.out.println("Would you like to enter another Trip?");

Scanner yesOrNo = new Scanner(System.in);

while(true)

{

String line = yesOrNo.nextLine();

if(line.equalsIgnoreCase("Y")){

while(line.equalsIgnoreCase("Y")) {

System.out.println("Enter Trip Number: ");

Scanner TripNumberInput = new Scanner(System.in);

String TripNumber = TripNumberInput.nextLine();

System.out.println("Enter Name of Starting Location: ");

Scanner StartingLocationInput = new Scanner(System.in);

String StartingLocationName = StartingLocationInput.nextLine();

System.out.println("Enter Name of Destination: ");

Scanner DestinationInput = new Scanner(System.in);

String DestinationName = DestinationInput.nextLine();

String UserData = "\"" + TripNumber + "\", \"" + StartingLocationName + "\", \"" + DestinationName + "\"";

InsertDataTable("Trip", UserData);

System.out.println("\nWould you like to enter another row of Data?");

Scanner yesOrNo2 = new Scanner(System.in);

line = yesOrNo2.nextLine();

}

break;

}else if(line.equalsIgnoreCase("N") || line.equalsIgnoreCase("n")){

break;

}else{

System.out.println("Please enter Y or N ");

}

}

promptEnterKey();

//Task 2c

System.out.println("\nTask 2c: Changing the driver for a given Trip offering ");

stmt.executeUpdate("UPDATE TripOffering " +

"SET DriverName = \"Maria Lopez\" " +

"WHERE TripNumber = 1 AND Date = \"2021-12-02\" AND ScheduledStartTime = \"10:00AM\";");

promptEnterKey();

//Task2d

System.out.println("\nTask 2d: Changing the bus for a given Trip offering ");

stmt.executeUpdate("UPDATE TripOffering " +

"SET BusID = 1111 " +

"WHERE TripNumber = 1 AND Date = \"2021-12-02\" AND ScheduledStartTime = \"10:00AM\";");

System.out.println("The Results are...");

ResultSet rs =stmt.executeQuery("SELECT \* FROM TRIPOFFERING");

while (rs.next()) {

System.out.print("Trip Number: " + rs.getInt("TripNumber"));

System.out.print(", Date: " + rs.getDate("Date"));

System.out.print(", Scheduled Start Time: " + rs.getString("ScheduledStartTime"));

System.out.print(", Scheduled Arrival Time: " + rs.getString("ScheduledArrivalTime"));

System.out.print(", Driver Name: " + rs.getString("DriverName"));

System.out.println(", Bus ID: " + rs.getString("BusID"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task3(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

System.out.println("\n Task 3: Displaying Stops given by the TRIPSTOPINFO Table...");

ResultSet rs =stmt.executeQuery("SELECT \* FROM TRIPSTOPINFO");

while (rs.next()) {

// Retrieve by column name

System.out.print("Trip Number: " + rs.getInt("TripNumber"));

System.out.print(", Stop Number: " + rs.getInt("StopNumber"));

System.out.print(", Sequence Number: " + rs.getInt("SequenceNumber"));

System.out.println(", Driving Time: " + rs.getString("DrivingTime"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task4(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

System.out.println("\n Task 4: Displaying Schedule of Daniel San in December...");

ResultSet rs =stmt.executeQuery("SELECT \* FROM TripOffering AS T " +

"WHERE T.DriverName=\"Daniel San\" AND T.Date LIKE \"%-12-%\"");

while (rs.next()) {

// Retrieve by column name

System.out.print("Trip Number: " + rs.getInt("TripNumber"));

System.out.print(", Date: " + rs.getDate("Date"));

System.out.print(", Scheduled Start Time: " + rs.getString("ScheduledStartTime"));

System.out.print(", Scheduled Arrival Time: " + rs.getString("ScheduledArrivalTime"));

System.out.println(", Driver Name: " + rs.getString("DriverName"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task5(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

System.out.println("\n Task 5: Adding a new Driver...");

InsertDataTable("DRIVER", "\"Gloria Guevarra\", \"909-999-9999\"");

System.out.println("\n Added a new driver...");

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task6(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

System.out.println("\n Task 6: Adding new Buses...");

InsertDataTable("BUS", "9999, \"7XMinibus\", \"2012\"");

InsertDataTable("BUS", "8888, \"3XRCoach\", \"2014\"");

System.out.println("\n Added the new buses...");

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task7(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

String TASK7 = "DELETE " +

"FROM BUS " +

"WHERE BUSID = 9999";

System.out.println("\nTask 7: Deleting a Bus...");

stmt.executeUpdate(TASK7);

System.out.println("The Results are...");

ResultSet rs =stmt.executeQuery("SELECT \* FROM BUS");

while (rs.next()) {

System.out.print("BusID: " + rs.getInt("BusID"));

System.out.print(", Model: " + rs.getString("Model"));

System.out.println(", Year: " + rs.getString("Year"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* Task8(){

try(Connection conn = DriverManager.getConnection(DB\_URL, USER, PASS);

Statement stmt = conn.createStatement();) {

stmt.executeUpdate("UPDATE ActualTripStopInfo " +

"SET ActualStartTime = \"6:04PM\" " +

"WHERE TripNumber = 4 AND Date = \"2021-11-05\" AND ScheduledStartTime = \"6:00PM\";");

stmt.executeUpdate("UPDATE ActualTripStopInfo " +

"SET ActualArrivalTime = \"7:03PM\" " +

"WHERE TripNumber = 4 AND Date = \"2021-11-05\" AND ScheduledStartTime = \"6:00PM\";");

System.out.println("\nTask 8: Inserting data into Actual Start/Arrival in ActualTripStopInfo ");

System.out.println("The results are...");

ResultSet rs = stmt.executeQuery("SELECT \* FROM ACTUALTRIPSTOPINFO");

//Extract data from result set

while (rs.next()) {

// Retrieve by column name

System.out.print("Trip Number: " + rs.getInt("TripNumber"));

System.out.print(", Date: " + rs.getDate("Date"));

System.out.print(", Scheduled Start Time: " + rs.getString("ScheduledStartTime"));

System.out.print(", Scheduled Arrival Time: " + rs.getString("ScheduledArrivalTime"));

System.out.print(", Actual Start Time: " + rs.getString("ActualStartTime"));

System.out.println(", Actual Arrival Time: " + rs.getString("ActualArrivalTime"));

}

}

catch (SQLException e){

e.printStackTrace();

}

}

public static *void* promptEnterKey(){

System.out.println("Press \"ENTER\" to continue...");

Scanner scanner = new Scanner(System.in);

scanner.nextLine();

}

}