## Lab 4 Results Screenshots:

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

```
Task 20: Champing the bus for a given Trip offering
Tem Beaning 1, Date: 2021-12-07, Scheduled Start Time: 10:00AM, Scheduled Arrival Time: 11:00AM, Driver Name: Maria Lopez, Bus ID: 1111
Trip Number: 2, Date: 2021-13-08, Scheduled Start Time: 21:15M, Scheduled Arrival Time: 31:15M, Driver Name: John Dee, Bus ID: 2222
Trip Number: 3, Date: 2021-10-28, Scheduled Start Time: 9:00AM, Scheduled Arrival Time: 9:00AM, Driver Name: John Dee, Bus ID: 3333
Trip Number: 4, Date: 2021-10-8, Scheduled Start Time: 9:00AM, Scheduled Arrival Time: 9:00AM, Driver Name: Maria Lopez, Bus ID: 1111
Trip Number: 3, Date: 2021-10-8, Scheduled Start Time: 11:00AM, Scheduled Arrival Time: 9:00AM, Driver Name: Maria Lopez, Bus ID: 1111
Trip Number: 1, Schow Number: 12-15, Scheduled Start Time: 5:45PM, Scheduled Arrival Time: 6:45PM, Driver Name: Daniel San, Bus ID: 1224

Task 2: Displaying Stope given by the TRIPSTOPINGS Tabla...
Trip Number: 1, Stop Number: 1, Sequence Number: 1223, Driving Time: 0.5hr
Trip Number: 3, Stop Number: 3, Sequence Number: 1224, Driving Time: 0.5hr
Trip Number: 3, Stop Number: 3, Sequence Number: 1221, Driving Time: 0.5hr
Trip Number: 5, Stop Number: 5, Sequence Number: 3211, Driving Time: 8.3hr
Trip Number: 5, Date: 2021-12-13, Scheduled Start Time: 5:45PM, Scheduled Arrival Time: 6:45PM, Driver Name: Daniel San

Press "BRIEN" to continue...

Task 6: Adding new Buses...
Added the new buses...
Press "BRIEN" to continue...

Task 7: Deleting a Bus...
The Negults are...
Bus ID: 1234, Model: 20Xinibus, Year: 2013
Bus ID: 1234, Model: 20Xinibus, Year: 2013
Bus ID: 1234, Model: 20Xinibus, Year: 2013
Bus ID: 1234, Model: 20Xinibus, Year: 2017
Bus ID: 1204, Model: 20Xinibus, Ye
```

## Code copied and pasted from java file:

```
/*
MySQL and Visual Studio Code was used to create and test this program.
Daniel Santamaria
*/
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();
     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();
     Task5();
     promptEnterKey();
     Task6();
     promptEnterKey();
     Task7();
     promptEnterKey();
     Task8();
     } catch (SOLException 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 (SOLException e){
           e.printStackTrace();
      }
  public static void InsertDataTable(String TableName, String Data) {
      try(<u>Connection</u> conn = <u>DriverManager.getConnection(DB URL, USER, PASS);</u>
     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, <u>6</u>");
        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,
0.ScheduledStartTime, " +
                        "O.ScheduledArrivalTime, O.DriverName, O.BusID " +
                        "FROM Trip AS T INNER JOIN TripOffering as 0 ON T.TripNumber =
0.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 (SOLException e){
         e.printStackTrace();
   public static void Task2(){
      try(Connection conn = DriverManager.getConnection(DB_URL, USER, PASS);
      Statement stmt = conn.createStatement();) {
         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();
         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 = yes0rNo2.nextLine();
               }
            }else if(line.equalsIgnoreCase("N") || line.equalsIgnoreCase("n")){
               break;
            }else{
               System.out.println("Please enter Y or N ");
         promptEnterKey();
         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()) {
           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 (SOLException 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 (SOLException e){
         e.printStackTrace();
   }
   public static void Task5(){
      try(<u>Connection</u> conn = <u>DriverManager.getConnection(DB URL, USER, PASS);</u>
      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 (SOLException 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 (SOLException 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"));
```