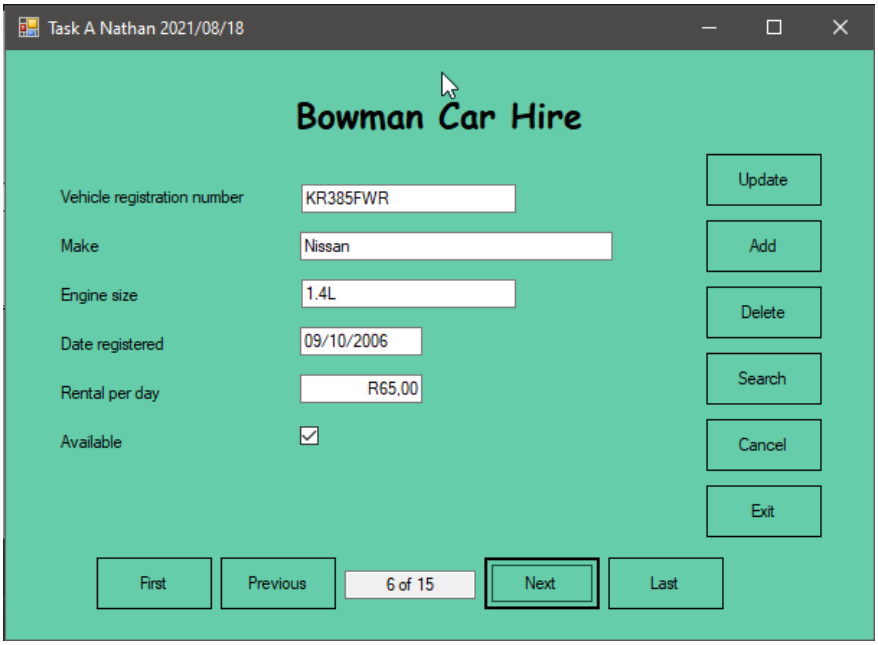
frmCars




```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Configuration;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace CarsDatabase
{
   public partial class frmCars : Form
   {
      public frmCars()
      {
         InitializeComponent();
```

```
    this.Text = $"Task A Nathan {Convert.ToString(DateTime.Today).Remove(10)}";
}

static string myconnstring = ConfigurationManager.ConnectionStrings["connstring"].ConnectionString;

static int recordsCount;
static int rowNum = 1;

private void frmCars_Load(object sender, EventArgs e)
{
    toolTip1.SetToolTip(txtBoxRegNum, "Enter the vehicle registration number.");
    toolTip1.SetToolTip(txtBoxMake, "Enter the make of the vehicle.");
    toolTip1.SetToolTip(txtBoxEngineSize, "Enter the engine size of the vehicle in liters");

    SqlConnection sqlCon = new SqlConnection(myconnstring);
    DataTable dataTable = new DataTable();

    try
    {
        string sqlQuery = "SELECT * FROM tblCar";
        SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
        SqlDataAdapter adapter = new SqlDataAdapter(cmd);
        sqlCon.Open();
        adapter.Fill(dataTable);

        recordsCount = dataTable.Rows.Count;

        txtBoxRegNum.Text = dataTable.Rows[0].Field<string>(0);
        txtBoxMake.Text = dataTable.Rows[0].Field<string>(1);
        txtBoxEngineSize.Text = dataTable.Rows[0].Field<string>(2);
        txtBoxDateReg.Text = Convert.ToString(dataTable.Rows[0].Field<DateTime>(3).ToString("dd/MM/yyyy"));
        txtBoxRentalPDay.Text = Convert.ToString(dataTable.Rows[0].Field<decimal>(4).ToString("C"));
        chbAvailable.Checked = dataTable.Rows[0].Field<bool>(5);
```

```
        RecordNum_RecordTotal(0);
    }
    catch (SqlException sqlEx)
    {
        MessageBox.Show(sqlEx.Message);
    }
    finally
    {
        sqlCon.Close();
    }
}

private void btnUpdate_Click(object sender, EventArgs e)
{
    SqlConnection sqlCon = new SqlConnection(myconnstring);

    try
    {
        string regNum = txtBoxRegNum.Text;
        string make = txtBoxMake.Text;
        string engineSize = txtBoxEngineSize.Text;

        //--- Begin date formating ---
        string temp, tempDay, tempMonth, tempYear;

        temp = txtBoxDateReg.Text;
        tempDay = txtBoxDateReg.Text.Substring(0, 2);
        tempMonth = txtBoxDateReg.Text.Substring(2, 3);
        tempYear = txtBoxDateReg.Text.Substring(6, 4);

        txtBoxDateReg.Text = tempYear + tempMonth + "/" + tempDay;
        DateTime dateReg = Convert.ToDateTime(txtBoxDateReg.Text);
```

```
   txtBoxDateReg.Text = temp;
   //--- End date formating ---

   decimal rentalPDay = 0;

   //Bug: Will only remove if the rand symbol is present and not other currencies.
   //     Because the letter "R" can not be converted to a decimal.
   if (txtBoxRentalPDay.Text.Contains("R"))
   {
      txtBoxRentalPDay.Text = txtBoxRentalPDay.Text.Remove(0, 1);
      rentalPDay = Convert.ToDecimal(txtBoxRentalPDay.Text);
   }
   else
   {
      rentalPDay = Convert.ToDecimal(txtBoxRentalPDay.Text);
   }

   bool available = chbAvailable.Checked;

   string sqlQuery = "UPDATE tblCar SET VehicleRegNo=@vehicleRegNo, Make=@make,
EngineSize=@engineSize, DateRegistered=@dateRegistered, RentalPerDay=@rentalPerDay,
Available=@available WHERE VehicleRegNo=@vehicleRegNo";

   SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
   sqlCon.Open();
   cmd.Parameters.AddWithValue("@vehicleRegNo", regNum);
   cmd.Parameters.AddWithValue("@make", make);
   cmd.Parameters.AddWithValue("@engineSize", engineSize);
   cmd.Parameters.AddWithValue("@dateRegistered", dateReg);
   cmd.Parameters.AddWithValue("@rentalPerDay", rentalPDay);
   cmd.Parameters.AddWithValue("@available", available);

   int rows = cmd.ExecuteNonQuery();
   //if the query runs succesfully then the value of the rows will be greater than zero else
```

```
        //its value will be 0
        if (rows > 0)
        {
            MessageBox.Show("Your record has successfully updated", "Success", MessageBoxButtons.OK);
        }
        else
        {
            MessageBox.Show("Your record failed to update", "Failure", MessageBoxButtons.OK,
    MessageBoxIcon.Warning);
        }

    }
    catch (SqlException sqlEx)
    {
        MessageBox.Show(sqlEx.Message);
    }
    finally
    {
        sqlCon.Close();
    }
}

/// <summary>
/// --- Add button to add new records ---
/// Bug: When a record is added it looks at the first column value of the new record and insert it
///      in alphabetical order into the table. This means the new record will not always go to
///      the bottom but in between records.
/// </summary>
/// <param name="sender"></param>
/// <param name="e"></param>
private void btnAdd_Click(object sender, EventArgs e)
{
    SqlConnection sqlCon = new SqlConnection(myconnstring);
```

```
string regNum = txtBoxRegNum.Text;
string make = txtBoxMake.Text;
string engineSize = txtBoxEngineSize.Text;
DateTime dateReg = Convert.ToDateTime(txtBoxDateReg.Text);
decimal rentalPDay = 0;

//Bug: Will only remove if the rand symbol is present and not other currencies.
//     Because the letter "R" can not be converted to a decimal.
if (txtBoxRentalPDay.Text.Contains("R"))
{
   txtBoxRentalPDay.Text = txtBoxRentalPDay.Text.Remove(0, 1);
   rentalPDay = Convert.ToDecimal(txtBoxRentalPDay.Text);
}
else
{
   rentalPDay = Convert.ToDecimal(txtBoxRentalPDay.Text);
}

bool available = chbAvailable.Checked;

try
{
   string sqlQuery = "INSERT INTO tblCar(VehicleRegNo, Make, EngineSize, DateRegistered, RentalPerDay,
Available) VALUES (@vehicleRegNo, @make, @engineSize, @dateRegistered, @rentalPerDay, @available)";
   SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);

   cmd.Parameters.AddWithValue("@vehicleRegNo", regNum);
   cmd.Parameters.AddWithValue("@make", make);
   cmd.Parameters.AddWithValue("@engineSize", engineSize);
   cmd.Parameters.AddWithValue("@dateRegistered", dateReg);
   cmd.Parameters.AddWithValue("@rentalPerDay", rentalPDay);
   cmd.Parameters.AddWithValue("@available", available);
```

```
        sqlCon.Open();


        int rows = cmd.ExecuteNonQuery();
        //if the query runs succesfully then the value of the rows will be greater than zero else
        //its value will be 0
        if (rows > 0)
        {
            MessageBox.Show("Your record has successfully been added", "Success", MessageBoxButtons.OK);
        }
        else
        {
            MessageBox.Show("Your record failed to add", "Failure", MessageBoxButtons.OK,
    MessageBoxIcon.Warning);
        }


        //txtBoxRecordNum.Text = $"{rowNum} of {recordsCount + 1}";
    }
    catch (SqlException sqlEx)
    {
        MessageBox.Show(sqlEx.Message);
    }
    finally
    {
        sqlCon.Close();
    }
}


/// <summary>
/// --- Deletes records ---
/// Bug: If last record is deleted and the previous button is clicked
///      the program will break.
/// </summary>
/// <param name="sender"></param>
```

```
/// <param name="e"></param>
private void btnDelete_Click(object sender, EventArgs e)
{
   SqlConnection sqlCon = new SqlConnection(myconnstring);

   string regNum = txtBoxRegNum.Text;

   try
   {
      string sqlQuery = "DELETE tblCar WHERE VehicleRegNo=@vehicleRegNo";
      SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
      sqlCon.Open();

      cmd.Parameters.AddWithValue("@vehicleRegNo", regNum);

      int rows = cmd.ExecuteNonQuery();
      //if the query runs succesfully then the value of the rows will be greater than zero else
      //its value will be 0
      if (rows > 0)
      {
         MessageBox.Show("Your record has successfully been deleted", "Success", MessageBoxButtons.OK);
      }
      else
      {
         MessageBox.Show("Your record failed to delete", "Failure", MessageBoxButtons.OK,
   MessageBoxIcon.Warning);
      }

   }
   catch (SqlException sqlEx)
   {
      MessageBox.Show(sqlEx.Message);
   }
```

```
    finally
    {
        sqlCon.Close();
    }
}

private void btnCancel_Click(object sender, EventArgs e)
{
    txtBoxRegNum.Text = "";
    txtBoxMake.Text = "";
    txtBoxEngineSize.Text = "";
    txtBoxDateReg.Text = "";
    txtBoxRentalPDay.Text = "";
    chbAvailable.Checked = false;

    txtBoxRecordNum.Text = "";
}

/// <summary>
///--- Skips to the next records ---
/// Bug: The button must be clicked twice after the previous button was clicked.
/// </summary>
/// <param name="sender"></param>
/// <param name="e"></param>
private void btnNext_Click(object sender, EventArgs e)
{
    SqlConnection sqlCon = new SqlConnection(myconnstring);
    DataTable dataTable = new DataTable();

    try
    {
        string sqlQuery = "SELECT * FROM tblCar";
        SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
```

```
    SqlDataAdapter adapter = new SqlDataAdapter(cmd);
    sqlCon.Open();
    adapter.Fill(dataTable);

    recordsCount = dataTable.Rows.Count;

    if (rowNum < recordsCount)
    {
        txtBoxRegNum.Text = dataTable.Rows[rowNum].Field<string>(0);
        txtBoxMake.Text = dataTable.Rows[rowNum].Field<string>(1);
        txtBoxEngineSize.Text = dataTable.Rows[rowNum].Field<string>(2);
        txtBoxDateReg.Text =
Convert.ToString(dataTable.Rows[rowNum].Field<DateTime>(3).ToString("dd/MM/yyyy"));
        txtBoxRentalPDay.Text = Convert.ToString(dataTable.Rows[rowNum].Field<decimal>(4).ToString("C"));
        chbAvailable.Checked = dataTable.Rows[rowNum].Field<bool>(5);
        rowNum++;
    }
    else
    {
        MessageBox.Show("You have reach the final record!");
    }

    RecordNum_RecordTotal(0);
}
catch (SqlException sqlEx)
{
    MessageBox.Show(sqlEx.Message);
}
finally
{
    sqlCon.Close();
}
```

```
}

/// <summary>
/// --- Go's to the previous record ---
/// Bug: The button must be clicked twice after the next button was clicked.
/// Bug: After last record is deleted when previous button is clicked the program
///     will break.
/// </summary>
/// <param name="sender"></param>
/// <param name="e"></param>
private void btnPrevious_Click(object sender, EventArgs e)
{
   SqlConnection sqlCon = new SqlConnection(myconnstring);
   DataTable dataTable = new DataTable();

   try
   {
      string sqlQuery = "SELECT * FROM tblCar";
      SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
      SqlDataAdapter adapter = new SqlDataAdapter(cmd);
      sqlCon.Open();
      adapter.Fill(dataTable);

      recordsCount = dataTable.Rows.Count;

      if (rowNum > 0)
      {
         rowNum--;
         txtBoxRegNum.Text = dataTable.Rows[rowNum].Field<string>(0);
         txtBoxMake.Text = dataTable.Rows[rowNum].Field<string>(1);
         txtBoxEngineSize.Text = dataTable.Rows[rowNum].Field<string>(2);
         txtBoxDateReg.Text =
   Convert.ToString(dataTable.Rows[rowNum].Field<DateTime>(3).ToString("dd/MM/yyyy"));
```

```
            txtBoxRentalPDay.Text = Convert.ToString(dataTable.Rows[rowNum].Field<decimal>(4).ToString("C"));
            chbAvailable.Checked = dataTable.Rows[rowNum].Field<bool>(5);
        }
        else
        {
            MessageBox.Show("You have reach the first record!");
        }

        RecordNum_RecordTotal(1);
    }
    catch (SqlException sqlEx)
    {
        MessageBox.Show(sqlEx.Message);
    }
    finally
    {
        sqlCon.Close();
    }
}

private void btnFirst_Click(object sender, EventArgs e)
{
    SqlConnection sqlCon = new SqlConnection(myconnstring);
    DataTable dataTable = new DataTable();

    try
    {
        string sqlQuery = "SELECT * FROM tblCar";
        SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
        SqlDataAdapter adapter = new SqlDataAdapter(cmd);
        sqlCon.Open();
        adapter.Fill(dataTable);
```

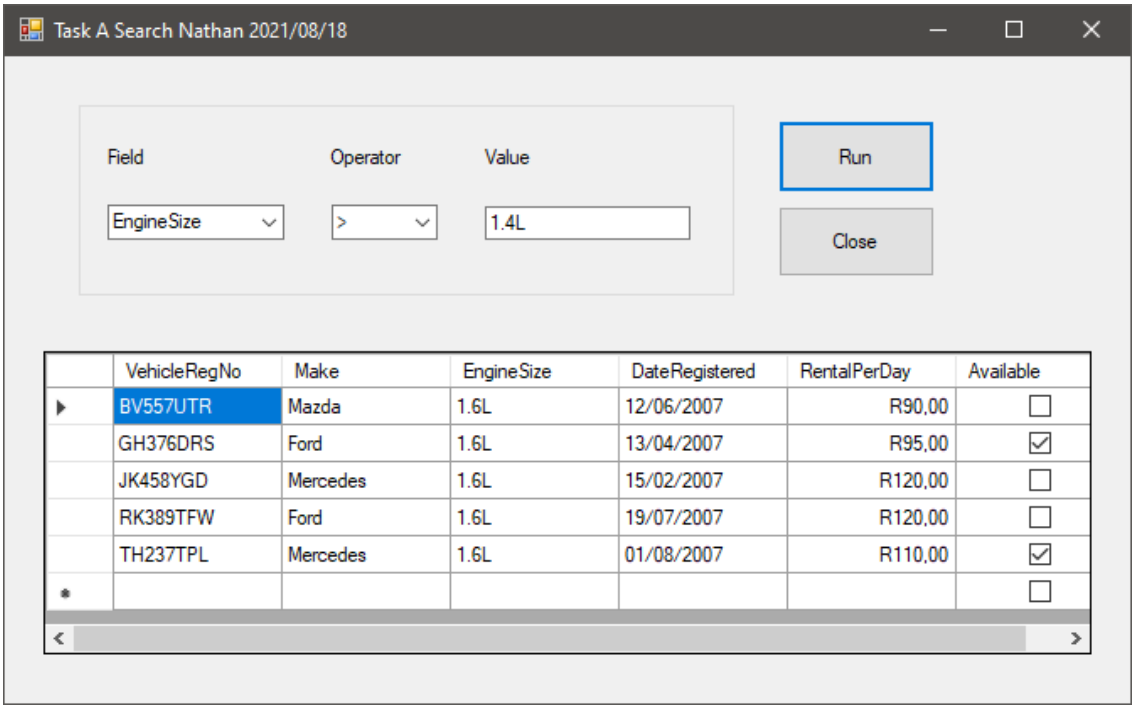
```
        recordsCount = dataTable.Rows.Count;

        txtBoxRegNum.Text = dataTable.Rows[0].Field<string>(0);
        txtBoxMake.Text = dataTable.Rows[0].Field<string>(1);
        txtBoxEngineSize.Text = dataTable.Rows[0].Field<string>(2);
        txtBoxDateReg.Text = Convert.ToString(dataTable.Rows[0].Field<DateTime>(3).ToString("dd/MM/yyyy"));
        txtBoxRentalPDay.Text = Convert.ToString(dataTable.Rows[0].Field<decimal>(4).ToString("C"));
        chbAvailable.Checked = dataTable.Rows[0].Field<bool>(5);

        rowNum = 1;
        RecordNum_RecordTotal(0);
    }
    catch (SqlException sqlEx)
    {
        MessageBox.Show(sqlEx.Message);
    }
    finally
    {
        sqlCon.Close();
    }
}

private void btnLast_Click(object sender, EventArgs e)
{
    SqlConnection sqlCon = new SqlConnection(myconnstring);
    DataTable dataTable = new DataTable();

    try
    {
        string sqlQuery = "SELECT * FROM tblCar";
        SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
        SqlDataAdapter adapter = new SqlDataAdapter(cmd);
        sqlCon.Open();
```

```
            adapter.Fill(dataTable);


            recordsCount = dataTable.Rows.Count;


            txtBoxRegNum.Text = dataTable.Rows[recordsCount - 1].Field<string>(0);
            txtBoxMake.Text = dataTable.Rows[recordsCount - 1].Field<string>(1);
            txtBoxEngineSize.Text = dataTable.Rows[recordsCount - 1].Field<string>(2);
            txtBoxDateReg.Text = Convert.ToString(dataTable.Rows[recordsCount -
        1].Field<DateTime>(3).ToString("dd/MM/yyyy"));
            txtBoxRentalPDay.Text = Convert.ToString(dataTable.Rows[recordsCount -
        1].Field<decimal>(4).ToString("C"));
            chbAvailable.Checked = dataTable.Rows[recordsCount - 1].Field<bool>(5);


            rowNum = recordsCount;
            RecordNum_RecordTotal(0);
        }
        catch (SqlException sqlEx)
        {
            MessageBox.Show(sqlEx.Message);
        }
        finally
        {
            sqlCon.Close();
        }
    }

    #region Methods
    /// <summary>
    /// Method to display the record number and records total at the bottom textbox.
    /// </summary>
    /// <param name="add">some buttons needs to add a amount to the record number</param>
    public void RecordNum_RecordTotal(int add)
    {
        SqlConnection sqlCon = new SqlConnection(myconnstring);
```

```
    DataTable dataTable = new DataTable();

    string sqlQuery = "SELECT * FROM tblCar";
    SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
    SqlDataAdapter adapter = new SqlDataAdapter(cmd);
    sqlCon.Open();
    adapter.Fill(dataTable);

    recordsCount = dataTable.Rows.Count;
    txtBoxRecordNum.Text = $"{rowNum + add} of {recordsCount}";
}

#endregion

private void btnExit_Click(object sender, EventArgs e)
{
    const string message = "Do you want to Exit?";
    const string caption = "Exit App";

    var result = MessageBox.Show(message, caption, MessageBoxButtons.YesNo, MessageBoxIcon.Warning);

    if (result == DialogResult.Yes)
    {
        Application.Exit();
    }
}

private void btnSearch_Click(object sender, EventArgs e)
{
    frmSearch search = new frmSearch();
    search.Show();
    this.Hide();
}
```

```
    }
}
```

frmSearch




```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Configuration;
using System.Data;
using System.Data.SqlClient;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
```

```
namespace CarsDatabase
{
    public partial class frmSearch : Form
    {
        public frmSearch()
        {
            InitializeComponent();
            this.Text = $"Task A Search Nathan {Convert.ToString(DateTime.Today).Remove(10)}";
        }

        static string myconnstring = ConfigurationManager.ConnectionStrings["connstring"].ConnectionString;

        private void frmSearch_Load(object sender, EventArgs e)
        {
            cboField.Items.Add("VehicleRegNo");
            cboField.Items.Add("Make");
            cboField.Items.Add("EngineSize");
            cboField.Items.Add("RentalPerDay ");
            cboField.Items.Add("Available");

            cboOperator.Items.Add("=");
            cboOperator.Items.Add("<");
            cboOperator.Items.Add(">");
            cboOperator.Items.Add("<=");
            cboOperator.Items.Add(">=");
        }

        private void btnRun_Click(object sender, EventArgs e)
        {
            string field, sOperator, value;

            field = cboField.Text;
            sOperator = cboOperator.Text;
```

```
value = txtBoxValue.Text;

//Changing the available value field to accept Yes and No values
if (field == "Available" && value == "Yes")
{
   value = true.ToString();
}
else if (field == "Available" && value == "No")
{
   value = false.ToString();
}

SqlConnection sqlCon = new SqlConnection(myconnstring);
DataTable dataTable = new DataTable();

try
{
   string sqlQuery = "SELECT * FROM tblCar WHERE " + field + sOperator + "@Value";
   SqlCommand cmd = new SqlCommand(sqlQuery, sqlCon);
   SqlDataAdapter adapter = new SqlDataAdapter(cmd);
   sqlCon.Open();
   cmd.Parameters.AddWithValue("@Value", value);

   adapter.Fill(dataTable);

   //if satement for preventing unnecessary result errors from displaying
   if (field == "VehicleRegNo" && sOperator != "=" || field == "Make" && sOperator != "=" || field ==
"Available" && sOperator != "=")
   {
      MessageBox.Show($"You can't use the {field} field with the {sOperator} operator","Invalid
Input",MessageBoxButtons.OK);
      dataTable.Clear();
   }
```

```
            dgvCars.DataSource = dataTable;

            //Changing the display format of the date registered and rental per day displayed
            dgvCars.Columns[3].DefaultCellStyle.Format = "dd/MM/yyyy";
            dgvCars.Columns[4].DefaultCellStyle.Format = "C";
            dgvCars.Columns[4].DefaultCellStyle.Alignment = DataGridViewContentAlignment.MiddleRight;

        }
        catch (SqlException sqlEx)
        {
            MessageBox.Show(sqlEx.Message);

        }
        finally
        {
            sqlCon.Close();
        }
    }

    private void btnClose_Click(object sender, EventArgs e)
    {
        frmCars cars = new frmCars();
        cars.Show();
        this.Hide();
    }
  }
}
```