Java Project 2 – Video Store

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Contents:

Source Code:

```
/* Filename:          VideoStoreGUI.java
 * Author:            Donovan van Heerden (EL2014-0043)
 * Created:           19-01-2014
 * Operating System:    Windows 7
 * Version:           1.0
 * Description:       This program handles interation to a SQL Server Database,
 *                  called 'VideoStoreDb'.
 */
package javaproject2_videostore;
import java.sql.*;
import javax.swing.*;
import java.util.*;
import java.util.regex.Pattern;
/**
 *
 * VideoStoreGUI Class, handles interaction to a SQL Server Database called,
 * VideoStoreDb.
 *
 * @author      Donovan van Heerden
 */
public class VideoStoreGUI
{
   //Globals
   private static final String[] tableCols = {"Movie Name", "Movie Description", "Genre"};

//---------------------------------------------------------------------------
   //GUI Globals - VideoStore Window
   private static final JMenuBar MenuBar = new JMenuBar();
   private static final JMenu InfoMenu = new JMenu();
   private static final JMenu AdminMenu = new JMenu();
   private static final JMenu SearchMenu = new JMenu();
   private static final JMenuItem btnHelp =  new JMenuItem();
   private static final JMenuItem btnAbout = new JMenuItem();
   private static final JMenuItem btnSearchMov = new JMenuItem();
   private static final JMenuItem btnSearchGen = new JMenuItem();
   private static final JMenuItem btnAdmin = new JMenuItem();


   private static final JFrame ClientMainWindow = new JFrame();
   private static final JLabel lblSearch = new JLabel();
   private static final JTextField txtSearch = new JTextField();

   private static JTable dtResults = new JTable();
   private static final JScrollPane spResults = new JScrollPane();

   private static final JPanel pnlSearchControls = new JPanel();

//---------------------------------------------------------------------------
   //GUI Globals - Administrator Window
   private static final JFrame AdminMainWindow = new JFrame();
```

```
    private static final JMenuBar AdminMenuBar = new JMenuBar();
    private static final JMenu AdminInfoMenu = new JMenu();
    private static final JMenu AdminMainMenu = new JMenu();
    private static final JMenuItem btnAdminHelp =  new JMenuItem();
    private static final JMenuItem btnAdminAbout = new JMenuItem();
    private static final JMenuItem btnAdminLogout = new JMenuItem();

    private static final JSeparator sepMovie = new JSeparator();
    private static final JSeparator sepGenre = new JSeparator();

    private static final JComboBox cbxMovieList = new JComboBox();
    private static final JComboBox cbxMovieGenre = new JComboBox();
    private static final JComboBox cbxGenreList = new JComboBox();

    private static final JLabel lblMovieTitle = new JLabel();
    private static final JLabel lblMovieDesc =  new JLabel();
    private static final JLabel lblMovieGenre = new JLabel();

    private static final JTextField txtMovieTitle = new JTextField();
    //public static JTextField txtMovieGenre = new JTextField();
    private static final JTextArea taMovieDesc = new JTextArea();
    private static final JScrollPane spMovieDesc = new JScrollPane();

    private static final JTextField txtGenre = new JTextField();
    private static final JLabel lblGenre = new JLabel();

    private static final JLabel lblAllGenre = new JLabel();
    private static final JLabel lblAllMovie = new JLabel();

    private static final JButton btnAddMov = new JButton();
    private static final JButton btnDeleteMov = new JButton();

    private static final JButton btnAddGen = new JButton();
    //private static JButton btnDeleteGen = new JButton();

    private static final JPanel pnlMovieInfo = new JPanel();
    private static final JPanel pnlGenreInfo = new JPanel();

    private static final JTabbedPane tpAdminPnl = new JTabbedPane();

//---------------------------------------------------------------------------
    //GUI Globals - Login Window
    private static final JFrame LoginMainWindow = new JFrame();

    private static final JTextField txtUsername = new JTextField(20);
    private static final JLabel lblUsername = new JLabel();
    private static final JPasswordField txtPassword = new JPasswordField(20);
    private static final JLabel lblPassword = new JLabel();
    private static final JButton btnLogin = new JButton();
    private static final JButton btnCancel = new JButton();
//---------------------------------------------------------------------------
    /**
     * This is the constructor for the VideoStoreGUI class, which sets the ClientMainWindow's
     * Title, setDefaultCloseOperation, and sets the JFrame's resizable property to false.
     * Followed by calling the ConfigureMainWindow() method and MainWindow_Action() method.
     * And lastly by making the JFrame visible.
     */
```

```
   public VideoStoreGUI()
   {
      ClientMainWindow.setTitle("VideoStore: Browse");
      ClientMainWindow.setDefaultCloseOperation(JFrame.DO_NOTHING_ON_CLOSE);
      ClientMainWindow.setResizable(false);
      ConfigureMainWindow();
      MainWindow_Action();
      ClientMainWindow.setVisible(true);
   }
//---------------------------------------------------------------------------
   /**
    * The main method, just builds the three various GUIs, but leaves the LoginWindow
    * and AdminWindow invisible until called for. Thus leaving the MainWindow, the
    * only accessable window initially.
    * @param args
    */
   public static void main(String[] args)
   {
      VideoStoreGUI VideoStore = new VideoStoreGUI();
      BuildLoginWindow();
      BuildAdminMainWindow();
   }
//---------------------------------------------------------------------------
   /**
    * This method sets up the MainWindow GUI, setting the position of all the
    * controls.
    */
   public static void ConfigureMainWindow()
   {
      ClientMainWindow.setBackground(new java.awt.Color(255, 255, 255));
      ClientMainWindow.setSize(620, 370);
      ClientMainWindow.setLocation(220,180);
      ClientMainWindow.getContentPane().setLayout(null);

      ClientMainWindow.setJMenuBar(MenuBar);
      MenuBar.setVisible(true);

      btnAdmin.setText("Login");
      AdminMenu.add(btnAdmin);
      AdminMenu.setText("Admin");
      MenuBar.add(AdminMenu);

      btnSearchMov.setText("Movie Search");
      btnSearchGen.setText("Genre Search");
      SearchMenu.setText("Search Options");
      SearchMenu.add(btnSearchMov);
      SearchMenu.add(btnSearchGen);
      MenuBar.add(SearchMenu);

      btnHelp.setText("Help");
      btnAbout.setText("About");
      InfoMenu.setText("Info");
      InfoMenu.add(btnAbout);
      InfoMenu.add(btnHelp);
      MenuBar.add(InfoMenu);

      pnlSearchControls.setBounds(10, 10, 595, 300);
```

```
      pnlSearchControls.setBorder(BorderFactory.createEtchedBorder());
      pnlSearchControls.setLayout(null);
      pnlSearchControls.setVisible(true);

      lblSearch.setBounds(10, 10, 80, 25);
      lblSearch.setText("Search:");
      txtSearch.setBounds(60, 10, 525, 25);
      pnlSearchControls.add(lblSearch);
      pnlSearchControls.add(txtSearch);

      spResults.setHorizontalScrollBarPolicy(ScrollPaneConstants.HORIZONTAL_SCROLLBAR_NEVER);
      spResults.setVerticalScrollBarPolicy(ScrollPaneConstants.VERTICAL_SCROLLBAR_ALWAYS);
      spResults.getViewport().add(dtResults, null);
      pnlSearchControls.add(spResults);
      spResults.setBounds(10, 50, 575, 240);

      dtResults.setFont(new java.awt.Font("Tahoma", 0, 12));
      dtResults.setForeground(new java.awt.Color(0, 0, 0));

      ClientMainWindow.getContentPane().add(pnlSearchControls);
   }
//--------------------------------------------------------------------------
   /**
    * This method adds all the ActionListeners to the various controls within the
    * MainWindow.
    */
   public static void MainWindow_Action()
   {
      try
      {
         btnAdmin.addActionListener(new java.awt.event.ActionListener() {
               @Override
               public void actionPerformed(java.awt.event.ActionEvent evt)
               {
                  ClientMainWindow.setVisible(false);
                  txtSearch.setText(null);
                  dtResults =  new JTable();
                  spResults.getViewport().add(dtResults);
                  spResults.setViewportView(dtResults);
                  LoginMainWindow.setVisible(true);
               }
            });

         btnSearchMov.addActionListener(new java.awt.event.ActionListener() {
               @Override
               public void actionPerformed(java.awt.event.ActionEvent evt)
               {
                  ACTION_SEARCH("Movie");
               }
            });

         btnAbout.addActionListener(new java.awt.event.ActionListener() {
               @Override
               public void actionPerformed(java.awt.event.ActionEvent evt)
               {
                  ACTION_ABOUT();
               }
```

```
            });

        btnHelp.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               BROWSE_HELP();
            }
            });

        btnSearchGen.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               ACTION_SEARCH("Genre");
            }
            });

        ClientMainWindow.addWindowListener(new java.awt.event.WindowAdapter(){
            @Override
            public void windowClosing(java.awt.event.WindowEvent windowEvent)
            {
               ACTION_CLOSE(ClientMainWindow);
            }
        });

      }
      catch(Exception X)
      {
         System.out.println(X);
      }
   }
//---------------------------------------------------------------------------
   /**
    * This method sets the LoginWindow GUI's title, sets the defaultCloseOperation,
    * and sets the JFrame's resizable property to false. Followed by calling the ConfigureLoginWindow()
    * and LoginWindow_Action() methods. Thus building the AdminWindow.
    */
   public static void BuildLoginWindow()
   {
      LoginMainWindow.setTitle("VideoStore: Login");
      LoginMainWindow.setDefaultCloseOperation(JFrame.DO_NOTHING_ON_CLOSE);
      LoginMainWindow.setResizable(false);
      ConfigureLoginWindow();
      LoginWindow_Action();
   }
//---------------------------------------------------------------------------
   /**
    * This method sets the LoginWindow GUI, setting the position of all the controls.
    */
   public static void ConfigureLoginWindow()
   {
      LoginMainWindow.setBackground(new java.awt.Color(255, 255, 255));
      LoginMainWindow.setSize(250, 190);
      LoginMainWindow.setLocation(520,180);
      LoginMainWindow.getContentPane().setLayout(null);
```

```
      lblUsername.setText("Username:");
      lblUsername.setBounds(10, 10, 70, 25);
      txtUsername.setBounds(80, 10, 155, 25);
      LoginMainWindow.add(lblUsername);
      LoginMainWindow.add(txtUsername);

      lblPassword.setText("Password:");
      lblPassword.setBounds(10, 45, 70, 25);
      txtPassword.setBounds(80, 45, 155, 25);
      LoginMainWindow.add(lblPassword);
      LoginMainWindow.add(txtPassword);

      btnLogin.setText("Login");
      btnLogin.setBounds(55, 90, 140, 25);
      btnCancel.setText("Cancel");
      btnCancel.setBounds(55, 125, 140, 25);
      LoginMainWindow.add(btnLogin);
      LoginMainWindow.add(btnCancel);
   }
//---------------------------------------------------------------------------
   /**
    * This method adds all the ActionListeners to the various controls within the
    * LoginWindow.
    */
   public static void LoginWindow_Action()
   {
      btnLogin.addActionListener(new java.awt.event.ActionListener() {
               @Override
               public void actionPerformed(java.awt.event.ActionEvent evt)
               {
                  if (ACTION_LOGINCHECK(txtUsername.getText().trim(), txtPassword.getText().trim()))
                  {
                     LoginMainWindow.setVisible(false);
                     txtPassword.setText(null);
                     txtUsername.setText(null);
                     txtUsername.requestFocus();
                     AdminMainWindow.setVisible(true);
                  }
                  else
                  {
                     JOptionPane.showMessageDialog(null, "Username and Password\ncombination are incorrect!",
"Alert!", 2);
                     txtUsername.setText("");
                     txtPassword.setText("");
                     txtUsername.requestFocus();
                  }
               }
            });

      btnCancel.addActionListener(new java.awt.event.ActionListener() {
               @Override
               public void actionPerformed(java.awt.event.ActionEvent evt)
               {
                  ClientMainWindow.setVisible(true);
                  LoginMainWindow.setVisible(false);
               }
            });
```

```
    LoginMainWindow.addWindowListener(new java.awt.event.WindowAdapter(){
          @Override
          public void windowClosing(java.awt.event.WindowEvent windowEvent)
          {
             ACTION_CLOSE(LoginMainWindow);
          }
        });
  }
//---------------------------------------------------------------------------
  /**
   * This method sets the AdminWindow GUI's title, sets the defaultCloseOperation,
   * and sets the window's resizable property to false. Followed by calling the AdminWindow_Action() method,
   * ConfigureAdminWindow() method and ACTION_SET_MOVIECBX() and ACTION_SET_GENRECBX() methods.
   * Thus building the AdminWindow.
   */
  public static void BuildAdminMainWindow()
  {
    AdminMainWindow.setTitle("VideoStore: Administrator");
    AdminMainWindow.setDefaultCloseOperation(JFrame.DO_NOTHING_ON_CLOSE);
    AdminMainWindow.setResizable(false);
    ConfigureAdminWindow();
    AdminWindow_Action();
    ACTION_SET_CBX("Movie");
    ACTION_SET_CBX("Genre");
  }
//---------------------------------------------------------------------------
  /**
   *This method configures the AdminWindow GUI, setting the position of
   * all controls.
   */
    public static void ConfigureAdminWindow()
  {
    AdminMainWindow.setBackground(new java.awt.Color(255, 255, 255));
    AdminMainWindow.setSize(620, 370);
    AdminMainWindow.setLocation(220,180);
    AdminMainWindow.getContentPane().setLayout(null);

    AdminMainWindow.setJMenuBar(AdminMenuBar);
    AdminMenuBar.setVisible(true);

    btnAdminLogout.setText("Logout");
    AdminMainMenu.setText("Admin");
    AdminMainMenu.add(btnAdminLogout);
    AdminMenuBar.add(AdminMainMenu);

    btnAdminHelp.setText("Help");
    btnAdminAbout.setText("About");
    AdminInfoMenu.setText("Info");
    AdminInfoMenu.add(btnAdminAbout);
    AdminInfoMenu.add(btnAdminHelp);
    AdminMenuBar.add(AdminInfoMenu);

    pnlMovieInfo.setBounds(10, 50, 595, 255);
    pnlMovieInfo.setBorder(BorderFactory.createEtchedBorder());
    pnlMovieInfo.setLayout(null);
    pnlMovieInfo.setVisible(true);
```

```
        lblAllMovie.setText("All Movies:");
        lblAllMovie.setBounds(10, 10, 80, 25);
        cbxMovieList.setBounds(80, 10, 395, 25);
        btnDeleteMov.setBounds(490, 10, 90, 25);
        btnDeleteMov.setText("Delete");
        pnlMovieInfo.add(lblAllMovie);
        pnlMovieInfo.add(cbxMovieList);
        pnlMovieInfo.add(btnDeleteMov);

        sepMovie.setBounds(0, 45, 593, 1);
        sepMovie.setForeground(new java.awt.Color(166, 166, 166));
        pnlMovieInfo.add(sepMovie);

        lblMovieTitle.setBounds(10, 55, 100, 25);
        lblMovieTitle.setText("Movie Title:");
        lblMovieGenre.setBounds(10, 90, 100, 25);
        lblMovieGenre.setText("Genre:");
        lblMovieDesc.setBounds(10, 120, 150, 25);
        lblMovieDesc.setText("Movie Description:");
        pnlMovieInfo.add(lblMovieTitle);
        pnlMovieInfo.add(lblMovieDesc);
        pnlMovieInfo.add(lblMovieGenre);

        txtMovieTitle.setBounds(80, 55, 200, 25);
        cbxMovieGenre.setBounds(80, 90, 200, 25);

        spMovieDesc.setHorizontalScrollBarPolicy(ScrollPaneConstants.HORIZONTAL_SCROLLBAR_NEVER);
        spMovieDesc.setVerticalScrollBarPolicy(ScrollPaneConstants.VERTICAL_SCROLLBAR_ALWAYS);
        spMovieDesc.setViewportView(taMovieDesc);
        pnlSearchControls.add(spMovieDesc);
        spMovieDesc.setBounds(10, 145, 570, 80);

        btnAddMov.setBounds(480, 235, 100, 25);
        btnAddMov.setText("Add");
        pnlMovieInfo.add(btnAddMov);

        pnlMovieInfo.add(txtMovieTitle);
        pnlMovieInfo.add(cbxMovieGenre);
        pnlMovieInfo.add(spMovieDesc);

        pnlGenreInfo.setBounds(10, 50, 595, 255);
        pnlGenreInfo.setBorder(BorderFactory.createEtchedBorder());
        pnlGenreInfo.setLayout(null);
        pnlGenreInfo.setVisible(true);

        lblAllGenre.setText("All Genres:");
        lblAllGenre.setBounds(10, 10, 80, 25);
        cbxGenreList.setBounds(80, 10, 502, 25);
//      btnDeleteGen.setBounds(490, 10, 90, 25);
//      btnDeleteGen.setText("Delete");
        pnlGenreInfo.add(cbxGenreList);
//      pnlGenreInfo.add(btnDeleteGen);
//
        sepGenre.setBounds(0, 45, 593, 1);
        sepGenre.setForeground(new java.awt.Color(166, 166, 166));
        pnlGenreInfo.add(lblAllGenre);
```

```
      pnlGenreInfo.add(sepGenre);

      lblGenre.setBounds(10, 55, 100, 25);
      lblGenre.setText("Genre:");
      txtGenre.setBounds(80, 55, 150, 25);
      pnlGenreInfo.add(lblGenre);
      pnlGenreInfo.add(txtGenre);

      btnAddGen.setBounds(480, 235, 100, 25);
      btnAddGen.setText("Add");
      pnlGenreInfo.add(btnAddGen);

      tpAdminPnl.addTab("Movie", pnlMovieInfo);
      tpAdminPnl.addTab("Genre", pnlGenreInfo);
      tpAdminPnl.setVisible(true);

      tpAdminPnl.setBounds(7, 5, 600, 305);

      AdminMainWindow.getContentPane().add(tpAdminPnl);

   }
//--------------------------------------------------------------------------
   /**
    * This method adds all the ActionListeners to the various controls within
    * the AdminWindow.
    */
   public static void AdminWindow_Action()
   {
      btnAdminLogout.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               AdminMainWindow.setVisible(false);
               txtMovieTitle.setText(null);
               taMovieDesc.setText(null);
               txtGenre.setText(null);
               ClientMainWindow.setVisible(true);
            }
         });

      btnAdminAbout.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               ACTION_ABOUT();
            }
         });

      btnAdminHelp.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               ADMIN_HELP();
            }
         });

      btnAddMov.addActionListener(new java.awt.event.ActionListener() {
```

```
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
               String tempRegEx = "\\s([A-Z][a-z]+|[0-9]+)";
               String defaultRegEx = "[A-Z][a-z]+";
               String numRegEx = "[0-9]+";

               //String descRegEx = "(^).*?(?=\\n|$)";              - Initially used to check Movie Description.
               //if (txtMovieTitle.getText().matches("\\d.*"))      - Used to check if string started with a number.
               //    System.out.println("Contains number!");

               for (int x = 0; x < txtMovieTitle.getText().length(); x++)
               {
                  if (txtMovieTitle.getText().charAt(x) == ' ')
                  {
                     //System.out.println("Space found at: " + x);
                     defaultRegEx += tempRegEx;
                     numRegEx += tempRegEx;
                  }
               }

               boolean movTitleCheck = ((Pattern.matches(defaultRegEx, txtMovieTitle.getText().trim()) ||
(Pattern.matches(numRegEx, txtMovieTitle.getText().trim()))));
               //System.out.println("Matched Pattern for Title: " + movTitleCheck);

               if ((taMovieDesc.getText().length() > 15))
               {
                  if (movTitleCheck)
                  {
                     //System.out.println("Matched Pattern: " + txtMovieTitle.getText().trim());
                     String temp = txtMovieTitle.getText().trim() + "|" +
                              taMovieDesc.getText().trim() + "|" +
                           cbxMovieGenre.getSelectedItem().toString().trim();

                     //System.out.println(temp);
                     boolean insertCheck = ACTION_INSERT(temp);

                     if (insertCheck)
                     {
                        //System.out.println(insertCheck);
                        ACTION_SET_CBX("Movie");

                        JOptionPane.showMessageDialog(null, "Added Movie \"" + txtMovieTitle.getText() + "\" !",
"Alert!", 1);

                        txtMovieTitle.setText(null);
                        taMovieDesc.setText(null);
                     }
                     else
                     {
                        JOptionPane.showMessageDialog(null, "Adding Movie \"" + txtMovieTitle.getText() + "\" was not
successful!\nPlease check that the Movie doesn't already exist and that the genre exists!", "Alert!", 2);

                        txtMovieTitle.setText(null);
                        taMovieDesc.setText(null);
                     }
                  }
```

```
                    else
                    {
                        JOptionPane.showMessageDialog(null, "Movie Title doesn't start with a capital letter! OR\neach
word in the movie title isn't capitalised!", "ALERT!", 2);
                    }
                }
                else
                {
                    JOptionPane.showMessageDialog(null, "Description is not greater than 15 characters!", "ALERT!", 2);
                }
            }
        });

    btnAddGen.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {

                String temp = txtGenre.getText().trim();

                boolean genreCheck = Pattern.matches("[A-Z][a-z]+", temp);

                //System.out.println(temp);
                if (genreCheck)
                {
                    boolean insertCheck = ACTION_INSERT(temp);

                    if (insertCheck)
                    {
                        //System.out.println(insertCheck);

                        JOptionPane.showMessageDialog(null, "Added Genre \"" + txtGenre.getText() + "\" !", "Alert!", 1);

                        txtGenre.setText(null);

                        ACTION_SET_CBX("Genre");
                    }
                    else
                    {
                        JOptionPane.showMessageDialog(null, "Adding Genre \"" + txtGenre.getText() + "\" was\nnot
successful!", "Alert!", 2);

                        txtGenre.setText(null);
                    }
                }
                else
                {
                    JOptionPane.showMessageDialog(null, "Please Check that the Genre Name is capitalised\nand that
there are no spaces!", "Alert!", 2);
                }
            }
        });

    btnDeleteMov.addActionListener(new java.awt.event.ActionListener() {
            @Override
            public void actionPerformed(java.awt.event.ActionEvent evt)
            {
```

```
                cbxMovieList.getSelectedItem();

                if (ACTION_DELETE(cbxMovieList.getSelectedItem().toString()))
                {
                  JOptionPane.showMessageDialog(null, "Movie: \"" + cbxMovieList.getSelectedItem().toString() + "\"
\nwas deleted!","ALERT!", 2);

                  ACTION_SET_CBX("Movie");
                }
                else
                {
                  JOptionPane.showMessageDialog(null, "Unable to DELETE Movie: \n\"" +
cbxMovieList.getSelectedItem().toString() + "\"!","ALERT!", 2);
                }

              }
            });

      AdminMainWindow.addWindowListener(new java.awt.event.WindowAdapter(){
          @Override
          public void windowClosing(java.awt.event.WindowEvent windowEvent)
          {
            ACTION_CLOSE(AdminMainWindow);
          }
        });
    }
//---------------------------------------------------------------------------
    /**
     * This method accepts a JFrame as a parameter and based on what the user chose
     * from the JOptionPane.showOptionDialog, it will either minimize,
     * or exit the program.
     * @param frame
     */
    public static void ACTION_CLOSE(JFrame frame)
    {
      String[] closingOptions = {"Minimize", "Exit", "Cancel"};
      int response = JOptionPane.showOptionDialog(null,
          "Are you sure you want to exit?", "Exit?", 0,
            JOptionPane.WARNING_MESSAGE, null, closingOptions, closingOptions[1]);

      if (response == 0)
      {
        frame.setState(frame.ICONIFIED);
      }
      else if (response == 1)
      {
        System.exit(0);
      }

    }
//---------------------------------------------------------------------------
    /**
     * This method returns an ArrayList of String[] with the movies which were
     * selected from the parameters passed. It accepts the query of what the user
     * is trying to find from the database, populates the ArrayList with String[]
     * of the movie information that matches the query and then returns the ArrayList.
     * @param query
```

```
    * @param topic
    * @return ArrayList of String[] containing Movie Information.
    */
   public static ArrayList<String[]> ACTION_SELECT_QUERY(String query, String topic)
   {
      ArrayList<String[]> MovieList = new ArrayList<>();
      String queryString;

      try
      {
         String data = "jdbc:odbc:VideoStoreDb";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         if (topic.equals("Movie"))
         {
           queryString = "SELECT movie_name, movie_description, genre_name FROM Movie, Genre WHERE
Movie.genre_id = Genre.genre_id AND movie_name LIKE '%" + query + "%';";
         }
         else
         {
            queryString = "SELECT movie_name, movie_description, genre_name FROM Movie, Genre WHERE
Genre.genre_id = Movie.genre_id AND genre_name LIKE '%" + query + "%';";
         }
         ResultSet rec = st.executeQuery(queryString);

         while (rec.next())
         {
            //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
            String[] tempArr = new String[3];
            tempArr[0] = rec.getString(1); tempArr[1] = rec.getString(2); tempArr[2] = rec.getString(3);
            MovieList.add(tempArr);
         }

         st.close();

         return MovieList;
      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }

      return null;
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts a single string parameter, to determine whether
    * the user is searching for a movie or a specific genre. It then will call
```

```
    * the ACTION_SELECT_QUERY() method, and assigns the returned value to an
    * ArrayList, it then uses that ArrayList to populate the JTable and update
    * the JTable to show the result of the query, which the user entered.
    *IF there are no results the method shows a JOptionPane.showMessageDialog,
    * to the user to display that there are no movies, or genres matching the query.
    * @param topic
    */
   public static void ACTION_SEARCH(String topic)
   {
      String userQuery = txtSearch.getText().trim();
      //System.out.println("get string");
      ArrayList<String[]> MovieList = ACTION_SELECT_QUERY(userQuery, topic);

      if (MovieList.size() > 0)
      {
      //System.out.println("arraylist create");
      int rowCount = MovieList.size();
      //System.out.println("int create");
      String[][] MovieItems = new String[rowCount][3];
      //System.out.println("2d Array Create");
      for (int i = 0; i < MovieList.size(); i++)
      {
         String[] movieInfoArr = MovieList.get(i);
         for (int j = 0; j < movieInfoArr.length; j++)
         {
            MovieItems[i][j] = movieInfoArr[j];
            //System.out.println(movieInfoArr[j]);
         }
      }

      //System.out.println("after for loops");
      dtResults =  new JTable(MovieItems, tableCols);
      //System.out.println("after jtable");
      spResults.getViewport().add(dtResults);
      spResults.setViewportView(dtResults);
      }
      else
      {
         dtResults =  new JTable();
         spResults.getViewport().add(dtResults);
         spResults.setViewportView(dtResults);

         if (topic.equals("Movie"))
         {
            JOptionPane.showMessageDialog(null, "No Movie Results found for : \"" + txtSearch.getText() +
"\"","ALERT!", 2);
         }
         else
         {
            JOptionPane.showMessageDialog(null, "No Genre Results found for : \"" + txtSearch.getText() +
"\"","ALERT!", 2);
         }
      }
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts two parameters, the user's username and password from
```

```
   * the username and password textboxes on the LoginWindow, and checks these
   * values against the database and compares if the information given is correct.
   *
   * If the information is correct, it will return true.
   * @param username
   * @param password
   * @return true if matches the username and password given, otherwise false.
   */
  public static boolean ACTION_LOGINCHECK(String username, String password)
  {

     try
      {
         String[] tempArr = new String[2];
         String data = "jdbc:odbc:VideoStoreDb";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         ResultSet rec = st.executeQuery("SELECT user_name, user_password FROM User_Accounts");

         while (rec.next())
         {
            //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
            tempArr[0] = rec.getString(1); tempArr[1] = rec.getString(2);

         }

         //System.out.println(tempArr[0] + "|" + tempArr[1]);

         st.close();

         if (tempArr[0].equals(username))
         {
            return tempArr[1].equals(password);
         }

      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }
      return false;
  }
//---------------------------------------------------------------------------
   /**
   * This method accepts a single String parameter to determine what JCombobox to
   * populate, if 'Movie' is passed, it populates the Movie JComobobox and if
   * 'Genre' is passed, it populates the Genre JComboboxes.
   * @param topic
```

```
 */
public static void ACTION_SET_CBX(String topic)
{
   ArrayList<String> List = new ArrayList<>();
   String queryString;

   try
   {
      if (topic.equals("Movie"))
      {
          cbxMovieList.removeAllItems();
          queryString = "SELECT movie_name,movie_description FROM Movie";
      }
      else
      {
         cbxGenreList.removeAllItems();
         cbxMovieGenre.removeAllItems();
         queryString = "SELECT genre_name FROM Genre";
      }

       String data = "jdbc:odbc:VideoStoreDb";

       Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

       Connection conn = DriverManager.getConnection(data, "", "");

       Statement st = conn.createStatement();

       ResultSet rec = st.executeQuery(queryString);


       while (rec.next())
       {
          //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
          if (topic.equals("Movie"))
          {
             List.add(rec.getString(1) + " - " + rec.getString(2).substring(0, 10) + "...");
          }
          else
          {
             List.add(rec.getString(1));
          }
       }

       st.close();

       if (List.size() > 0)
       {
          if (topic.equals("Movie"))
          {
             for (String movie : List)
             {
                cbxMovieList.addItem(movie);
                cbxMovieList.setEnabled(true);
                btnDeleteMov.setEnabled(true);
             }
          }
```

```
            else
            {
               for (String genre : List)
               {
                  cbxGenreList.addItem(genre);
                  cbxMovieGenre.addItem(genre);
                  cbxGenreList.setEnabled(true);
                  cbxMovieGenre.setEnabled(true);
               }
            }
         }

      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts a single parameter to determine which table in the database
    * it must insert into, if 'Movie' is passed, it inserts into the Movie Table,
    * and if 'Genre' is passed, it inserts into the Genre Table.
    * @param topicInfo
    * @return true if insert is successful, otherwise false;
    */
   public static boolean ACTION_INSERT(String topicInfo)
   {
      int rowsAdded;
      String genre;
      String queryString;

      try
      {
         //System.out.println(topicInfo);

         if (topicInfo.contains("|"))
         {
            //System.out.println("Before split");
            String[] movie = topicInfo.split("\\|");
            //System.out.println("After split: " + movie[0] + "|" + movie[1] + "|" + movie[2]);
            if (!CheckMovie(movie[0] + "|" + movie[1]))
            {
               //System.out.println("CheckGenre: True");
               String tempGenre = getGenreID(movie[2]);

               //System.out.println("Method got ID");
               //System.out.println(tempGenre);
               //System.out.println(movie[0] + "|" + movie[1] + "|" + tempGenre);
               queryString = "INSERT INTO Movie(movie_name, movie_description, genre_id) VALUES('" + movie[0] + "', '"
+ movie[1] + "', '" + tempGenre + "')";
            }
            else
```

```
            {
               return false;
            }
         }
         else
         {
            genre = topicInfo;

            if (!CheckGenre(genre))
            {
               //System.out.println("GenreCheck was False");
               queryString = "INSERT INTO Genre(genre_name) VALUES( '" + genre + "')";
            }
            else
            {
               return false;
            }
         }

         String data = "jdbc:odbc:VideoStoreDb";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         rowsAdded = st.executeUpdate(queryString);
         //System.out.println("After SQL INSERT");

         st.close();

         return true;
      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }


      return false;
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts a single String parameter which contains the movie information,
    * allowing that specified movie to be deleted, and removed from the Database
    * To ensure that the correct movie is deleted, it calls the getMovieInfo() method
    * before deleting, to ensure that it is, in fact, the correct movie it should delete.
    * @param MovieInfo
    * @return true if delete was successful, otherwise false.
    */
   public static boolean ACTION_DELETE(String MovieInfo)
    {
```

```
      int rowsAdded;
      String queryString;

      try
      {
         //System.out.println(MovieInfo);
         String tempMovieInfo = getMovieInfo(MovieInfo);

         if (tempMovieInfo.contains("|"))
         {
            //System.out.println("Before split");
            String[] movie = tempMovieInfo.split("\\|");
            //System.out.println("After split: " + movie[0] + "|" + movie[1] + "|" + movie[2]);

            queryString = "DELETE FROM Movie WHERE movie_name = '" + movie[0] + "' AND movie_description = '" +
movie[1] + "';";

         }
         else
         {
            return false;
         }

         String data = "jdbc:odbc:VideoStoreDb";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         rowsAdded = st.executeUpdate(queryString);
         //System.out.println("After SQL DELETE");

         st.close();

         return true;
      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }

      return false;
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts a single String parameter, which contains movie information
    * it then finds the movie specified and returns the Movie Name and Full Description.
    * @param Movie
    * @return Movie information in a single String.
    */
   public static String getMovieInfo(String Movie)
```

```
  {
     String[] temp = Movie.split(" - ");
     //System.out.println(temp[0] + "|" + temp[1]);
     ArrayList<String> tempResults = new ArrayList<>();
     try
     {
        String data = "jdbc:odbc:VideoStoreDb";

        Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

        Connection conn = DriverManager.getConnection(data, "", "");

        Statement st = conn.createStatement();

        ResultSet rec = st.executeQuery("SELECT movie_name,movie_description FROM Movie WHERE movie_name =
'" + temp[0] + "' AND movie_description LIKE '" + temp[1].substring(0, temp[1].length()-3) + "%';");

        if (rec.next())
        {
           //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
           tempResults.add(rec.getString(1) + "|" + rec.getString(2));

        }

        st.close();

        //System.out.println("ArrSize: " + tempResults.size());
        if (tempResults.size() == 1)
           return tempResults.get(0);

        return null;

     }
     catch (SQLException E)
     {
        System.out.println(E);
     }
     catch(Exception X)
     {
        System.out.println(X);
     }

     return null;
  }
//---------------------------------------------------------------------------
  /**
   * This method accepts a single String parameter, which contains the movie information,
   * it uses this information to check in the database that no other information for this movie
   * exists, if so it returns true. Otherwise false;
   * @param movieInfo
   * @return true if movie exists, otherwise false.
   */
  public static boolean CheckMovie(String movieInfo)
  {
     String movieCompare = "";

     try
```

```
      {
         String[] tempMovieInfo = movieInfo.split("\\|");

         String data = "jdbc:odbc:VideoStoreDb";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         ResultSet rec = st.executeQuery("SELECT movie_name, movie_description FROM Movie WHERE movie_name =
'" + tempMovieInfo[0] + "' AND movie_description = '" + tempMovieInfo[1] + "';");

         while (rec.next())
         {
            //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
            movieCompare = rec.getString(1) + "|" + rec.getString(2);

         }

         st.close();

         //System.out.println(movieInfo.toUpperCase());
         //System.out.println(movieCompare.toUpperCase());

         return movieInfo.toUpperCase().equals(movieCompare.toUpperCase());

      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }

      return false;
   }
//---------------------------------------------------------------------------
   /**
    * This method accepts a single String parameter, and returns a string parameter.
    * This method is used to get the GenreID for that specified Genre.
    * @param genre
    * @return Genre ID
    */
   public static String getGenreID(String genre)
   {
      try
      {
         String data = "jdbc:odbc:VideoStoreDb";

         String genreID = "";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
```

```
        Connection conn = DriverManager.getConnection(data, "", "");

        Statement st = conn.createStatement();

        ResultSet rec = st.executeQuery("SELECT genre_id FROM Genre WHERE genre_name = '" + genre + "';");

        while (rec.next())
        {
           //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
           genreID = rec.getString(1);

        }

        st.close();

        //System.out.println(genreID);

        return genreID;

      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }

     return null;
  }
//---------------------------------------------------------------------------
  /**
   * This method accepts a single String parameter, which is the Genre Name, it then
   * uses this to check if it exists within the database, and if it does returns false.
   * @param genre
   * @return true if genre already exists.
   */
  public static boolean CheckGenre(String genre)
  {
     try
      {
         String data = "jdbc:odbc:VideoStoreDb";

         String tempGenre = "";

         Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");

         Connection conn = DriverManager.getConnection(data, "", "");

         Statement st = conn.createStatement();

         ResultSet rec = st.executeQuery("SELECT genre_name FROM Genre WHERE genre_name = '" + genre + "';");

         while (rec.next())
         {
            //System.out.println(rec.getString(1) + "\t" + rec.getString(2) + "\t" + rec.getString(3));
```

```
            tempGenre = rec.getString(1);

         }

         st.close();

         System.out.println(tempGenre + "|" + genre);

         return genre.toUpperCase().equals(tempGenre.toUpperCase());

      }
      catch (SQLException E)
      {
         System.out.println(E);
      }
      catch(Exception X)
      {
         System.out.println(X);
      }

      return false;
   }
//---------------------------------------------------------------------------
   /**
    * This method displays a JOptionPane.showMessageDialog, detailing who created the program
    * as well as when it was created.
    */
   public static void ACTION_ABOUT()
   {
      JOptionPane.showMessageDialog(null, "Author: Donovan van Heerden\nEL2014-0043\nDate Created: 20-01-
2014", "About", 1);
   }
//---------------------------------------------------------------------------
   /**
    * This method displays a JOptionPane.showMessageDialog, detailing how a user may search
    * for a movie with a specified name or movies with similar names, otherwise movies with
    * certain genres.
    */
   public static void BROWSE_HELP()
   {
      JOptionPane.showMessageDialog(null, "Searching Database:\n----------------------------------------------------------------------
------------------------------\n" +
            "Users may enter anything into the search textbox provided, " +
            "the program\nwill then search the database to partially match what was typed into the\nsearch textbox and
show the results below.\n\n" +
            "If the movie or genre specified cannot be found a message will appear.", "Browse Help", 1);
   }
//---------------------------------------------------------------------------
   /**
    * This method displays a JOptionPane.showMessageDialog, detailing how an Administrator, may
    * add a new Movie, Genre.
    */
   public static void ADMIN_HELP()
   {
      JOptionPane.showMessageDialog(null, "Movie Section:\n----------------------------------------------------------------\n" +
            "1. Movie Title must start with a capital letter.\n" +
            "2. If the Movie Title starts with a number, and has a space following the number, the next word must be
```

```
capitalised.\n" +
        "3. If the Movie Title has mutliple spaces and words, each word in the title must be capitalised.\n" +
        "4. The Movie Description must be 15 characters in length or longer.\n\n" +
        "Examples: 9, The Hobbit, 28 Days Later, Super 8\n\n" +
        "Genre Section:\n----------------------------------------------------------------------\n" +
        "1. The Genre Name must start with a capital letter.\n" +
        "2. No spaces are allowed for the Genre Name.\n\n" +
        "Examples: Comedy, Romance, Family", "Admin Help", 1);
  }
}
```

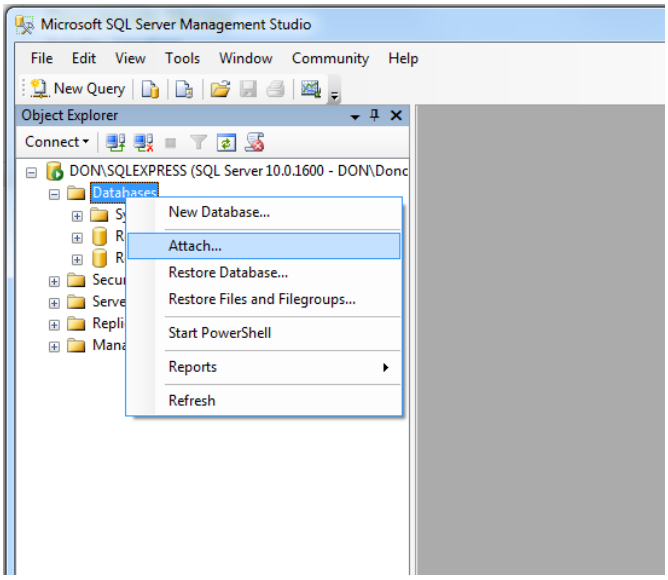
User Documentation:

Author: Donovan van Heerden
Student No: EL2014-0043
Date: 20/01/2014
Lecturer: Jason Smith
Campus: CTI East London

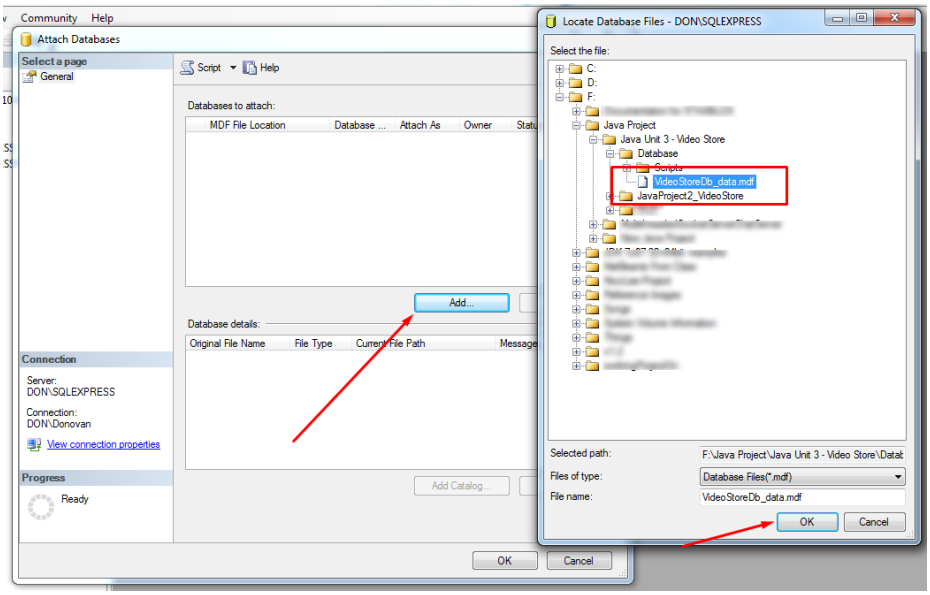
The purpose of this project is to create a java application for users to browse a video/movie database, and for an administrator to add videos/movies or remove videos/movies, as well as add new genres. In other words, the administrator is able to manage the database from the "backend" of the java application by means of a login system.

How to add the Database to MS SQL Server 2008:

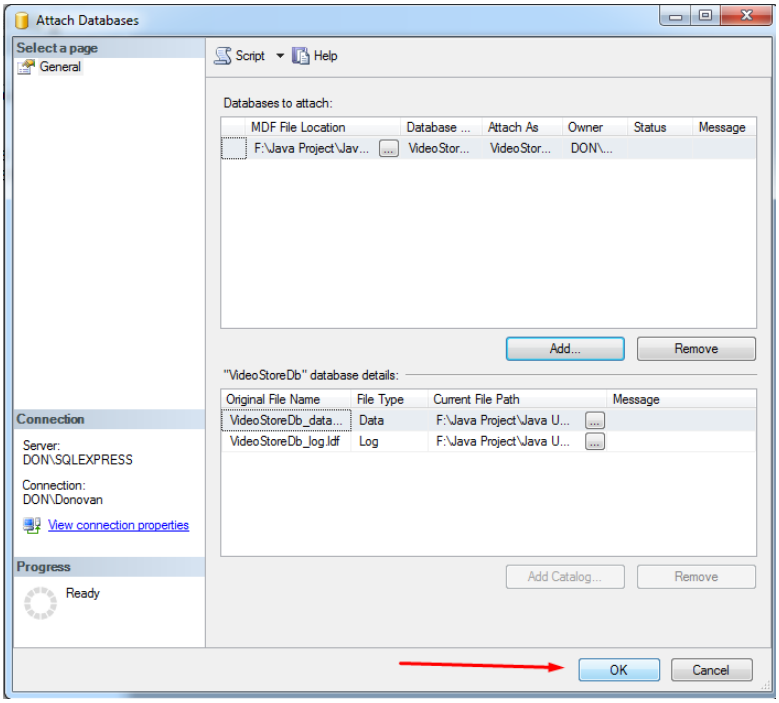
- Open Microsoft SQL Server 2008
- Right click on the Database folder and select **Attach…**



- A new window should appear, click on **Add…** Another new window should appear, now locate the database **.mdf** file and select it, followed by clicking the **OK** button.



- The previous window should now have some information in it, similar to the image below, now select **OK.**



- You should now see the database has been added to the Databases Folder in MS SQL Server.

How to setup the MS SQL Server 2008 Database:

Go to **Start > Control Panel > Administrative Tools > ODBC Data Source**.

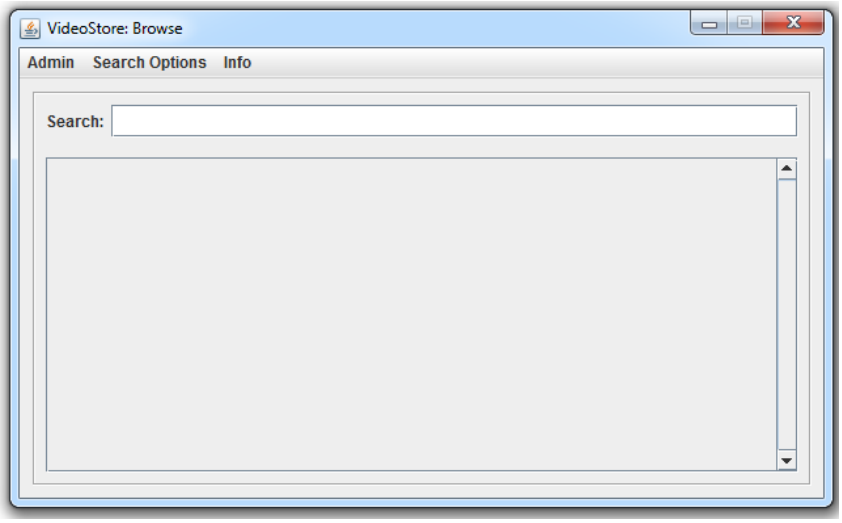
• Select the **System DSN** tab at the top.
• Click the **Add** button to the right.
• In the list box, select **SQL Server Native Client 10.0** and then click **Finish**.
• Enter **"VideoStoreDb"** in the **Name** field, **"Video Store Database"** in the **Description** field, and select the name of your **SQL Server** from the combo box.(See image below for example of where to find this information.) Click the **Next** button.

• Make sure the **With Windows NT authentication……**, and the **Connect to SQL Server ….** items are selected. Click the **Next** button.
• Make sure the **Change the default database to……** box has a tick in it, and select **"VideoStoreDb"** form the drop-down list. Leave the rest of the checkboxes as they are. Click **Next**.
• Click **Finish**.
• A new frame will be displayed showing the chosen settings. Click the **Test Data Source** button to see if you have set it up correctly. It should say 'Test Completed successfully'. If not, go through the setup again.
• Click **OK**.
• You should see the name of your database in the **System DSN** tab.

Application Images & Guidelines:

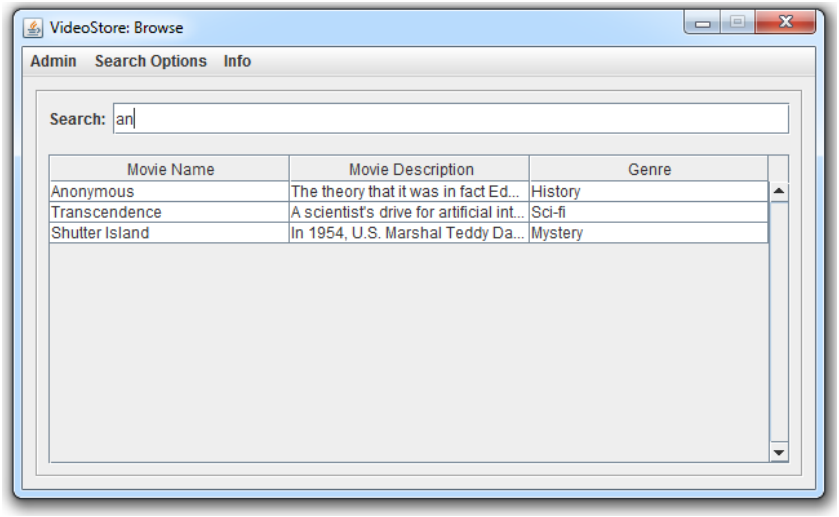
Browsing the VideoStore Application.

Below is the first window you will see when running the application.

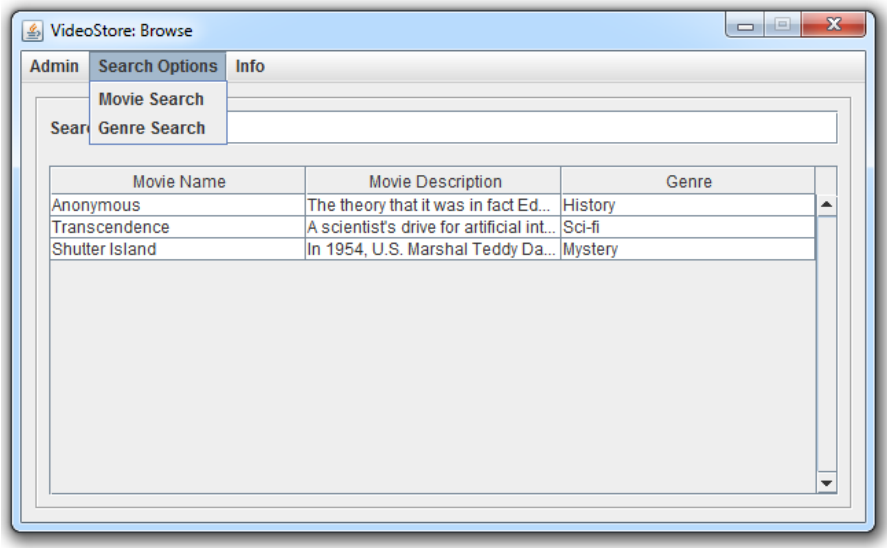


VideoStore – Browse Window

A user can type in the **Search textbox** provided, and select from the **Search Options** on the Menubar, **Movie Search** or **Genre Search**, to search according to how they so desire.

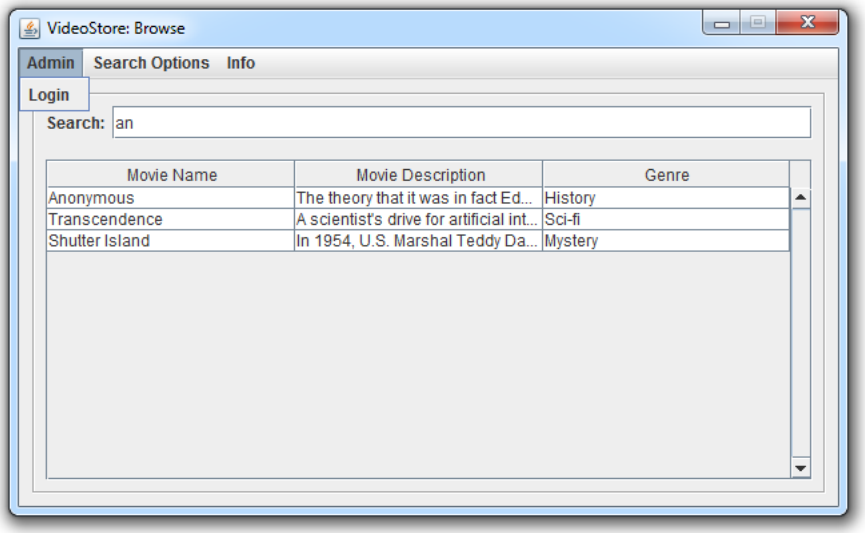


VideoStore – Browse Window: Searching "an"

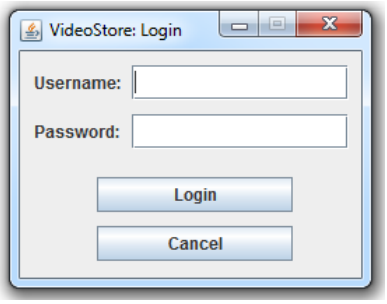


VideoStore – Browse Window: Search Options

The **Admin Menu** contains the button called **Admin**, this will take the user to the **Login Window**, allowing the Administrator to access the **Administrator Window**.

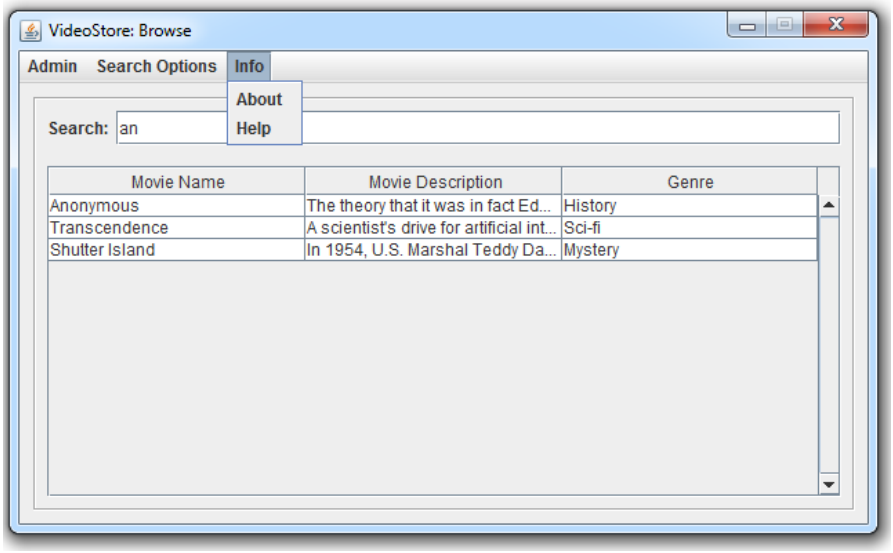


VideoStore – Browse Window: Admin Option

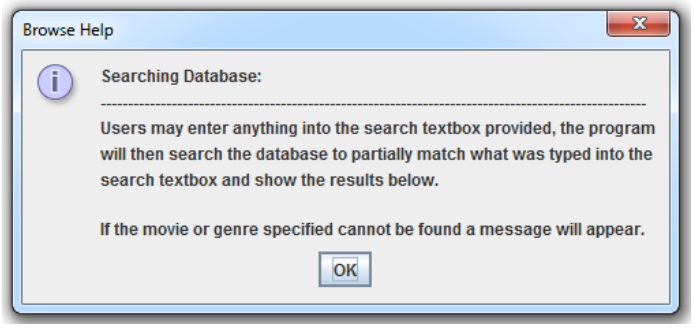


VideoStore – Login Window

The **Info Menu** contains two buttons, the **About** button and Help button.



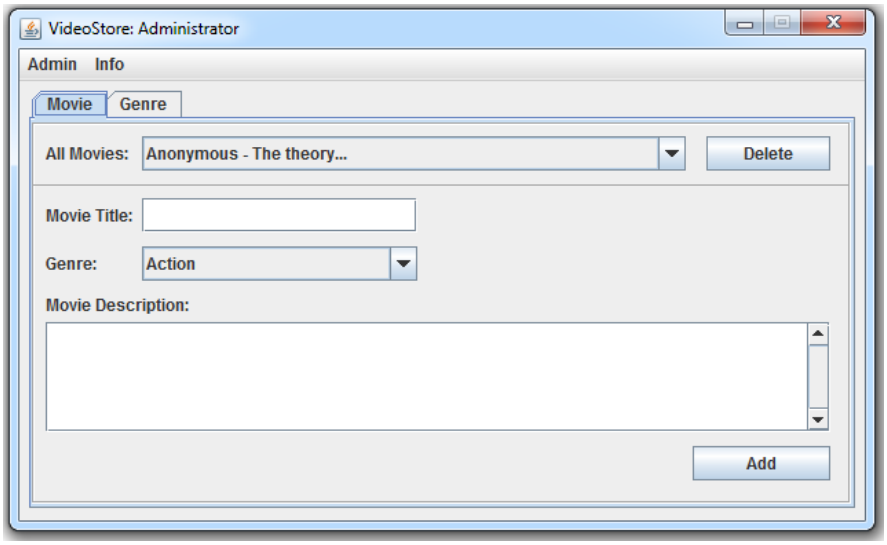
VideoStore – Browse Window: Info Options



VideoStore – Browse Help

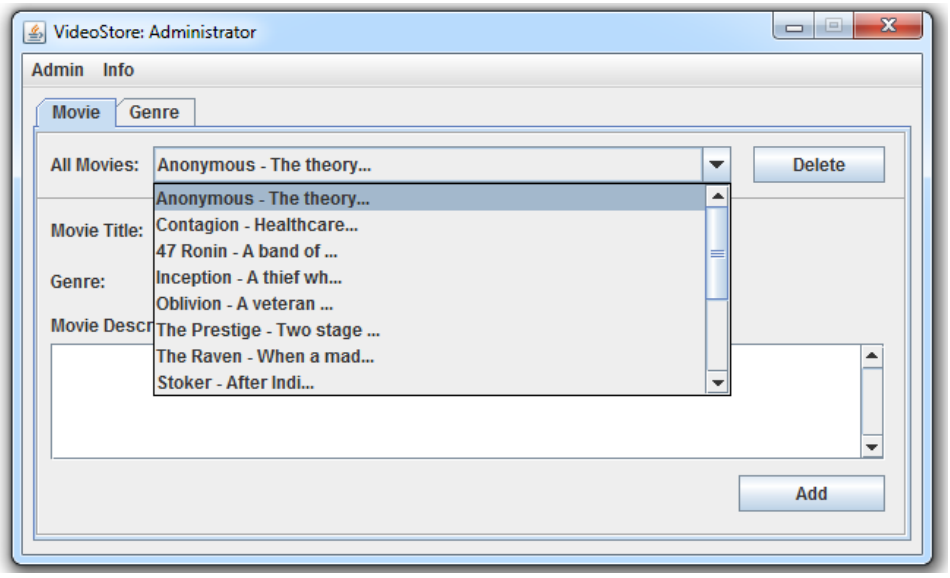
VideoStore – About

The Administrator Window appears once the user/administrator has logged in successfully.

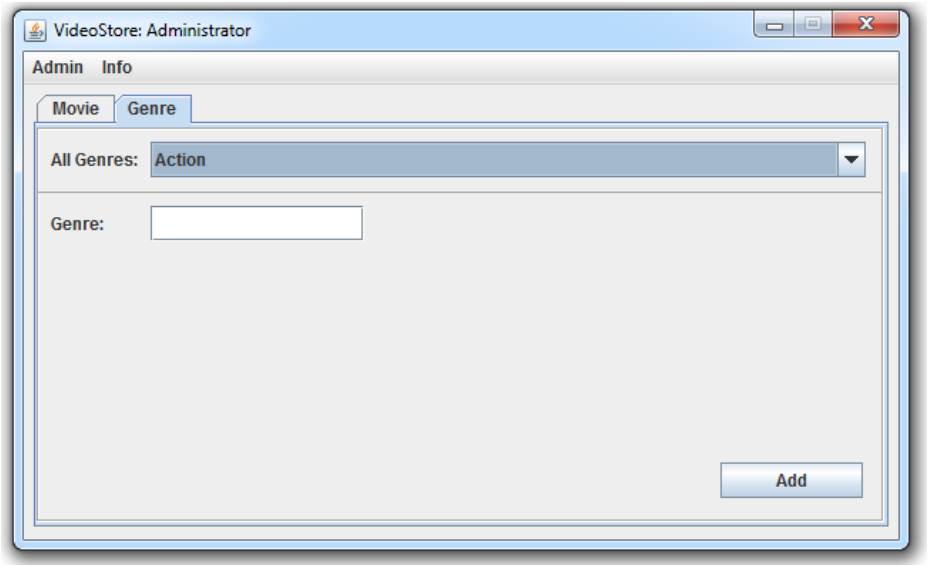


VideoStore – Administrator Window: Movie Tab

From here, the Administrator can add new movies to the database, remove movies from the database and add new genre's allowing new movies of those genres to be added.

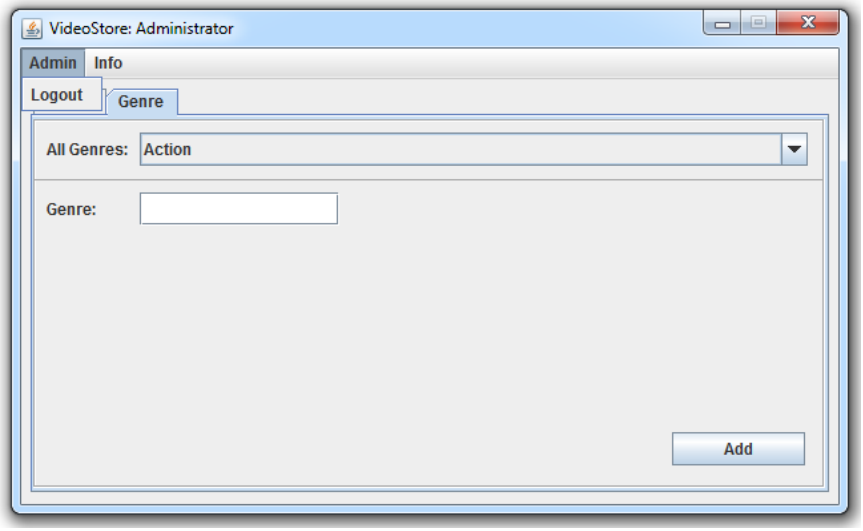


VideoStore – Administrator Window: Movies List

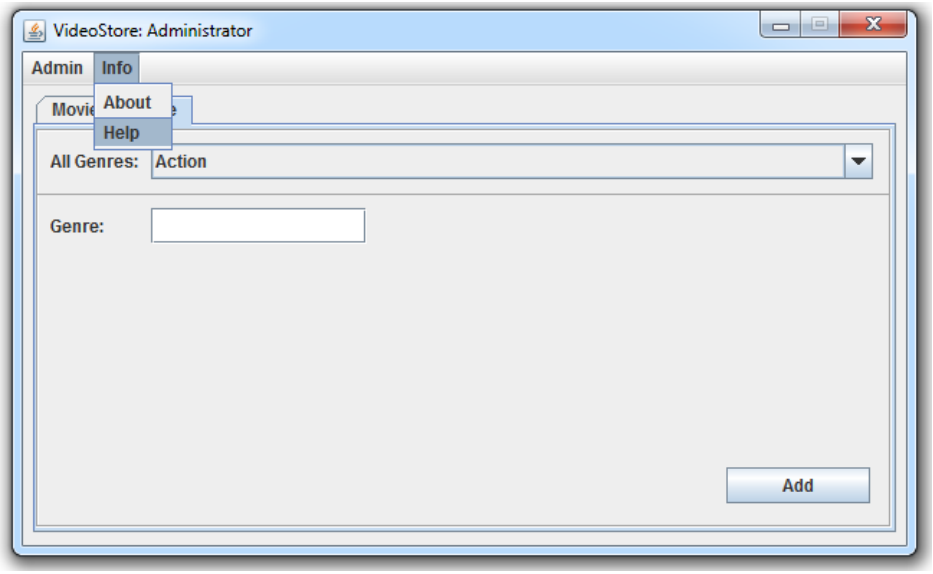


VideoStore – Administrator Window: Genre Tab

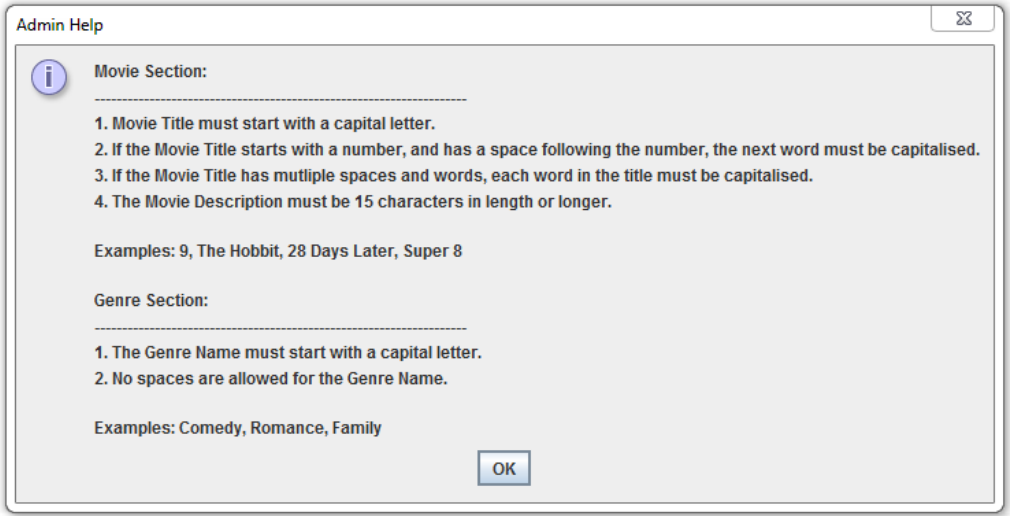
The **Admin Option** in the Menu contains a Logout button and the **Info** Options, contains the **About** button, which displays the same as before, and a **Help** button which displays a Help message for Administrators attempting to add new movies/genres.



VideoStore – Administrator Window: Admin Option

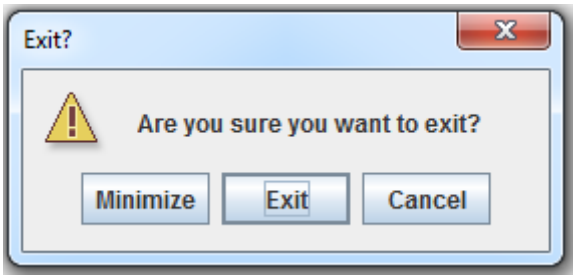


VideoStore – Administrator Window: Info Option



VideoStore – Admin Help

Upon trying to exit any window by means of pressing the **"X"** the user will get prompted with a message asking if they would like to **Minimize**, **Exit** or **Cancel**.



VideoStore – Exit Prompt