

UNIVERSIDAD DE GUAYAQUIL
FACULTAD DE INGENIERÍA INDUSTRIAL
CARRERA DE SISTEMAS EN INFORMACIÓN

MATERIA:
PROGRAMACIÓN EN AMBIENTES GRÁFICOS

CURSO:
SIN – S – MA – 3 – 1

NOMBRE Y APELLIDO:
SAMANIEGO LAGO JOSÉ JEREMY

DOCENTE:
Ing. CÉSAR ALCÍVAR

TAREA CONDUCTORES EN TABLEVIEW

TERCER SEMESTRE

CÓDIGO

```
package InterfazGrafica;

import javax.swing.*;
import javax.swing.table.DefaultTableCellRenderer;
import javax.swing.table.DefaultTableModel;
import java.awt.*;
import java.sql.*;
import java.util.Vector;

public class InterfazGrafica {
    private Connection conn;
    private JFrame frame;
    private JComboBox<String> comboBox;
    private JTable table;
    private DefaultTableModel tableModel;

    public InterfazGrafica() {
        // Establecer conexión a la base de datos PostgreSQL
        connectDB();

        // Crear la interfaz gráfica
        createGUI();
    }

    private void connectDB() {
        try {
            String url =
"jdbc:postgresql://localhost:5432/Formulal";
            String user = "postgres";
            String password = "password";
            conn = DriverManager.getConnection(url, user,
password);
            System.out.println("Conexión establecida con
PostgreSQL.");
        } catch (SQLException e) {
            e.printStackTrace();
        }
    }

    private void createGUI() {
        frame = new JFrame("Tabla de Drivers por Año de
Carrera");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setSize(950, 450);

        // Combo box para seleccionar el año de carrera
        comboBox = new JComboBox<>();
        populateComboBox();
        comboBox.addActionListener(e -> {
            // Cuando se seleccione un año, actualizar la tabla
de corredores
            updateTable();
        });
    }
}
```

```

// Tabla para mostrar los datos de corredores y carreras
tableModel = new DefaultTableModel();
table = new JTable(tableModel);
JScrollPane scrollPane = new JScrollPane(table);

// Centrar el contenido de las celdas
DefaultTableCellRenderer centerRenderer = new
DefaultTableCellRenderer();
centerRenderer.setHorizontalAlignment(JLabel.CENTER);
table.setDefaultRenderer(Object.class, centerRenderer);

frame.getContentPane().add(comboBox,
BorderLayout.NORTH);
frame.getContentPane().add(scrollPane,
BorderLayout.CENTER);

frame.setVisible(true);
}

private void populateComboBox() {
    try {
        Statement stmt = conn.createStatement();
        ResultSet rs = stmt.executeQuery("SELECT DISTINCT
year FROM races ORDER BY year DESC");
        while (rs.next()) {
            comboBox.addItem(rs.getString("year"));
        }
        rs.close();
        stmt.close();
    } catch (SQLException e) {
        e.printStackTrace();
    }
}

private void updateTable() {
    try {
        String selectedYear = (String)
comboBox.getSelectedItem();
        if (selectedYear != null) {
            // Consulta para obtener los corredores que
participaron en las carreras del año seleccionado
            String query = "SELECT DISTINCT ON (d.driver_id)
d.driver_id, d.forename, d.surname, d.dob, d.nationality, " +
"(SELECT COUNT(*) FROM driver_standings
ds INNER JOIN races r ON ds.race_id = r.race_id " +
"WHERE ds.driver_id = d.driver_id AND
r.year = ? AND ds.position = 1) AS carreras_ganadas, " +
"(SELECT COUNT(*) FROM driver_standings
ds INNER JOIN races r ON ds.race_id = r.race_id " +
"WHERE ds.driver_id = d.driver_id AND
r.year = ?) AS num_races " +
"FROM drivers d " +
"JOIN driver_standings ds ON d.driver_id
= ds.driver_id " +

```

```

        "JOIN races r ON ds.race_id = r.race_id
" +
        "WHERE r.year = ? " +
        "ORDER BY d.driver_id, r.date";

        PreparedStatement pstmt =
conn.prepareStatement(query);
        pstmt.setInt(1, Integer.parseInt(selectedYear));
        pstmt.setInt(2, Integer.parseInt(selectedYear));
        pstmt.setInt(3, Integer.parseInt(selectedYear));
        ResultSet rs = pstmt.executeQuery();

        // Obtener columnas
        Vector<String> columnNames = new Vector<>();
        columnNames.add("Driver ID");
        columnNames.add("Nombre");
        columnNames.add("Apellido");
        columnNames.add("Fecha Nacimiento");
        columnNames.add("Nacionalidad");
        columnNames.add("Numero Carreras");
        columnNames.add("Carreras Ganadas");

        // Obtener filas
        Vector<Vector<Object>> data = new Vector<>();
        while (rs.next()) {
            Vector<Object> row = new Vector<>();
            row.add(rs.getInt("driver_id"));
            row.add(rs.getString("forename"));
            row.add(rs.getString("surname"));
            row.add(rs.getDate("dob"));
            row.add(rs.getString("nationality"));
            row.add(rs.getInt("num_races"));
            row.add(rs.getInt("carreras_ganadas"));
            data.add(row);
        }

        // Actualizar modelo de la tabla
        tableModel.setDataVector(data, columnNames);

        // Centrar el contenido de las celdas
        DefaultTableCellRenderer centerRenderer = new
DefaultTableCellRenderer();

        centerRenderer.setHorizontalAlignment(JLabel.CENTER);
        table.setDefaultRenderer(Object.class,
centerRenderer);

        rs.close();
        pstmt.close();
    }
} catch (SQLException e) {
    e.printStackTrace();
}
}

public static void main(String[] args) {

```

```

        SwingUtilities.invokeLater(InterfazGrafica::new);
    }
}

```

EJECUCIÓN

| Tabla de Drivers por Año de Carrera | | | | | | |
|-------------------------------------|-----------|------------|------------------|--------------|-----------------|------------------|
| 2016 | | | | | | |
| Driver ID | Nombre | Apellido | Fecha Nacimiento | Nacionalidad | Numero Carreras | Carreras Ganadas |
| 1 | Lewis | Hamilton | 1985-01-07 | British | 21 | 4 |
| 3 | Nico | Rosberg | 1985-06-27 | German | 21 | 17 |
| 4 | Fernando | Alonso | 1981-07-29 | Spanish | 21 | 0 |
| 8 | Kimi | Räikkönen | 1979-10-17 | Finnish | 21 | 0 |
| 13 | Felipe | Massa | 1981-04-25 | Brazilian | 21 | 0 |
| 18 | Jenson | Button | 1980-01-19 | British | 21 | 0 |
| 20 | Sebastian | Vettel | 1987-07-03 | German | 21 | 0 |
| 154 | Romain | Grosjean | 1986-04-17 | French | 21 | 0 |
| 807 | Nico | Hülkenberg | 1987-08-19 | German | 21 | 0 |
| 815 | Sergio | Pérez | 1990-01-26 | Mexican | 21 | 0 |
| 817 | Daniel | Ricciardo | 1989-07-01 | Australian | 21 | 0 |
| 821 | Esteban | Gutiérrez | 1991-08-05 | Mexican | 21 | 0 |
| 822 | Valtteri | Bottas | 1989-08-28 | Finnish | 21 | 0 |
| 825 | Kevin | Magnussen | 1992-10-05 | Danish | 21 | 0 |
| 826 | Daniil | Kvyat | 1994-04-26 | Russian | 21 | 0 |
| 828 | Marcus | Ericsson | 1990-09-02 | Swedish | 21 | 0 |
| 829 | Max | Verstappen | 1997-09-30 | Dutch | 21 | 0 |

| Tabla de Drivers por Año de Carrera | | | | | | |
|-------------------------------------|-----------|------------|------------|------------|----|----|
| 2013 | | | | | | |
| 2019 | | | | | | |
| 2018 | | | | | | |
| 2017 | | | | | | |
| 2016 | | | | | | |
| 2015 | | | | | | |
| 2014 | | | | | | |
| 2013 | | | | | | |
| 2012 | | | | | | |
| 18 | Jenson | Button | 1980-01-19 | British | 19 | 0 |
| 20 | Sebastian | Vettel | 1987-07-03 | German | 19 | 18 |
| 154 | Romain | Grosjean | 1986-04-17 | French | 19 | 0 |
| 807 | Nico | Hülkenberg | 1987-08-19 | German | 19 | 0 |
| 813 | Pastor | Maldonado | 1985-03-09 | Venezuelan | 19 | 0 |
| 814 | Paul | di Resta | 1986-04-16 | British | 19 | 0 |
| 815 | Sergio | Pérez | 1990-01-26 | Mexican | 19 | 0 |
| 817 | Daniel | Ricciardo | 1989-07-01 | Australian | 19 | 0 |
| 818 | Jean-Éric | Vergne | 1990-04-25 | French | 19 | 0 |
| 819 | Charles | Pic | 1990-02-15 | French | 19 | 0 |
| 820 | Max | Chilton | 1991-04-21 | British | 19 | 0 |