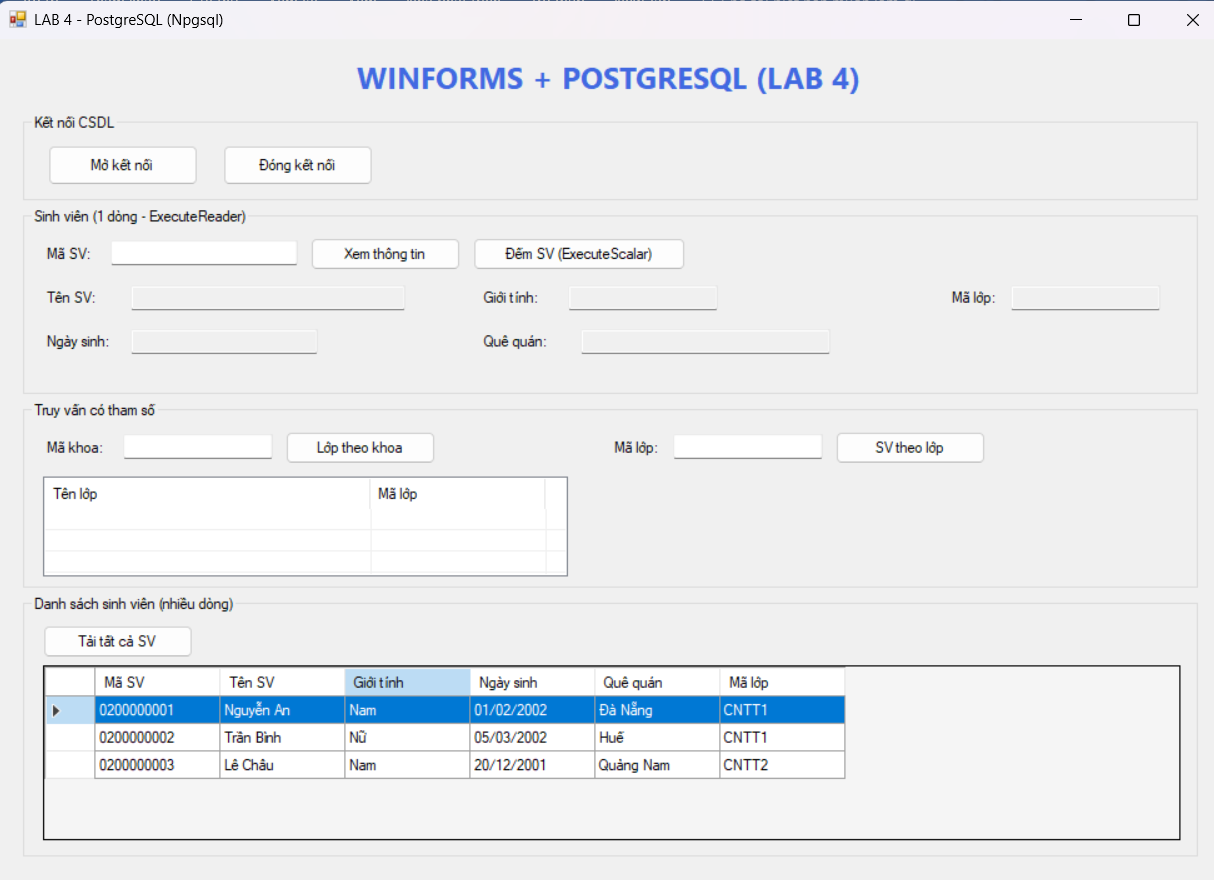
**LAB 4**

Tên: Hà Chí Hân

Lớp: 11\_DH\_CNPM1

MSSV: 1150080014



* Form1.cs

using System;

using System.Data;

using System.Globalization;

using System.IO;

using System.Windows.Forms;

using Npgsql;

namespace ChiHan\_1150080014\_BTTuan6\_Lab4

{

public partial class Form1 : Form

{

private readonly string connString =

"Host=localhost;Port=5432;Database=PPPTPMHDT\_Lab4;Username=postgres;Password=Chihan0403@";

private NpgsqlConnection pgCon;

public Form1()

{

InitializeComponent();

}

private void btnOpenConn\_Click(object sender, EventArgs e)

{

try

{

if (pgCon == null) pgCon = new NpgsqlConnection(connString);

if (pgCon.State == ConnectionState.Closed) pgCon.Open();

MessageBox.Show("Kết nối PostgreSQL thành công!");

}

catch (Exception ex) { MessageBox.Show(ex.ToString(), "Lỗi", MessageBoxButtons.OK, MessageBoxIcon.Error); }

}

private void btnCloseConn\_Click(object sender, EventArgs e)

{

try

{

if (pgCon != null && pgCon.State != ConnectionState.Closed)

{

pgCon.Close();

MessageBox.Show("Đã đóng kết nối.");

}

}

catch (Exception ex) { MessageBox.Show(ex.ToString()); }

}

private void btnCountSV\_Click(object sender, EventArgs e)

{

EnsureOpen();

using (var cmd = new NpgsqlCommand("SELECT COUNT(\*) FROM sinhvien;", pgCon))

{

long count = (long)cmd.ExecuteScalar();

MessageBox.Show($"Số lượng sinh viên: {count}");

}

}

private void btnGetOne\_Click(object sender, EventArgs e)

{

EnsureOpen();

string maSV = txtMaSV.Text.Trim();

if (string.IsNullOrEmpty(maSV))

{

MessageBox.Show("Nhập Mã SV trước.");

txtMaSV.Focus();

return;

}

using (var cmd = new NpgsqlCommand(

@"SELECT masv, tensv, gioitinh, ngaysinh, quequan, malop

FROM sinhvien WHERE masv = @masv;", pgCon))

{

cmd.Parameters.AddWithValue("@masv", maSV);

using (var reader = cmd.ExecuteReader())

{

if (reader.Read())

{

txtTenSV.Text = reader.IsDBNull(1) ? "" : reader.GetString(1);

txtGioiTinh.Text = reader.IsDBNull(2) ? "" : reader.GetString(2);

txtNgaySinh.Text = reader.IsDBNull(3) ? "" : reader.GetDateTime(3).ToString("dd/MM/yyyy", CultureInfo.InvariantCulture);

txtQueQuan.Text = reader.IsDBNull(4) ? "" : reader.GetString(4);

txtMaLop.Text = reader.IsDBNull(5) ? "" : reader.GetString(5);

}

else

{

MessageBox.Show("Không tìm thấy sinh viên.");

}

}

}

}

private void btnLoadAll\_Click(object sender, EventArgs e)

{

EnsureOpen();

using (var da = new NpgsqlDataAdapter(

@"SELECT masv AS ""Mã SV"",

tensv AS ""Tên SV"",

gioitinh AS ""Giới tính"",

ngaysinh AS ""Ngày sinh"",

quequan AS ""Quê quán"",

malop AS ""Mã lớp""

FROM sinhvien

ORDER BY masv;", pgCon))

{

var dt = new DataTable();

da.Fill(dt);

dgv.DataSource = dt;

if (dgv.Columns.Contains("Ngày sinh"))

dgv.Columns["Ngày sinh"].DefaultCellStyle.Format = "dd/MM/yyyy";

}

}

private void btnLopTheoKhoa\_Click(object sender, EventArgs e)

{

EnsureOpen();

string maKhoa = txtMaKhoa.Text.Trim();

lvLop.Items.Clear();

using (var cmd = new NpgsqlCommand(

@"SELECT tenlop, malop FROM lop WHERE makhoa = @makhoa ORDER BY tenlop;", pgCon))

{

cmd.Parameters.AddWithValue("@makhoa", maKhoa);

using (var reader = cmd.ExecuteReader())

{

while (reader.Read())

{

var lvi = new ListViewItem(reader.GetString(0));

lvi.SubItems.Add(reader.GetString(1));

lvLop.Items.Add(lvi);

}

}

}

}

private void btnSVTheoLop\_Click(object sender, EventArgs e)

{

EnsureOpen();

string maLop = txtMaLopFilter.Text.Trim();

using (var da = new NpgsqlDataAdapter(

@"SELECT masv AS ""Mã SV"",

tensv AS ""Tên SV"",

gioitinh AS ""Giới tính"",

ngaysinh AS ""Ngày sinh"",

quequan AS ""Quê quán"",

malop AS ""Mã lớp""

FROM sinhvien

WHERE malop = @malop

ORDER BY tensv;", pgCon))

{

da.SelectCommand.Parameters.AddWithValue("@malop", maLop);

var dt = new DataTable();

da.Fill(dt);

dgv.DataSource = dt;

if (dgv.Columns.Contains("Ngày sinh"))

dgv.Columns["Ngày sinh"].DefaultCellStyle.Format = "dd/MM/yyyy";

}

}

private void EnsureOpen()

{

if (pgCon == null) pgCon = new NpgsqlConnection(connString);

if (pgCon.State == ConnectionState.Closed) pgCon.Open();

}

}

}

* Form1.Designer.cs

namespace ChiHan\_1150080014\_BTTuan6\_Lab4

{

partial class Form1

{

private System.ComponentModel.IContainer components = null;

private System.Windows.Forms.Label lblTitle;

private System.Windows.Forms.GroupBox grpConn;

private System.Windows.Forms.Button btnOpenConn;

private System.Windows.Forms.Button btnCloseConn;

private System.Windows.Forms.GroupBox grpOne;

private System.Windows.Forms.Label lblMaSV;

private System.Windows.Forms.TextBox txtMaSV;

private System.Windows.Forms.Button btnGetOne;

private System.Windows.Forms.Button btnCountSV;

private System.Windows.Forms.Label lblTenSV;

private System.Windows.Forms.TextBox txtTenSV;

private System.Windows.Forms.Label lblGioiTinh;

private System.Windows.Forms.TextBox txtGioiTinh;

private System.Windows.Forms.Label lblNgaySinh;

private System.Windows.Forms.TextBox txtNgaySinh;

private System.Windows.Forms.Label lblQueQuan;

private System.Windows.Forms.TextBox txtQueQuan;

private System.Windows.Forms.Label lblMaLop;

private System.Windows.Forms.TextBox txtMaLop;

private System.Windows.Forms.GroupBox grpParam;

private System.Windows.Forms.Label lblMaKhoa;

private System.Windows.Forms.TextBox txtMaKhoa;

private System.Windows.Forms.Button btnLopTheoKhoa;

private System.Windows.Forms.ListView lvLop;

private System.Windows.Forms.ColumnHeader colTenLop;

private System.Windows.Forms.ColumnHeader colMaLop2;

private System.Windows.Forms.Label lblMaLopFilter;

private System.Windows.Forms.TextBox txtMaLopFilter;

private System.Windows.Forms.Button btnSVTheoLop;

private System.Windows.Forms.GroupBox grpList;

private System.Windows.Forms.Button btnLoadAll;

private System.Windows.Forms.DataGridView dgv;

protected override void Dispose(bool disposing)

{

if (disposing && (components != null)) components.Dispose();

base.Dispose(disposing);

}

#region Windows Form Designer generated code

private void InitializeComponent()

{

this.components = new System.ComponentModel.Container();

this.lblTitle = new System.Windows.Forms.Label();

this.grpConn = new System.Windows.Forms.GroupBox();

this.btnOpenConn = new System.Windows.Forms.Button();

this.btnCloseConn = new System.Windows.Forms.Button();

this.grpOne = new System.Windows.Forms.GroupBox();

this.lblMaSV = new System.Windows.Forms.Label();

this.txtMaSV = new System.Windows.Forms.TextBox();

this.btnGetOne = new System.Windows.Forms.Button();

this.btnCountSV = new System.Windows.Forms.Button();

this.lblTenSV = new System.Windows.Forms.Label();

this.txtTenSV = new System.Windows.Forms.TextBox();

this.lblGioiTinh = new System.Windows.Forms.Label();

this.txtGioiTinh = new System.Windows.Forms.TextBox();

this.lblNgaySinh = new System.Windows.Forms.Label();

this.txtNgaySinh = new System.Windows.Forms.TextBox();

this.lblQueQuan = new System.Windows.Forms.Label();

this.txtQueQuan = new System.Windows.Forms.TextBox();

this.lblMaLop = new System.Windows.Forms.Label();

this.txtMaLop = new System.Windows.Forms.TextBox();

this.grpParam = new System.Windows.Forms.GroupBox();

this.lblMaKhoa = new System.Windows.Forms.Label();

this.txtMaKhoa = new System.Windows.Forms.TextBox();

this.btnLopTheoKhoa = new System.Windows.Forms.Button();

this.lvLop = new System.Windows.Forms.ListView();

this.colTenLop = new System.Windows.Forms.ColumnHeader();

this.colMaLop2 = new System.Windows.Forms.ColumnHeader();

this.lblMaLopFilter = new System.Windows.Forms.Label();

this.txtMaLopFilter = new System.Windows.Forms.TextBox();

this.btnSVTheoLop = new System.Windows.Forms.Button();

this.grpList = new System.Windows.Forms.GroupBox();

this.btnLoadAll = new System.Windows.Forms.Button();

this.dgv = new System.Windows.Forms.DataGridView();

((System.ComponentModel.ISupportInitialize)(this.dgv)).BeginInit();

this.SuspendLayout();

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(980, 680);

this.StartPosition = System.Windows.Forms.FormStartPosition.CenterScreen;

this.Text = "LAB 4 - PostgreSQL (Npgsql)";

this.lblTitle.Text = "WINFORMS + POSTGRESQL (LAB 4)";

this.lblTitle.Font = new System.Drawing.Font("Segoe UI", 18F, System.Drawing.FontStyle.Bold);

this.lblTitle.ForeColor = System.Drawing.Color.RoyalBlue;

this.lblTitle.AutoSize = false;

this.lblTitle.TextAlign = System.Drawing.ContentAlignment.MiddleCenter;

this.lblTitle.Location = new System.Drawing.Point(10, 10);

this.lblTitle.Size = new System.Drawing.Size(960, 40);

this.Controls.Add(this.lblTitle);

this.grpConn.Text = "Kết nối CSDL";

this.grpConn.Location = new System.Drawing.Point(20, 60);

this.grpConn.Size = new System.Drawing.Size(940, 70);

this.Controls.Add(this.grpConn);

this.btnOpenConn.Text = "Mở kết nối";

this.btnOpenConn.Location = new System.Drawing.Point(20, 25);

this.btnOpenConn.Size = new System.Drawing.Size(120, 32);

this.btnOpenConn.Click += new System.EventHandler(this.btnOpenConn\_Click);

this.grpConn.Controls.Add(this.btnOpenConn);

this.btnCloseConn.Text = "Đóng kết nối";

this.btnCloseConn.Location = new System.Drawing.Point(160, 25);

this.btnCloseConn.Size = new System.Drawing.Size(120, 32);

this.btnCloseConn.Click += new System.EventHandler(this.btnCloseConn\_Click);

this.grpConn.Controls.Add(this.btnCloseConn);

this.grpOne.Text = "Sinh viên (1 dòng - ExecuteReader)";

this.grpOne.Location = new System.Drawing.Point(20, 135);

this.grpOne.Size = new System.Drawing.Size(940, 150);

this.Controls.Add(this.grpOne);

this.lblMaSV.Text = "Mã SV:";

this.lblMaSV.Location = new System.Drawing.Point(16, 30);

this.lblMaSV.AutoSize = true;

this.grpOne.Controls.Add(this.lblMaSV);

this.txtMaSV.Location = new System.Drawing.Point(70, 26);

this.txtMaSV.Size = new System.Drawing.Size(150, 22);

this.grpOne.Controls.Add(this.txtMaSV);

this.btnGetOne.Text = "Xem thông tin";

this.btnGetOne.Location = new System.Drawing.Point(230, 24);

this.btnGetOne.Size = new System.Drawing.Size(120, 26);

this.btnGetOne.Click += new System.EventHandler(this.btnGetOne\_Click);

this.grpOne.Controls.Add(this.btnGetOne);

this.btnCountSV.Text = "Đếm SV (ExecuteScalar)";

this.btnCountSV.Location = new System.Drawing.Point(360, 24);

this.btnCountSV.Size = new System.Drawing.Size(170, 26);

this.btnCountSV.Click += new System.EventHandler(this.btnCountSV\_Click);

this.grpOne.Controls.Add(this.btnCountSV);

this.lblTenSV.Text = "Tên SV:";

this.lblTenSV.Location = new System.Drawing.Point(16, 65);

this.lblTenSV.AutoSize = true;

this.grpOne.Controls.Add(this.lblTenSV);

this.txtTenSV.Location = new System.Drawing.Point(86, 62);

this.txtTenSV.Size = new System.Drawing.Size(220, 22);

this.txtTenSV.ReadOnly = true;

this.grpOne.Controls.Add(this.txtTenSV);

this.lblGioiTinh.Text = "Giới tính:";

this.lblGioiTinh.Location = new System.Drawing.Point(366, 65);

this.lblGioiTinh.AutoSize = true;

this.grpOne.Controls.Add(this.lblGioiTinh);

this.txtGioiTinh.Location = new System.Drawing.Point(436, 62);

this.txtGioiTinh.Size = new System.Drawing.Size(120, 22);

this.txtGioiTinh.ReadOnly = true;

this.grpOne.Controls.Add(this.txtGioiTinh);

this.lblNgaySinh.Text = "Ngày sinh:";

this.lblNgaySinh.Location = new System.Drawing.Point(16, 100);

this.lblNgaySinh.AutoSize = true;

this.grpOne.Controls.Add(this.lblNgaySinh);

this.txtNgaySinh.Location = new System.Drawing.Point(86, 97);

this.txtNgaySinh.Size = new System.Drawing.Size(150, 22);

this.txtNgaySinh.ReadOnly = true;

this.grpOne.Controls.Add(this.txtNgaySinh);

this.lblQueQuan.Text = "Quê quán:";

this.lblQueQuan.Location = new System.Drawing.Point(366, 100);

this.lblQueQuan.AutoSize = true;

this.grpOne.Controls.Add(this.lblQueQuan);

this.txtQueQuan.Location = new System.Drawing.Point(446, 97);

this.txtQueQuan.Size = new System.Drawing.Size(200, 22);

this.txtQueQuan.ReadOnly = true;

this.grpOne.Controls.Add(this.txtQueQuan);

this.lblMaLop.Text = "Mã lớp:";

this.lblMaLop.Location = new System.Drawing.Point(740, 65);

this.lblMaLop.AutoSize = true;

this.grpOne.Controls.Add(this.lblMaLop);

this.txtMaLop.Location = new System.Drawing.Point(790, 62);

this.txtMaLop.Size = new System.Drawing.Size(120, 22);

this.txtMaLop.ReadOnly = true;

this.grpOne.Controls.Add(this.txtMaLop);

this.grpParam.Text = "Truy vấn có tham số";

this.grpParam.Location = new System.Drawing.Point(20, 290);

this.grpParam.Size = new System.Drawing.Size(940, 150);

this.Controls.Add(this.grpParam);

this.lblMaKhoa.Text = "Mã khoa:";

this.lblMaKhoa.Location = new System.Drawing.Point(16, 30);

this.lblMaKhoa.AutoSize = true;

this.grpParam.Controls.Add(this.lblMaKhoa);

this.txtMaKhoa.Location = new System.Drawing.Point(80, 26);

this.txtMaKhoa.Size = new System.Drawing.Size(120, 22);

this.grpParam.Controls.Add(this.txtMaKhoa);

this.btnLopTheoKhoa.Text = "Lớp theo khoa";

this.btnLopTheoKhoa.Location = new System.Drawing.Point(210, 24);

this.btnLopTheoKhoa.Size = new System.Drawing.Size(120, 26);

this.btnLopTheoKhoa.Click += new System.EventHandler(this.btnLopTheoKhoa\_Click);

this.grpParam.Controls.Add(this.btnLopTheoKhoa);

this.lvLop.Location = new System.Drawing.Point(16, 60);

this.lvLop.Size = new System.Drawing.Size(420, 80);

this.lvLop.View = System.Windows.Forms.View.Details;

this.lvLop.FullRowSelect = true;

this.lvLop.GridLines = true;

this.colTenLop.Text = "Tên lớp"; this.colTenLop.Width = 260;

this.colMaLop2.Text = "Mã lớp"; this.colMaLop2.Width = 140;

this.lvLop.Columns.AddRange(new System.Windows.Forms.ColumnHeader[] { this.colTenLop, this.colMaLop2 });

this.grpParam.Controls.Add(this.lvLop);

this.lblMaLopFilter.Text = "Mã lớp:";

this.lblMaLopFilter.Location = new System.Drawing.Point(470, 30);

this.lblMaLopFilter.AutoSize = true;

this.grpParam.Controls.Add(this.lblMaLopFilter);

this.txtMaLopFilter.Location = new System.Drawing.Point(520, 26);

this.txtMaLopFilter.Size = new System.Drawing.Size(120, 22);

this.grpParam.Controls.Add(this.txtMaLopFilter);

this.btnSVTheoLop.Text = "SV theo lớp";

this.btnSVTheoLop.Location = new System.Drawing.Point(650, 24);

this.btnSVTheoLop.Size = new System.Drawing.Size(120, 26);

this.btnSVTheoLop.Click += new System.EventHandler(this.btnSVTheoLop\_Click);

this.grpParam.Controls.Add(this.btnSVTheoLop);

this.grpList.Text = "Danh sách sinh viên (nhiều dòng)";

this.grpList.Location = new System.Drawing.Point(20, 445);

this.grpList.Size = new System.Drawing.Size(940, 210);

this.Controls.Add(this.grpList);

this.btnLoadAll.Text = "Tải tất cả SV";

this.btnLoadAll.Location = new System.Drawing.Point(16, 24);

this.btnLoadAll.Size = new System.Drawing.Size(120, 26);

this.btnLoadAll.Click += new System.EventHandler(this.btnLoadAll\_Click);

this.grpList.Controls.Add(this.btnLoadAll);

this.dgv.Location = new System.Drawing.Point(16, 56);

this.dgv.Size = new System.Drawing.Size(910, 140);

this.dgv.AllowUserToAddRows = false;

this.dgv.SelectionMode = System.Windows.Forms.DataGridViewSelectionMode.FullRowSelect;

this.dgv.BackgroundColor = System.Drawing.Color.WhiteSmoke;

this.dgv.BorderStyle = System.Windows.Forms.BorderStyle.FixedSingle;

this.grpList.Controls.Add(this.dgv);

((System.ComponentModel.ISupportInitialize)(this.dgv)).EndInit();

this.ResumeLayout(false);

}

#endregion

}

}

* Query PostgreSQL

DROP TABLE IF EXISTS sinhvien;

DROP TABLE IF EXISTS lop;

DROP TABLE IF EXISTS khoa;

CREATE TABLE khoa (

makhoa VARCHAR(10) PRIMARY KEY,

tenkhoa TEXT NOT NULL

);

CREATE TABLE lop (

malop VARCHAR(10) PRIMARY KEY,

tenlop TEXT NOT NULL,

makhoa VARCHAR(10) NOT NULL REFERENCES khoa(makhoa)

);

CREATE TABLE sinhvien (

masv VARCHAR(20) PRIMARY KEY,

tensv TEXT NOT NULL,

gioitinh TEXT,

ngaysinh DATE,

quequan TEXT,

malop VARCHAR(10) REFERENCES lop(malop)

);

INSERT INTO khoa(makhoa, tenkhoa) VALUES

('CNTT','Công nghệ thông tin'),

('CK', 'Cơ khí'),

('DT', 'Điện tử'),

('KT', 'Kinh tế');

INSERT INTO lop(malop, tenlop, makhoa) VALUES

('CNTT1','CNTT 1','CNTT'),

('CNTT2','CNTT 2','CNTT'),

('CK1', 'Cơ khí 1','CK');

INSERT INTO sinhvien(masv,tensv,gioitinh,ngaysinh,quequan,malop) VALUES

('0200000001','Nguyễn An','Nam','2002-02-01','Đà Nẵng','CNTT1'),

('0200000002','Trần Bình','Nữ','2002-03-05','Huế','CNTT1'),

('0200000003','Lê Châu','Nam','2001-12-20','Quảng Nam','CNTT2');