МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ, МОЛОДЕЖИ И СПОРТА УКРАИНЫ

ХАРЬКОВСКИЙ НАЦИОНАЛЬНЫЙ УНИВЕРСИТЕТ РАДИОЭЛЕКТРОНИКИ

Кафедра ИИ

Отчёт

Дисциплина: «Программирование под платформу .NET»

Тема: «ADO.NET»

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ЛАБОРАТОРНАЯ РАБОТА №1

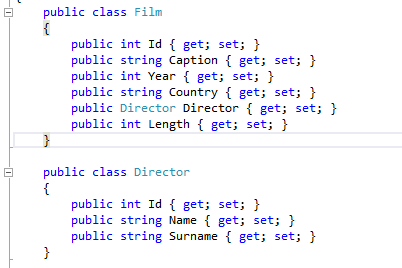
НАЗВАНИЕ РАБОТЫ: Использование технологии ADO.NET для организации доступа к базам данных из .NET-приложений.

ЦЕЛЬ РАБОТЫ: Изучение особенностей использования технологии ADO.NET для организации доступа к базам данных из .NET-приложений в режиме постоянного соединения либо в отсоединенном режиме.

ЗАДАНИЕ: Кинопоиск (FilmSearch)

РЕАЛИЗАЦИЯ:

Доменная модель:



Уровень доступа к БД:

public class ConnectionServise

{

private OleDbConnection \_connection;

public OleDbConnection Connection

{

get { return \_connection; }

}

public void OpenConnection()

{

\_connection = new OleDbConnection(@"Provider=Microsoft.Jet.OLEDB.4.0;Data Source=film\_search.mdb;");

\_connection.Open();

}

public void CloseConnection()

{

\_connection.Close();

}

}

public class FilmDao

{

private ConnectionServise connectionService = new ConnectionServise();

DirectorDao directorDao = new DirectorDao();

public void InsertFilm(Film film)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("INSERT INTO film" +

" VALUES('{0}','{1}','{2}','{3}','{4}','{5}')",

film.Id, film.Caption, film.Year, film.Country, film.Director.Id, film.Length);

if (directorDao.GetDirector(film.Director.Id) == null)

{

directorDao.InsertDirector(film.Director);

}

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public void updateFilm(Film film)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("UPDATE film" +

" SET caption='{1}', year='{2}', country='{3}', director='{4}', length='{5}'" +

" WHERE id={0}",

film.Id, film.Caption, film.Year, film.Country, film.Director.Id, film.Length);

if (directorDao.GetDirector(film.Director.Id) == null)

{

directorDao.InsertDirector(film.Director);

}

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public void DeleteFilm(int id)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("DELETE FROM film WHERE id={0}", id);

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public List<Film> GetFilms()

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

const string sql = "SELECT \* FROM film";

var command = new OleDbCommand(sql, connection);

List<Film> films = new List<Film>();

using (OleDbDataReader datareader = command.ExecuteReader())

{

while (datareader != null && datareader.Read())

{

Film film = parseDatareader(datareader);

films.Add(film);

}

}

connectionService.CloseConnection();

return films;

}

public Film GetFilm(int id)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = "SELECT \* FROM film WHERE id= " + id;

var command = new OleDbCommand(sql, connection);

Film film = null;

using (OleDbDataReader datareader = command.ExecuteReader())

{

if (datareader != null && datareader.Read())

{

film = parseDatareader(datareader);

}

}

connectionService.CloseConnection();

return film;

}

public Film parseDatareader(OleDbDataReader datareader)

{

Film film = new Film();

film.Id = datareader.GetInt32(0);

film.Caption = datareader.GetString(1);

film.Year = datareader.GetInt32(2);

film.Country = datareader.GetString(3);

film.Director = directorDao.GetDirector(datareader.GetInt32(4));

film.Length = datareader.GetInt32(5);

return film;

}

}

public class DirectorDao

{

private ConnectionServise connectionService = new ConnectionServise();

public void InsertDirector(Director director)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("INSERT INTO director" +

" VALUES('{0}','{1}','{2}')",

director.Id, director.Name, director.Surname);

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public void UpdateDirector(Director director)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("UPDATE director" +

" SET name='{1}', surname='{2}'" +

" WHERE id={0}",

director.Id, director.Name, director.Surname);

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public void DeleteDirector(int id)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("DELETE FROM director WHERE id={0}", id);

using (var cmd = new OleDbCommand(sql, connection))

{

cmd.ExecuteNonQuery();

}

connectionService.CloseConnection();

}

public Director GetDirector(int id)

{

connectionService.OpenConnection();

OleDbConnection connection = connectionService.Connection;

string sql = string.Format("SELECT \* FROM director WHERE id={0}", id);

var command = new OleDbCommand(sql, connection);

Director director = null;

using (OleDbDataReader datareader = command.ExecuteReader())

{

if (datareader != null && datareader.Read())

{

director = new Director();

director.Id = datareader.GetInt32(0);

director.Name = datareader.GetString(1);

director.Surname = datareader.GetString(2);

}

}

connectionService.CloseConnection();

return director;

}

}

Уровень клиента:

class Program

{

static void Main()

{

FilmDao dao = new FilmDao();

Film film = new Film();

Director director = new Director();

director.Id = 1;

director.Name = "Bennett";

director.Surname = "Miller";

film.Id = 2;

film.Caption = "Foxcatcher";

film.Country = "USA";

film.Year = 2014;

film.Director = director;

film.Length = 134;

dao.InsertFilm(film);

List<Film> films = dao.GetFilms();

foreach (Film f in films)

{

Console.WriteLine("id: {0}, caption: {1}, year: {2}, country: {3}, director: {4}, length: {5}",

f.Id,

f.Caption,

f.Country,

f.Year,

f.Director.Name + " " + f.Director.Surname,

f.Length);

}

dao.DeleteFilm(film.Id);

Console.ReadLine();

}

}

ВЫВОДЫ ПО РАБОТЕ: В процессе разработки приложения мы научились использовать ADO.NET для соединения и работы с базой данных (т.е. отправление простых запросов и получение ответов).