LINQPad

- http://www.linqpad.net/
- Scratchpad for C#, VB.NET, and F#
- Lightweight SQL tool
- Free, with optional upgrade for intellisense and other features

Objections to LINQPad

- I already know LINQ. **X**
- I don’t use LINQ. **X**
- I’m not familiar with LINQ. ✓
- I’m not familiar with LINQPad. ✓

LINQ

- Language-Integrated Query
- Query Functionality in C# and VB.NET
- Two Syntax Styles:
  - Query
  - Method

Query Syntax

```
from p in Products
where p.ListPrice > 10
orderby p.ListPrice
select p
```

Method Syntax

C#

```
Products.Where(p => p.ListPrice > 10)
        .OrderBy(p => p.ListPrice)
```

VB.NET

```
Products.Where(Function(p) p.ListPrice > 10) _
        .OrderBy(Function(p) p.ListPrice)
```

~~LINQ~~Pad: not just for LINQ!

- C# Scratchpad ✓
- VB.NET Scratchpad ✓
- SQL Scratchpad ✓
- F# Scratchpad

Scratchpad for C# and VB

- Expressions
- Statements
- Programs

Expression

- Single code snippet, not a full statement
- No constants, variables, methods, or enums
- No semicolon for C#
- Displays result on execution

Expression Examples

- Calculations
  - `Math.Pow(2, 3)`
- String formatting
  - `DateTime.Now.ToString("mmddyy")` ✗
  - `DateTime.Now.ToString("MMddyy")` ✓

Statement(s)

- Can use constants and variables
- No method, class, or enum declarations
- Use semicolons for C#
- Call .Dump() to display results

Dump Method

- Can call .Dump() on almost any object
- Examples:
  - `123.Dump();`
  - `"here".Dump();`
  - `new[] { 1, 1, 2, 3, 5 }.Dump();`

Statement(s) Example

```
int output;

string input = Console.ReadLine();

input.Dump();

Int32.TryParse(input, out output).Dump();

output.Dump();
```

Program Execution

- Can use methods, classes, and enumerations
- Call .Dump() to display results
- Examples:
  - enum parsing
  - https://github.com/kacollins/Doomsday

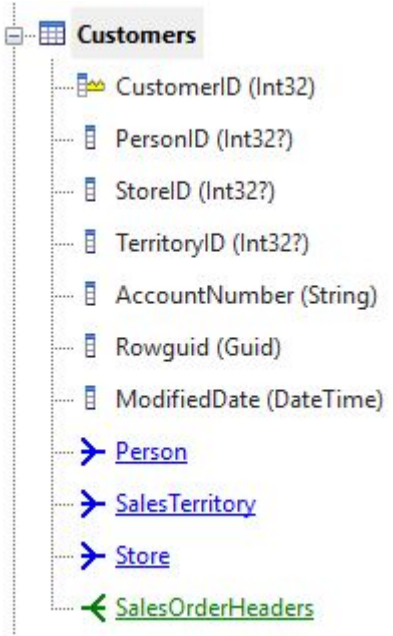
Lightweight SQL Tool

- Query data in LINQPad instead of
  SQL Server Management Studio

- Export data to Excel for quick reporting

Navigating Table Structure

- Primary keys and foreign keys **must** exist
- Parent tables are **blue links**
- Child tables are **green links**



Querying Data

- Click links to display **parent** and **child** records

IOrderedQueryable<Department> (1 item)

DepartmentID	Name	GroupName	ModifiedDate	EmployeeDepartmentHistories
1	Engineering	Research and Development	6/1/2002 12:00:00 AM	EmployeeDepartmentHistories

- View single object in vertical layout

Department

LINQPad.User.Department	
DepartmentID	1
Name	Engineering
GroupName	Research and Development
ModifiedDate	6/1/2002 12:00:00 AM
EmployeeDepartmentHistories	EmployeeDepartmentHistories

Benefits of LINQPad

- Quickly test changes to code
  - Instead of debugging in Visual Studio, loading application, navigating to page, etc.
- Get in the habit of writing short methods that each do one thing
  - **Great way to get started with unit tests!**

Drawbacks of LINQPad

- Have to copy and paste code back and forth between LINQPad and Visual Studio
- No intellisense without paying for upgrade

Get Started Using LINQPad

- Download latest version
  http://www.linqpad.net/Download.aspx
- Try some samples
- Connect to database and navigate table structure
- Start writing C# and VB.NET code in LINQPad!