Windows Programming

Chapter 4: Designing and Using Crystal Reports in Windows Applications

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Introduction

- Megabytes or gigabytes of raw data are neither meaningful nor useful to people. Instead, we need organized information, distilled and focused on answering specific questions.
- In businesses and enterprises of all kinds, organizing and presenting information has traditionally been the job of documents called **reports**. These documents generally consist of multiple pages that can include text, numbers, charts, maps, and illustrations.
- The best reports convey the facts needed to make the best decisions, unobscured by a clutter of data irrelevant to the task at hand

Introduction(cont..)

- Crystal Reports has been a leading report-writing application package for more than a decade — and is by far the most commonly used report writer in the world
- To create a report, you need to know a few things:
  - Which tables in the database contain the data you want
  - Which data items you want in those tables
  - What manipulations of the data must be performed to give you the information you want
  - How you want your report to be formatted
  - Whether the users of your report retrieve it from a black-and-white printer, a color printer, a local computer screen, or a Web site

Introduction(cont..)

- When you start Crystal Reports, generally you want to do one of three things: create a report, modify a report, or run a report against the data in your database.
- Reports take data from a database, process it, format it, and then output it to a printer, computer screen, or Web site.

Introduction(cont..)

- You've probably chosen Crystal Reports because you have a database that contains information that's important to you.
- In all likelihood, the data in that database changes with time, and you want to be able to keep up with its current status.
- You could retrieve the information you want by making SQL queries, but that would be too much like work.

Introduction(cont..)

- It’s far better to create a report with Crystal Reports, and then run the report whenever you want the latest status of the information of interest.
- You have to create the report only once, but you can run it many times, getting the latest results with each successive run.

Report Design Guidelines

- An effective report design depends on many factors:
  - The data that the report draws from the database
  - The way the database is structured
  - The level of detail that the users of the report require
  - The purpose of the report
  - The capabilities of the computer that displays or prints the report
  - What the users of the report really need (understanding this is critical)

Report Design Guidelines(cont..)

- While we are design a report we should consider the following points:
  - **Audience** of the report: Every report should have a definite audience. Here's a key question to ask as you begin to develop any report: "Who will be reading this report?" Another question to ask is, "What information does the audience need and in what form should it be delivered?" If they need several unrelated things, you may serve them better by creating several reports, each one focused on one specific purpose.

Report Design Guidelines(cont..)

- **Purpose** of the report: In addition to having a specific audience, the report should be restricted to one specific purpose — and accomplish that purpose by providing thorough, accurate, timely information to the target audience. This information, more often than not, is the basis for important decisions that the readers of the report will make.
- **Content** of the report: After you know who the report is for, and the kinds of decisions they want to base on the information in the report, it's time to decide exactly what information should be in the report. Leaving out distracting, irrelevant material is just as important as including material of interest.

Interfacing a Report to DB

- Suppose your clients have told you what they want the report to deliver —and the raw material for that information exists in the database the report will draw from. Your job as the report designer is to make the connection to the database so the needed data can flow into your report, where it will be massaged, formatted, combined, graphed, or otherwise processed to produce a finished report.
- The first step in that process is connecting your report to the database that will be supplying it with data. Crystal Reports has built-in interfaces that connect to a wide variety of data sources

Interfacing a Report to DB(cont..)

- The connection is mediated by a database driver program, of which there are several varieties:
- **Direct database driver**: This type of program is specifically designed and optimized to connect to a specific DBMS, such as Microsoft SQL Server, Oracle, or IBM's DB2. Crystal Reports includes direct database drivers for the most popular DBMS products, including these.
- In addition, Crystal Reports includes drivers for data sources that are not relational databases, such as Excel spreadsheets, Outlook folders, and Lotus Notes databases.

Interfacing a Report to DB(cont..)

- **ODBC** (Open Database Connectivity): This is a second type of database connection. Unlike a dedicated direct database driver, a report can connect via ODBC to a wide variety of data sources, many more than those that are available via direct database driver. In fact, you can connect to the Access xtreme.mdb database via ODBC as well as by the direct route.
- Crystal Reports' support of ODBC means that you should be able to create a report based on the data in any data source that is ODBC-compliant, and ODBC compliance is practically universal today.

Interfacing a Report to DB(cont..)

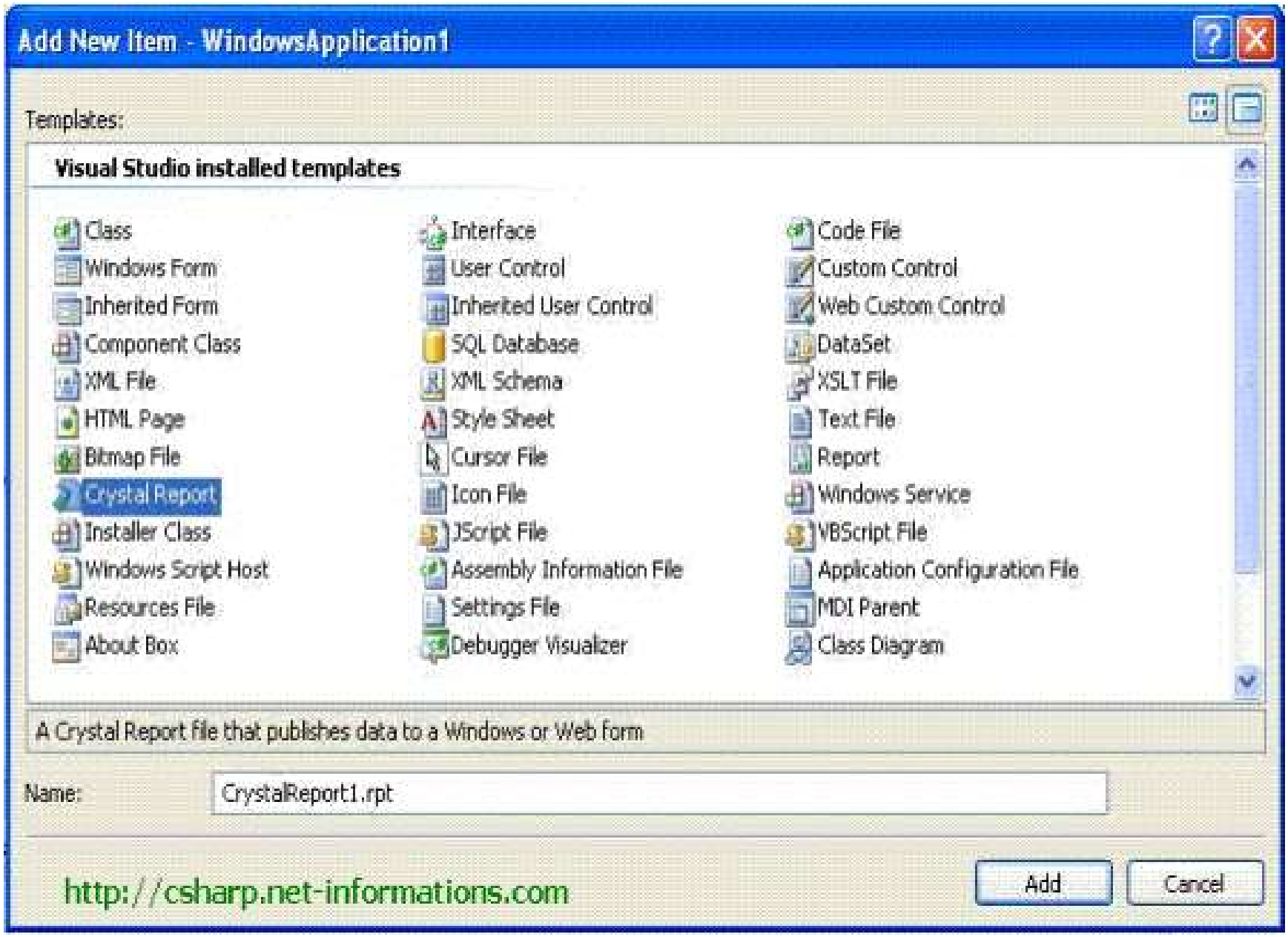
- **OLE DB**: (Pronounced “o-lay-dee-bee.”) This is a newer interfacing technique similar to but more flexible than ODBC. OLE DB allows a report to pull data from multiple sources, some of which may be relational databases and others may be non-relational.
- OLE is an acronym for Object Linking and Embedding. DB, of course, stands for Database.

Crystal Reports Designing Tools

- There are some mostly used crystal report designing tools: standalone Crystal Report software and crystal report designing tool which is incorporated into Microsoft Visual Studio.NET
- Once we designed a crystal report in VS.NET we use CrystalReportViewer control to view the report on a form. For example,

```
private void button1_Click(object sender, EventArgs e)
{
    ReportDocument cryRpt = new ReportDocument();
    cryRpt.Load(PUT CRYSTAL REPORT PATH HERE\\CrystalReport1.rpt");
    crystalReportViewer1.ReportSource = cryRpt;
    crystalReportViewer1.Refresh();
}
```

- For our lab session discussion we will use the one which is installed as part of visual studio .NET


Add New Item - WindowsApplication1
Templates:
Visual Studio installed templates
Class
Windows Form
Inherited Form
Component Class
XML File
HTML Page
Bitmap File
Crystal Report
Installer Class
Windows Script Host
Resources File
About Box
Interface
User Control
Inherited User Control
SQL Database
XML Schema
Style Sheet
Cursor File
Icon File
JScript File
Assembly Information File
Settings File
Debugger Visualizer
Code File
Custom Control
Web Custom Control
DataSet
XSLT File
Text File
Report
Windows Service
VBScript File
Application Configuration File
MDI Parent
Class Diagram
A Crystal Report file that publishes data to a Windows or Web form
Name:
CrystalReport1.rpt
http://csharp.net-informations.com
Add
Cancel

Thank you!!