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# SQL Server 2012 Reporting Services Blueprints

Use real-world situations to develop real-world solutions

**Marlon Ribunal**

**Mickey Stuewe**

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BIRMINGHAM - MUMBAI

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*Marlon Ribunal*

I want to thank my husband, Dan, who supports me in all my endeavors. Without him I would not have the time or energy to work on this book or even participate in the SQL community.

*Mickey Stuewe*

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I would like to thank my wife Aniqah and my sons Saifan and Rayyan for coping with my hectic work schedule.

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I would like to thank my mom and dad who always inspire me for my work.

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In 2012, he received the MVE (Most Valuable Expert) award in recognition of his outstanding community contributions at Experts Exchange.

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# Preface

SQL Server Reporting Services (SSRS), as a platform, has grown to become a mature reporting solution, beginning with its SQL Server 2008 Reporting Services iteration. Actually SQL Server 2005 Reporting Services got some attention too, but the 2008 version made it a strong contender in the report solution battle which was at that time dominated by Crystal Reports.

More and more companies are implementing SSRS as part of their Business Intelligence implementation. We can only expect this trend to increase as SQL Server is continuing to increase its share of the database market.

SQL Server Integrated BI Solution—Microsoft BI Stack (SQL Server, SSIS, SSAS & SSRS)—is becoming increasingly popular in the BI market. The primary reason for this is that it's quite easy to learn the platform if you have a sufficient amount of passion and the right tools and support.

*SQL Server 2012 Reporting Services Blueprints* is intended to be just that, a series of Blueprints—things that work straight out-of-the-box and that mirror what a real job requires real report developers to do. You will not be bored with an "Introduction to X" or "What's under the hood of Y". We go straight to the practical development of reporting skills, explaining actions as they are taken. This means working through step-by-step tutorials instead of studying infrastructure and business use explanations.

This book is a step-by-step, task-driven tutorial. It provides enterprise reporting blueprints that address common business report requirements and scenarios. Right from the very start, you'll learn SSRS beyond the basics, giving you the skills to create the best reports for any task. Explore the possibilities, master your options, and choose the best tool for the job.



## What this book covers

*Chapter 1, Let's Breakdown the Numbers*, covers the use of parameters in different scenarios. We figured that you already have a basic knowledge of how SSRS works. So, we eliminated the boring stuff. The chapter begins with showing you how to create a data source and dataset with T-SQL and stored procedures.

*Chapter 2, Making a Good Impression*, covers the structure and properties of the report. This is a critical part of the design and presentation of the report.

*Chapter 3, Getting Some Actions*, covers the addition of interactive elements to the report.

*Chapter 4, Everything Looks Better with Charts*, demonstrates the basic and advanced uses of various visualizations in a report.

*Chapter 5, Location, Location, Location!*, covers the use of basic and advance maps, also other geospatial elements in SSRS.

*Chapter 6, Let's Get Analytical!*, covers the use of OLAP cubes in a SSRS report if you are dealing with SQL Server Analytical Services (SSAS).

*Chapter 7, Sir, We're Ready to Deploy!*, gives you options for successfully deploying your SSRS projects.

*Chapter 8, Beyond the Horizon!*, shows you basic information on how to integrate SharePoint 2010/2013, PowerPivot, and Power View with SSRS.

*Appendix A, SSRS Best Practices*, gives you few tips on report management, report standards, execution logs, and so on.

*Appendix B, Transactional Replication for Reporting Services*, demonstrates the step-by-step process of setting up Transactional Replication.

## What you need for this book

The authors used SQL Server 2012 SP1 Enterprise Edition on Windows Server 2012 for writing the step-by-step tutorials in this book. In order for you to accomplish all the steps discussed in this book, you need the SQL Server 2012 Enterprise or Business Intelligence Edition. You can still use the Standard Edition but it doesn't support the advanced BI features, such as PowerPivot and Power View. Here's a link to the comparison of the three editions of SQL Server 2012: <https://www.microsoft.com/en-us/sqlserver/editions.aspx/>.

Here are the tools you need to follow the step-by-step tutorials in this book:

- Windows 8 or Windows Server 2012 (check the SQL Server 2012 installation requirements)
- SQL Server 2012 Enterprise or Business Intelligence Edition
- SQL Server Data Tools (SSDT), or SSDT for Visual Studio 2010, or higher (If using Visual Studio)
- SharePoint 2013 (You can use SharePoint 2010 but the steps may look slightly different from this book)

## Who this book is for

This book does not require readers to have advance knowledge of T-SQL, but the readers are expected to know how to write basic aggregates in T-SQL. SQL Server Reporting Services architecture and any pertinent information are not included in this book. Knowing how data sources and datasets work in advance will greatly help you to progress through the tutorials quickly. This book is perfect for those new to SQL Server Reporting Services. Other SQL Server users, such as database administrators, who are getting involved in report development can greatly benefit from the fast-paced style of this tutorial book.

## Conventions


In this book, you will find a number of styles of text that distinguish between different kinds of information. Here are some examples of these styles, and an explanation of their meaning.


Code words in text are shown as follows: "Find the location of the `Sales Commissions.rdl` file that we modified."

Any command-line input or output is written as follows:

```
=iif(Parameters!SalesPersonID.Value = -1, Fields!BusinessEntityID.Value,  
Parameters!SalesPersonID.Value)
```

**New terms** and **important words** are shown in bold. Words that you see on the screen, in menus or dialog boxes for example, appear in the text like this: "Click on the **OK** button to save your changes."

[  Warnings or important notes appear in a box like this. ]

[  Tips and tricks appear like this. ]

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# 1

## Let's Breakdown the Numbers

John Kirkland is an awesome "accidental" SQL Server DBA for Red Speed Bicycle LLC—a growing bicycle startup based in the United States. The company distributes bikes, bicycle parts, and accessories to various distribution points around the world.

To say that they are performing well financially is an understatement. They are booming! They've been expanding their business to Canada, Australia, France, and the United Kingdom in the last three years.

The company has upgraded their SQL Server 2000 database recently to the latest version of SQL Server 2012. Linda, from the Finance Group, asked John if they can migrate their Microsoft Access Reports into the **SQL Server 2012 Reporting Services**.

John installed SSRS 2012 in a native mode. He decided to build the reports from the ground up so that the report development process would not interrupt the operation in the Finance Group.

There is only one caveat; John has never authored any reports in SQL Server Reporting Services (SSRS) before.

Let's give John a hand and help him build his reports from the ground up. Then, we'll see more of his SSRS adventures as we follow his journey throughout this book.

In this chapter, we will learn the following:

- Creating a report from scratch
- Using stored procedure in a report
- Defining data sources and datasets
- Using dataset as a parameter source

- Creating a parameterized report
- Creating multivalued parameters
- Creating cascading parameters
- Creating cascading multivalued parameters

Here's the first report requirement for John: a simple table that shows all the sales transactions in their database. Linda wants to see a report with the following data:

- Date
- Sales Order ID
- Category
- Subcategory
- Product Name
- Unit Price
- Quantity
- Line Total

We will build our report, and all succeeding reports in this book, using the **SQL Server Data Tools (SSDT)**. SSDT is Visual Studio shell which is an integrated environment used to build SQL Server database objects. You can install SSDT from the SQL Server installation media.

In June 2013, Microsoft released SQL Server Data Tools-Business Intelligence (SSDTBI). SSDTBI is a component that contains templates for **SQL Server Analysis Services (SSAS)**, **SQL Server Integration Services (SSIS)**, and **SQL Server Reporting Services (SSRS)** for Visual Studio 2012.

SSDTBI replaced Business Intelligence Development Studio (BIDS) from the previous versions of SQL Server.

You have two options in creating your SSRS reports: SSDT or Visual Studio 2012. If you use Visual Studio, you have to install the SSDTBI templates.

Let's create a new solution and name it **SSRS2012Blueprints**.



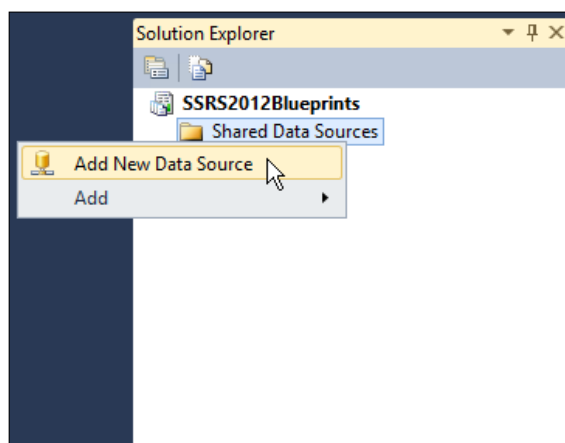
For the following exercises, we're using SSRS 2012 in native mode. Also, make a note that we're using the AdventureWorks2012 Sample database all throughout this book unless otherwise indicated. You can download the sample database from **CodePlex**. Here's the link: <http://msftdbprodsamples.codeplex.com/releases/view/55330>.

## Defining a data source for the project

Now, let's define a shared data source and shared dataset for the first report. A shared dataset and data source can be shared among the reports within the project:

1. Right-click on the Shared Data Sources folder under the **SSRS2012Blueprints** solution in the **Solution Explorer** window, as shown in the following illustration.

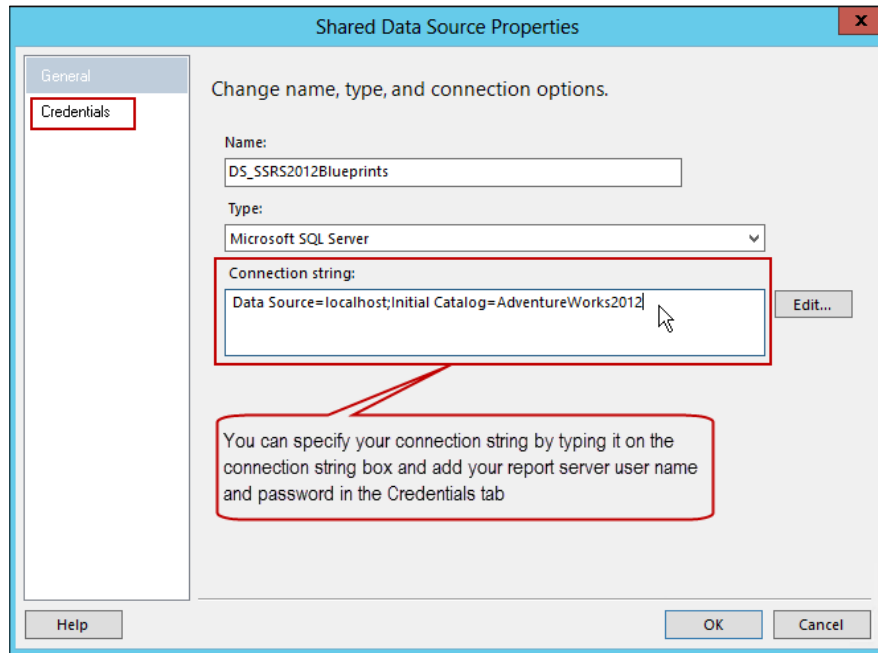
If the **Solution Explorer** window is not visible, access it by navigating to **Menu | View | Solution Explorer**, or press *Ctrl + Alt + L*:





2. Select **Add New Data Source** which displays the **Shared Data Source Properties** window. Let's name our data source DS\_SSRS2012Blueprint.

For this demonstration, let's use the wizard to create the connection string. As a good practice, I use the wizard for setting up connection strings for my data connections. Aside from convenience, I'm quite confident that I'm getting the right connections that I want.



3. Another option for setting the connection is through the **Connection Properties** dialog box, as shown in the next screenshot.

Clicking on the **Edit** button next to the connection string box displays the **Connection Properties** dialog box:



Shared versus embedded data sources and datasets: as a good practice, always use shared data sources and shared datasets where appropriate. One characteristic of a productive development project is using reusable objects as much as possible.