SQL Server Reporting Services 2008

Lesson 4: Working with Report Builder and Report Model

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Lesson Objectives

➢ **Working With Report Model**
➢ **Working With Report Builder**

Objectives

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Working with Report Model

➢ **In order to create reports using Report Builder, you must first build a report model based on your business database.**

➢ **Model Designer provides the most flexibility for designing models based on SQL Server or Oracle databases.**

➢ **In order to build a model, you must first create a report model project.**

➢ **A report model project is a container for the model and consists of one or more data source (.ds) files, one or more data source view (.dsv) files, and one or more report model (.smdl) files.**

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A report model is a metadata description of a data source and its relationships. Report models provide familiar business names for database fields and tables, logically grouped model items, and predefined relationships between items within the data source. The report model helps Report Builder users to explore and select the data that they want to use from the underlying data source. The report model definitions are used by Report Server to automatically generate a query for retrieving the requested data.

To build your model, you need to run the Model Designer wizard. When running the Model Designer wizard, you can create a data source, a data source view, and generate the model. If you want, you can continue to refine your model using the Model Design window. You can refine your model by rearranging the model items within the model and by adding additional model items, such as entities, folders, or perspectives, to the model.

When you have finished designing a model, you can publish it to a report server running in either native mode or SharePoint integration mode. After the model is published, individuals with the appropriate permissions can use the model to create reports in Report Builder or Report Designer.
To use a published model, the data source used in the model must be available on the report server. You can publish data sources for the model from Model Designer at the same time you publish a model, or you can create a data source independently on the report server and then bind it to the published model.

Creating and Customizing Report Model

➢ **When you create a report model using the Report Model wizard, a collection of entities is automatically generated for you based on items in your database as described in your data source view (.dsv) file.**

➢ **For example, a Products entity might contain information, such as product name, product number, and list price, related to each of the products that your company manufactures.**

➢ **Once you create the report model, you might want to customize the model to make it even easier for your users to use.**

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Once you create the report model, you might want to refine the model to make it even easier for your users to use. By default, entities and folders are listed in alphabetical order, but you can rearrange them according to how you think your users will use the data in them to build reports. For example, if you think most of your Report Builder users will use the Products entity frequently you might want to move it to the top of the model items list.

We can organize entities, perspectives and other folders into folders within your report models. This allows you to expose frequently used model items, group related items, and archive inactive or infrequently used items to facilitate navigation for your users.

Perspectives also can be defined. A perspective is a subset of a model. Model subsetting can be helpful when the size of your model is very large, or if you want to partition the model so that specific user groups can access only the data they need.
Perspectives exist within a model and can contain entities, folders, roles, source fields, and expressions. They are not generated by the Model Designer wizard. Instead, manually create them and then select the model items that you want to include in the perspective by using the Edit Perspective dialog box.

Entities contain source fields (attributes), roles, folders, and expressions. When you run Model Designer, roles and source fields are automatically created within entities for you. You can add additional fields, roles, folders, or expressions to the entities once the model is created.

A role indicates that two entities are related to each other. The role can be a 1-to-1 relationship, a 1-to-many relationship or a many-to-many relationship. For example, the Store Location entity has a 1-to-1 relationship with the Address entity; therefore, for every store location, there is a single address. The Customer entity has a 1-to-many relationship with the Sales Orders entity; this means that for every customer there are multiple sales orders.

Working with Clickthrough Reports

In Report Builder, a clickthrough report is a report that provides detailed information about the data contained within the main report. A clickthrough report is displayed when the Report Builder user clicks the interactive data that appears in the main report. These reports are automatically generated by the report server. You, as the model designer, determine what is displayed in clickthrough reports by setting the DefaultDetailAttribute and DefaultAggregateAttribute properties that you assign to an entity in the report model.

Working With Report Builder

➤ Report Builder allows business users to create their own reports based on a user-friendly report model created in Model Designer.

➤ Fully integrated with Microsoft SQL Server Reporting Services, Report Builder brings ad hoc reporting to all users.

➤ Report Builder is a client-side application that information workers can use to create and design ad hoc reports. Using Report Builder, users can select data and design reports without having to understand how and where the data is stored. Nor do they need to know any complex programming languages in order to create reports.

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Information workers throughout an organization need access to business data for timely and effective decision making. With a wide range of skills and expertise, these business users need an intuitive yet powerful tool to explore and find answers to critical questions without deep technical knowledge of corporate data sources.

Users create reports with the Report Builder tool. The Report Builder interface is built on top of familiar Microsoft Office paradigms such as Excel and PowerPoint. Users start with report layout templates containing pre-defined data regions to build combinations of tables, matrices and charts. They navigate the reporting model to select report items and set constraints to filter the report data. The reporting model contains all of the necessary information for the Report Builder to automatically generate the source query and retrieve the requested data.
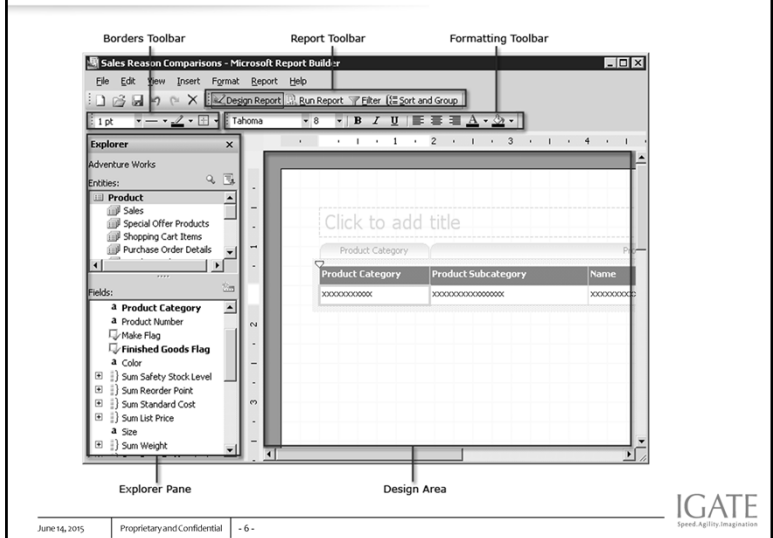
The Report Builder also allows users to:

1. Add text and formatting to reports.
2. Create new fields and calculations defined against the reporting model.
3. Preview, print and publish reports.
4. Explore data related to the content of their report.

Interactive Data Exploration
1. Report Builder reports enable users to interactively drill and explore data related to the content of their report.
2. Automatic generation of new drill down reports allows users to explore data along model navigation paths.
3. Queries for navigation reports are generated on the fly, passing the context of the user's current "location."
4. Users can keep drilling as long as there is a relationship to follow from the current item

Working With Report Builder

Using Report Builder, users can create table, matrix, or chart reports. To get started, select a report layout template and then simply drag and drop the fields into the design area. The data can be manipulated by filtering, grouping and sorting, or working with formulas. You can specify parameters, such as the prompt parameter in filters. In addition, you can add images to your report layout and format your reports to use colors, fonts, lines, and different formats. Save reports to the report server, and then they can be managed just like any other report on the server. Or, reports can be exported to the local computer as a different file type, such as a TIFF, PDF, Microsoft Office Excel, or HTML file.

Report Builder builds reports based on report models, referred to as data sources in Report Builder, provided by the model designer who is typically an analyst, database administrator, or database developer. A data source contains information about the data available in the database and the relationships between that data. When fields are dragged onto the design area, users are laying out the report and providing the information needed to retrieve the data at the same time.
Report Builder is a ClickOnce Windows Forms application that is accessed from the report server for easy centralized management. Report Builder reports are published using Report Definition Language (RDL), which allows users to take advantage of Reporting Service's full capabilities. Because Report Builder reports are saved as RDL, they can be opened and modified using the advanced programming capabilities in Report Designer.

Summary

- ➢ **Working With Report Model**
- ➢ **Working With Report Builder**

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