SSRS (SQL Server Reporting Services) – Beginner to Intermediate Stepwise Guide

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## 1. Introduction – Reporting as Storytelling

- Reporting is not just about dumping data; it’s about telling a story.

- Example:

❌ Boss asks: “How is our sales in Europe?” – Don’t return raw SQL table output.

✅ Instead, tell: "Sales this year were good except in two countries due to seasonality. Our YTD sales trend is healthy when viewed monthly."

- Storytelling tools: SSRS, Tableau, QlikView, Power BI.

- This course focuses on SSRS.

## 2. What is SSRS?

- Microsoft Definition:

SQL Server Reporting Services is an on-premise solution for creating, publishing, managing, and delivering reports.

- Supports:

- Viewing on Web, Mobile, or Email.

- Multiple formats (Tabular, Matrix, Charts).

- Purpose:

- Create and deliver pixel-perfect, interactive reports.

## 3. Getting Started – No Prerequisites

- Steps:

1. Install SQL Server Database Engine.

2. Install SQL Server Reporting Services (SSRS).

3. Install Sample Databases (e.g., AdventureWorks).

- Use step-by-step PDF/Guide for installation.

- Post-installation, test databases and SSRS before report creation.

## 4. Creating First Report – Wizard Method

### Step 1 – Open Visual Studio

- Select New Project → Report Server Project Wizard.

- Name it (e.g., MyFirstReport).

### Step 2 – Configure Data Source

- Name: First Data Source.

- Connection String:

- Server: localhost\SQL2016 (or your instance name).

- Database: AdventureWorks.

- Test connection – ensure success.

### Step 3 – Create Dataset (Query)

- Use Query Builder.

- Add required tables (e.g., SalesTerritory).

- Select required columns.

- Run query to preview sample data.

### Step 4 – Choose Report Type

- Select Tabular or Matrix (Tabular for beginners).

- Arrange fields into Groups and Details.

### Step 5 – Table Layout & Preview

- Choose layout: Blocked or Stepped.

- Name report.

- Preview output – report is ready.

## 5. Creating First Report – Manual (Non-Wizard)

### Step 1 – New Project

- New Project → Report Server Project (no wizard).

- Add New Report in Reports folder.

### Step 2 – Create Data Source

- Name: MyDataSource.

- Server: localhost\SQL2016.

- Database: AdventureWorks2016.

- Test connection.

### Step 3 – Create Dataset

- Name: SalesTerritoryDataSet.

- Use Query Designer to select table & columns.

- Test query.

### Step 4 – Design Report Layout

- Add Text Box for title (“My First Report”).

- Add Table from toolbox.

- Drag dataset columns into table cells.

- Format (bold, underline, font changes).

### Step 5 – Preview

- Save credentials.

- Run report.

## 6. Adding Parameters

### Single Parameter

1. Edit dataset query:

```sql

SELECT \* FROM SalesTerritory

WHERE CountryRegionCode = @CountryRegionCode

```

2. SSRS auto-creates parameter.

3. Run – enter value (e.g., US) to filter.

### Dropdown Parameter

1. Create dataset:

```sql

SELECT DISTINCT CountryRegionCode FROM SalesTerritory

```

2. Link dataset to parameter’s Available Values.

3. User selects from dropdown.

## 7. Multiple & Cascading Parameters

### Example – Country & Territory

1. Main dataset filters on both:

```sql

SELECT \* FROM SalesTerritory

WHERE CountryRegionCode = @CountryRegionCode

AND TerritoryID = @TerritoryID

```

2. Create Country Parameter Dataset:

```sql

SELECT DISTINCT CountryRegionCode FROM SalesTerritory

```

3. Create Territory Parameter Dataset (cascading):

```sql

SELECT DISTINCT TerritoryID

FROM SalesTerritory

WHERE CountryRegionCode = @CountryRegionCode

```

4. Link:

- CountryRegionCode parameter → Country dataset.

- TerritoryID parameter → Territory dataset (filtered by selected country).

## 8. Expressions – Dynamic Formatting

- Expressions allow customization of:

- Font color, background color, formatting.

- Calculations & conditional logic.

### Example – Font Color by Threshold

- Select column → Properties → FontColor → Expression:

```vb

=IIF(Fields!TerritoryID.Value <= 5, "Green", "Red")

```

- Preview:

- ID ≤ 5 → Green text.

- ID > 5 → Red text.

## 9. Key SSRS Concepts Learned

- Data Source: Connection to database.

- Dataset: Query or data retrieved from the source.

- Report Items: Tables, Charts, Text boxes, etc.

- Parameters: User-driven filters (single, multiple, cascading).

- Expressions: Custom logic for display & behavior.

## 10. Next Steps

- Add charts & KPIs for storytelling.

- Use grouping, sorting, and aggregations.

- Deploy reports to Report Server.

- Learn scheduling & subscriptions.