SSRS REPORTING
Lab Guide

SSRS is a powerful tool for custom reporting. Learn how to enhance your SSRS reports related to New World ERP.

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INTRODUCTION

Welcome to the New World ERP SSRS Lab. New World ERP uses Microsoft® SQL Server Reporting Services (SSRS) as the primary technology for generating standard reports and forms. The SSRS toolset provides a streamlined means of report creation and customization, as well as a simplified method of report deployment. In this lab, we will explore the possibilities available with SSRS, and provide you with the basics to create and enhance reports for your own organization.

REPORT BUILDER

Microsoft® Report Builder is a report authoring tool that features a Microsoft® Office-like environment with an array of useful report objects such as tables, charts, and text boxes. This application is a free download and only requires rights to your SQL Server Reporting Services and read access to a database. In this session, we will be utilizing Report Builder Version 15.0.20073.0.

REPORT BUILDER VERSUS VISUAL STUDIO

This lab will utilize Microsoft® Report Builder for all exercises. While Microsoft® Visual Studio can be used to produce the same results, it is geared more towards software developers rather than business analysts. Visual Studio includes additional features such as integration with source control systems, intelliSense for report expressions, and the ability to develop and utilize custom functions within the report.

ASSUMPTIONS

Attendees are expected to have a prior experience maintaining SSRS reports and SQL queries.

OBJECTIVES

After completing this lab, you will be familiar with…

- Images
- Interactive sorting
- Expressions
- Merging cells
- Filtering
- Parameters
- Hyperlinks

EXERCISE – CREATE AN EMPLOYEE INFORMATION REPORT

Requirements

- Report Builder installed on the client machine
- Rights to access SQL Server Reporting Services where New World ERP is installed
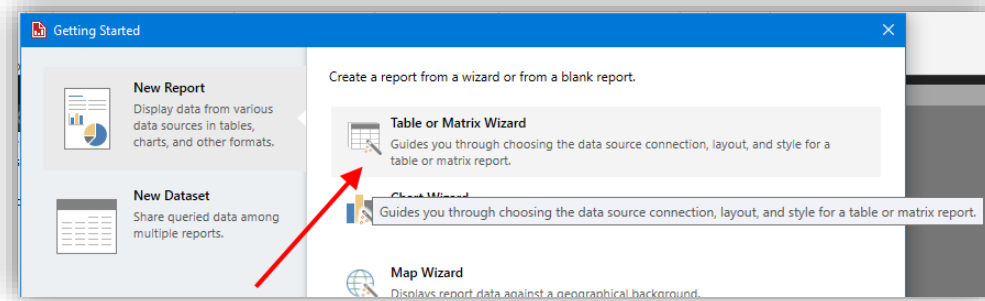- Read-only access to the New World ERP database

Start Report Builder

1. Start by running Report Builder
   a. Click into the search field next to the Start menu in the lower left corner of the screen
   b. Type "***report builder***" into the search field
   c. Click the *Report Builder* App to open it
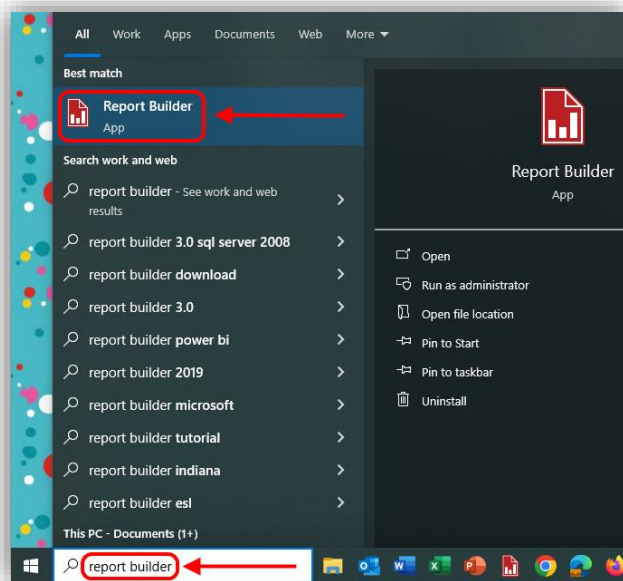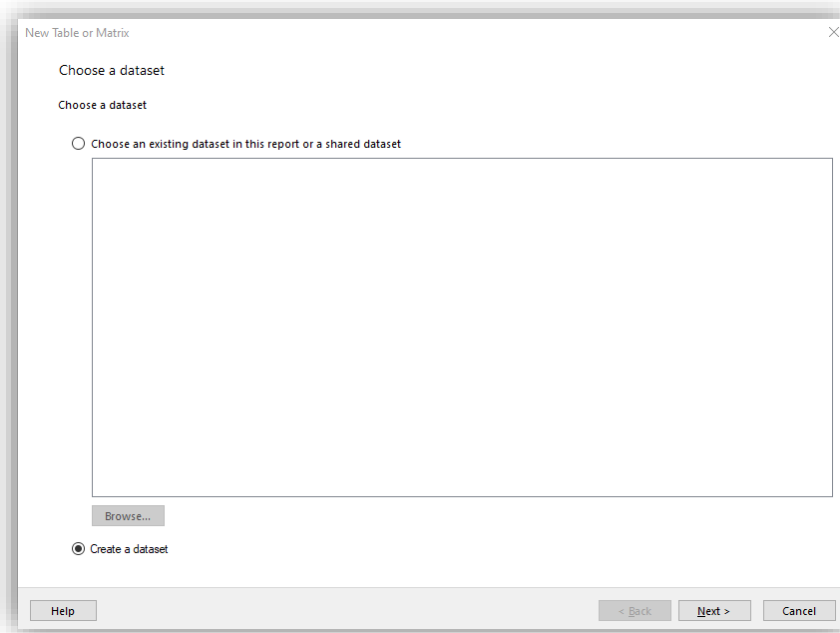
2. In the Getting Started window, select *New Report > Table or Matrix Wizard*
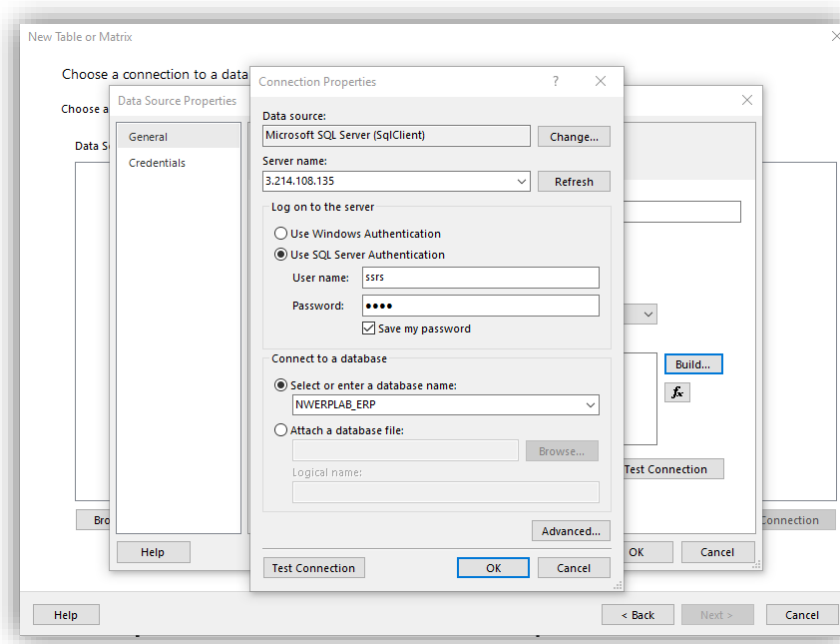

3. When prompted to *Choose a Dataset*, select *Create a Dataset* and click **<Next>**

Create the Data Source

The Data Source is the connection to the database will be used for report data.

1. In the *Choose a Connection to the Data Source* window, click the **<New>** button to create a new data source

    a. Enter **NWERP** in the *Name* field

    b. Click the **<Build>** button to configure the DB connection

    i. *Server name*: **3.214.108.135**

    ii. *Use SQL Server Authentication* with

        1. *User name*: **ssrs**

        2. *Password*: **ssrs**

    iii. Check *Save my password*

    iv. *Select or enter a database name*: **NWERPLAB_ERP**

    v. Click **<OK>** to close the *Connection Properties* popup

    c. Click **<OK>** to close the *Data Source Properties* window

2. From the *Connection to the Data Source* window, confirm your **NWERP** data source is selected and click the **<Next>** button

Create the Dataset

The Dataset contains the rows and columns of data that will be displayed in the report. In our example we will be retrieving several employee-related fields.

1. Click the **<Edit as Text>** button at the top of the *Design a Query* window
2. Locate the **1-EmployeeInfoDataSet.txt** file in the Windows **Desktop > SSRS** folder and double-click to open it in Notepad
   a. Highlight all of the text **(Ctrl + A)** and Copy it **(Ctrl + C)** to your clipboard
   b. In the Report Builder *Design a Query* window, Paste the text **(Ctrl + V)** into the blank text field below the header

3. Click the Run icon ! to confirm that your query returns data

4. Click **<Next>**

Select the Data and Prepare the Body

1. From the *Arrange Fields* window

   a. Drag the following fields to the *Values* box

      i. **EmployeeName**

      ii. **EmployeeNumber**

         1. The **EmployeeNumber** field will be prefaced with the word "***Sum***" (i.e. ***Sum(EmployeeNumber)***)

            a. Click the field to highlight it

            b. Click the down arrow [▼] to the right of the field name and click **Sum** to deselect it

      iii. **EmployeeType**

      iv. **PositionNumber**

         1. The **PositionNumber** field will be prefaced with the word "***Sum***" (i.e. ***Sum(PositionNumber)***)

            a. Click the field to highlight it

            b. Click the down arrow [▼] to the right of the field name and click **Sum** to deselect it

      v. **PositionTitle**

      vi. **BenefitGroup**

   b. Drag the following fields to the Row groups box

      i. **Department**

c. When complete, it should look like this

d. Click **<Next>**

2. From the *Choose the layout* window

a. Check *Show subtotal and grand totals*

i. Select *Stepped, subtotal above*

b. Check *Expand/collapse groups*

3. Click **<Next>**

4. Click **<Finish>**

5. Delete all the **Sum** fields and the "*Total*" text from the group header and footer by clicking on the cell and pressing the **<Delete>** key on your keyboard

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.

Department	Employee Name	Employee Number	Employee Type	Position Number	Position Title	Benefit Group
⊟ 001						
	Neyra, Adonis V	74	PP			5
	Werner, Zackery W	121	TP			5
	Adelblue, Julie G	181	TF			5
	Cutrell, Keith	186	EO	1059005	Council Person	5C

Add an Image

1. Resize the report to allow room for a logo and make it more readable

    a. Widen the **Employee Name** and **Position Title** columns so that the data printed will be more likely to fit on one line

    b. Select the **Employee Name** and **Position Title** columns, then click the Left align button to align the text in both columns to the left
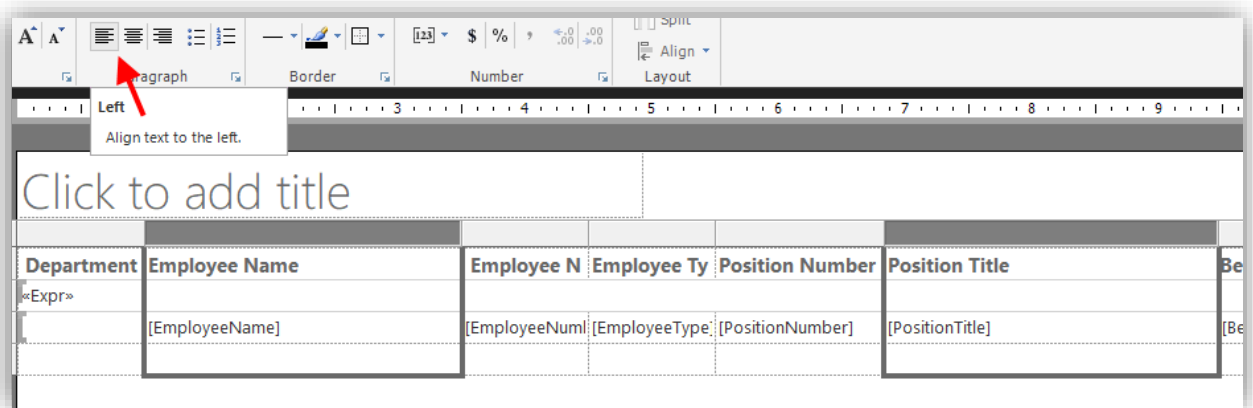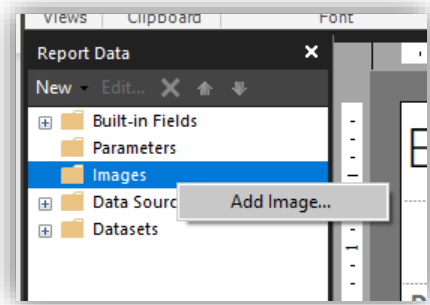

    c. Move the tablix down to make more room

    d. Add the title "*Employee Information Report*" and shrink the width of its text box
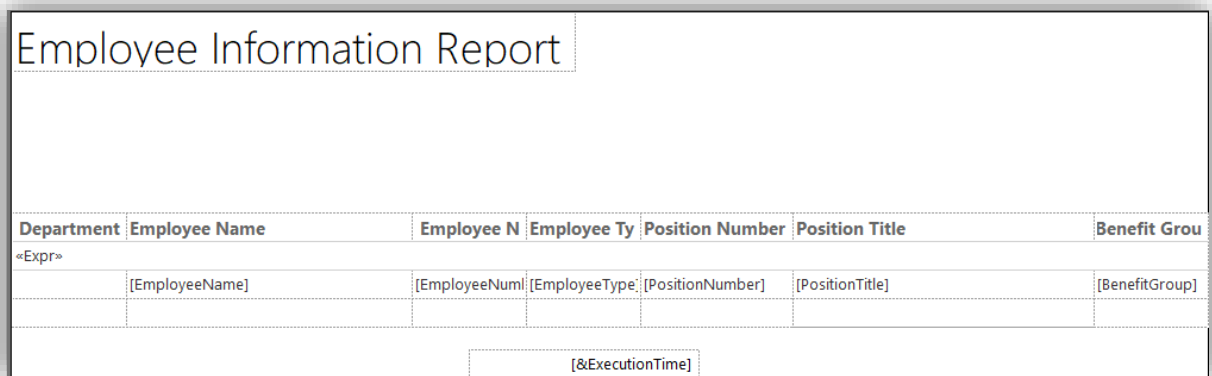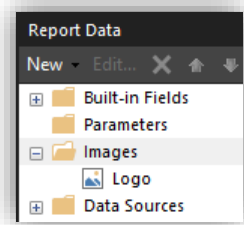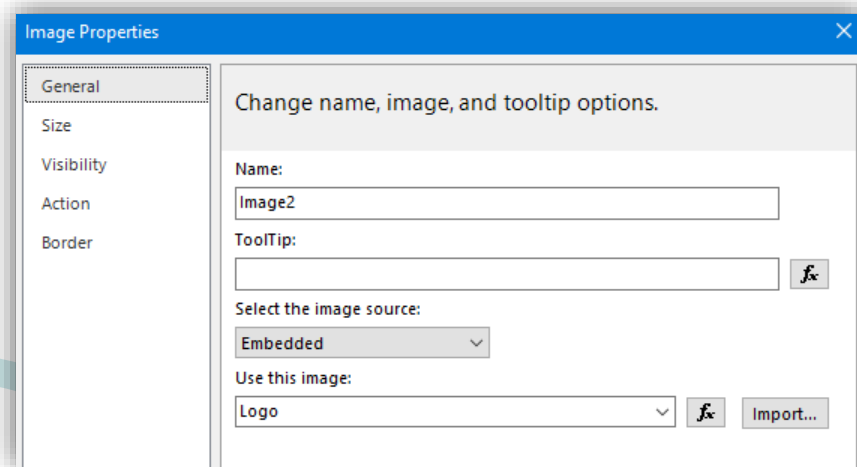
2. In the *Report Data* tray on the left, right-click *Images*, then select *Add Image*
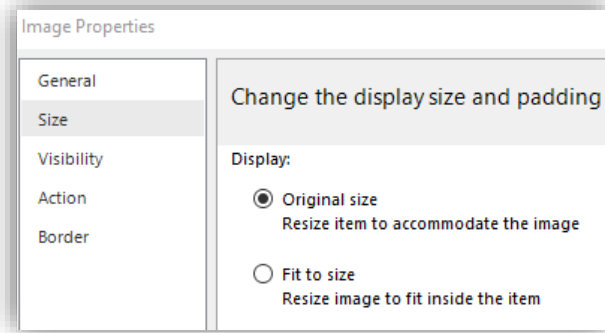

3. Browse to the **Logo.jpg** file in the Windows **Desktop > SSRS** folder and double-click it to open bring it into the report

4. Drag the **Logo** onto your report in the upper right-hand corner and an *Image Properties* window will appear

5. Select the *Size* tab on the left side of the *Image Properties* window

      a. Under *Display*, select *Original size*

6. Click **<OK>**

7. Move the tablix down more if the logo overlaps it

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.

Employee Information Report

CityCounty
an integrated community

| Department	Employee Name	Employee Number	Employee Type	Position Number	Position Title	Benefit Group
⊟ 001						
	Neyra, Adonis V	74	PP			5
	Werner, Zackery W	121	TP			5
	Adelblue, Julie G	181	TF			5
	Cutrell, Keith	186	EO	1059005	Council Person	5C
	Wiener, Kourtney A	211	TP			5

Building Expressions

1. Right-click on the **Department** text box in the group header and select *Expression*
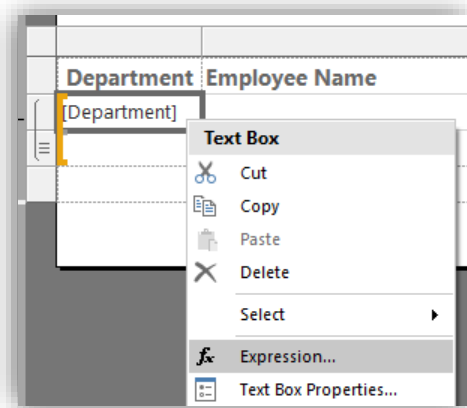
   a. You should see **=Fields!Department.Value**

   b. Change it to the following

   =Fields!Department.Value & " – " & Fields!DepartmentDescription.Value & " (" & Count(Fields!EmployeeID.Value) & " employees)"

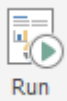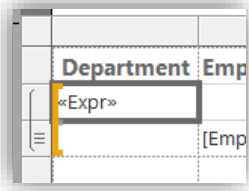NOTE: you can copy this text from the file **2-DepartmentExpression.txt** located in the Windows **Desktop > SSRS** folder
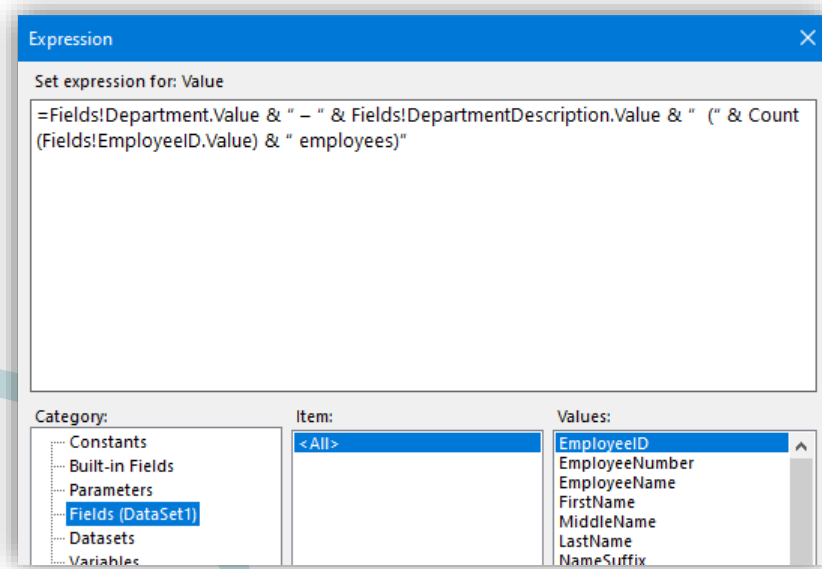
	A shortcut to typing out the field names in expressions is to select *Fields* in the *Category* window, then double-click the column name in the *Values* window.

   c. Click **<OK>**

2. You should notice that the cell previous with **[Department]** in it now shows as **«Expr»**

	--- PREVIEW BREAK ---	
Run	Click the **Run** icon to preview your report – Click **Design** when finished.	Design

Merging Cells

Notice above now that you added the Department Description, the cell wraps and looks odd

1. Click the new **Department** cell with the **«Expr»** in it within the group header

2. Hold the **<Shift>** key down on your keyboard

3. Click the cell in the last column of the report that is in the same row (all cells in that row should now be selected)

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4. Right-click somewhere within the selected cells and select *Merge Cells*
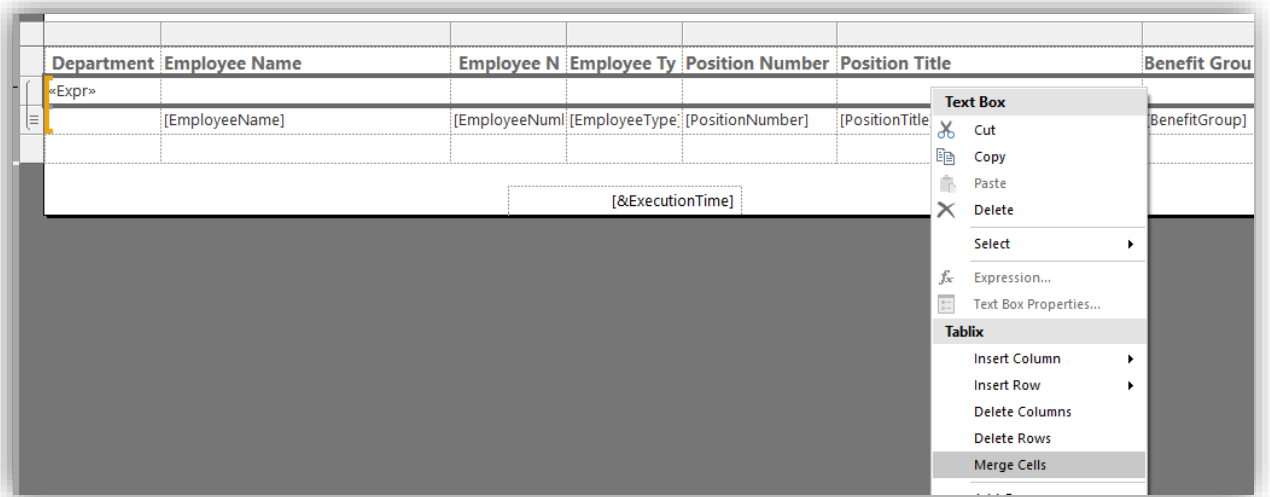
- - - PREVIEW BREAK - - -

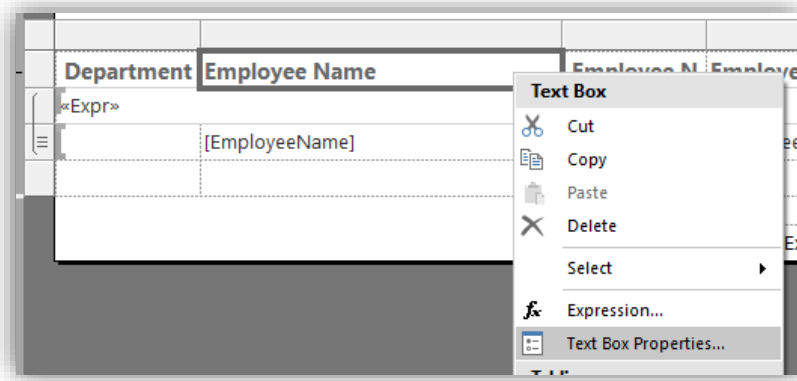Click the **Run** icon to preview your report – Click **Design** when finished.

5. Notice the **Department** no longer wraps

6. Conversely, you can right-click on a merged cell and select *Split Cells* to "un-merge" the cells

Interactive Sorting

1. Right-click the column header named **Employee Name** and select *Textbox Properties*

2. Select the *Interactive Sorting* tab on the left in the *Text Box Properties* windows
   a. Check *Enable interactive sorting on this text box*
   b. *Sort by:* **[EmployeeName]**
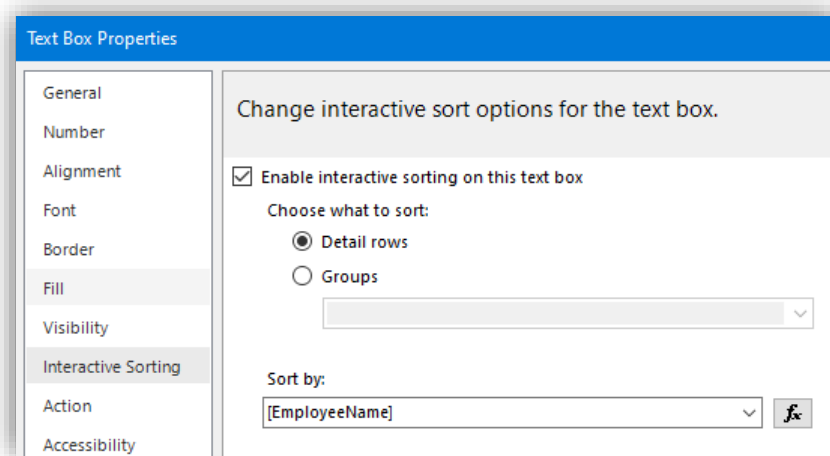
3. Click **<OK>**

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.
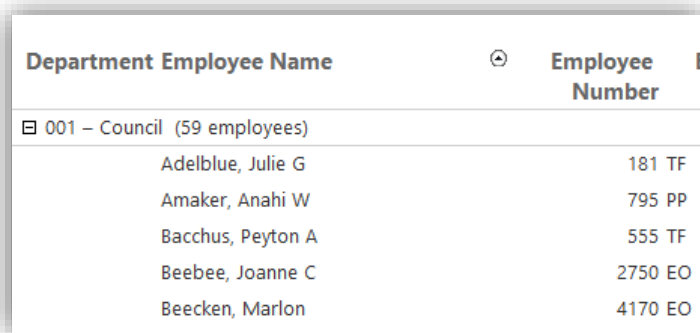
4. You will notice the **Employee Name** column has an up and down arrow on it now

5. Click that arrow to sort the report by **Employee Name** within each department group

Filtering

1. Click anywhere on the table and right-click any gray edge of the tablix and select Tablix Properties
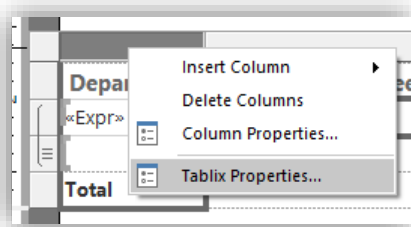
2. Select the *Filters* tab on the left side of the *Tablix Properties* window
3. Click **<Add>**
   a. *Expression* = **[EmployeeStatus]**
   b. *Operator* "**=**"
   c. *Value* = **A**
4. Click **<OK>**

	- - - PREVIEW BREAK - - -	
Run	Click the **Run** icon to preview your report – Click **Design** when finished.	**Design**

5. You will notice that the list of employees in the **001 - Council** department has reduced from 59 to 8, since it now only shows active (**A**) employees

Department	Employee Name ↕	Employee Number
⊟ 001 – Council (8 employees)		
	Leeks, Destini	3536 E
	Debeaumont, Dayana	3741 E
	Washabaugh, Adolfo	3858 E
	Cutrell, Keith	186 E
	Tueller, Misty P	3017 E
	Maiello, Johanna J	4018 E
	Kreamalmeyer, Armani J	4169 E
	Beecken, Marlon	4170 E
⊞ 002 – Clerk of Council (2 employees)		
⊞ 010 – Information Technology (5 employees)		

Creating Parameters

1. In the *Report Data* tray on the left, right-click *Parameters*, then select *Add Parameter*
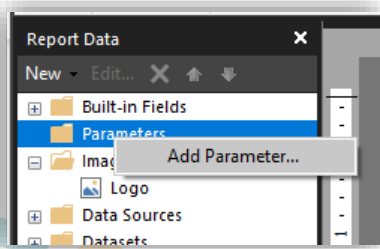
2. In the *Report Parameter Properties* window, enter **Department** into the *Name* and *Prompt* fields
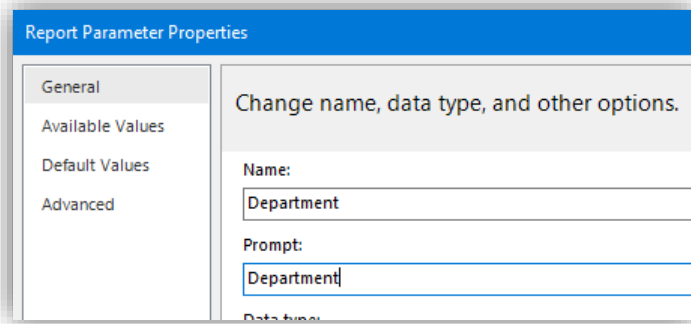
3. Click **<OK>**

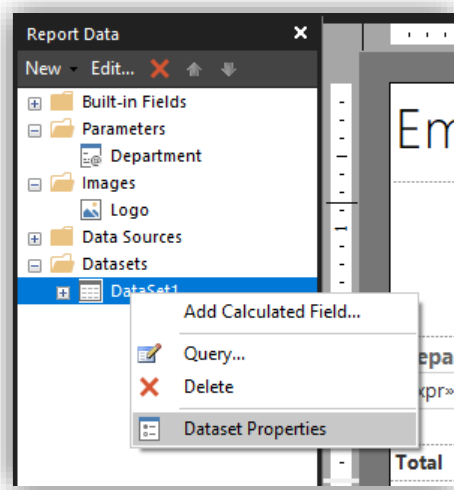4. In the *Report Data* tray on the left, expand *Datasets*, right-click **DataSet1**, then select *Dataset Properties*

5. In the Dataset Properties window pop up, add a **WHERE** clause to the end of the query string

WHERE EPJ.OrgStructureCodeConcatenated IN (@Department)

*NOTE: you can copy this text from the file **3-WhereClause.txt** located in the Windows **Desktop > SSRS** folder*

6. Select the *Parameters* tab on the left

    a. A parameter named **@Department** should have been already added for you

    b. Select **[@Department]** for the *Parameter Value*

        i. This connects the Dataset's parameter to the report parameter you created earlier
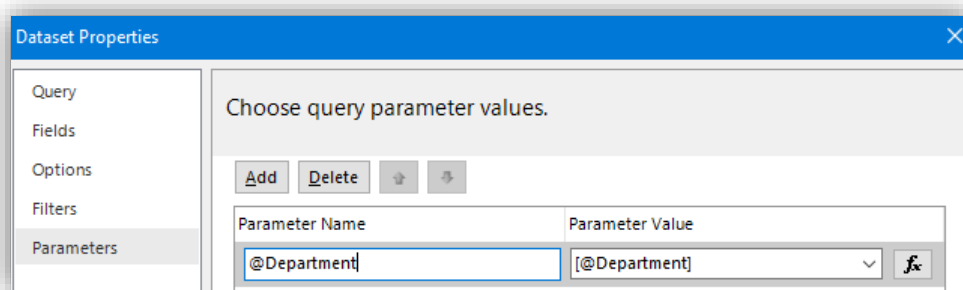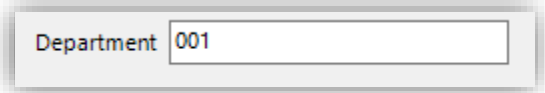

c. Click **<OK>**

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.
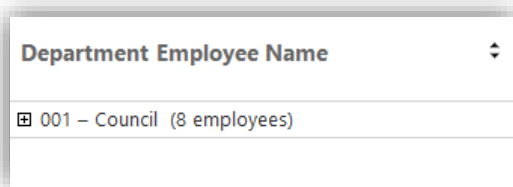
7. A **Department** parameter will appear at the top

    a. Enter *001*

    Department 001

    b. Click **<View Report>**

8. The report should just return results having the department **001**

    Department Employee Name

    ⊞ 001 – Council (8 employees)

List Parameters Using Database Values

1. In the *Report Data* tray on the left, right click on the *Datasets* folder, then select *Add Dataset*

    Report Data
    New ▾ Edit... ✕ ⬆ ⬇
    ⊞ Built-in Fields
    ⊟ Parameters
        Department
    ⊟ Images
        Logo
    ⊞ Data Sources
    ⊟ Datas   Add Dataset...
        ⊞ Dataset1
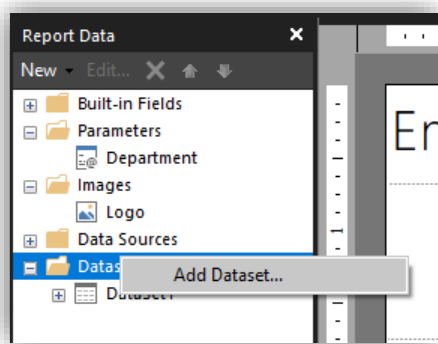
2. In the *Datatset Properties* window enter the following

    a. *Name: **Departments***

    b. Select *Use a dataset embedded in my report*

    c. *Data source:* **NWERP**

    d. Select *Text*

        i. Locate the **4-DepartmentDataSet.txt** file in the Windows **Desktop > SSRS** folder and double-click to open it in Notepad

1. Highlight all of the text (**Ctrl + A**) and Copy it (**Ctrl + C**) to your clipboard
2. Paste (**Ctrl + V**) the text into the Dataset Properties *Query* window
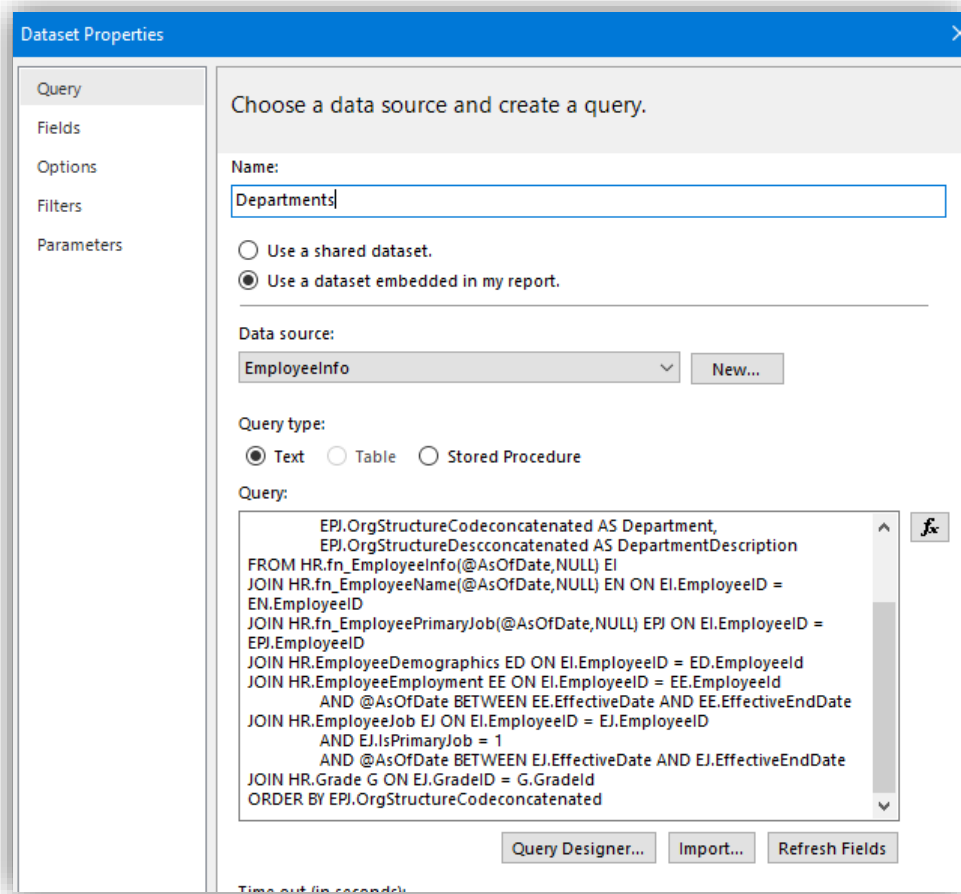
3. Click **<OK>**
4. In the *Report Data* tray on the left, expand *Parameters*, right click **Department**, then select *Parameter Properties*
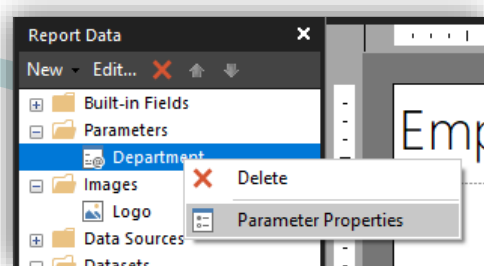
5. Check *Allow multiple values*

6. Select the *Available Values* tab on the left

    a. Select *Get values from a query*

    b. *Dataset:* **Departments**

    c. *Value field:* **Department**

    d. *Label field:* **DepartmentDescription**

7. Click **<OK>**

Run	- - - PREVIEW BREAK - - - Click the **Run** icon to preview your report – Click **Design** when finished.	Design

8. You will notice the **Department** parameter now appears as a drop down where you can select multiple departments


Default Parameters

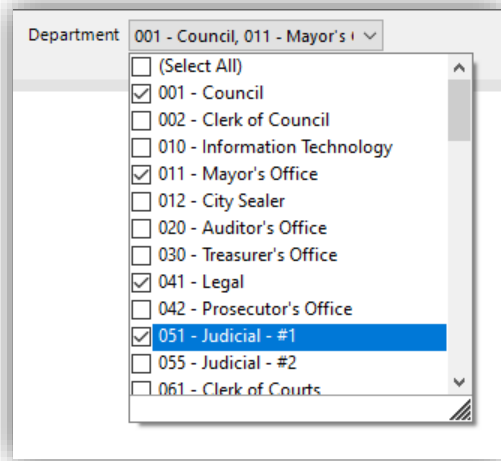1. In the *Report Data* tray on the left, right click on the *Datasets* folder, then select *Add Dataset*
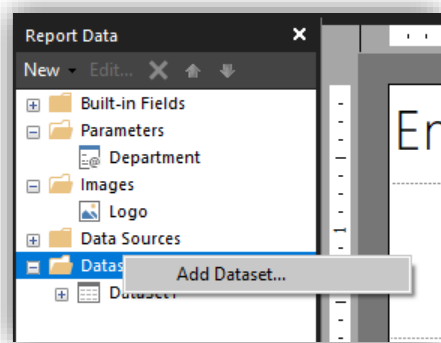
2. In the *Datatset Properties* window enter the following
   a. *Name: **DateDataSet***
   b. Select *Use a dataset embedded in my report*
   c. *Data source:* **NWERP**
   d. Select *Text*
      i. Locate the **5-DateDataSet.txt** file in the Windows **Desktop > SSRS** folder and double-click to open it in Notepad
         1. Highlight all of the text (**Ctrl + A**) and Copy it (**Ctrl + C**) to your clipboard
         2. Paste (**Ctrl + V**) the text into the Dataset Properties *Query* window

3. Click **<OK>**

4. In the *Report Data* tray on the left, right-click *Parameters*, then select *Add Parameter*

5. In the *Report Parameter Properties* window
   a. *Name:* **EffectiveDate**
   b. *Prompt:* **Effective Date**
   c. *Data type:* select **Date/Time**
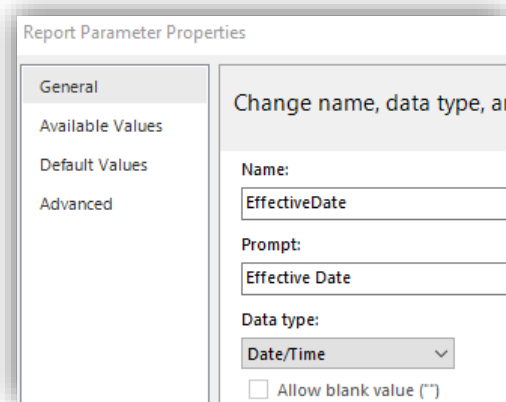
6. Select the *Default Values* tab on the left

    a. Select *Get values from a query*

    b. *Dataset:* **DateDataSet**

    c. *Value field:* **Today**
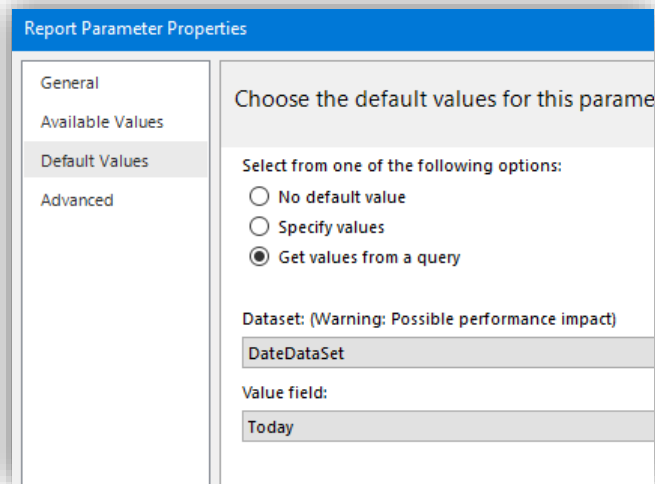
7. Click **<OK>**

8. In the *Report Data* tray on the left, expand *Datasets*, right-click **DataSet1**, then select *Dataset Properties*
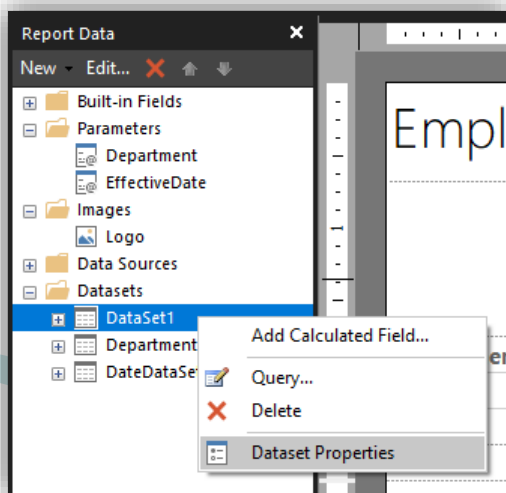
9. In the *Dataset Properties* window pop up, remove the first 2 lines of the query string

   DECLARE @AsOfDate DATETIME

   SET @AsOfDate = GETDATE()
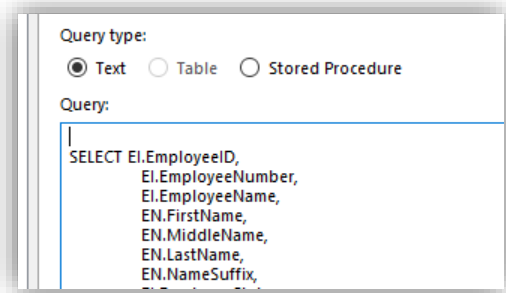
10. Select the *Parameters* tab on the left

    a. A parameter named **@AsOfDate** should have been already added

    b. Select **[@EffectiveDate]** for the *Parameter Value*

       i. This connects the Dataset's parameter to the report parameter you created earlier

    c. Click **<OK>**

	- - - PREVIEW BREAK - - - Click the **Run** icon to preview your report – Click **Design** when finished.	
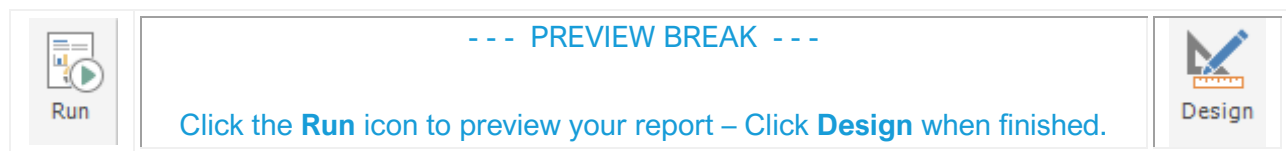
11. An **Effective Date** parameter will appear at the top defaulting in today's date
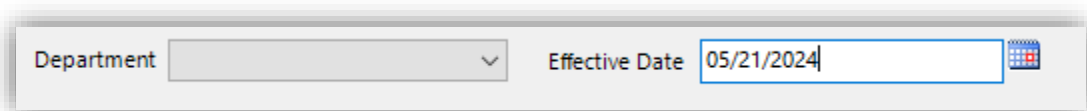
The report will now print the employees' information as of the Effective Date you enter

12. In the *Report Data* tray on the left, expand *Parameters*, right click **Department**, then select *Parameter Properties*
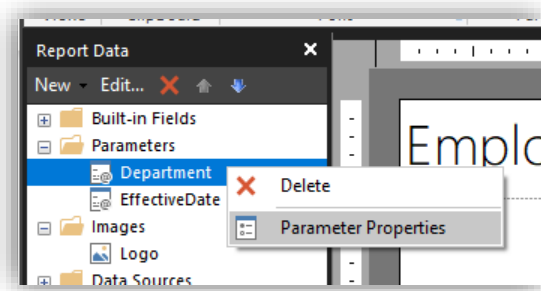

13. Select the *Default Values* tab on the left

    a. Select *Get values from a query*

    b. *Dataset:* **Departments**

    c. *Value field:* **Department**


14. Click **<OK>**

	- - - PREVIEW BREAK - - -	
Run	Click the **Run** icon to preview your report – Click **Design** when finished.	Design
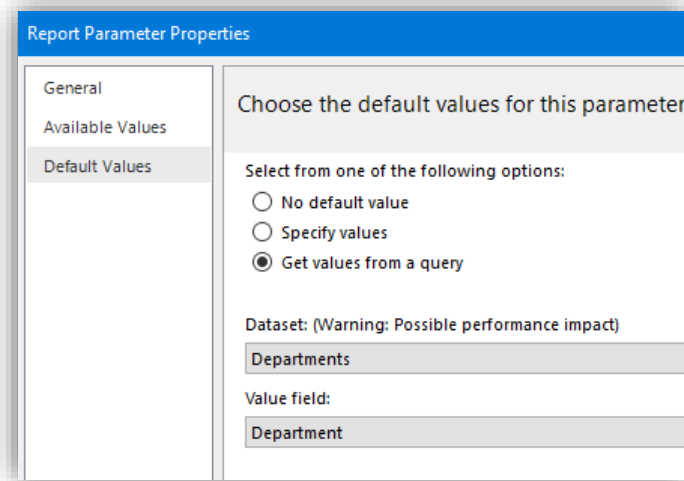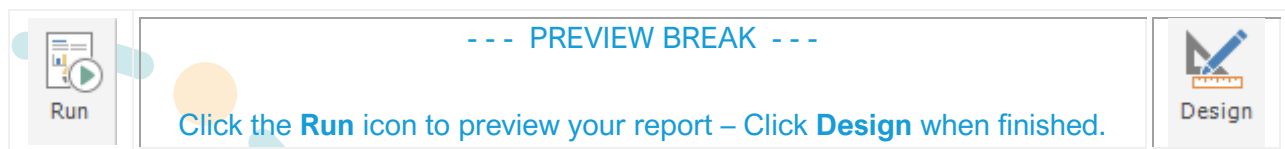
15. You will notice the **Department** parameter now appears auto selects every department from the drop down by default
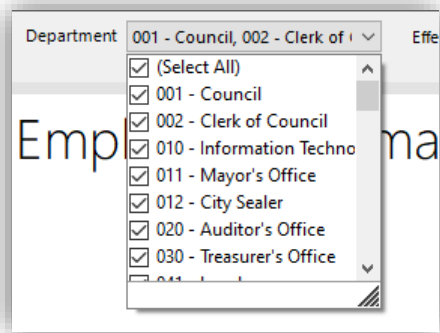
At this point, the report will automatically generate because default values have been specified for all parameters

Link to New World ERP

1. Right-click on the **[EmployeeName]** text box in the group header and select *Text Box Properties*
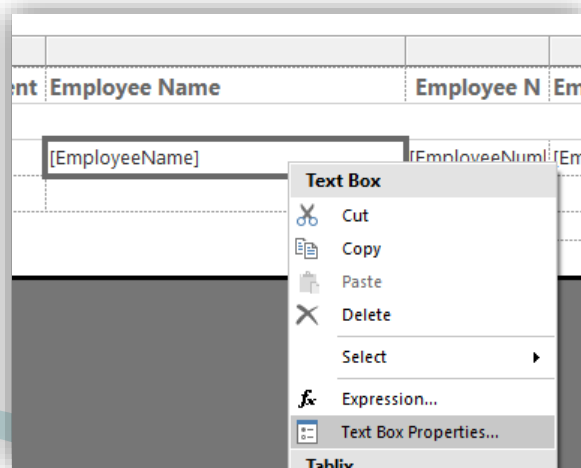
2. Select the *Action* tab on the left
   a. Select *Go to URL*
   b. Select *URL*
      i. Locate the **6-EmployeeURLExpression.txt** file in the Windows **Desktop > SSRS** folder and double-click to open it in Notepad
         1. Highlight all of the text (**Ctrl + A**) and Copy it (**Ctrl + C**) to your clipboard
         2. Paste (**Ctrl + V**) the text into the Text Box Properties *Select URL* field
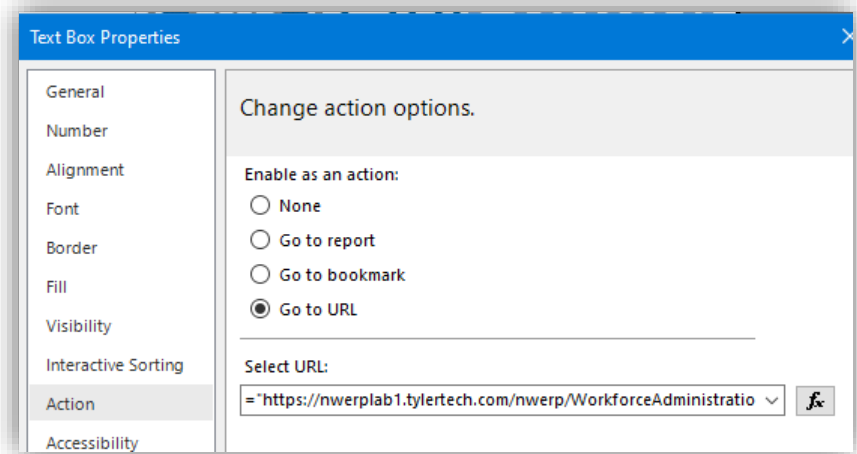
Note: This is the URL to the Workforce Administration page. Many of the URLs in the software end with a unique ID. In this case, it's the EmployeeID from the database.

   c. Click **<OK>**

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.
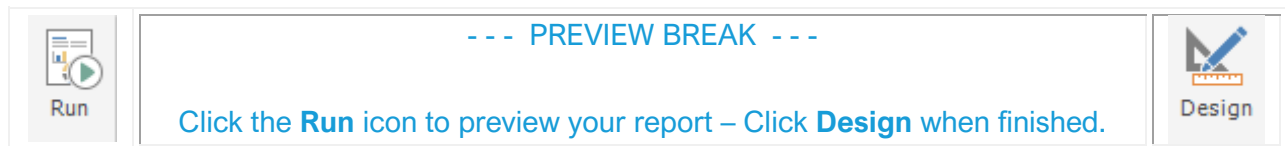
3. If you run the report and hover over one of the employees in the **Employee Name** column, the mouse pointer should change

4. If you click on the employee, it will take you into the Workforce Administration page for that employee
    a. Login for New World ERP
        i. User: **lab***
            1. where * represents your laptop station identifier (1 through 50)
            2. example **lab11**
        ii. Password: **connect123**

Expand/Collapse All

1. In the *Report Data* tray on the left, right-click *Parameters*, then select *Add Parameter*
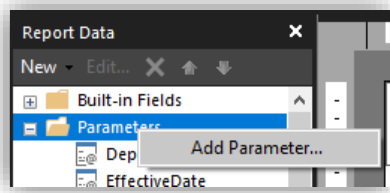
2. In the *Report Parameter Properties* window
    a. *Name:* ***ExpandCollapse***
    b. *Prompt:* ***Expand/Collapse***

3. Select the *Available Values* tab on the left
    a. Select *Specify values*
    b. Click **<Add>**
        i. *Label: **Expand All***
        ii. *Value: **Expand***
    c. Click <Add>
        i. *Label* = ***Collapse All***
        ii. *Value* = ***Collapse***

4. Select the *Default Values* tab on the left
    a. Select *Specify values*
    b. Click **<Add>**
        i. *Value: **Collapse***

5. Click **<OK>**
6. Click somewhere in the Tablix revealing the gray border

7. Right click on the Details row in gray border on the left side of the Tablix and select *Row Properties*
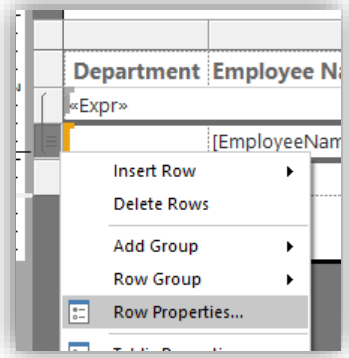
8. Select *Visibility* tab on the left
   a. Select *Show or hide based on an expression*
   b. Click the button to add an Expression
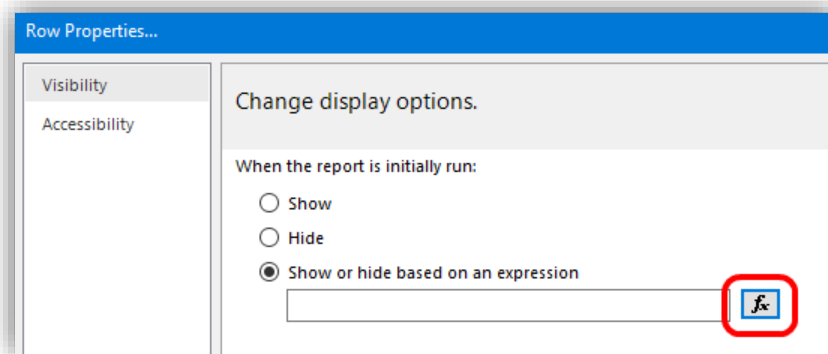
   i. Enter the following in the expression
      =IIF(Parameters!ExpandCollapse.Value="Expand", False, True)
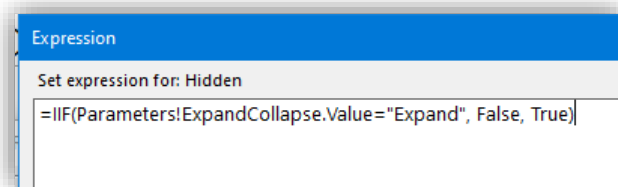
ii. Click **<OK>**
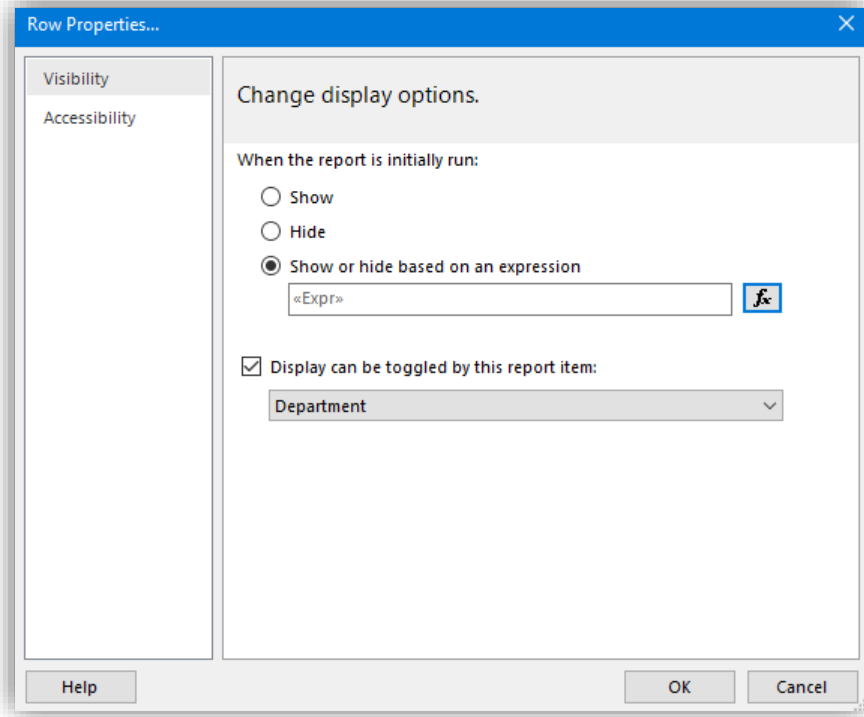
c. Click **<OK>**
9. Select the *View* tab at the top of Report Builder
10. Check *Properties* to display the *Properties* tray on the right
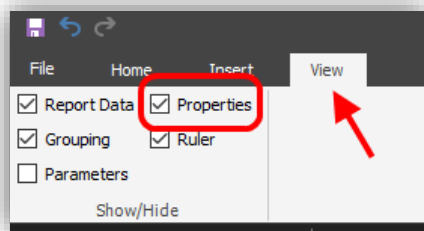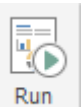
11. In your Tablix, select the Department group header cell (the cell we merged earlier)

12. Select the property titled *InitialToggleState* near the bottom of the *Properties* tray under the *Visibility* section
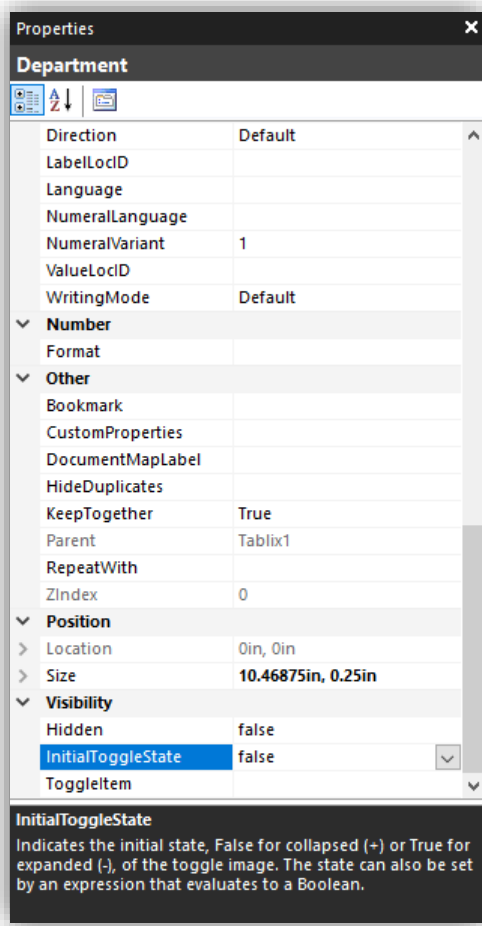
13. Enter the following in the expression, replacing the ***false*** text
   =IIF(Parameters!ExpandCollapse.Value="Expand", True, False)

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.

14. Select *Expand/Collapse* = **Expand All**

15. Click **<View Report>**
    Notice all Department groups are expanded

Employee Information Report

Department Employee Name	Employee Number	Employee Type	Position Number	Position Title
001 – Council (8 employees)				
Kreamalmeyer, Armani J	4169	EO	1059004	Council Person
Beecken, Marlon	4170	EO	1059002	Council Person
Debeaumont, Dayana	3741	EO	1059003	Council Person
Washabaugh, Adolfo	3858	EO	1059001	Council Person
Leeks, Destini	3536	EO	1059008	Council Person
Cutrell, Keith	186	EO	1059005	Council Person
Maiello, Johanna J	4018	EO	1059011	Council Person at Larg
Tueller, Misty P	3017	EO	1060001	Council President
002 – Clerk of Council (2 employees)				
Bedson, Seth	4259	PF	2912001	Deputy Clerk of Counc
Schwartze, Kristopher	3643	PF	2001001	Clerk of Council
010 – Information Technology (5 employees)				
Buffa, Carmen	2668	PF	10026002	I.T. Specialist 3
Guiga, Rosalinda	4127	PF	10027001	IT Specialist 2
Levian, Blanca G	804	PF	10912001	Information Technolog
Hoder, Jarod A	2273	PF	10026001	I.T. Specialist 3
Bierbower, Blair S	3731	PF	10022001	IT Specialist 1
011 – Mayor's Office (3 employees)				
Bunche, Helen C	4130	TP	11001001	Administrative Assistar
Burtner, Stefan G	669	PF	11030002	Police Support Special
Gonzale, Nadine	2183	EO	11067001	Mayor

Department: 001 - Council, 002 - Clerk of (Effective Date: 05/21/2024 Expand/Collapse: Expand All

EXERCISE – UPDATE AN EXISTING REPORT TO ALLOW DATA ENTRY

Free Form Entry

1. Open an existing report by clicking *File > Open* in the upper left corner
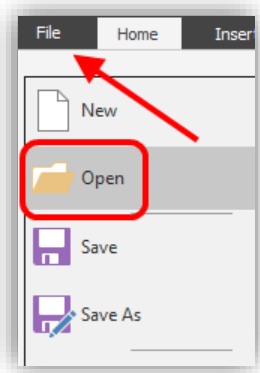
a. Locate the **EmployeeVerificationForm.rdl** file in the Windows **Desktop > SSRS** folder and double-click to open it in Report Builder

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123 Elm Street
City County, MI 48084
(248) 269-1234

Name	[EmployeeName]
Hire Date	[HireDate]
Position	[PositionTitle]
Address	[PrimaryAddressLineOne] [PrimaryCity], [PrimaryState] [PrimaryZip]

Date	«Expr»

Remarks

- - - PREVIEW BREAK - - -

Click the **Run** icon to preview your report – Click **Design** when finished.

Run

Design

2. Select any employee and click **<View Report>**
3. Click the Print Layout icon to view the report in a print preview mode
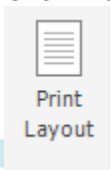
Print
Layout

41

This is a basic Employment Verification Form with an area for Remarks. Instead of writing in remarks by hand, we're going to modify this report to allow you to enter them through SSRS.

4. In the *Report Data* tray on the left, right-click *Parameters*, then select *Add Parameter*
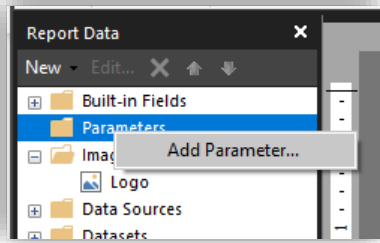
5. In the *Report Parameter Properties* window, enter **Remarks** into the *Name* and *Prompt* fields.
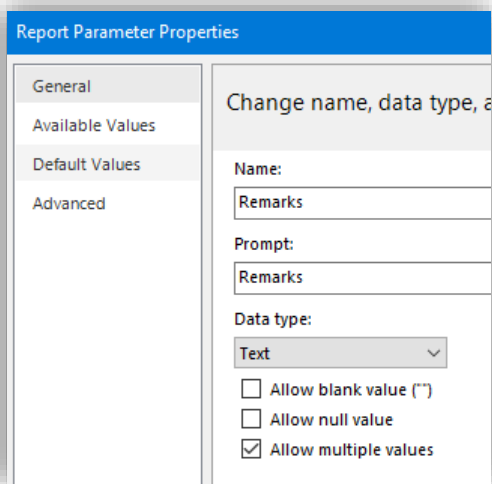
6. Click **<OK>**
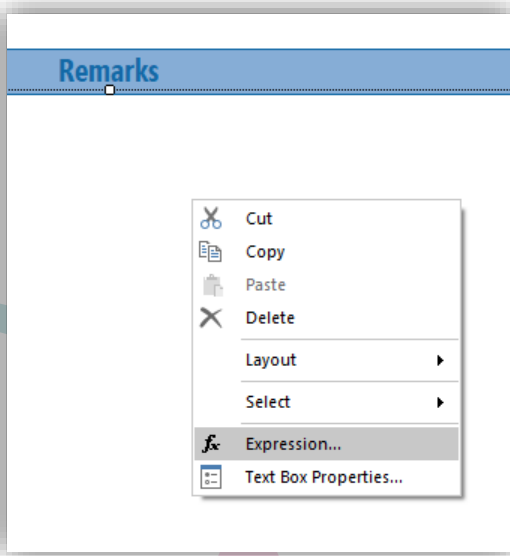
7. Enter the following into the *Expression* window
   a. **=Join(Parameters!Remarks.Label, chr(10))**
8. Click **<OK>**

	- - - PREVIEW BREAK - - -	
Run	Click the **Run** icon to preview your report – Click **Design** when finished.	Design
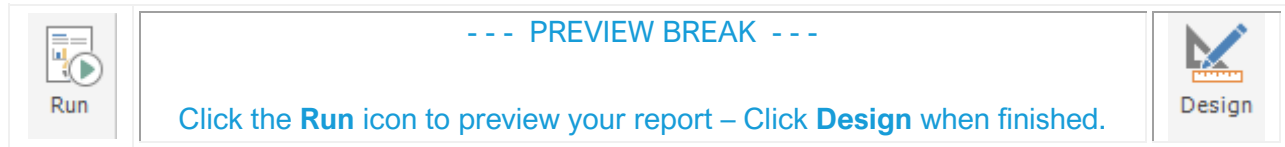
9. Click the drop-down arrow next to the new **Remarks** parameter
10. Click inside the area that opens and begin typing a message

Select Employee	4267 - Abes, Maranda ⌄
Remarks	⌄

Ms. Abes is a Housing Inspector
She was hired approximately 18 months ago
She is a full time employee
Her employment is in good standing
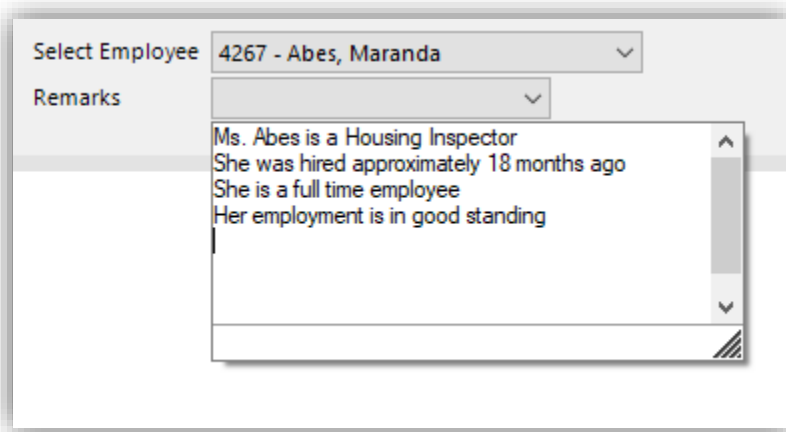
Note: You can press enter to go to a new line and enter as much text as you like

11. Click **<View Report>**

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123 Elm Street
City County, MI 48084
(248) 269-1234

Name	**Abes, Maranda**	Date **05/02/2024**
Hire Date	**11/21/2022**	
Position	**Housing Inspector**	
Address	**2444 Mulberry Way**	
	TROY, MI 48084	

Remarks

Ms. Abes is a Housing Inspector
She was hired approximately 18 months ago
She is a full time employee
Her employment is in good standing

_____   _____
Manager   Date

APPENDIX

Data Sources

When New World ERP reports have been deployed to an SSRS Report Server, a Data Source is created to allow the standard reports to connect to the New World ERP Database. This *Shared Data Source* should be used when creating new or modifying existing reports.

In Report Builder, instead of creating a new data source, you can **<Browse>** for an existing one. After clicking the **<Browse>** button in the *Data Source Properties* menu, enter the report server URL into the file name field. The URL is structures as follows...
http://***SSRS Server Name or IP Address***/reportserver
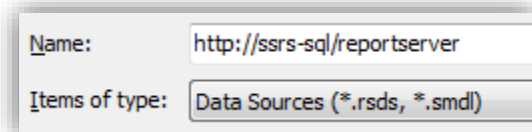
Press **<Enter>** or click the **<Open>** button to browse the Report Server directory. You should see the folder where the New World ERP SSRS reports were deployed during the initial installation.
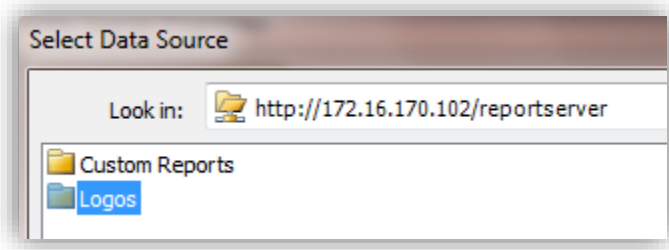
Located and select the data source icon 🖳 and click **<Open>**. The data source will typically be named *LogosDB*.

SSRS Report Services URL

The SSRS Report Server (i.e. Reporting Services) is generally installed on the New World ERP Database Server. The Reporting Services directory tree can be accessed using one of the following URLs:
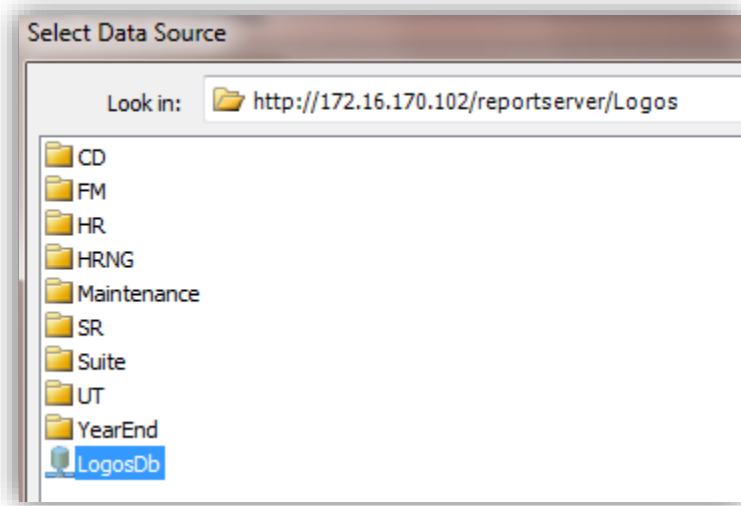
http://ServerName/reports

Use this path when directly browsing the SSRS folders via Internet Explorer, setting security, uploading new reports, creating folders, etc.

http://ServerName/ReportServer

This path provides a basic navigation which can be used for browsing and uploading reports via Report Builder.

SSRS Report Services URL (Named Instances of SQL)

If using a named instance of SQL, the URL must include an underscore followed by the name of the instance. In the example below, the SQL instance is called "finance."

http://ServerName/reports_finance

Direct Links to Custom Reports

Once the report is published, a direct link to execute it can be obtained with the following URL structure:

http://***ServerName***/ReportServer/Pages/ReportViewer.aspx?%2f***FolderName***%2f***CustomReportName***

If there are multiple folders in the directory, they should be ordered sequentially. Use "%2f" instead of '/' between folder names. Spaces in the folder names must be separated with a + sign.

Example:

http://NWSDB/ReportServer/Pages/ReportViewer.aspx?%2fCustom+Reports%2f Finance+Department%2f BudgetAnalysis

Query Designer

When building a dataset, the query can be built from the Report Builder *Query Designer* tool. This feature can be accessed from the Dataset (Query) Properties, by clicking the **<Query Designer>** button.
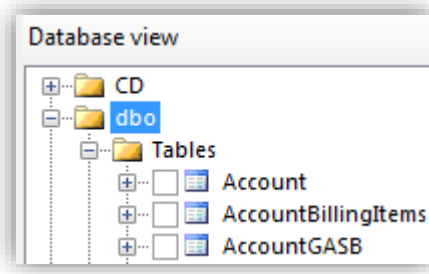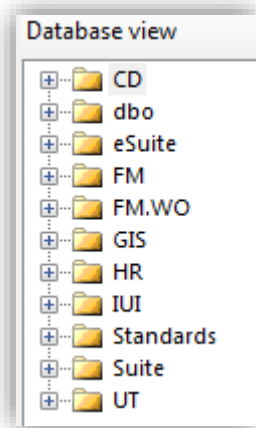
Query Designer...

Query Designer provides a visual query mechanic for those not familiar with SQL syntax.

It has four components:

1. **Database View**

    The *Database View* can be drilled into through the folder structure on the left.

Tables and Views are categorized into folders, based on their applied schema (i.e. FM, HR, UT, CD), although most of the classic tables can be currently found in the DBO (database object) schema.

A table can be selected as a whole or by selecting individual fields. Fields will either be used in the report output or to link to other tables.

2. **Selected Fields**

Fields selected from the *Database View* will populate the *Selected Fields* window. If a field is represented by more than one table, it will appear as *Table Name Field Name*.

The *Selected Fields* window will allow you to move, delete, or group fields.

If the fields are grouped, an aggregate is selected from the right-hand column.
Example: The "sum" aggregate applied to the **TransactionAmount** will sum the transactions where all other grouped fields share a common set of values.
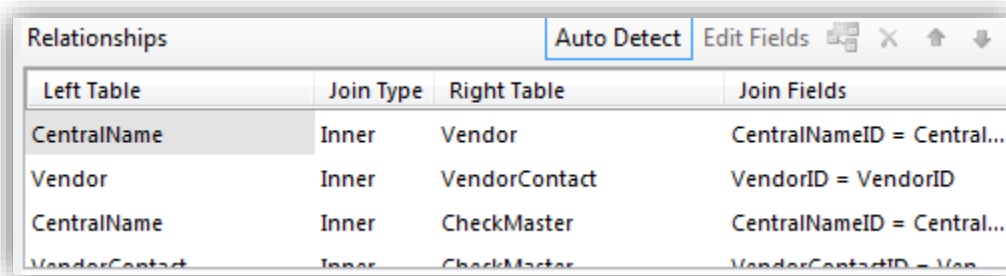
3. **Relationships**

   Relationships represent the joins between one or more tables. They are joined on a key that the tables share. It is common to have many joins in a single query.
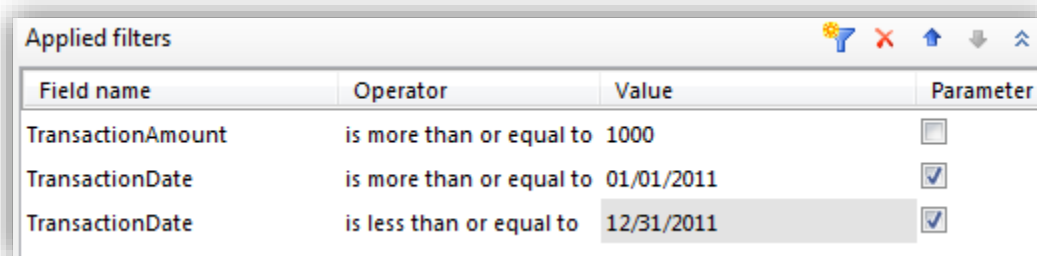
   The *Relationships* are generally collapsed by default. The Auto Detect feature [Auto Detect] serves to build the table joins automatically. This setting can be turned off by clicking the button and manual joins can be created, if desired. The ⩔ icon can be used to expand this section. You can also use the expand toggle to view the automatically created joins.

Relationships			Auto Detect	Edit Fields 🖫 ✕ ⬆ ⬇
Left Table	**Join Type**	**Right Table**	**Join Fields**	
CentralName	Inner	Vendor	CentralNameID = Central...	
Vendor	Inner	VendorContact	VendorID = VendorID	
CentralName	Inner	CheckMaster	CentralNameID = Central...	
VendorContact	Inner	CheckMaster	VendorContactID = Ven...	

4. **Applied Filters**

   Filters 🝑 can apply a measured constraint or restrict the query to a specific set of values. The filter may indicate that a specific value should be validated, or it can be used as a parameter, which will allow the end-user to specify the criteria.

Applied filters			🝑 ✕ ⬆ ⬇ ⩔
Field name	**Operator**	**Value**	**Parameter**
TransactionAmount	is more than or equal to	1000	☐
TransactionDate	is more than or equal to	01/01/2011	☑
TransactionDate	is less than or equal to	12/31/2011	☑

🗗 Edit as Text   You can view the SQL syntax for your query at any time by clicking the **<Edit As Text>** button.

▶ Run Query   Before completing your dataset, use the **<Run Query>** button to confirm it returns the values you were expecting. This will also help to catch any errors, due to improper query design.