Hands-On Lab

SQL Server Reporting Services Report Creation

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Visualutions
Tomorrow’s Vision - Today’s Solution
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Overview

This lab will help users to author a report using Report Builder 3.0. In the exercise, you will create a report by creating tables. You will then create and configure a report parameter for this report. Publish the report parameter and main dataset to the server. You will then create a drill-through report using Report Builder. You will add interactivity to the report and add a link to the first report built in Lab 2.

Objectives

The objectives of this exercise are to:

Use Report Builder 3.0 to:

- Create a report using the Table Wizard
- Add date range parameters
- Add formatting
- Add interactivity to the report
- Add a drill through report
- Create buttons on the drill through report
- Publish the report

Exercises

This Hands-On Lab comprises the following exercise:

1. Creating the Base Report
2. Creating the Drill Through Report
3. Linking the Reports using Report Builder Actions
4. Running and Obtaining Results

Estimated time to complete this lab: 90 minutes.
Creating the Base Report

In this exercise, you will commence by launching Report Builder, and then create a report using the Table Wizard. Having developed the report layout, including the configuration of report parameters, you will publish the report parameters and main dataset for use by the report authored in Lab 2.

The finished report will resemble the following.

<table>
<thead>
<tr>
<th>Patient Registry Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Service: 1/1/2007 to 12/31/2007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient ID</th>
<th>Patient Name</th>
<th>Date Of Birth</th>
<th>Gender</th>
<th>Phone Number</th>
<th>E-Mail</th>
<th>Occupation</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>127</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Reported</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>67</td>
<td></td>
<td></td>
<td>M</td>
<td><a href="mailto:EBoyd@buddy.com">EBoyd@buddy.com</a></td>
<td>NONE</td>
<td>None</td>
<td>Net Hispanic or Latino</td>
</tr>
<tr>
<td>#FTHA</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Reported</td>
</tr>
<tr>
<td>778</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>310</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Reported</td>
</tr>
<tr>
<td>38</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>276</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>Fashion Designer</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>331</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>220</td>
<td></td>
<td></td>
<td>F</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>341</td>
<td></td>
<td></td>
<td>M</td>
<td>NONE</td>
<td>NONE</td>
<td>None</td>
<td>Net Hispanic or Latino</td>
</tr>
</tbody>
</table>

Task 1 – Launching Report Builder

In this task, you will launch Report Builder.

1. Double-Click the Report Builder 3.0 icon located on the Taskbar.

Task 2 – Creating a Report Using the Table Wizard

In this task, you will use the Table Wizard to create the report. This will involve the creation of a dataset, and arranging the dataset fields to produce the table design. The dataset will be configured to support date range parameters that will enable users to request the report for a specific date range.

1. To create a new table report when Report Builder launches, click Table or Matrix Wizard in the Getting Started window.
2. In the **New Table or Matrix** window, in the **Choose a Dataset** step, ensure the **Create a Dataset** option is selected (located at the bottom of the window), and then click **Next**.

3. To browse to a published shared dataset, in the **Choose a Connection to a Data Source** step, click **Browse**.

4. In the **Select Data Source** window, double-click the **Visualutions** folder, double-click **Data Sources** select the **VisAnalytics** data source, and then click **Open**.

   If prompted for **credentials** then use the following:

5. In the **New Table or Matrix** window, click **Next**.

6. In the **Design a Query** step, click **Import** in the menu.

7. Browse to **UGLab U:\SSRS Lab Queries Patient Registry Query.sql**.

8. To preview the data, click **Run**.

9. Notice the output of the data is displayed.
10. Click **Next**.

11. In the **Arrange Fields** step, in the **Available Fields** list, select the fields and drag them to the spots as shown below.

12. Verify that the field arrangement looks like the following.
13. Click **Next**.

14. In the **Choose the Layout** step, click **Next**.

15. In the **Choose a Style** step, click **Finish**.


17. To save the report, click the top left corner button (for the purpose of this lab, it will be referred to as the **Report Builder** button), and then select **Save**.

18. In the **Save as Report** window, browse to **Recent Sites and Server**, double-click the **UG18** folder.

19. In the **Name** box, replace the text with **Patient Registry Report**, and then click **Save**.
Task 3 – Developing the Table Report Layout

In this task, you will format the report layout that will involve adding a report header, configuring the title textbox, and formatting the table, its columns, and date value formats.

1. To add a header to the report, on the Insert ribbon tab, inside the Header & Footer group, click Header. Then select Add Header.

2. Select the title textbox (the text in the title textbox reads Click to Add Title), and then drag it into the top of the report header. Leave about an inch of space, enough room to add an image.

3. In the Report Data pane (located on the left), expand the Built-in Fields folder, and then drag the Report Name field into the title textbox.

   Note: The last step has assigned an expression that will dynamically assign the name of the report to the textbox.

4. Resize the Report Name to 20 by clicking on the [&ReportName] and then selecting to font size in the upper ribbon.

5. Click on the Parameters file box to expose the Reports Parameters.

6. Drag both the FromDate and the ToDate Parameters into the text box.

7. Use the enter button to create a new line with the Parameters. Enter the text exactly as displayed below and resize the line to 11px.

   [ &ReportName ]
   Date of Service: [@FromDate] to [@ToDate]

8. To select the table, click anywhere inside it to reveal the column and row guides. Then click the top left corner.

9. Click and drag the four-headed arrow to reposition the table to the top left corner of the body of the report.

10. To widen the first column, click anywhere inside the table to reveal the column and row guides, and then drag the right edge of the first column guide to widen the column to approximately twice its original size.

11. To select all the second column’s textboxes, select the box above the Patient Name Header.
12. Resize each column by clicking and dragging the edge.

13. Rename the phone and e Mail columns to Phone Number and E-Mail.

14. Center-align all the columns. To center-align the columns, on the Home ribbon tab, inside the Paragraph group, click the Center align button.

15. Exposed the Properties side bar, click the view tab and select the Properties check box.

16. Highlight the column headers by clicking on the left most row.

17. Change the Fill – Background color to #1b416d.

18. Change the Font – Color to White.

Task 4 – Configuring the Report Parameter

In this task, you will develop the Date Range report parameters to prompt the user with available values. You will also extend the layout of the report to display the parameter selection in the header of the report.

1. In the Report Data pane under the Parameters folder select the FromDate parameter, Right-Click and select Parameter Properties.
2. Change the Data Type from Text to Date/Time and click OK.

![Report Parameter Properties][1]

3. Repeat steps for ToDate.

4. To preview the report, on the Home ribbon tab, click Run.

5. In the Date parameters enter a date range and then click View Report (located at the far right).
   - Try date range of 1/1/2014 – 12/31/2014

6. Notice that the report header displays the parameter selection.

7. To save the report, click the Report Builder button, and then select Save.

Creating the Drill-Through Report

In this exercise, you will commence by launching Report Builder, and then create a report using the Table Wizard. Having developed the report layout, including the configuration of report parameters, you will publish the report parameters and main dataset for use by the report.

The finished report will resemble the following.
Task 1 – Launching Report Builder

In this task, you will launch Report Builder.

1. Double-Click the Report Builder 3.0 icon located on Taskbar.

Task 2 – Creating a Report Using the Table Wizard

In this task, you will use the Table Wizard to create the report. This will involve the creation of a dataset, and arranging the dataset fields to produce the table design. The dataset will be configured to support date range parameters that will enable users to request the report for a specific date range.

1. To create a new table report when Report Builder launches, click Table or Matrix Wizard in the Getting Started window.
2. In the **New Table or Matrix** window, in the **Choose a Dataset** step, ensure the **Create a Dataset** option is selected (located at the bottom of the window), and then click **Next**.

3. To browse to a published shared dataset, in the **Choose a Connection to a Data Source** step, click **Browse**.

4. In the **Select Data Source** window, double-click the **Visualutions** folder, double-click **Data Sources** select the **VisAnalytics** data source, and then click **Open**.

   If prompted for credentials then use the following:

   ![Enter Data Source Credentials](image)

   - **Use the current Windows user**
   - **Use the following**:
     - **User name:** [Enter user name]
     - **Password:** [Enter password]
   - **Use as Windows credentials**
   - **Save password with connection**

5. In the **New Table or Matrix** window, click **Next**.

6. In the **Design a Query** step, click **Import** in the menu.

7. Browse to **U:SSRS Lab Queries** and select **Link Report – Problems Query.sql**.

8. To preview the data, click **Run**.

   ![Run Query](image)

9. Notice the output of the data is displayed.
10. Click **Next**.

11. In the **Arrange Fields** step, in the **Available Fields** list, select the fields and drag them to the spots as shown below.

12. Verify that the field arrangement looks like the following.
13. Click Next.

14. In the Choose the Layout step, click Next.

15. In the Choose a Style step, click Finish.

16. Add the ObsTerm DataSet.

17. Right click on Datasets in the left side Report Data Pane.

18. Click on “Use a dataset embedded in my report.”

19. Use the drop down to select the proper Data Source.

20. Click on the import button. Browse to U:\SSRS Lab Queries and select Link Report – Observation Query.sql.

21. Rename the data set to “ObservationLookup”. See example below.
22. Select Table Wizard from the insert tab.

![Image of Table Wizard]

23. Click on the “ObservationLookup” Dataset.

24. In the **Arrange Fields** step, in the **Available Fields** list, select the fields and drag them to the spots as shown below.

25. Verify that the field arrangement looks like the following.

   ![Arrange Fields Diagram]

26. Click **Next**.

27. In the **Choose the Layout** step, click **Next**.

28. In the **Choose a Style** step, click **Finish**.

![Report Builder Table]

29. In **Report Builder**, if necessary, maximize the window.

30. To save the report, click the top left corner button (for the purpose of this lab, it will be referred to as the **Report Builder** button), and then select **Save**.
31. In the **Save as Report** window, browse to **Recent Sites and Server**, double-click the **UG18** folder.

32. In the **Name** box, replace the text with **Patient Registry Link Report**, and then click **Save**.

**Task 3 – Developing the Table Report Layout**

In this task, you will format the report layout that will involve adding action buttons, a Show /hide function and general formatting of the link report.

1. **Add 2 rows to each Table to house the Buttons and the Patient Identification information.**
   - Click anywhere inside of the table.
   - Right click on the grey box to left of the row.
   - Click on **Insert Row, Above**.
   - Repeat for the second table, make sure both tables now have 2 additional rows above the headers.

2. **Stretch the columns of the Problems Table to fit the labels.**
   - Click anywhere inside of the table.
   - Click and drag the columns to size.
Repeat for the Observation Table. Make the total size match the Problems Table.

Review that your tables look the same as the example below.

3. Merge cells to remove dead space.
   - Click anywhere inside of the table and highlight the cells to merge.
   - Click the Merge button on the top right hand of the ribbon.

4. Add button Labels.
   - Click into each cell of the top row for each table.
   - Type Home, Observations, Problems List into the Columns.

   - Repeat for each table.

5. Add the Patient Information on the second row.
   - Type “PatientID:” into the first cell.
   - Right click and select create placeholder.
In the Value click on the Fx box.

Double click on the “PatientID” in the Fields, Values of the pop-up box. Click ok.

Repeat for Patient Name and Date of birth on the next two cells. Also repeat on the second Table. Make sure your work looks exactly like the example below.

6. Add Color Formatting to each table.
   - Show the Properties side bar by clicking the Properties check box in the view tab on the top ribbon.
   - Click on the second row and change the Background Color to “#1966af.”
   - Click on each placeholder and change the Font color to “yellow.”
   - Click on the third row and change the Background Color to “Lavender” and the Font color to “#1966af.”

7. Add Date Formatting to the date time fields.
   - Click on the Birthdate field, change date type from Default to Date.
8. Finished, the tables will look like the following.

9. Save the Report by clicking the Save button.

Task 4 – Configuring the Report Parameter

In this task, you will develop the report parameters to prompt the user with available values. The parameters we will create are as follows:

**Patient ID**: This will be used to filter and only show data based on a single patient chosen from the Registry report.

**Show**: This will be the button controller parameter. This will give us the ability to show and hide the two different tables based on the value input from which button we click.

**Date range** (*FromDate, ToDate*): The date range for this report is only used as data holders. This way, when the home button is clicked to go back to the Registry report, the Link report can pass the correct date ranges.

10. In the Report Data pane under the Parameters folder, select the **Patient ID** parameter, Right-Click and select Parameter Properties.

11. Verify the Data Type is **Text** and click OK.
12. Right Click on the parameters, then click add parameter. Change the Name and the Prompt to Show. Click the ok button.

13. Create parameters for StartDate and EndDate, changing the data type to Date/Time.

14. Review the parameter list and make sure it matches the following:

```
Parameters
- PatientID
- Show
- StartDate
- EndDate
```

15. To preview the report, on the Home ribbon tab, click Run.

16. In the Date parameters enter a date range and then click View Report (located at the far right).

   Try date range of 1/1/2014 – 12/31/2014

17. Notice that the report header displays the parameter selections.

18. To save the report, click the Report Builder button, and then select Save.

---

### Linking the Reports using SSRS Actions

#### Task 1 – Create link on the Patient Registry Report

In this task, you will add a link to the Patient Registry Report drilling into the Patient Registry Link Report.

1. To return to the Patient Registry Report.

2. In the Data Table Right-Click on the textbox PatientID and select Text Box Properties.
3. Select Action. Choose Go to Report, then click Browse.

4. Select Patient Registry Link Report then Open.
5. Select Add 4 times to create 4 parameters.

![Text Box Properties]

6. Select PatientID for the first parameter from the name drop down. Select Patient ID from the Value Drop down.

7. Select FromDate and ToDate for the names of the next two parameters.

8. For the value, select the Expression builder button.

![Parameters Values]

9. From the Parameters Values list, select the FromDate parameter. Click ok.
10. **Repeat** for the **ToDate**.
11. Add the Parameter *Show* and set the Value to 1. Click the **OK** button.

12. Change the font on the **PatientID** text box to blue.
13. **Underline** the **PatientID** textbox.

14. To save the report, click the **Report Builder** button, and then select **Save**.

**Task 2 - Create Buttons on Link Report**

1. Return to the Patient Registry Link Report rdl file.
2. Add Visibility options to Both Tables. Right click on the table and click on Tablix properties.
3. Click on the **Visibility** section. “Show or Hide based on an expression”. Click on the **Fx** button and enter the expression shown. This expression will show the table if the Parameter “Show” equals 1. Click the **OK** button.

   ![Set expression for: Hidden](image)

   ```
   =if(Parameters!Show.Value = 1, False, True)
   ```

4. Repeat for the other Table changing the value of the expression to 2.

5. In the Problems List Table, change the color of the Problems List text box background to Silver and the Font to “#1b416d.”

6. In the Observations Table, change the color of the Observations text box background to Silver and the Font to “#1b416d.”

### Task 3 - Add Actions to Each Button

In this task, you will add a link to each of the buttons created in the previous task.

1. Right click on the **Problems List** textbox.

2. Click on the Text Box properties.

3. Click on the **Action** tab.

4. Add an action to the report Patient Registry Link Report as you did for the Patient Registry Report using the set up shown below.
5. Repeat for the Observations Textbox changing the Show value to 2.

6. Add an action to the Home Textbox linking to the Patient Registry Report. This action will only require the FromDate and ToDate parameters.

7. Repeat for the second table.

8. Click on the **Save** Button to save your work.
Running the Report

Task 1 – Running and Returning Results

1. Press the Save Button on both the Patient Registry Report and the Link Report. This ensures the reports are the most updated versions.

2. Using the Patient Registry Report, click on the Run button.

3. Enter date ranges to the Parameter and click on the VIEW REPORT button.

4. The results will look like this:

5. Click on Patient ID 67. By doing so, the report will open the Link Report.

6. Click on any of the other buttons and notice that the Link report buttons change the output and the highlight, mimicking a webpage. Click Home to Return to the Patient Registry Report.
Task 2 – Export Results

SSRS allows users to export results into many formats, including CSV, PDF, Word, and Excel.

1. Export the Results of the Patient **Registry Report** to CSV by clicking on the Export button and selecting CSV.

2. You will be prompted to enter a save name for the CSV file. Use the name Patient Registry Report and save to the desktop.

3. Open the file with any compatible CSV tool like Excel or notepad.

4. Congratulations you have successfully created a SSRS Active Report!