

Power BI

Paginated Reports

in a Day

Lab 03A - March 2023 release

Develop a List Report


Overview


The estimated time to complete this lab is 45 minutes.

In this lab, you will develop the **Salesperson Directory** report using the List data region. The report will be based on the **AdventureWorksDW2021-PRIAD** Azure SQL Database. You will then publish the report to Power BI.


The final report will look like the following:

Salesperson Directory







ABBAS, Syed
Corporate HQ: Corporate HQ
Pacific Sales Manager
926-555-0182
syed-abbas@adventureworks.com



ALBERTS, Amy
Corporate HQ: Corporate HQ
European Sales Manager
775-555-0164
amy-alberts@adventureworks.com



ANSMAN-WOLFE, Pamela
North America: Northwest
Sales Representative
340-555-0193
pamela-ansman-wolfe@adventureworks.com



BLYTHE, Michael
North America: Northeast
Sales Representative
257-555-0154
michael-blythe@adventureworks.com

Exercise 1: Develop a list report

In this exercise, you will develop a list report.

Important: There are many repetitive tasks when developing reports. The labs in this course will progressively reduce the detailed step-by-step instructions when detailed steps have already been provided.

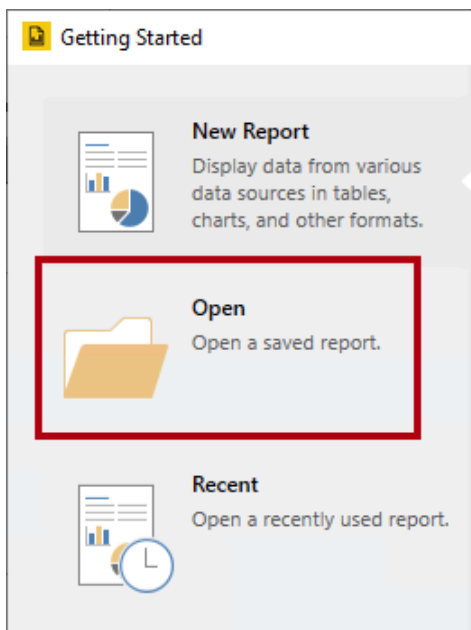
Task 1: Create the report

In this task, you will create the report based on the template created in **Lab 02A**.

The typical development steps for each report developed in this course will be:

- i. Create a report based on a report template, using a friendly report name*
- ii. Add data source(s) to connect to data store(s)*
- iii. Add datasets(s) to retrieve query result(s)*
- iv. Configure report parameters, if required*
- v. Add an expression to the subtitle text box to reflect the report parameter values*
- vi. Add and configuring report items to the report body*
- vii. Remove any excess height from the report body*

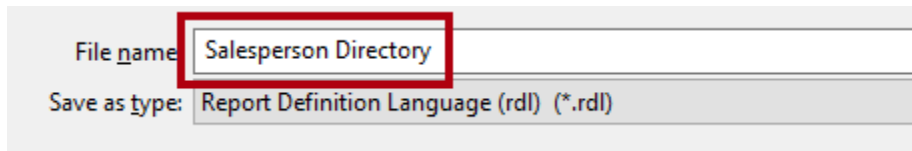
1. Open a new instance of Power BI Report Builder.
2. In the **Getting Started** window, click **Open**.



3. In the **Open** window, navigate to the <**CourseFolder**>\PowerBIPRIAD\MySolution folder.

*Important: If you didn't successfully complete **Lab 02B**, you can open the solution template found in the <**CourseFolder**>\PowerBIPRIAD\Lab02B\Solution folder.*

4. Select the **Portrait Template** report, and then click **Open**.
5. On the **File** ribbon tab, select **Save As**.
6. Save the report as **Salesperson Directory**, to <**CourseFolder**>\PowerBIPRIAD\MySolution folder.

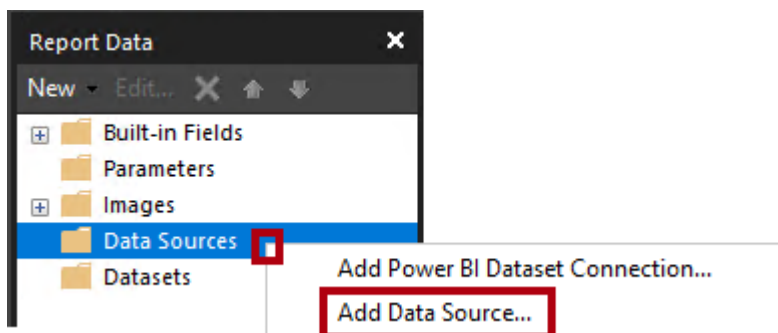


Tip: It's a good practice to save the file with the full name of the report. By default, this will become the name of the report in Power BI. Also, the file name will be displayed in the report title text box (as defined in your report template).

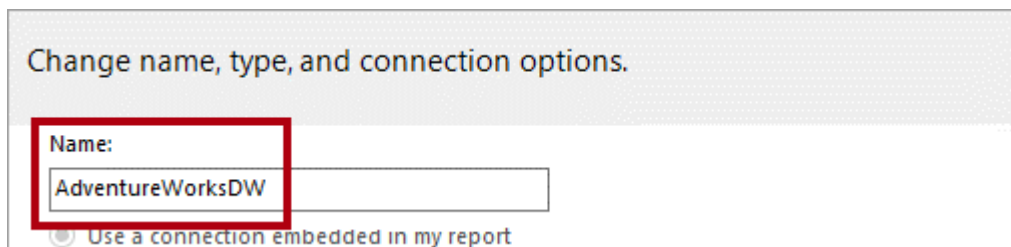
Task 2: Create the data source

In this task, you will create a report data source for the **AdventureWorksDW2021-PRIAD** Azure SQL Database.

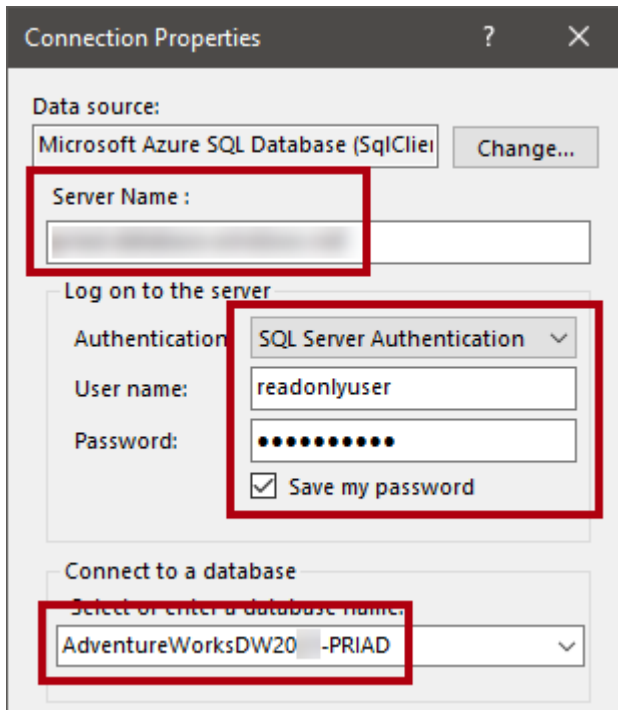
1. In the **Report Data** pane (located at the left), right-click the **Data Sources** folder, and then select **Add Data Source**.



2. In the **Data Source Properties** window, in the **Name** box, replace the text with **AdventureWorksDW**.



3. In the **Select Connection Type** dropdown list, select **Microsoft Azure SQL Database**.
4. To create the connection string, click **Build**.
5. Copy the following connection properties from the **<CourseFolder>\PowerBIPRIAD\MySolution\MyEnvironment.txt** file.
 - Server name: **priad.database.windows.net**
 - Authentication: **SQL Server Authentication**
 - User name: **readonlyuser**
 - Password: **Pass@word1**
6. Check the **Save My Password** checkbox.
7. In the **Connect To a Database** section, in the **Select or Enter a Database Name** dropdown list, **paste in the database name: AdventureWorksDW2021-PRIAD**

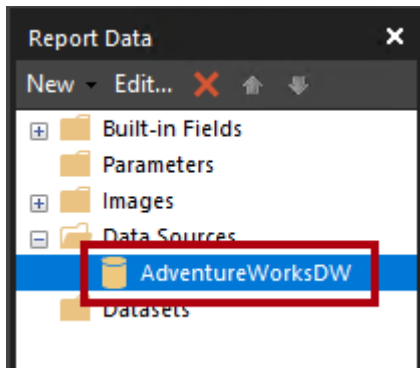


8. Click **Test Connection**, and verify that the connection succeeds, then click **OK**.

Important: If the connection doesn't succeed, it could be because you've entered incorrect connection details, or a firewall doesn't permit you to connect to the Azure SQL Database. If you suspect it's the latter case, you could open the firewall port, or try another network (for example, you could tether to your mobile device). For more information, see [Azure SQL Database and Azure SQL Data Warehouse IP firewall rules](#).

9. In the **Connection Properties** window, click **OK**.

10. In the **Data Source Properties** window, in the **Connection String** box, notice that the connection string has been inserted.
11. Click **OK**.
12. In the **Report Data** pane, verify that the data source is listed.

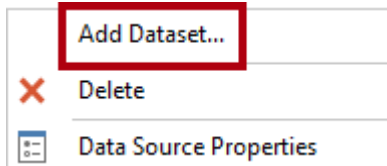


13. Save the report.

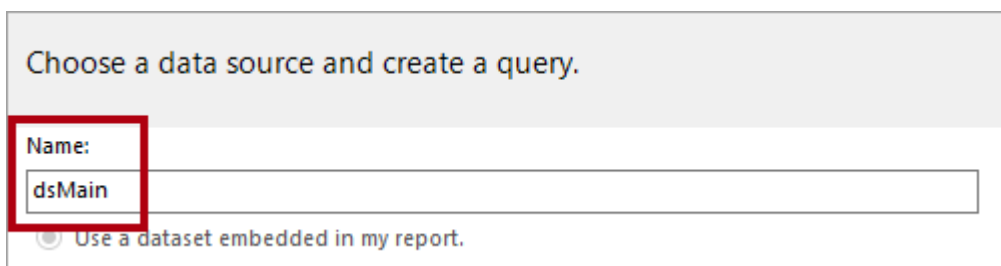
Task 3: Create the dataset

In this task, you will create the main report dataset by using the relation query designer.

1. In the **Report Data** pane, right-click the **AdventureWorksDW** data source, and then select **Add Dataset**.



2. In the **Dataset Properties** window, in the **Name** box, replace the text with **dsMain**.

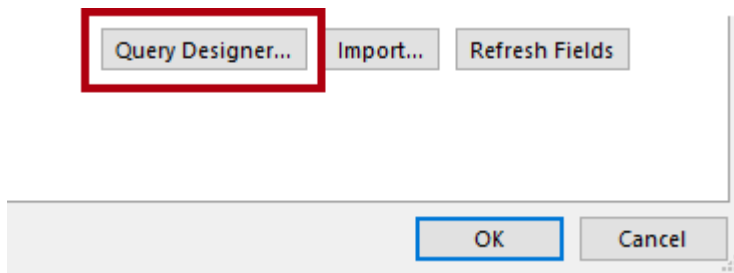


*Datasets must be defined with a unique name within the report. The practice used in this course is to name the principal dataset as **dsMain**.*

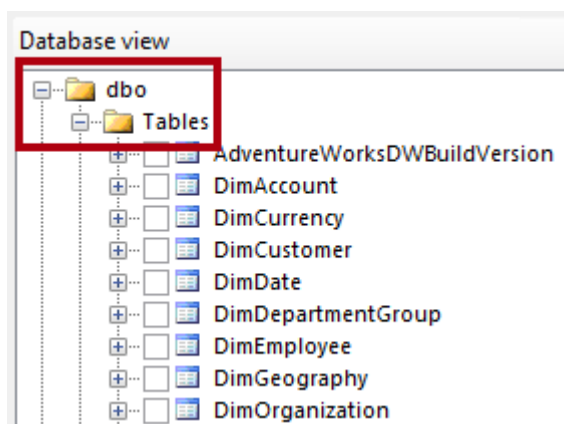
Also, take care to enter the name in the correct case—expression references are always case-sensitive.

3. To define the dataset query, click **Query Designer**.

If prompted, you will need to re-enter the same credentials you entered earlier.

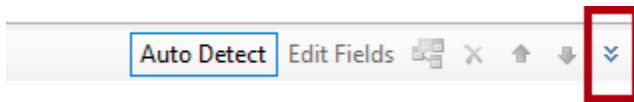


4. If necessary, maximize the **Query Designer** window.
5. In the **Query Designer** window, in the **Database View** pane (located at the left), expand the **dbo** schema, and then expand the **Tables** folder.



6. Expand the **DimEmployee** table, and then check the following six columns:
 - FirstName
 - LastName
 - Title
 - EmailAddress
 - Phone
 - EmployeePhoto
7. Expand the **DimSalesTerritory** table, and then check the following two columns:
 - SalesTerritoryRegion
 - SalesTerritoryGroup

8. In the **Selected Fields** pane (located at the top-right), review—but do not change—the list of fields.
All selected columns have become fields.
9. Beneath the **Selected Fields** pane, notice the **Relationships** section, which by default is collapsed.
10. At the very right of **Relationships**, expand the section to reveal the pane by using the double-chevron.

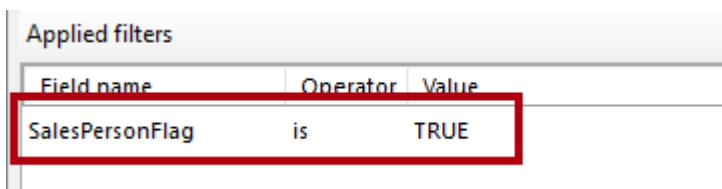


11. In the **Relationships** pane, notice that an inner join relationship was created.
The relationship was created automatically when columns from different tables were checked. The designer will automatically create a relationship when there's a foreign key relationship in the database. It's possible to create or remove relationships and modify the join type for existing relationships. In this instance, there's no need to change the relationship join type.

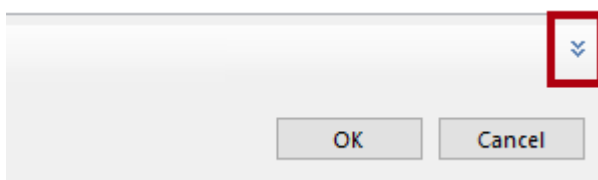
12. In the **Applied Filters** pane (located at the bottom-right), at the far right, click the **Add Filter** button.



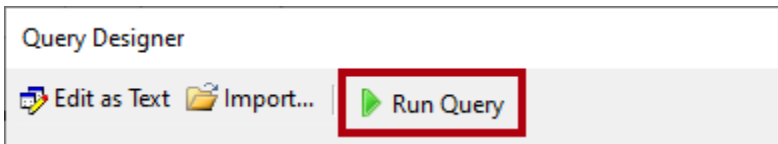
13. Notice that the **FirstName** field was added to the **Applied Filters** pane.
14. Modify the item to filter by the **SalesPersonFlag** column of the **DimEmployee** table.
15. In the corresponding **Value** box, enter **TRUE**.



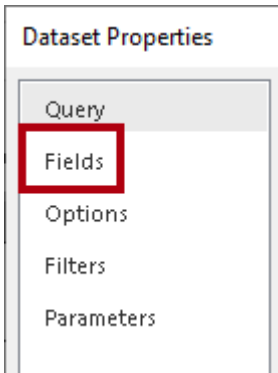
16. At the bottom-right (above the **Cancel** button), use the double-chevron to reveal the **Query Results** pane.



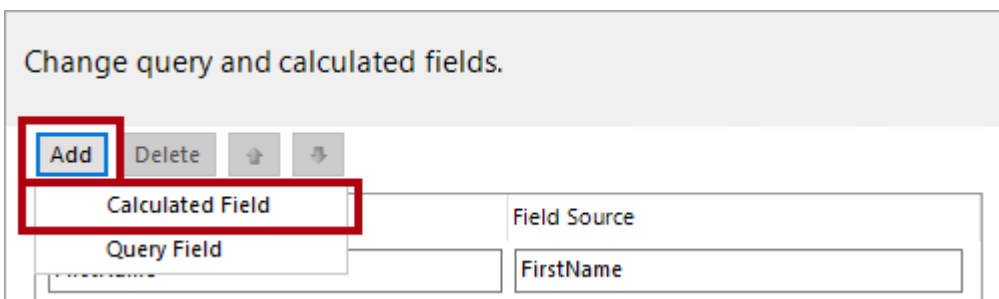
17. On the toolbar, click **Run Query**.



18. Review the query result.
19. To finalize the query design, click **OK** (located at the bottom-right).
20. In the **Dataset Properties** window, in the **Query** box, review the T-SQL query statement, noticing the FROM clause table joins, and the WHERE clause filter.
21. At the left of the window, select the **Fields** page.

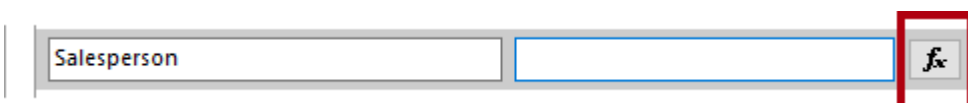


22. To add a calculated field, click **Add**, and then select **Calculated Field**.



Calculated fields extend the fields collection with fields based on expressions. They can be useful when you need to transform the source data into a single field, and when you don't have the skills to write the expression in the native query.

23. Notice the new field is appended to the bottom of the field list.
24. In the **Field Name** box, enter **Salesperson**.
25. At the left of the **Field Source** box, click the function button.



26. In the **Expression** window, enter the following expression:

*For convenience, expressions can be copied from the
<CourseFolder>\PowerBIPRIAD\Lab03A\Assets\Snippets.txt file.*

VB.NET

```
=UCase(Fields!LastName.Value) & ", " & Fields!FirstName.Value
```

*The expression converts the value of the **LastName** dataset field to upper case, and then concatenates (appends) it to a comma followed by a space, which is then followed by the value of the **FirstName** dataset field.*

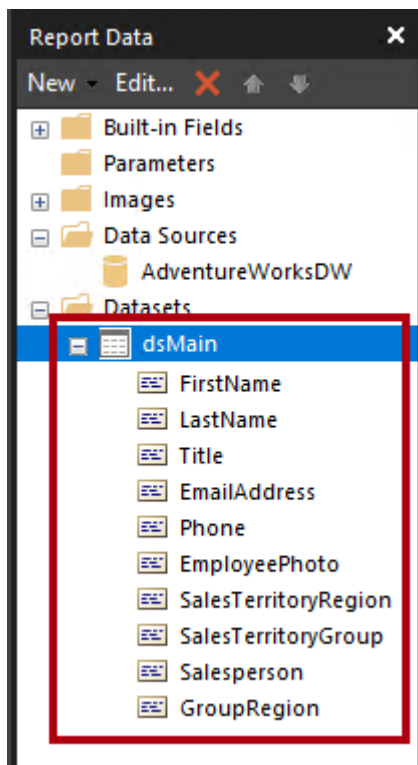
27. Click **OK**.
28. Create a second calculated field named **GroupRegion**, using the following expression:

VB.NET

```
=Fields!SalesTerritoryGroup.Value & ": " & Fields!SalesTerritoryRegion.Value
```

The expression concatenates the two field values together.

29. In the **Dataset Properties** window, click **OK**.
30. In the **Report Data** pane, verify that the dataset is listed.

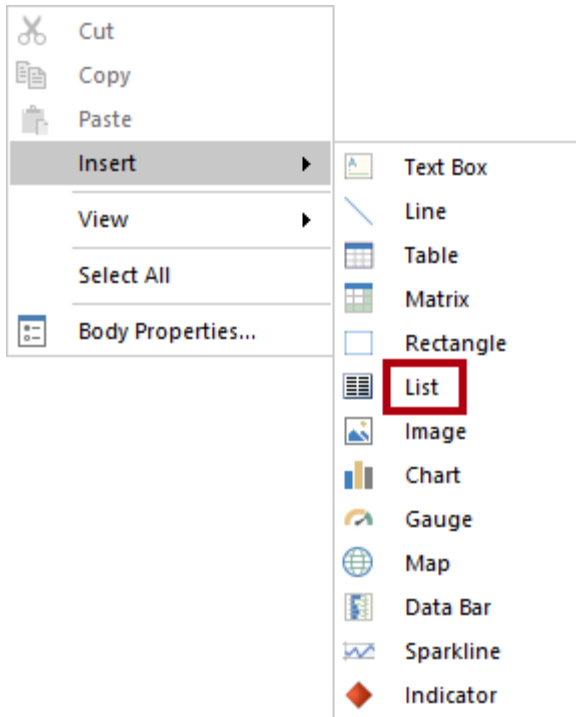


31. Save the report.

Task 4: Develop the report layout

In this task, you will add a List to the report body, and layout the dataset fields by using text boxes, an image and a line. You will also configure the List to sort the data by salesperson.

1. To add a List, right-click inside the report body, and then select **Insert | List**.

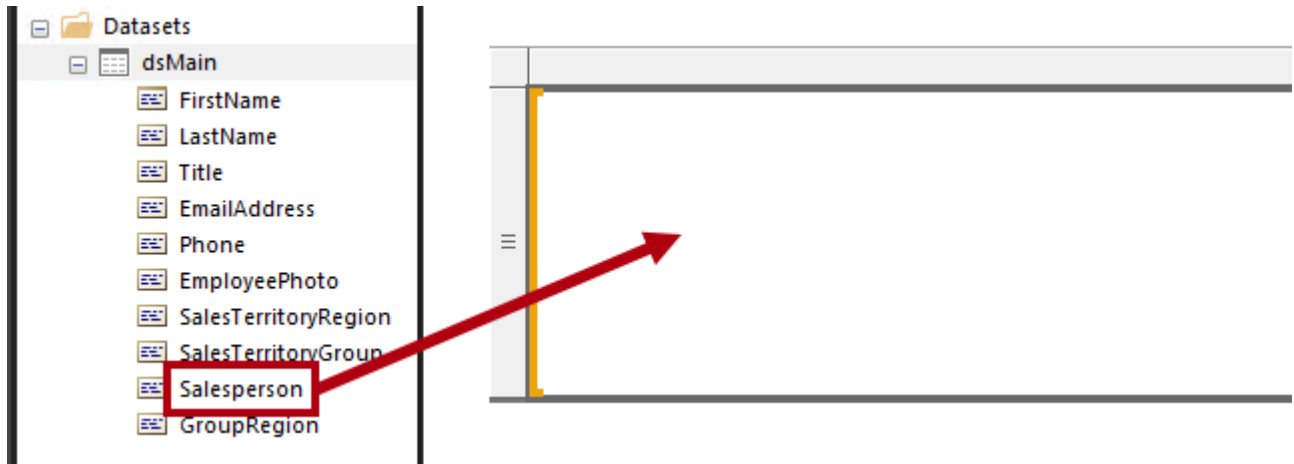


*A List is a rectangular template allowing free-form layout of report objects. You will learn about the List data region in **Module 05**.*

2. Set the size properties of the List:
 - Location, left: **0**
 - Location, top: **0**
 - Size, width: **7.5**
 - Size, height: **1.6**

3. From the **Report Data** pane, drag the **Salesperson** field, and drop it inside the List.

*Dropping a dataset field into the report designer adds a text box configured to display that field. As the field was dropped inside the List, it also automatically configures the List to use the **dsMain** dataset.*



4. Right-click the text box, and then select **Expression**.

5. Review the simple expression.

*The expression retrieves the **Value** property of the **Salesperson** dataset field.*

6. Click **Cancel**.

7. Configure the following properties for the text box:

- Font, size: **18pt**
- Location, left: **1.2**
- Location, top: **0**
- Size, width: **6.3**
- Size, height: **0.3**

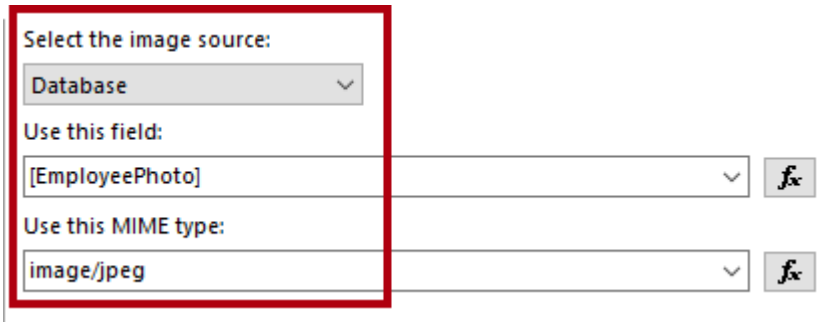
8. From the **Report Data** pane, drag the following four fields into the List, placing each directly beneath the last added text box:
 - GroupRegion
 - Title
 - Phone
 - EmailAddress
9. Configure each for the four text boxes as follows:
 - Location, left: **1.2**
 - Size, width: **6.3**

Unfortunately, it's not possible to multi-select report objects and then modify their location or size properties.

10. Modify the top location property for each of the four text boxes as follows:
 - GroupRegion: **0.3**
 - Title: **0.55**
 - Phone: **0.8**
 - EmailAddress: **1.05**
11. Verify that the List design looks like the following:

	[Salesperson]
	[GroupRegion]
	[Title]
	[Phone]
	[EmailAddress]

12. To add an image, right-click inside the List, and then select **Insert | Image**.
13. In the **Image** properties window, in the **Select the Image Source** dropdown list, select **Database**.
14. In the **Use this Field** dropdown list, select the **EmployeePhoto** field.
15. In the **Use this MIME Type** dropdown list, select **image/jpeg**.



Select the image source:

Database

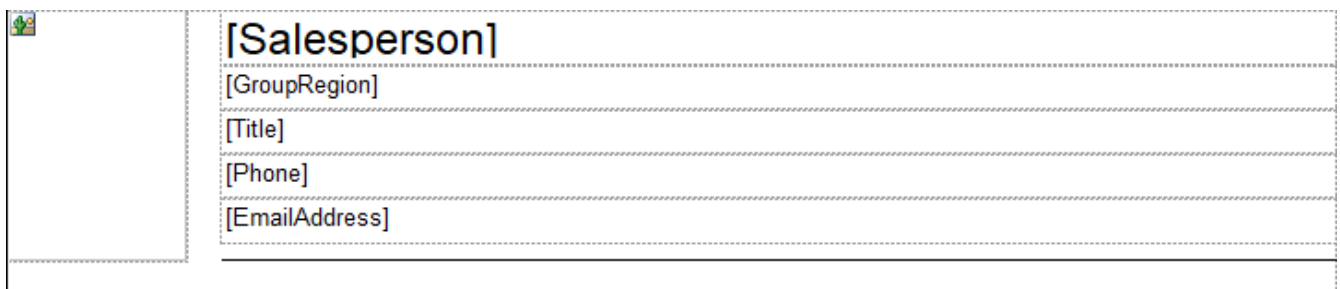
Use this field:

[EmployeePhoto]

Use this MIME type:

image/jpeg

16. Click **OK**.
17. Configure the following properties for the Image:
 - Location, left: **0**
 - Location, top: **0**
 - Size, width: **1**
 - Size, height: **1.4**
18. To add a line, right-click inside the List, and then select **Insert | Line**.
19. Configure the following properties for the Line:
 - Location, left: **1.2**
 - Location, top: **1.4**
 - EndPoint, horizontal: **7.5**
 - EndPoint, vertical: **1.4**
20. Verify that the List design looks like the following:



[Salesperson]

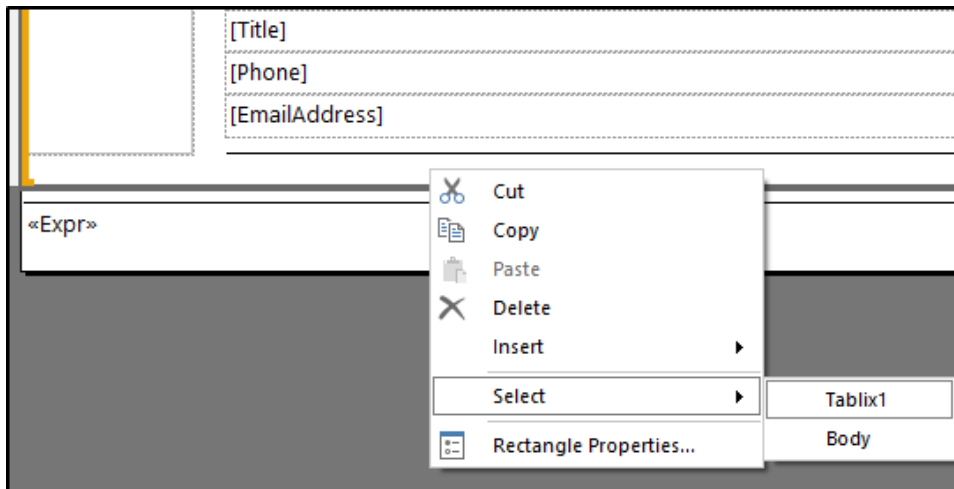
[GroupRegion]

[Title]

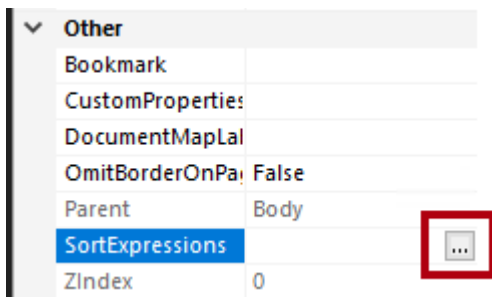
[Phone]

[EmailAddress]

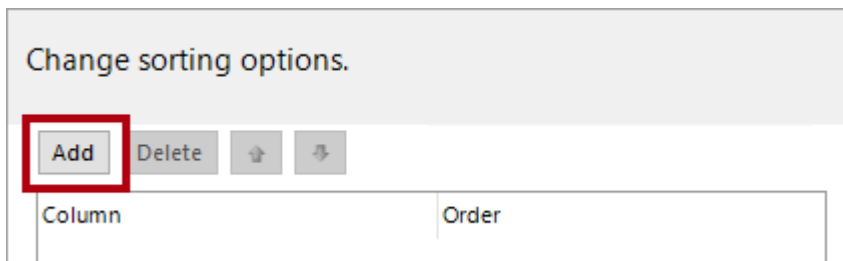
21. To select the List, right-click inside a blank area of the List, and then select **Select | Tablix1**.



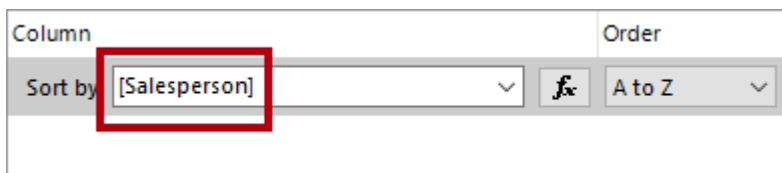
22. In the **Properties** pane, ensure that the List height is **1.6**.
23. To sort the List, in the **Properties** pane, from inside the **Other** category, select the **SortExpressions** property, and then click the ellipsis.



24. In the **Tablix Properties** window, click **Add**.

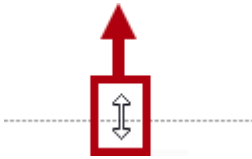


25. In the **Sort By** dropdown list, select **[Salesperson]**.



26. Click **OK**.

27. To remove the excess body height, hover the cursor over the dotted line between the report body and page footer to reveal a double-headed arrow, and then drag the line up to the bottom of the List.

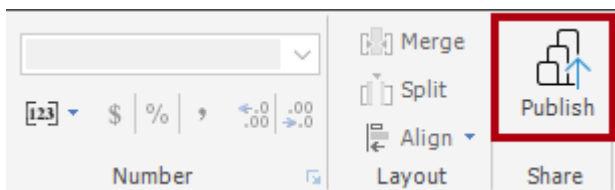


28. Verify that the report body width is still **7.5**.
29. Save the report.
30. Preview the report, and then switch back to design mode.

Task 5: Publish the report

In this task, you will publish the report to your Power BI workspace, and then edit the data source credentials.

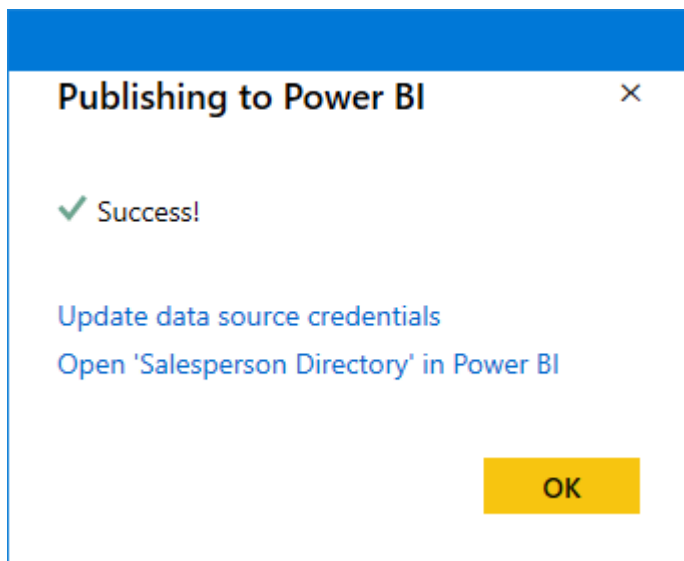
1. To publish the report, on the **Home** ribbon tab, from inside the Share group, click **Publish**.



2. In the **Publish To - Power BI Service** window, at the left, select the workspace you created in **Lab 01A**.
3. In the **File Name** box, enter **Salesperson Directory**.

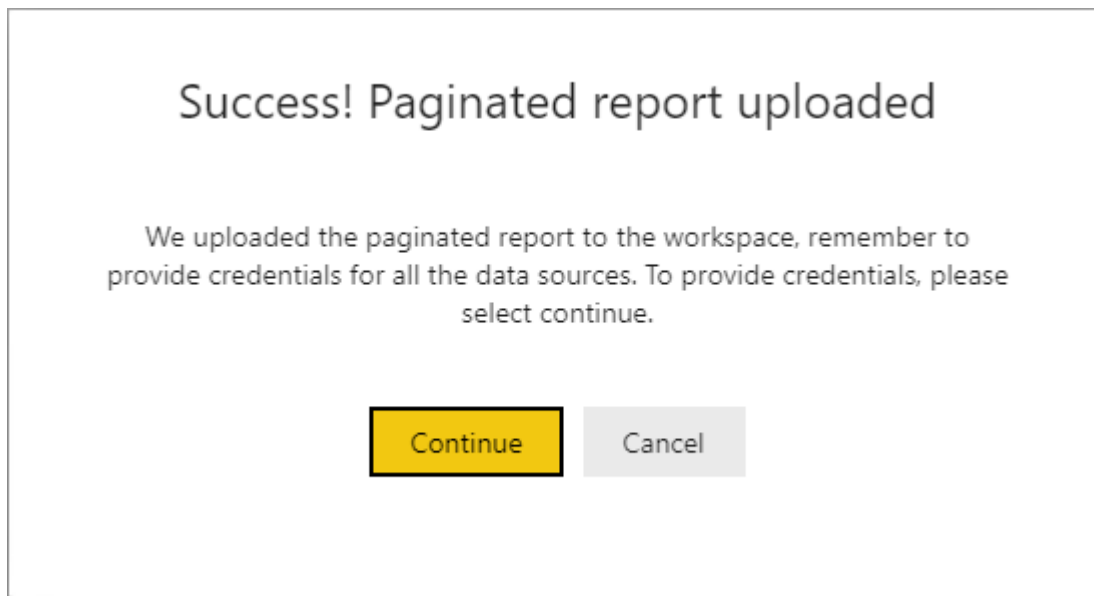
A screenshot of the 'Publish To - Power BI Service' dialog box. The 'File name' text box contains the text 'Salesperson Directory' and is highlighted with a red rectangular box. Below the text box are two buttons: a yellow 'Publish' button and a white 'Cancel' button with a grey border.

4. Click **Publish**.
5. When the report has published, click **OK**.

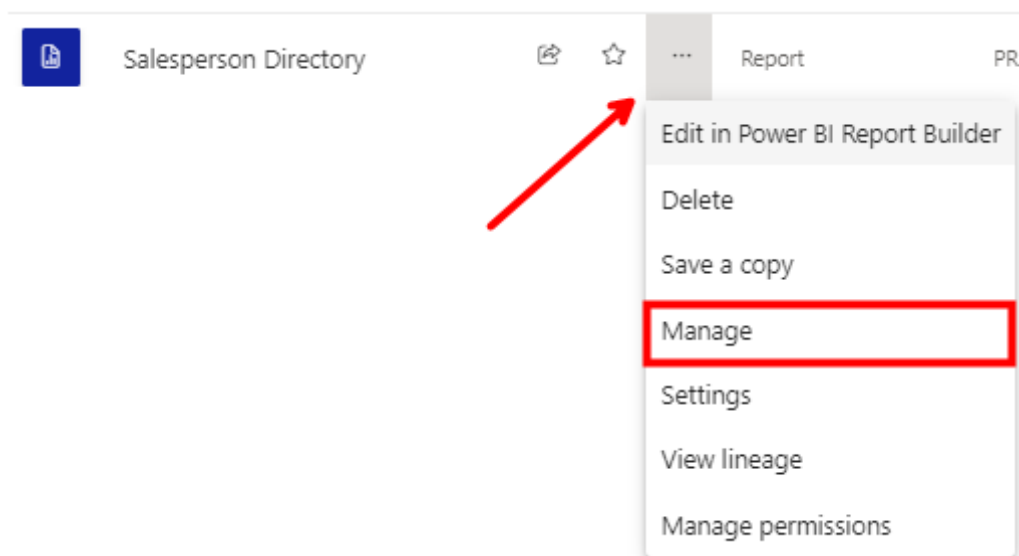


6. Switch to the Power BI service web browser session.

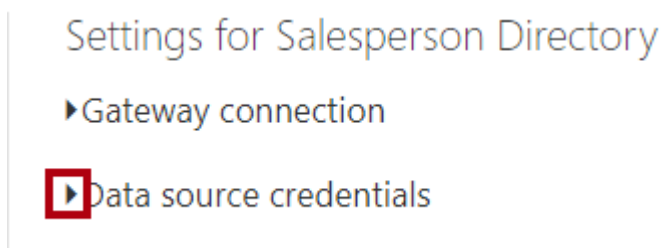
7. Wait until a dialog window opens notifying you that credentials are required for the new report.
8. In the dialog window, click **Continue**.



9. If the dialog above does not appear automatically, locate the paginated report in your workspace and select the **Manage** option.



10. In the settings for the **Salesperson Directory** report, expand the **Data Source Credentials** section.



11. Click the **Edit Credentials** link.

▲ Data source credentials

⊗ One or more datasource credentials are invalid. Please update your credentials and try again.

AdventureWorksDW ⊗ [Edit credentials](#) [Show in lineage view](#) 🗉

12. In the configuration window, re-enter the user name and password.

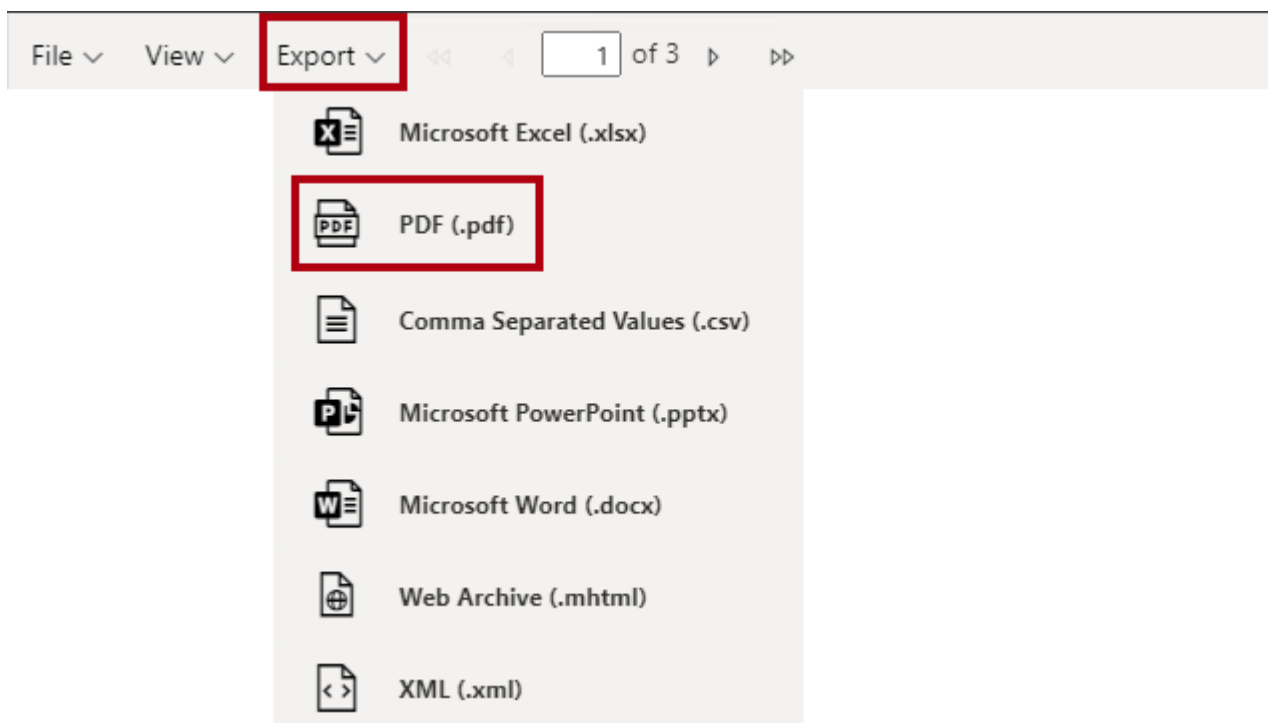
You can copy the credentials from the

<CourseFolder>\PowerBIPRIAD\MySolution\MyEnvironment.txt file.

- Click **Sign In**.



- To open the report, in the **Navigation** pane, click the **Salesperson Directory** report.
- On the menu, click **Export**, and then select **PDF**.



- When the browser has downloaded the file, open it.
- Review the report, consisting of four pages.
- Close the PDF document.
- Leave Power BI Report Builder and the **Salesperson Directory** report open.

*You will be enhancing the report design by adding parameters in **Lab 04A**.*

Summary

In this lab, you explored Report Builder, and learnt how to add and configure various report objects.

In this lab, you developed the **Salesperson Directory** report using the List data region. The report was based on the **AdventureWorksDW2021-PRIAD** Azure SQL Database. You then published the report to Power BI.

Terms of use

© 2022 Microsoft. All rights reserved.

By using this hands-on lab, you agree to the following terms:

The technology/functionality described in this hands-on lab is provided by Microsoft Corporation in a “sandbox” testing environment for purposes of obtaining your feedback and to provide you with a learning experience. You may only use the hands-on lab to evaluate such technology features and functionality and provide feedback to Microsoft. You may not use it for any other purpose. Without written permission, you may not modify, copy, distribute, transmit, display, perform, reproduce, publish, license, create derivative works from, transfer, or sell this hands-on lab or any portion thereof.

COPYING OR REPRODUCTION OF THE HANDS-ON LAB (OR ANY PORTION OF IT) TO ANY OTHER SERVER OR LOCATION FOR FURTHER REPRODUCTION OR REDISTRIBUTION WITHOUT WRITTEN PERMISSION IS EXPRESSLY PROHIBITED.

THIS HANDS-ON LAB PROVIDES CERTAIN SOFTWARE TECHNOLOGY/PRODUCT FEATURES AND FUNCTIONALITY, INCLUDING POTENTIAL NEW FEATURES AND CONCEPTS, IN A SIMULATED ENVIRONMENT WITHOUT COMPLEX SET-UP OR INSTALLATION FOR THE PURPOSE DESCRIBED ABOVE. THE TECHNOLOGY/CONCEPTS REPRESENTED IN THIS HANDS-ON LAB MAY NOT REPRESENT FULL FEATURE FUNCTIONALITY AND MAY NOT WORK THE WAY A FINAL VERSION MAY WORK. WE ALSO MAY NOT RELEASE A FINAL VERSION OF SUCH FEATURES OR CONCEPTS. YOUR EXPERIENCE WITH USING SUCH FEATURES AND FUNCTIONALITY IN A PHYSICAL ENVIRONMENT MAY ALSO BE DIFFERENT.

FEEDBACK If you give feedback about the technology features, functionality and/or concepts described in this hands-on lab to Microsoft, you give to Microsoft, without charge, the right to use, share and commercialize your feedback in any way and for any purpose. You also give to third parties, without charge, any patent rights needed for their products, technologies and services to use or interface with any specific parts of a Microsoft software or service that includes the feedback. You will not give feedback that is subject to a license that requires Microsoft to license its software or documentation to third parties because we include your feedback in them. These rights survive this agreement.

MICROSOFT CORPORATION HEREBY DISCLAIMS ALL WARRANTIES AND CONDITIONS WITH REGARD TO THE HANDS-ON LAB, INCLUDING ALL WARRANTIES AND CONDITIONS OF MERCHANTABILITY, WHETHER EXPRESS, IMPLIED OR STATUTORY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. MICROSOFT DOES NOT MAKE ANY ASSURANCES OR REPRESENTATIONS WITH REGARD TO THE ACCURACY OF THE RESULTS, OUTPUT THAT DERIVES FROM USE OF THE VIRTUAL LAB, OR SUITABILITY OF THE INFORMATION CONTAINED IN THE VIRTUAL LAB FOR ANY PURPOSE.

DISCLAIMER This lab contains only a portion of new features and enhancements in Microsoft Power BI. Some of the features might change in future releases of the product.