# Connecting JSON Data Sources to Word Using Windward Studios Report Designer

## Welcome to Windward Studios Report Designer

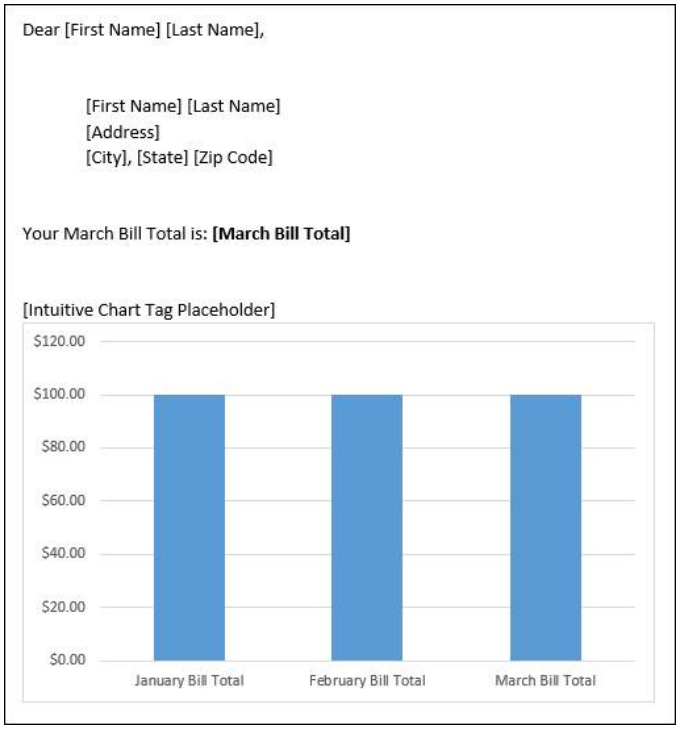
Windward Studios takes a unique approach to reporting. Our Report Designer sits directly inside Microsoft Office which means you get to use a familiar and powerful tool without having to learn a new designer. If you've ever used one of our competitors' products, you may be familiar with their modular designers that require you to build reports using bits and pieces, where every bit of text or every piece of data is a distinct object in your template. Windward changes all of that. With Windward in Microsoft Office, you design report templates just like you design any other document, utilizing *Tags* to insert your data wherever you need it seamlessly in-line with your other text and content.

## How Does Windward Work?

Before we jump into template design, let's talk about the *philosophy* of Windward. Let's consider the example of a local energy company. Every month they need to send out bills to all their customers. Their data might look something like this:

| First Name | Last Name | Address | City | State | Zip Code | March Bill Total | February Bill Total | January Bill Total |
|---|---|---|---|---|---|---|---|---|
| John | Smith | 1234 Broadway Drive | San Francisco | CA | 12345 | $101.78 | $98.22 | $95.66 |
| Bob | Johnson | 5678 Main Street | Los Angeles | CA | 78901 | $134.97 | $130.27 | $137.80 |
| Mary | Sue | 9012 Elm Circle | Las Vegas | NV | 23456 | $158.62 | $178.96 | $163.74 |

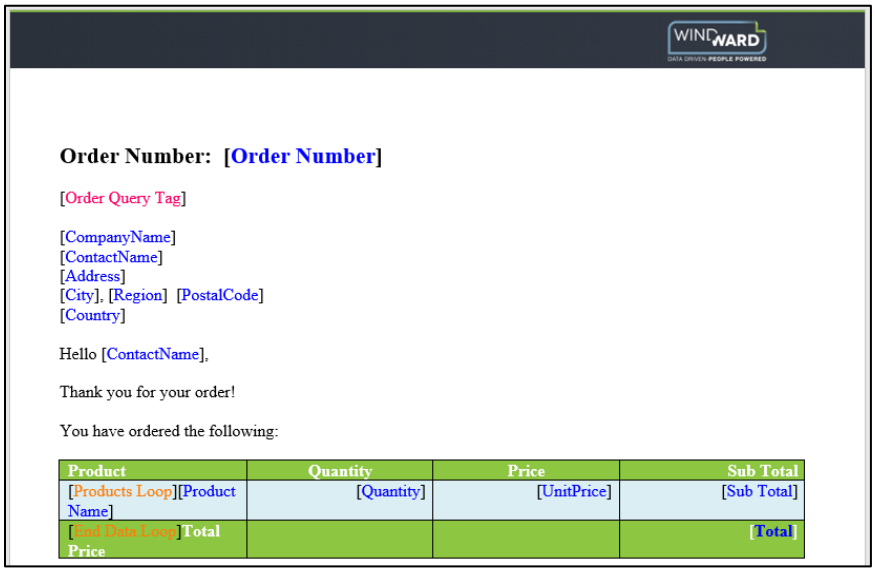
Using Windward, you design a single template in Word or Excel that allows you to generate a unique bill for every one of your customers.




The example template above uses *Tags* as placeholders for data. Every piece of text contained in brackets ([ ]) is a Tag and will be replaced with data when the bill is generated. Windward does the heavy lifting – we pull in all the relevant information from your Data Source and format it as specified in the original template:



Now let's look at one of our sample templates, the "Variable Invoice Sample – Template.docx":



**Order Number: [Order Number]**

[Order Query Tag]

[CompanyName]
[ContactName]
[Address]
[City], [Region] [PostalCode]
[Country]

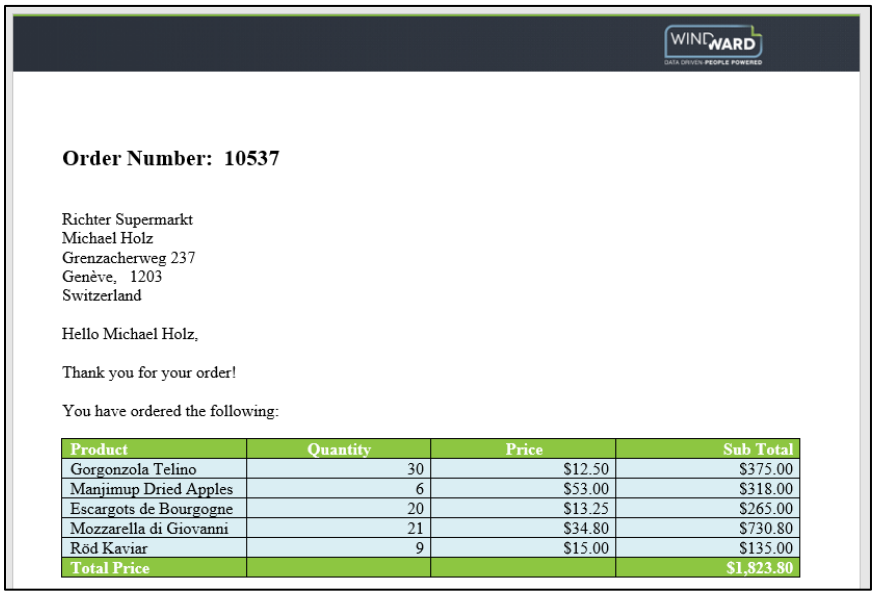
Hello [ContactName],

Thank you for your order!

You have ordered the following:

| Product | Quantity | Price | Sub Total |
|---|---|---|---|
| [Products Loop][Product Name] | [Quantity] | [UnitPrice] | [Sub Total] |
| [End Data Loop]Total Price | | | [Total] |

This template was created from scratch in Microsoft Word. Everything you see in the template, from the header to the text to the color formatting, functions just like it normally would in Word - with one major exception. All the colored text you see contained in brackets ([ ]) are Tags. Windward uses Tags as placeholders for your data. Every Tag corresponds to an item in your Data Source. In this example, the Tags are used to fill in the data for any given Order Number and its subsequent information. This is the output of the template:



**Order Number: 10537**

Richter Supermarkt
Michael Holz
Grenzacherweg 237
Genève, 1203
Switzerland

Hello Michael Holz,

Thank you for your order!

You have ordered the following:

| Product | Quantity | Price | Sub Total |
|---|---|---|---|
| Gorgonzola Telino | 30 | $12.50 | $375.00 |
| Manjimup Dried Apples | 6 | $53.00 | $318.00 |
| Escargots de Bourgogne | 20 | $13.25 | $265.00 |
| Mozzarella di Giovanni | 21 | $34.80 | $730.80 |
| Röd Kaviar | 9 | $15.00 | $135.00 |
| Total Price | | | $1,823.80 |

All the Tags are now replaced with the corresponding data from the Data Source. Once you have Report Designer installed, you can open this template and play around with it to help get an idea of how Windward lets you design templates in a familiar environment. All of Word's powerful design tools are available to you as you build unique templates.

Please note - A critical element of successful template design with Windward is knowing your data. If you are unfamiliar with your data or how it's structured, you may want to spend a few minutes reviewing the data or ask your database administrator for an overview before beginning this training.

## Training Overview

This Training Guide walks you through the fundamental steps you need to begin designing report templates with Windward Studios Report Designer in Microsoft Word using an SQL Data Source.

The Five Steps to Windward:

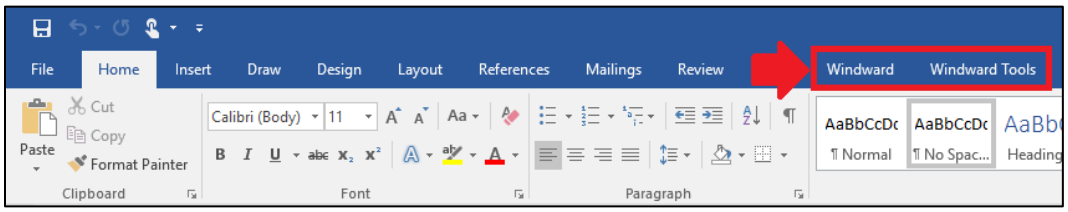
1. Install
2. Connect To Data
3. Design Your Template & Your Data
4. Refine Your Template
5. Output

## Step 1 – Install

The first step to getting started is to install the Report Designer. Please visit the Windward Studios Downloads Page and download the Report Designer.

*Please note:* Windward Studios requires Microsoft Office running on Microsoft Windows to install.

1. Run the program WindwardWebInstall.exe.
2. Enter your Report Designer License Key when prompted. If you did not receive a License Key within 10 minutes of signing up for a trial, please contact our Sales team.
3. Start Microsoft Word or Excel.
4. When Word or Excel first starts, it may indicate that you do not have a valid license. Click Yes. At the prompt, copy and paste your license key into the license key field.
5. Verify that the Windward menu is available by opening Microsoft Word or Excel. If Report Designer is not present, please reboot your system.

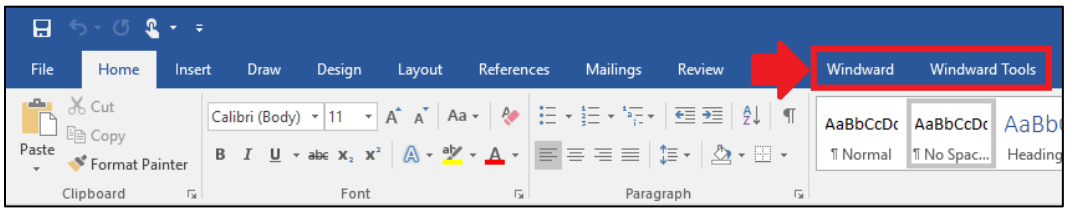



6. For troubleshooting, see the Instructions page.

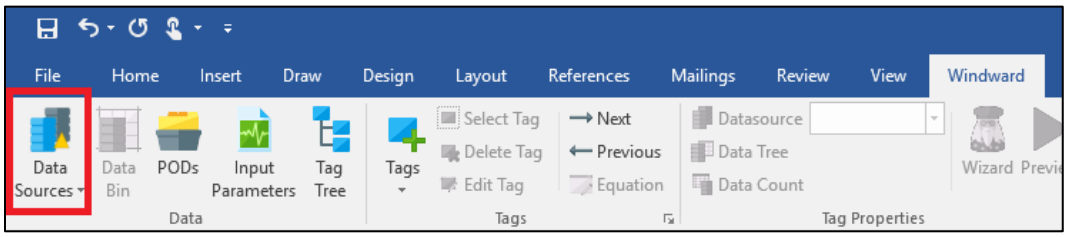
## Step 2 - Connect To Data

In this training guide we are connecting to a sample JSON Data Source provided by Windward.

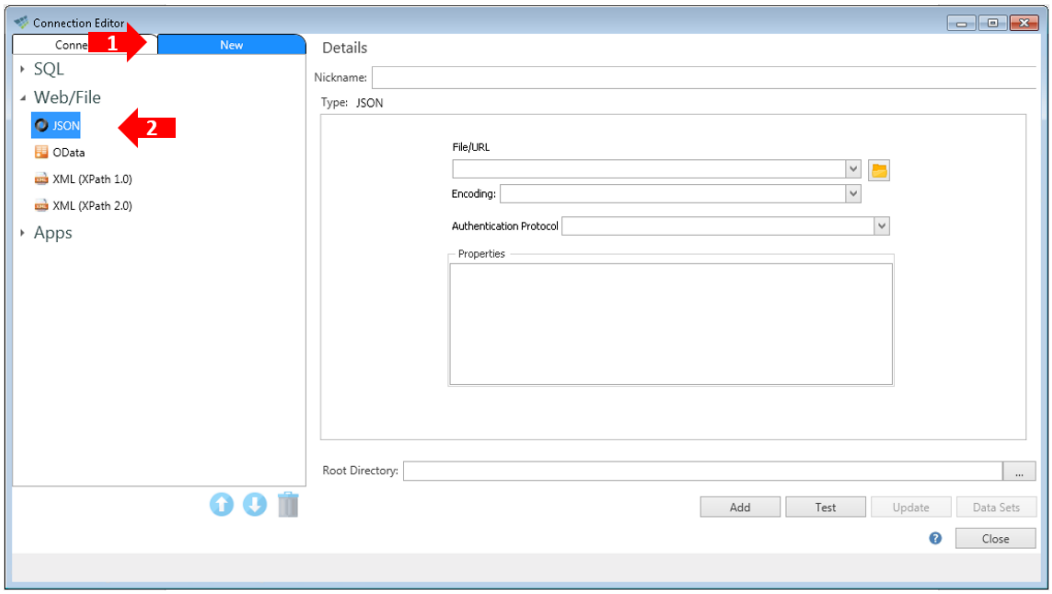
1. Open Microsoft Word. Now that you've installed Windward Studios Report Designer, you will see two new tabs in the Microsoft Office Ribbon – the **Windward** tab and the **Windward Tools** tab.



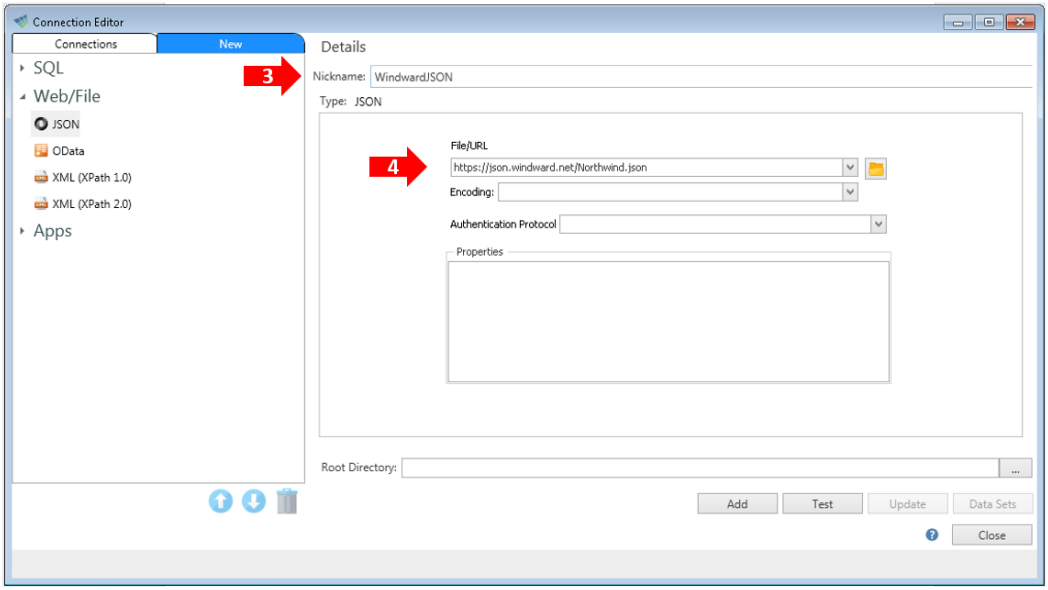

2. Click on the **Windward Tab** and click on the **Data Sources** button located on the left-hand side of the ribbon.



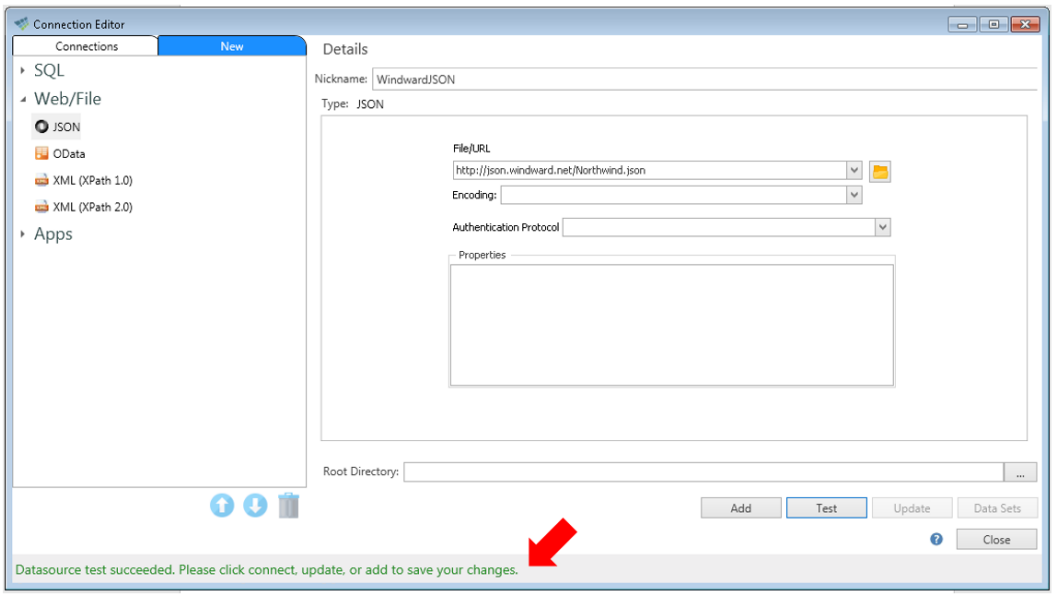

3. In the **Connection Editor** window, in the New tab, click on **JSON** under **Web/File**. The Details pane will change to prompt you for your data source details.




4. Enter a Nickname for your data source connection. It is best practice to always assign a nickname to your Data Source in the **Nickname** field. This will make your life much easier down the road when working with templates or tracking down issues.
5. Fill in the following fields:
    a. **File/URL:** http://json.windward.net/Northwind.json




6. Click **Test**, and then click **Add** to add your connection. If all parameters and credentials are correct and a connection is made, you will receive a successful notification. Click **Update** to save your information and **Close** to close the window.




## Step 3 – Design Your Template & Insert Your Data

In this Training Guide we're going to build a very basic order receipt that is generated anytime an order is completed.

Let's start by adding a basic outline for a written sales receipt. You can either type or copy-paste this text into your document:

Dear COMPANYNAME,

Thank you for your purchase. You placed your order on ORDERDATE. Your Order Number is ORDERID.

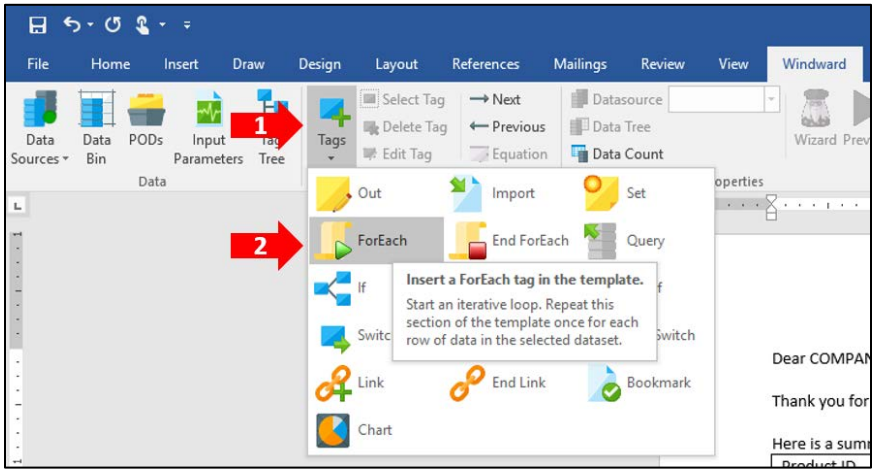
Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| PRODUCTID | PRICE | QUANTITY | DISCOUNT |

Thank you!

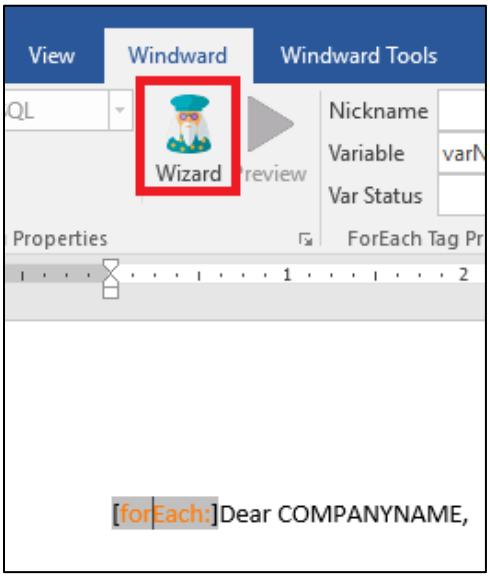
Now we're going to insert a Tag that gives your template the ability to incrementally pull in as much connected data as you need – the *ForEach Tag*. The ForEach Tag is used to step through your Data Source and insert individual pieces of data *for each* entry in the Data Source. Almost all templates you create will utilize ForEach Tags.

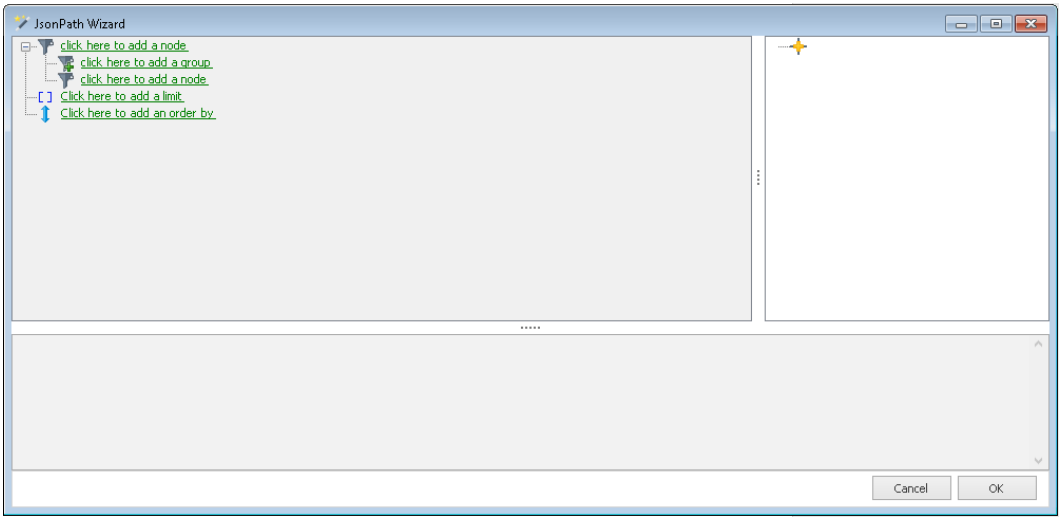
1. First place your cursor at the very beginning of the document, before the 'Dear' text. Navigate to the **Windward** tab, click the **Tags** drop-down menu, and click on the **ForEach** Tag to insert a ForEach Tag at the start of your document.




[forEach:]Dear COMPANYNAME,

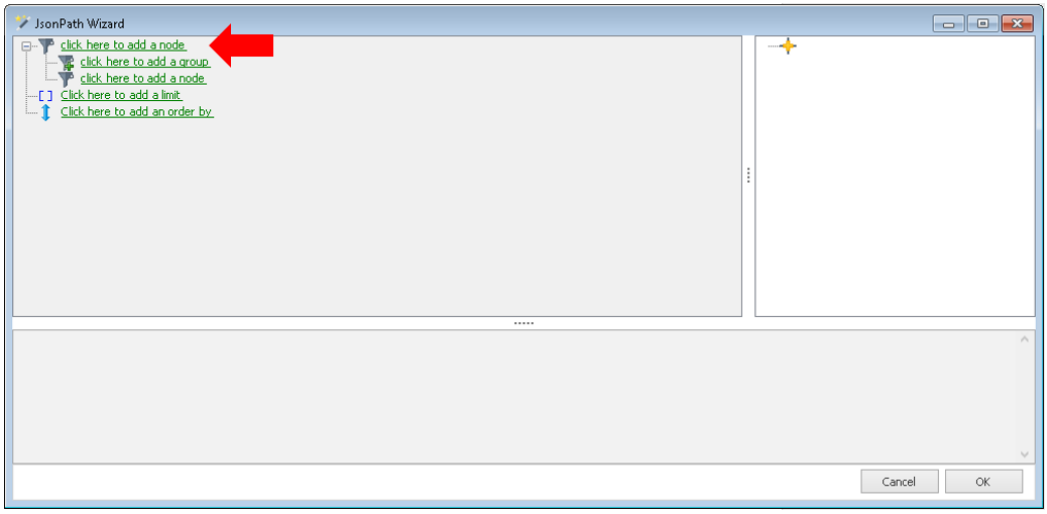
2. Now we're going to set up the ForEach Tag so it knows what data we want to insert into this template. Click on the Tag to select it and then click on the **Wizard** button in the **Windward** tab to open the **JsonPath Wizard**.

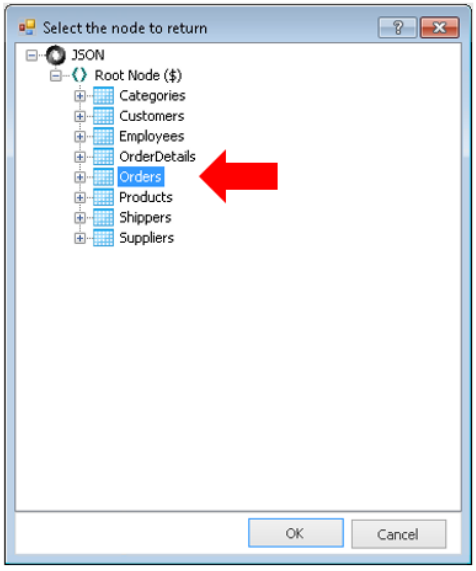


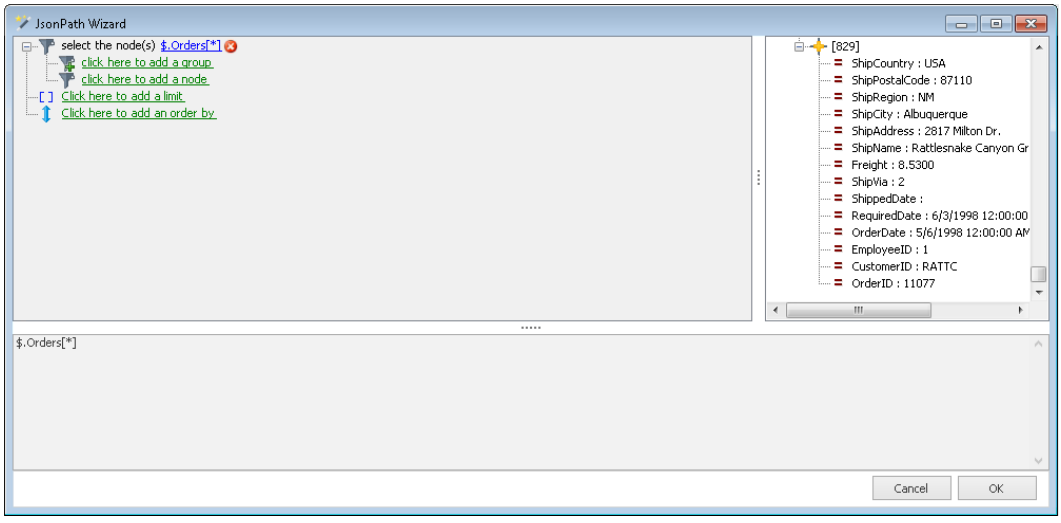




The Wizard is used to create a *Query* for the data. A query tells Report Designer exactly what data to pull from your data source for your report. This can seem technical your first time through, but the Query uses common language and you should be able to understand what we're pulling from the Data Source as we build the statement. Since the CompanyName is in a different table than the Order information we're going to make sure we're pulling the correct CompanyName based off the OrderID.

3. In the **JsonPath Wizard** click on the link **click here to add a node**. In the **Select the node to return dialog** that appears, expand the **Root Node($)** and select **Orders**. Then click **OK**. Click **OK** in the **JsonPath Wizard** to save your query.

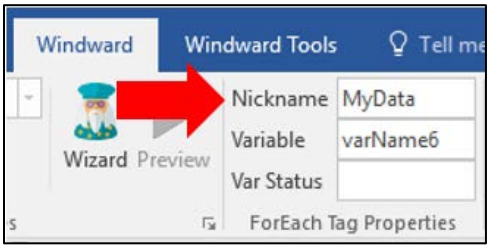

JsonPath Wizard
click here to add a node
click here to add a group
click here to add a node
Click here to add a limit
Click here to add an order by
Cancel
OK


Select the node to return
JSON
Root Node ($)
Categories
Customers
Employees
OrderDetails
Orders
Products
Shippers
Suppliers
OK
Cancel


JsonPath Wizard
select the node(s) $.Orders[*]
click here to add a group
click here to add a node
Click here to add a limit
Click here to add an order by
[829]
ShipCountry : USA
ShipPostalCode : 87110
ShipRegion : NM
ShipCity : Albuquerque
ShipAddress : 2817 Milton Dr.
ShipName : Rattlesnake Canyon Gr
Freight : 8.5300
ShipVia : 2
ShippedDate :
RequiredDate : 6/3/1998 12:00:00
OrderDate : 5/6/1998 12:00:00 AM
EmployeeID : 1
CustomerID : RATTC
OrderID : 11077
$.Orders[*]
Cancel
OK

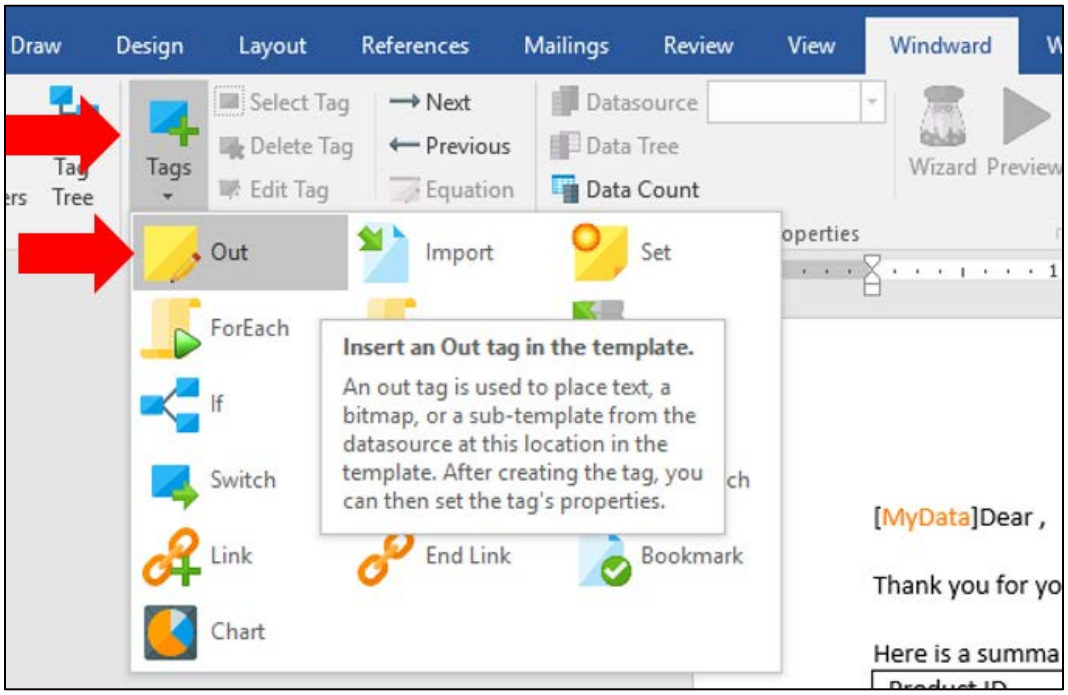
The ForEach Tag we made above will store information we will use later in a variable name associated with the tag.

4. In the template this creates a tag labeled with only a '*', so let's change this by entering a nickname for the Tag in the **Nickname** section of the **ForEach Tag Properties** in the **Windward** tab. Place your cursor on the ForEach Tag in the template to reveal the **ForEach Tag Properties**.

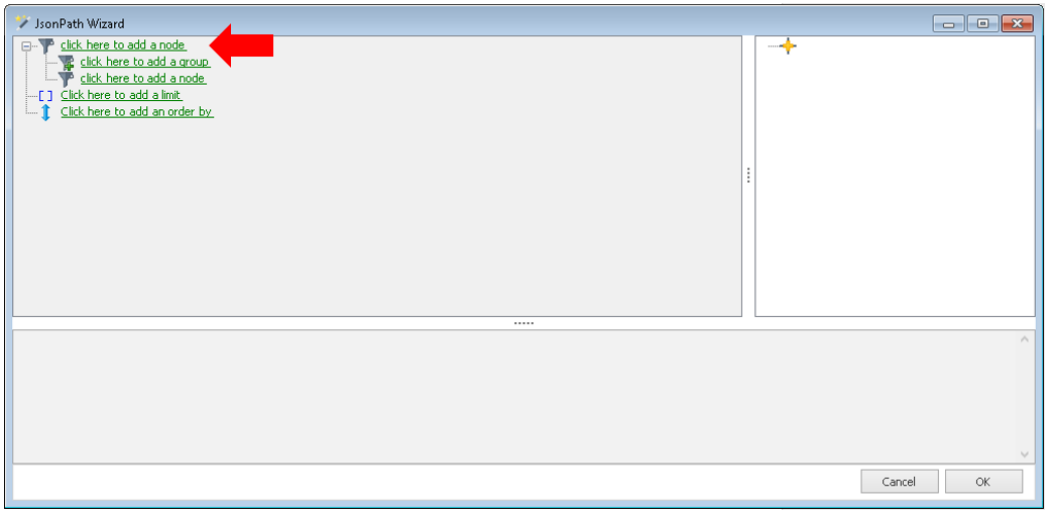


5. Notice the **Variable** field in the **ForEach Tag Properties** section does not describe our data query very well. Let's change the **Variable** to something more descriptive.
6. Now that we've specified that we want to use the **OrderDetails** table set of data in our template, it's time to insert our data Tags.
    a. Let's start by inserting a Tag for the Company Name in place of our COMPANYNAME placeholder text. Begin by selecting and deleting the COMPANYNAME text.
    b. Now use the **Tags** dropdown to insert an *Out Tag*.

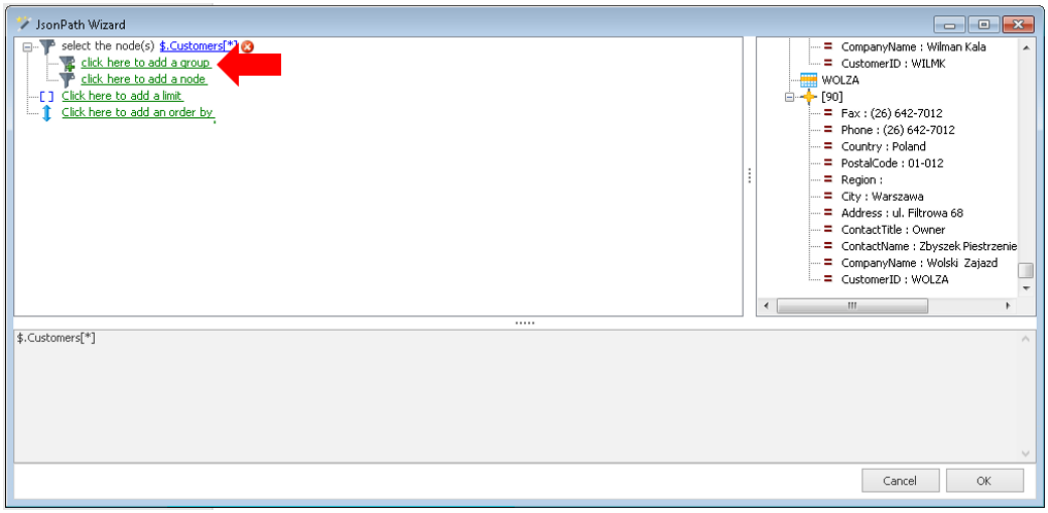



[MyData]Dear [out],

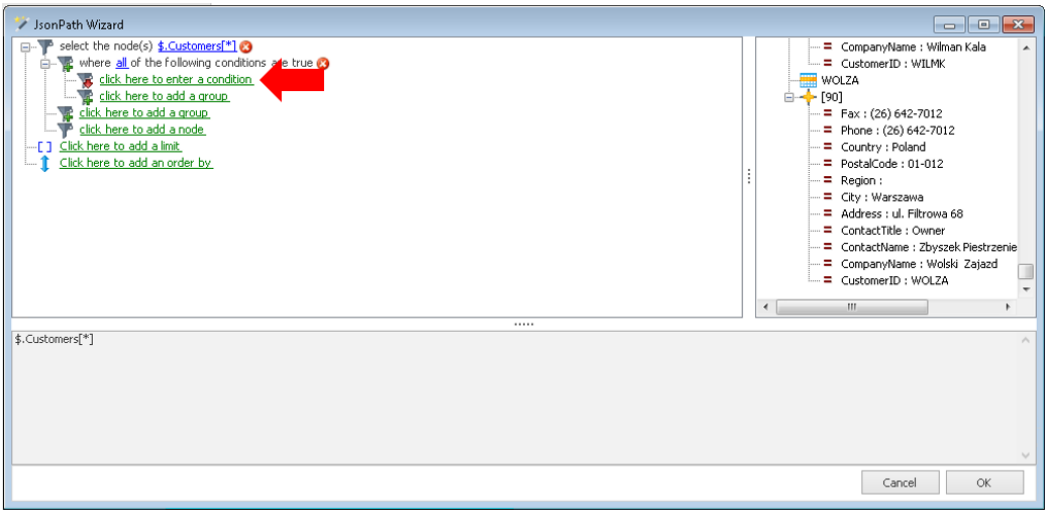
c. Click on the Tag to select it and then click on the **Wizard** button in the Windward tab to open the **JsonPath Wizard**.
d. In the **JsonPath Wizard** click on the link **click here to add a node**. In the **Select the node to return dialog** that appears select **Customers**. Then click **OK**.



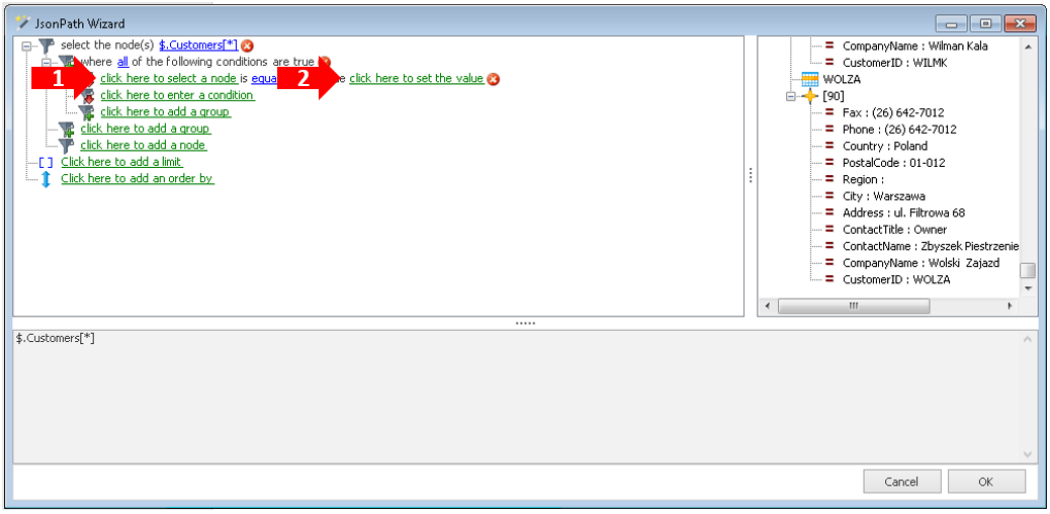

e. Click on the link **click here to add a group**.

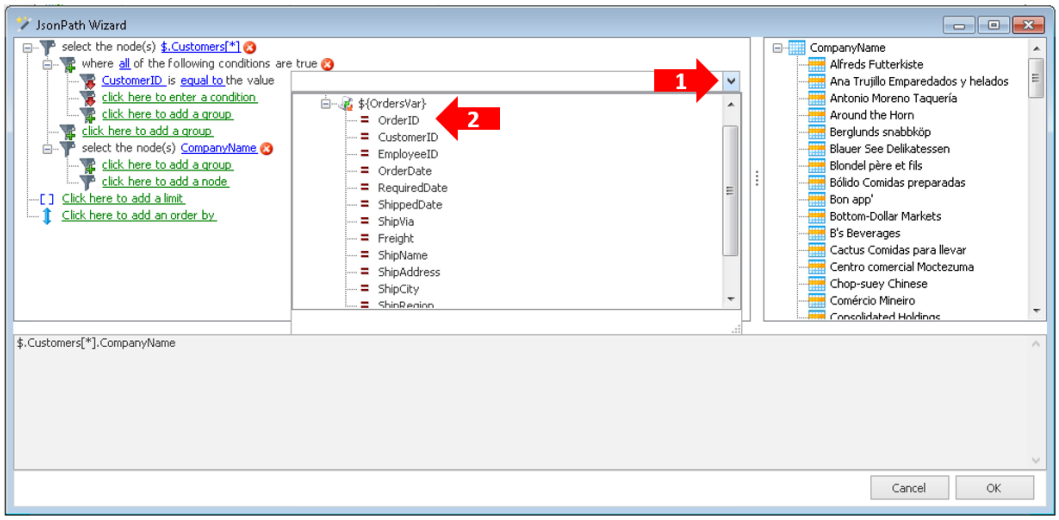



f. Click on the link **click here to add a condition**.

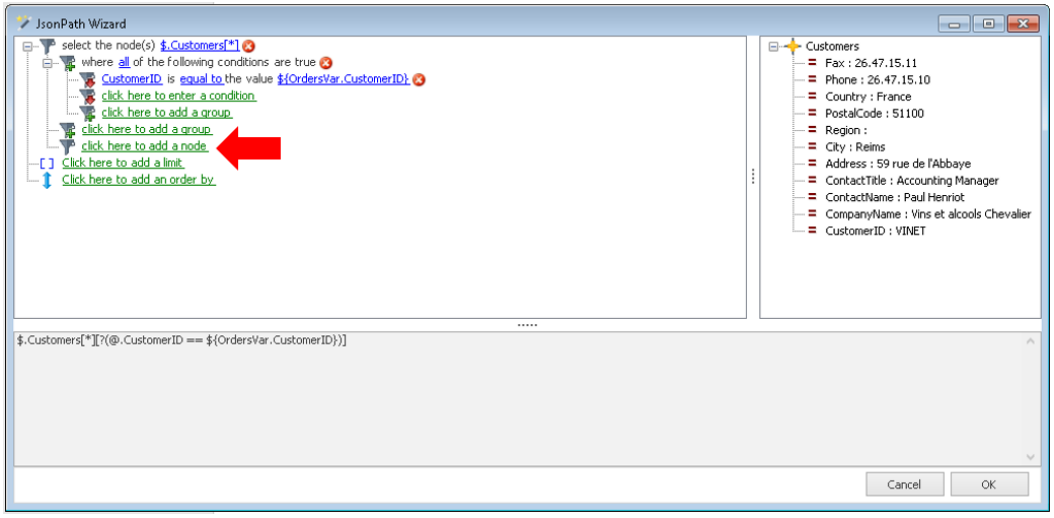


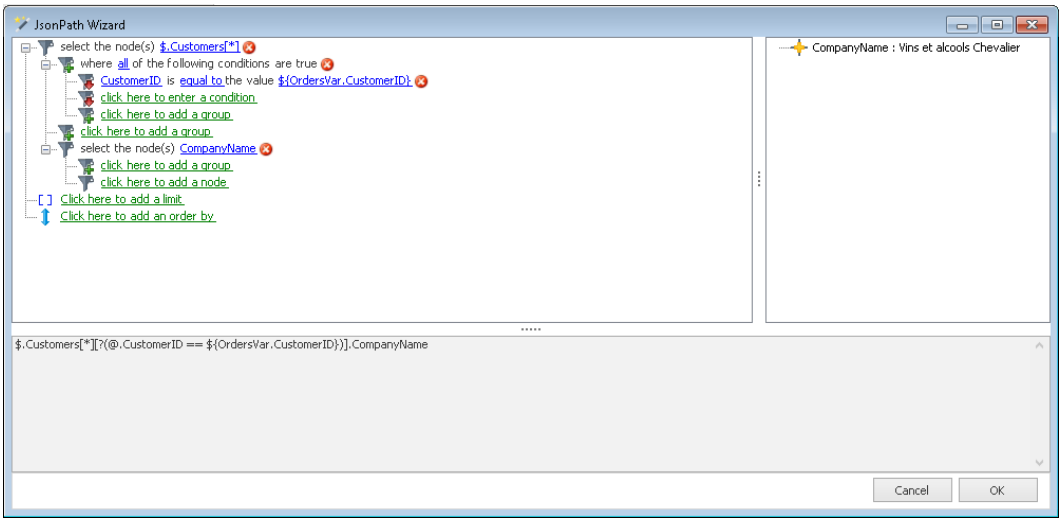

g. Click on the link **click here to select a node**. In the **Select the node to return dialog** that appears, expand the **Customers** node and select **CustomerID.** Then click **OK**.
h. Click on the link **click here to set the value**. Expand the drop down on the right side of the field, and under the variable name you set before double click the **CustomerID** node.




i. Click on the link **click here to add a node**. In the **Select the node to return dialog** that appears select **CompanyName**. Then click **OK**. Click **OK** in the **JsonPath Wizard** to save your query.

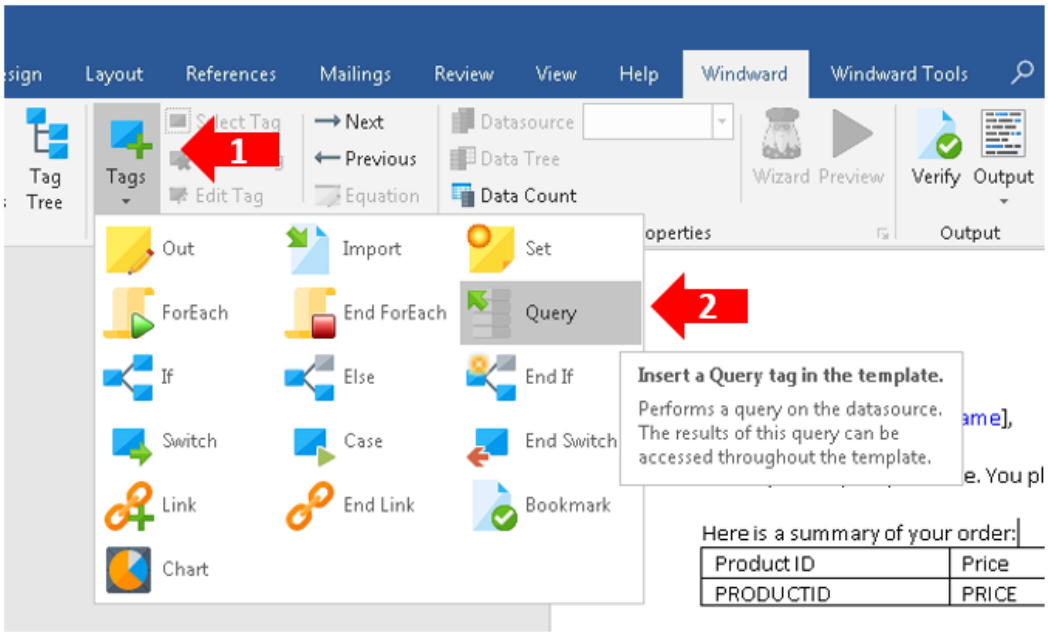



[MyData]Dear [CompanyName],

Congratulations! We just created the CompanyName Tag for our template. Next we need to query the data we will use in our table.

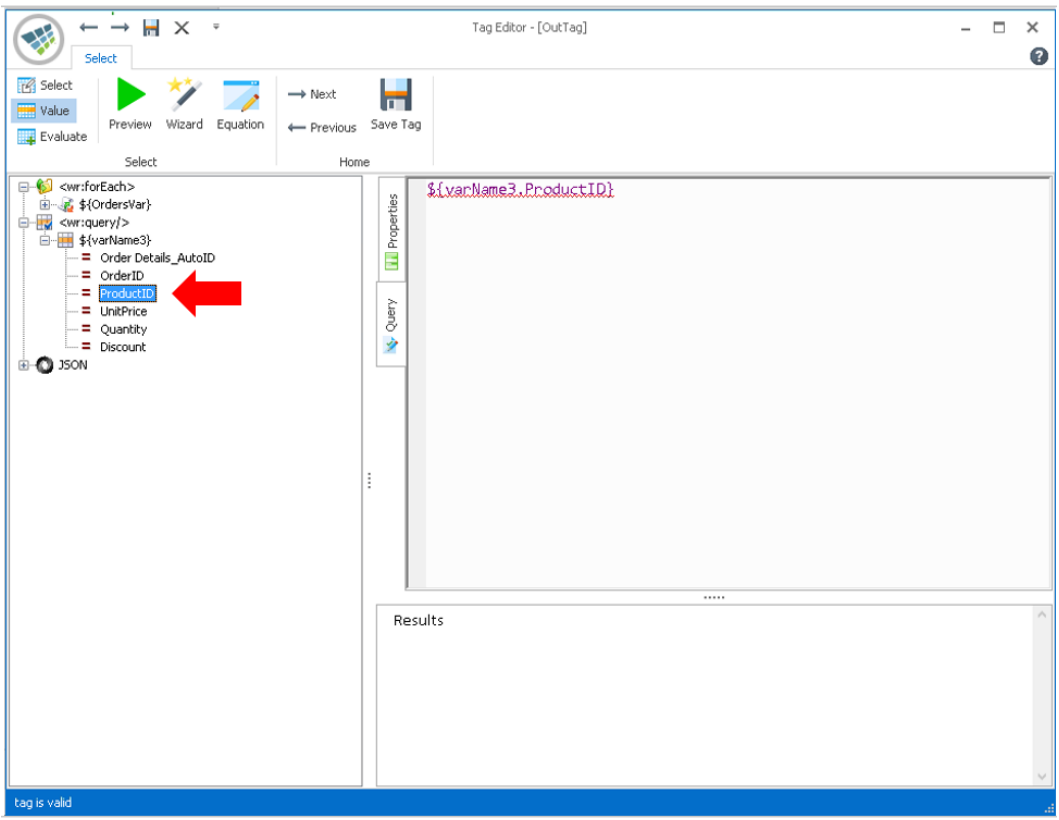
1. Use the **Tags** dropdown to insert a *Query Tag* after the line “Here is a summary of your order.”




2. Click on the Tag to select it and then click on the **Wizard** button in the Windward tab to open the **JsonPath Wizard**.
3. In the **JsonPath Wizard** click on the link **click here to add a node**. In the **Select the node to return dialog** that appears expand **JSON**, **Root Node ($)** and select **OrderDetails**. Then click **OK**.
4. Click on the link **click here to add a group**.
5. Click on the link **click here to add a condition**.
6. Click on the link **click here to select a node**. In the **Select the node to return dialog** that appears, expand the **OrderDetails** node and select **OrderID.** Then click **OK**.
7. Click on the link **click here to set the value**. Expand the drop down on the right side of the field, and under the variable name you set before double click the **OrderID** node.
8. Click **OK** in the **JsonPath Wizard** to save your query.

Now let's create the remaining Tags for our template.

1. Let's start by inserting a Tag for the ProductID in place of our PRODUCTID placeholder text. Begin by selecting and deleting the PRODUCTID text.
2. Now use the **Tags** dropdown to insert an *Out Tag*.
3. Double-click on that Out Tag to open the **Tag Editor** window.
4. In the **Tag Editor** expand the node under your Query Tag and double-click the **ProductID** node. This builds the Query for this individual Tag. Then click Save Tag to close the window.



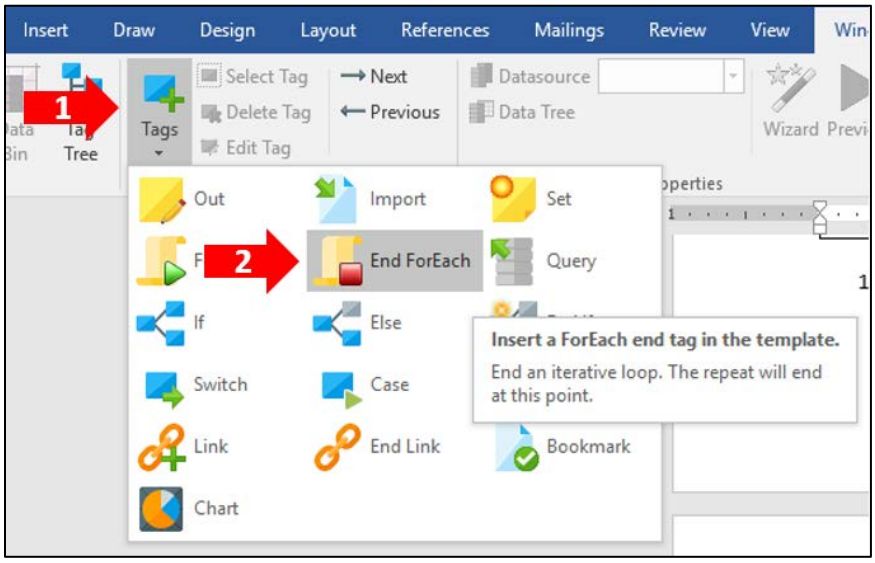

Here is a summary of your order:[OrderID}}]

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| [ProductID] | PRICE | QUANTITY | DISCOUNT |

5. Just as we did for the ProductID Tag, replace the rest of the placeholder text with an Out Tag.
6. Double-click the Out Tag to open the Tag Editor.
7. Then select the matching node from the Query or ForEach dropdown for our replacement text.

| Replacement Text | Tag Node |
|---|---|
| ORDERDATE | OrderDate |
| ORDERID | OrderID |
| PRICE | UnitPrice |
| QUANTITY | Quantity |
| DISCOUNT | Discount |

8. Click **Save Tag**.
9. The final step is to add an *EndForEach Tag* so the document knows where to stop filling in data. Place the cursor after the **Thank you!** text and insert an End ForEach Tag from the **Tags** dropdown.




Our final template now looks like this:

[MyData]Dear [CompanyName],

Thank you for your purchase. You placed your order on [OrderDate]. Your Order Number is [OrderDetails_OrderID].

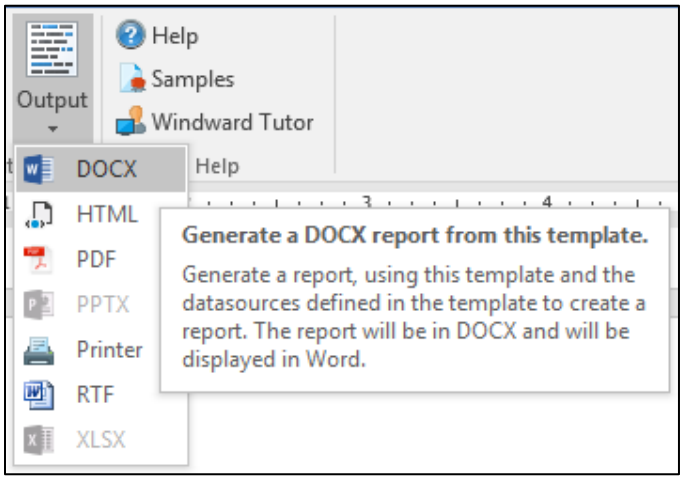
Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| [ProductID] | [UnitPrice] | [Quantity] | [Discount] |

Thank you!
[:forEach]

## Step 4 – Refine Your Output

On the **Windward** Tab you can use the **Output** dropdown to generate this template into a report in any supported format. Let's start by generating it in DOCX format.




As you can see, we need to make a few revisions to our template to get it looking right.

Dear Vins et alcools Chevalier,

Thank you for your purchase. You placed your order on Thu Jul 04 00:00:00 MDT 1996. Your Order Number is 10248.

Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| 11 | 14.0000 | 12 | 0.0 |

Thank you!
Dear Vins et alcools Chevalier,

Thank you for your purchase. You placed your order on Thu Jul 04 00:00:00 MDT 1996. Your Order Number is 10248.

Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| 42 | 9.8000 | 10 | 0.0 |

Thank you!
Dear Vins et alcools Chevalier,

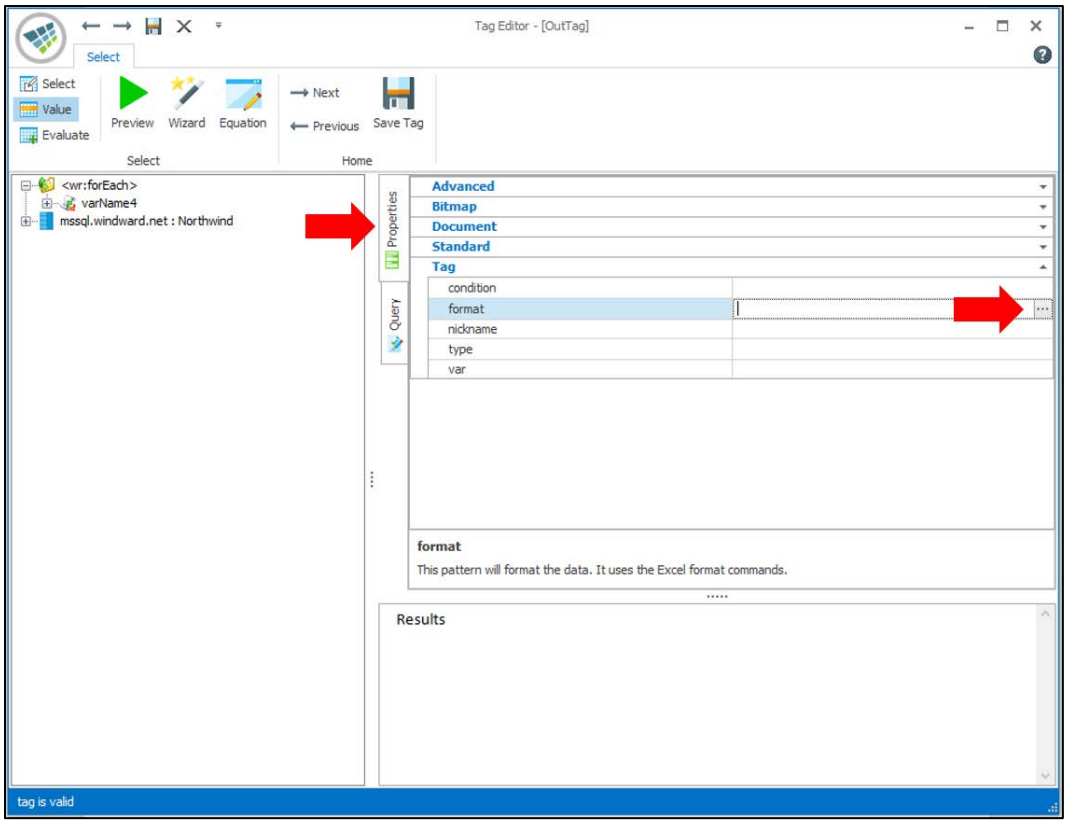
Thank you for your purchase. You placed your order on Thu Jul 04 00:00:00 MDT 1996. Your Order Number is 10248.

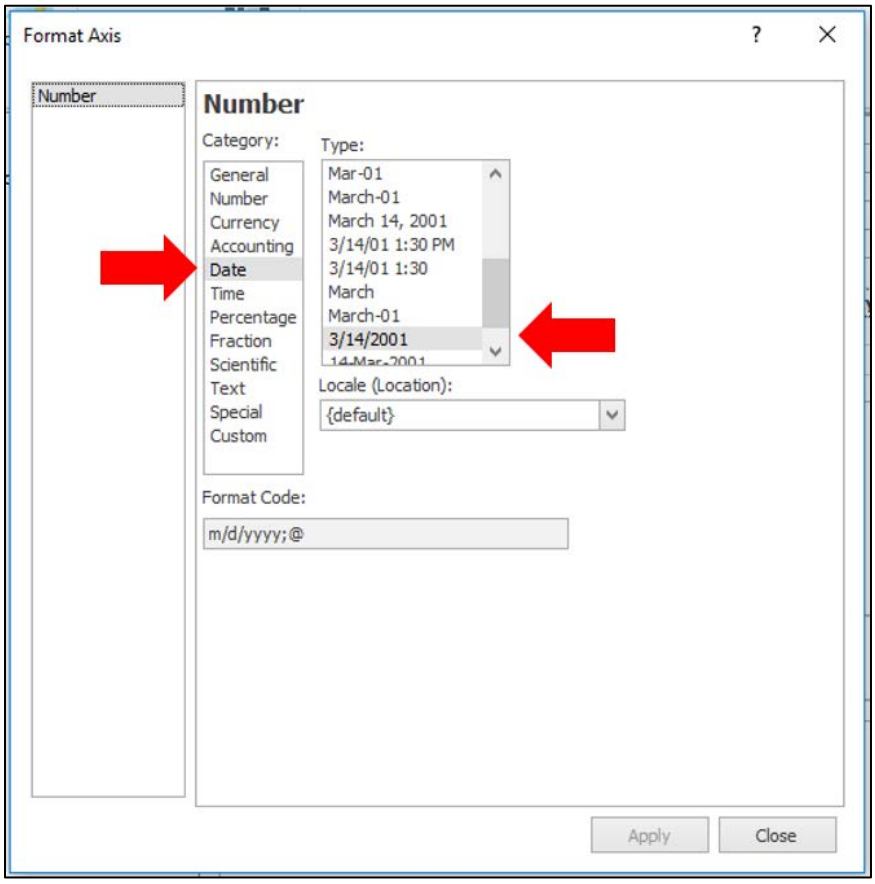
Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| 72 | 34.8000 | 5 | 0.0 |

Thank you!

1. The first easy fix is to move the End ForEach Tag to a new page so that we're only generating one receipt per page. Place the cursor in front of the End ForEach Tag, and use the Insert tab to insert a Page Break before this Tag. This moves the End ForEach Tag to a new page.
2. Now let's change the Data Type of the OrderDate, Price, and Discount Tags so they look better.
    a. Double-click on the OrderDate Tag to open the **Tag Editor**.
    b. Switch the main pane to the **Properties** pane, click in the entry field to the right of **Format**, and open the formatting window by clicking the button on the right of the entry box. The formatting window allows us to select a format for the Tag. This is very similar to Excel, where you are presented with options to standardize how this data is displayed in the output report. Since we're formatting OrderDate, click on the Date option and then select the most appealing format for you. Once you have your format click **Apply** and then click **Close**. Finally click **Save Tag** to close the Tag Editor window. Your Tag doesn't look any different, but when generated it will appear in the format you selected.






c. Repeat this process for the UnitPrice and Discount Tags, making sure that you select Currency instead of Date in the Formatting window.

3. Now let's do some basic Word formatting on the rest of the document. Let's bold the OrderDate and OrderID Tags as well as the first row of our table. Feel free to format the rest of the template in any way you wish - any formatting you define here will carry over to your generated document.

When you're done, generate another DOCX output of the template to see the changes.

Dear Vins et alcools Chevalier,

Thank you for your purchase. You placed your order on **7/4/1996**. Your Order Number is **10248**.

Here is a summary of your order:

| Product ID | Price | Quantity | Discount |
|---|---|---|---|
| 11 | $14.00 | 12 | $0.00 |

Thank you!

This output looks MUCH better. Receipts are now on individual pages and we're bolding parts of the template to draw attention to it. The Price and Discount columns are also now in commonly accepted currency format.

Most customers find it very useful to make formatting changes and output their document frequently to see how those changes appear. As you build more complex templates and use elements such as images and charts you'll find that it moves the rest of your content around as data is inserted.

## Step 5 – Output Your Template

Once you have completed formatting your output, you're ready to complete the final output of your template. To test your template you may output using the Designer, but in production you'll probably use one of our Windward Studios Report Engines. Most users use one of two methods for outputting from an Engine. The first option it to copy the DOCX or XLSX template to your Engine server and provide that template to the Engine as needed. The second option is to use the Generate Code button in Office which gives you the backend code you the Engine needs to output documents. The Generate Code button is found in the Windward Tools tab.