Creating an Invoice

Connect Designer Walkthrough

Creating an Invoice Walkthrough
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Introduction

Connect Designer lets you create and design print documents, web pages and emails in one tool. Every aspect of a document can be easily personalized thanks to its feature-rich and user-friendly interface.

The file format of the templates is HTML, the main markup language for web pages and e-mail messages. When exploring the user interface you will see several items that reveal this underlying technology. You will be able to work with the application without knowing HTML, but for users who are advanced in HTML and related technologies and standards like JavaScript and Cascading Style Sheets, the user interface does include the appropriate features.

This tutorial will teach you to create a new basic invoice from scratch. It will explain common techniques that are applicable to other document types too. But there is more to learn. Please visit learn.objectiflune.com and help.objectiflune.com to discover new ways and enhance your skills.

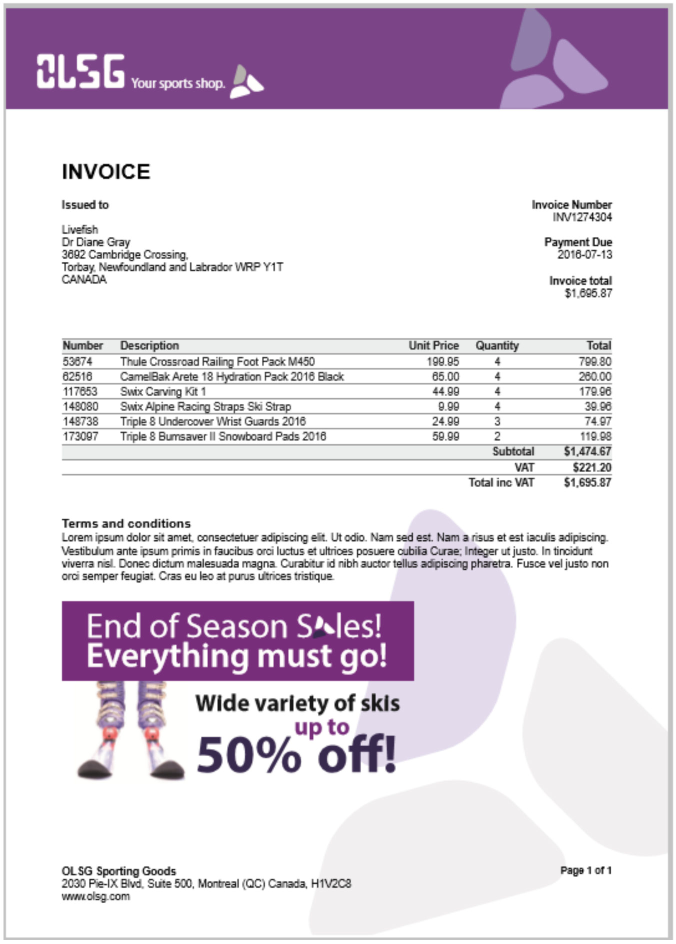
This walkthrough is meant to be used with OL Connect Designer 2020.1 and later versions.

Template requirements

Here are the requirements for the invoice template that needs to be created:

- The template contains a letterhead. Which color it has, depends on the hobby of the receiver: green for skating, purple for skiing.
- The general invoice information, like the invoice number and the due date, should be printed at the top, under the letterhead.
- The invoice data has to be printed in a table. The table should contain a transport line if it runs over two or more pages. The pages should be numbered.
- The company has several offices. The sender's address should be the office that is nearest to the receiver of the invoice.
- To fill any remaining white space a picture should be printed. Which picture is printed depends on the hobby of the receiver. If no white space remains, the picture should not be printed.

The generated invoice will look similar to this picture:


OLSG Your sports shop.

INVOICE

Issued to

Livefish
Dr Diane Gray
3692 Cambridge Crossing,
Torbay, Newfoundland and Labrador WRP Y1T
CANADA

Invoice Number
INV1274304

Payment Due
2016-07-13

Invoice total
$1,695.87

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	4	799.80
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	4	260.00
117653	Swix Carving Kit 1	44.99	4	179.96
148080	Swix Alpine Racing Straps Ski Strap	9.99	4	39.96
148738	Triple 8 Undercover Wrist Guards 2016	24.99	3	74.97
173097	Triple 8 Bumsaver II Snowboard Pads 2016	59.99	2	119.98
			Subtotal	**$1,474.67**
			VAT	**$221.20**
			Total inc VAT	**$1,695.87**

Terms and conditions
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut odio. Nam sed est. Nam a risus et est iaculis adipiscing. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer ut justo. In tincidunt viverra nisl. Donec dictum malesuada magna. Curabitur id nibh auctor tellus adipiscing pharetra. Fusce vel justo non orci semper feugiat. Cras eu leo at purus ultrices tristique.

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INVOICE

Issued to

Ms Philip Carter
81 Northridge Street,
Maple Ridge, British Columbia P24 H39
CANADA

Invoice Number
INV1472153

Payment Due
2016-07-26

Invoice total
$764.58

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	1	65.00
			Subtotal	**$664.85**
			VAT	**$99.73**
			Total inc VAT	**$764.58**

Terms and conditions
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut odio. Nam sed est. Nam a risus et est iaculis adipiscing. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Integer ut justo. In tincidunt viverra nisl. Donec dictum malesuada magna. Curabitur id nibh auctor tellus adipiscing pharetra. Fusce vel justo non orci semper feugiat. Cras eu leo at purus ultrices tristique.

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Creating a template

The exercises in this lesson introduce the concepts of sections, content and formatting. You will also learn how to navigate the content.

1. Creating a template

In this exercise you will learn how to create a new document for print. A Print template can be printed to a printer, to a file, or it can be attached to an email designed in Connect Designer.

1. Launch the Designer application by double-clicking the application icon.
2. Choose **File > New > Template > Print Template** and click **Next**, or click **Create a New Template** in the Welcome screen and choose **Print**. The New Print Template wizard is shown.
   The dialog lets you enter parameters for the new document, which includes its page size, the page margins and the number of sections. A section contains one or more pages. Text will flow automatically from one page to the next.
3. Make the following settings:
   - Page size: Letter
   - Margin Top: 1.4in
   - Margin Left: 1.6in
   - Margin Bottom: 1.2in
   - Margin Right 0.8in
4. Click **Finish**. The new document is shown in the main area of the user interface.
5. On the **Resources** pane at the left, expand the **Context**, and then the **Print** folder. Right-click **Section 1** and rename the section to **Invoice**.
6. To save the document, choose **File > Save As**. The **Save Template** dialog box displays.
7. Navigate to a folder (the folder where you unzipped the Walkthrough files, for example), enter **My OLSG Invoice.OL-template** in the **File name** field and then click **Save**.

2. Importing images

In this exercise you will learn how to import images into a template. Images can be static elements or they can be dynamically replaced by scripts based on a data field. They can also be used as a dynamic element to fill white space, as you will see in a later exercise.

1. In case the Resources pane is not shown, choose **Window > Show View > Resources**.
2. Locate the images folder provided with this tutorial.
3. Drag **OLSG_letterhead-green.pdf** to the **Images** folder in the **Resources** pane.

3. Adding a Virtual Stationery background

In this exercise you will learn how to set a PDF image as a background to emulate pre-printed paper. After specifying a so called "virtual stationery image" you can preview the pre-printed media and place the content in the correct position. The image will be repeated for all pages that use this media.

To set a PDF as media:

1. Locate the file **OLSG_letterhead-green.pdf** in the **Images** folder on the **Resources** pane (the image was added in the previous exercise).
2. Drag **OLSG_letterhead-green.pdf** to the **Media 1** entry in the Media folder on the Resources pane. The first page in the PDF will be set as the image for the front side of the media.
   After adding the image to the Media you will see that the image appears in the background of the page(s).

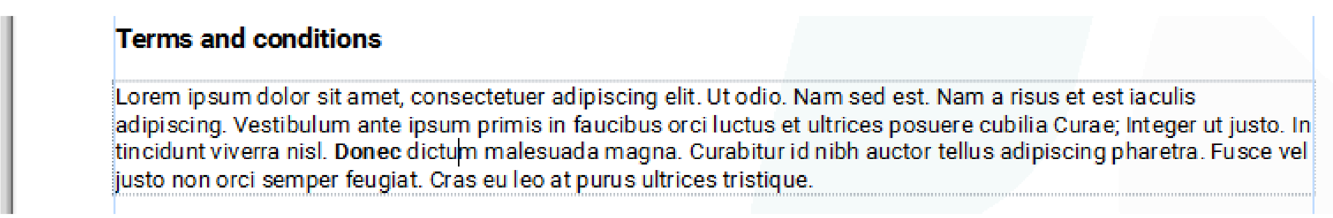
What if you dropped the wrong PDF on the Media or want to change it? The **Media properties** dialog allows you to delete a PDF file from a Media. It also lets you select an image for both the front and back of the Media and specify the position of the image.
To open the dialog, right-click the **Media 1** entry and select **Virtual Stationery** from the shortcut menu.

> **Note**
>
> By default, Media backgrounds are omitted from the output (because in the end, the pre-printed paper will have this imagery). In case you are printing on blank paper you could print this background image together with the document by selecting the **Print Virtual Stationery** option in the Advanced section of the Print Wizard interface or in an Output Creation Preset.

4. Adding text and applying basic formatting to it

In Connect Designer every print section consists of a main text flow. This is the area defined by the page size and margins. The margin guides are shown in light blue.

1. Place the cursor at the start of the document.
2. Type **INVOICE**.
3. Select the word INVOICE and change the style from Paragraph to **Heading 1** using the **Formatting** toolbar.
4. Press **Enter** and type **Terms and Conditions** on the next line. Change the style to **Heading 3**.
5. Press **Enter** and then click the **Insert Lorem Ipsum** toolbar button to enter dummy text.
6. Select one word in the dummy text and use the **Bold** toolbar button to make it bold.
7. Select the paragraph



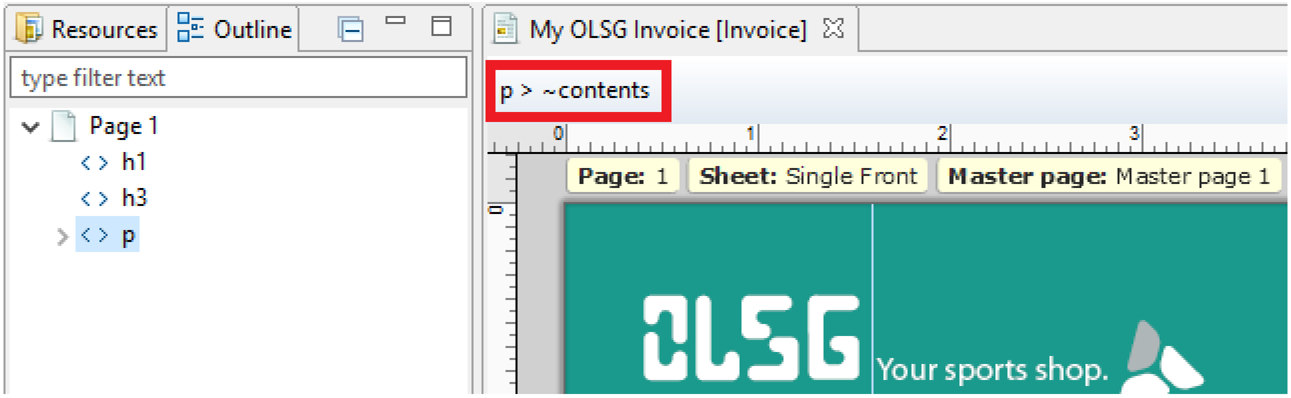
Alternatively you could copy-paste text from a text processor, such as MS Word. Basic style characteristics specified in MS Word travel with the content to Connect Designer. Formatting options like bold, italic and formats like Heading 1, Heading 2 are maintained.

5. Exploring the document

In this exercise you will learn how to explore and quickly select elements on the page using the **Outline** pane and the **breadcrumbs**. The Outline pane at the left shows a hierarchical tree structure of the pages and their elements. Advanced users will refer to this as the HTML Document Object Model or DOM.

1. The **Outline** pane is located in the upper left area next to the main editor. If the **Outline** pane isn’t visible, choose **Window > Show View > Outline**.
   In this example the Outline pane shows two headings and one paragraph. The subheadings are marked with <h1> and <h3> and the paragraph is represented by the <p> entry in the tree.
   A <p> element defines a paragraph in HTML. Other common HTML elements are:
   - h1 through h6 (headings)
   - img (image)
   - table
   - tr (table rows)
   - td (table data or table cells)
   - span (a piece of styled text)
   - div (a box).
2. Click the **<p>** element. The main document window jumps to that paragraph and shows an outline around its contents. The paragraph is now selected and you can see a **p** in the blue bar located under the title bar of the document. This line is referred to as the

breadcrumbs.



3. Click on **INVOICE**. Note that both the Outline pane and the breadcrumbs are updated to show that the currently selected element is **h1**.
4. Click on the word under **Terms and Conditions** that you've bolded. The breadcrumbs show that the selected, bold word is located inside a paragraph: **p > b**.
5. Now click on the **p** in the breadcrumbs. Note that the paragraph gets selected in both the text and the Outline pane.
6. With the paragraph still selected, select font-size **9pt** in the Formatting toolbar to reduce the size of the Lorem ipsum text.

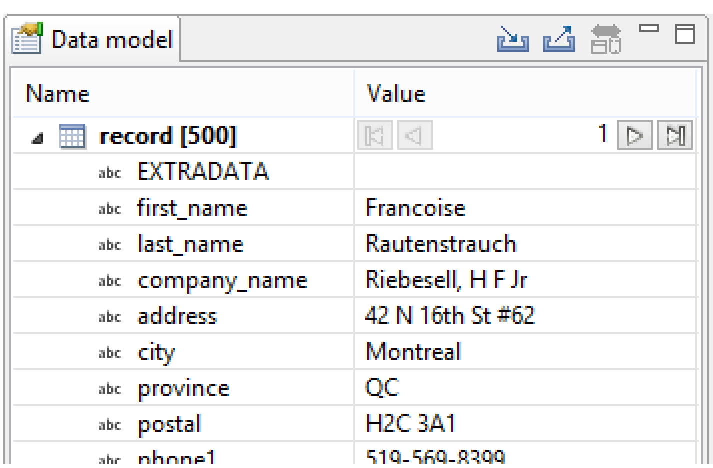
Adding personalization

To create any personalized document, you need data about the recipients. Typically such data include fields like the first name, last name, email address, job title etc. The exercises in this chapter show how to load data and demonstrate various techniques to add data fields to the page.

1. Loading data

In this exercise you will learn how to load data by opening a **data mapping configuration**. It is also possible to open a data file or database in the Designer, but transactional data – such as line items in an invoice – can't be imported in the Designer directly. That's why we need a data mapping configuration.

1. Go to the **Welcome** screen by clicking the **Home** icon at the top right.
2. On the right, under **Create/Open**, click **Open File**. Change the file type to DataMapper files (*.OL-datamapper).
3. Select the data mapping configuration provided with this tutorial: **OLSG-invoice.OL-datamapper**, or a data mapping configuration made by you with a DataMapper walkthrough. The DataMapper workspace is shown.
4. Toggle back to the Designer perspective by clicking the **My OLSG Invoice.OL-template** tab at the top of the workspace.
5. The **Data Model** pane now shows the data model and the data of the first record in OLSG-invoice.OL-datamapper. If not, hit the **Synchronize model** button in the Data Model pane to update the Data Model to the current data mapping configuration.

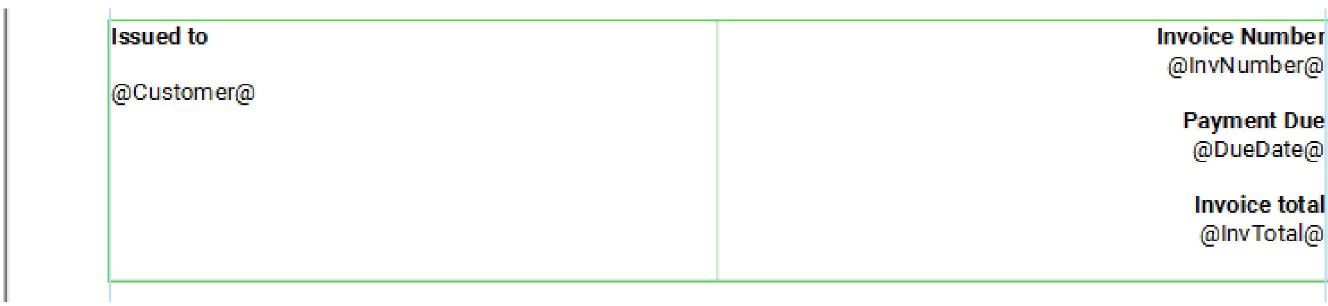


6. Use the browse buttons at the top of the Value column to browse through the imported data.
7. Scroll down in the Data Model pane to see the **detail table** and browse through its detail records.

2. Adding a table to hold the address and invoice information

In this exercise, you will learn how to add a table that functions as a container for the address of the client and the invoice information. The table, which in this case is placed in the main text flow, will have two columns: the left column is for the address data and the one on the right is for invoice information.

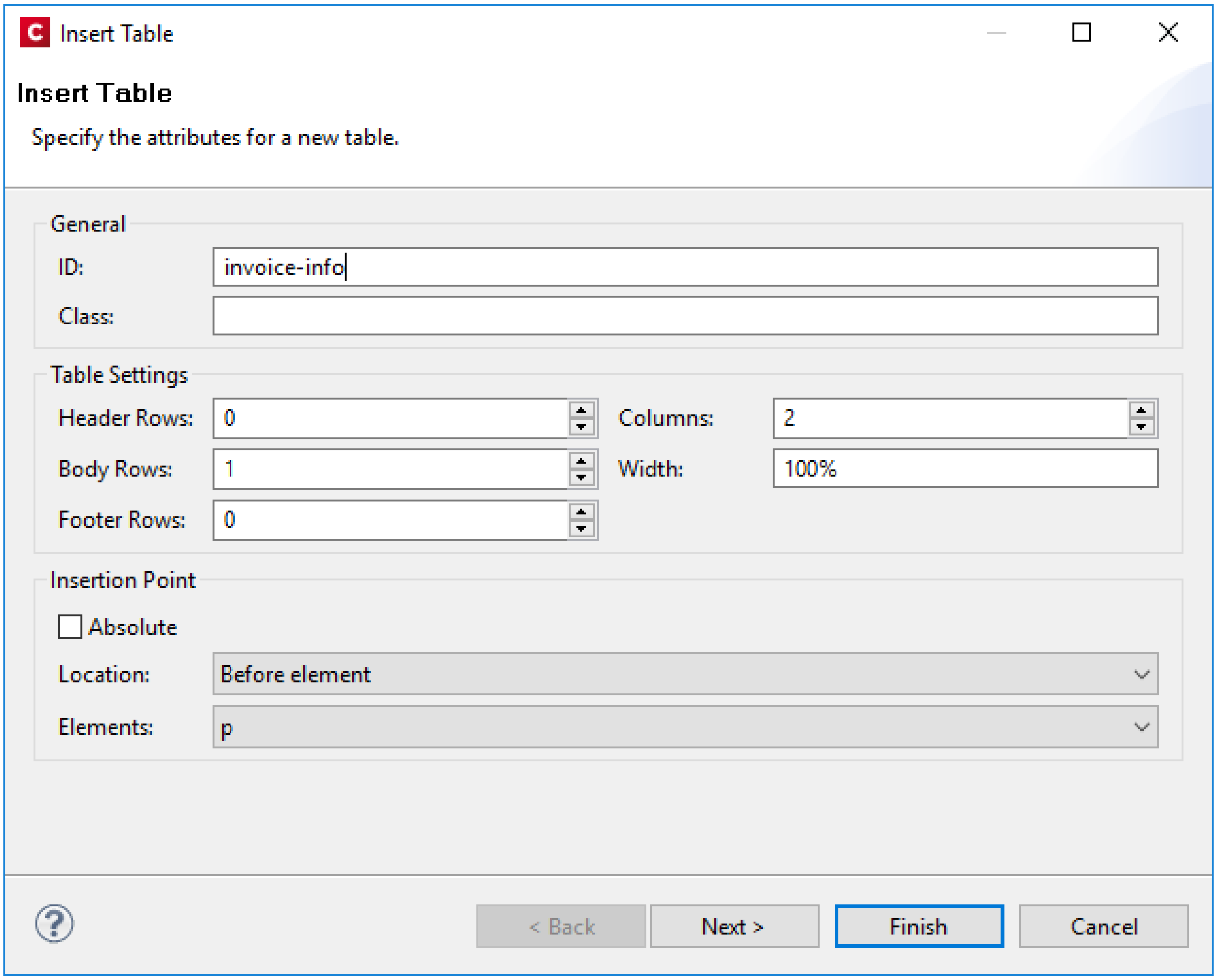
The following image shows the end result.



To add a table to the main text flow:

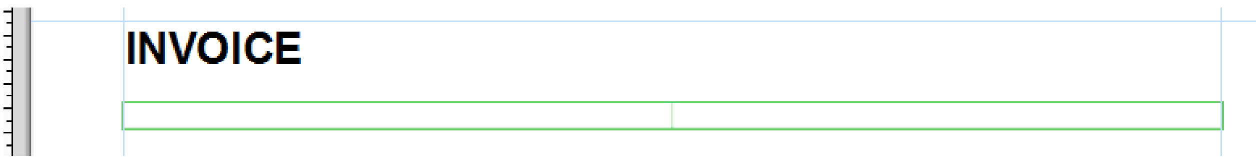
1. Return to the invoice template. Create a new paragraph after the INVOICE heading by pressing the Enter key after the last character of the heading.

2. Select **Insert > Table > Standard…** from the Menu or click the Insert Table icon on the toolbar. The **Insert Table** dialog appears. This dialog lets you configure the new table.



3. Make the following settings on the first page of the **Insert Table** wizard:
   - ID: invoice-info
   - Header Rows: 0
   - Body Rows: 1
   - Footer Rows: 0
   - Columns: 2
4. Use the **Location** drop-down to select **Before element** as the insertion point. This will insert the table before the new paragraph.

5. Click **Next** and select the table style at the top left, which does not have any borders or background colors. The table will take up the maximum available space horizontally and runs between the left and right margin guides.
6. Click **Finish** to insert the table.
7. As the table doesn't have any borders or background it blends into the page. Click the **Show Edges** button on the toolbar to reveal its position. The table shows a non-printing green border.

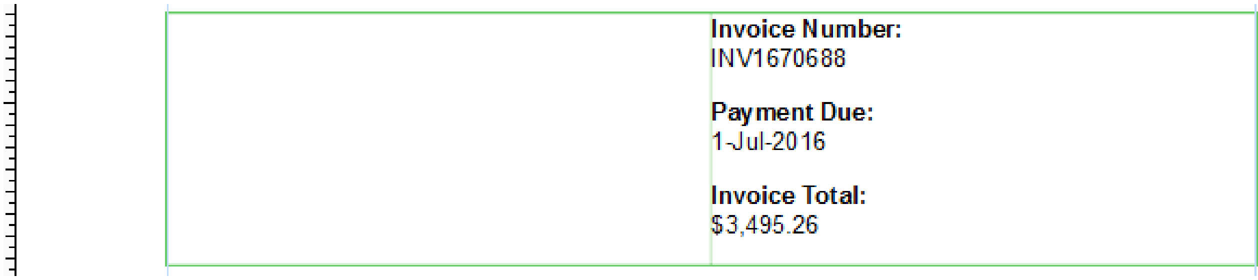


3. Adding the invoice information

In this exercise you will add the invoice information like the invoice number, due date and invoice total to the table. You will do this by dragging the data fields into the template.

1. Place the cursor in the right table cell of the initial table.
2. Type the following text:
   - Invoice Number: (press Enter twice)
   - Payment Due: (press Enter twice)
   - Invoice Total: (press Enter once)
3. Now, to add the variable data, drag the data fields **InvNumber**, **DueDate** and **InvTotal** one by one from the Data Model pane into the table, after the respective label. To push them to the next line, place the cursor before the first @, hold the Shift key and press the Enter key once.
4. Take a look at the **Scripts** pane: three new scripts have been added.
   When you drag a data field from the Data Model pane to anywhere in the template, a placeholder is inserted at the cursor position and a script is added to the Scripts pane. The script's *selector* is the *class* of the placeholder (actually of the span that contains the placeholder). Click a placeholder; its class will become visible on the **Attributes** pane. When viewing the document in Preview mode (or when generating output), the scripts are executed, by which the placeholders get replaced with the value of the data field.
5. Select the text of each label and click the **Bold** icon on the toolbar to set the font-weight for the selected label.

6. Click the **Preview** tab along the bottom of the main editor to view the merged template.



4. Adding the address

In this exercise you will learn how to add variable data, not by dragging data fields to the document but by using the **Text Script wizard** instead. The Text Script wizard concatenates multiple data fields into the full multi-line address and it can add a prefix and/or suffix to each data field. One of the big advantages of using a Text Script wizard is that it facilitates skipping empty lines when data fields are empty.

1. Type the following text in the first table cell: **Issued to**.
2. Select 'Issued to' and click the **Bold** icon in the Formatting toolbar.
3. Click after 'Issued to', press **Enter** two times and type **@customer@**.
4. Create a new text script entry: select @customer@, right-click the selection and select **Text Script...**.
   A script entry is added to the Scripts pane and opened in the **Edit Script** dialog. The **Find text** field has the text **@customer@**.
5. Change the **name** of the script so that it clearly describes the purpose of the script (e.g. Set Address).
6. Change the **selector** type to **Selector and Text**.
7. In the **Selector** field, type **#invoice-info**. #id refers to the element with the specified ID, which in this case is the ID of the table.

> **Note**
>
> By default, a Text Script scans the entire template for placeholders (such as a data

field name surrounded by the “@” signs) and replaces them by the value of a data field. In larger and more complex documents, this has an impact on the output performance. The option **Selector and Text** combines the text of the placeholder with a selector that identifies the HTML element in which the placeholder is located. This reduces the scope of the search and thereby speeds up the output.

8. The Text Script wizard is able to combine data from multiple data fields. Each field is placed on its own line in the wizard. New lines can be added by clicking the Plus sign next to the table or simply by clicking on the next empty line.
   The **Prefix** and **Suffix** fields add text to the data of each field.
   Important! When a data field is empty the respective line is skipped including its prefix and suffix.

   Add lines for the following fields and set the respective suffix text.

Prefix	**Field**	**Suffix**
	Company	 (adds a line break)
	Title	one space
	FirstName	one space
	LastName	
	Address1	
 	City	, (comma, then space)
	State	
one space	ZipCode	
	Country	

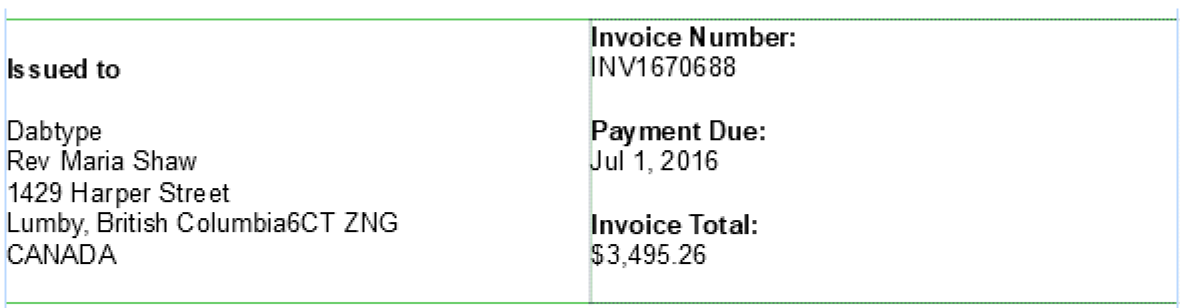
Tip

For two spaces to be used as a prefix or suffix, enter two non-breaking space

> characters (represented by the HTML entity: ** **) instead of two regular spaces. In HTML by default multiple regular spaces will be collapsed to a single space character.

9. At the bottom of the dialog, click **Options** and verify that the Insert Method is **HTML**.
10. Click **OK**. The name of the script will be shown in the Scripts pane.
11. Toggle to the Preview mode and use the browse buttons of the Data Model pane to navigate through the records. The address block should look like this:

    Company
    Title First name Last Name
    Address1
    City, State Zip code
    COUNTRY



5. Changing the date format

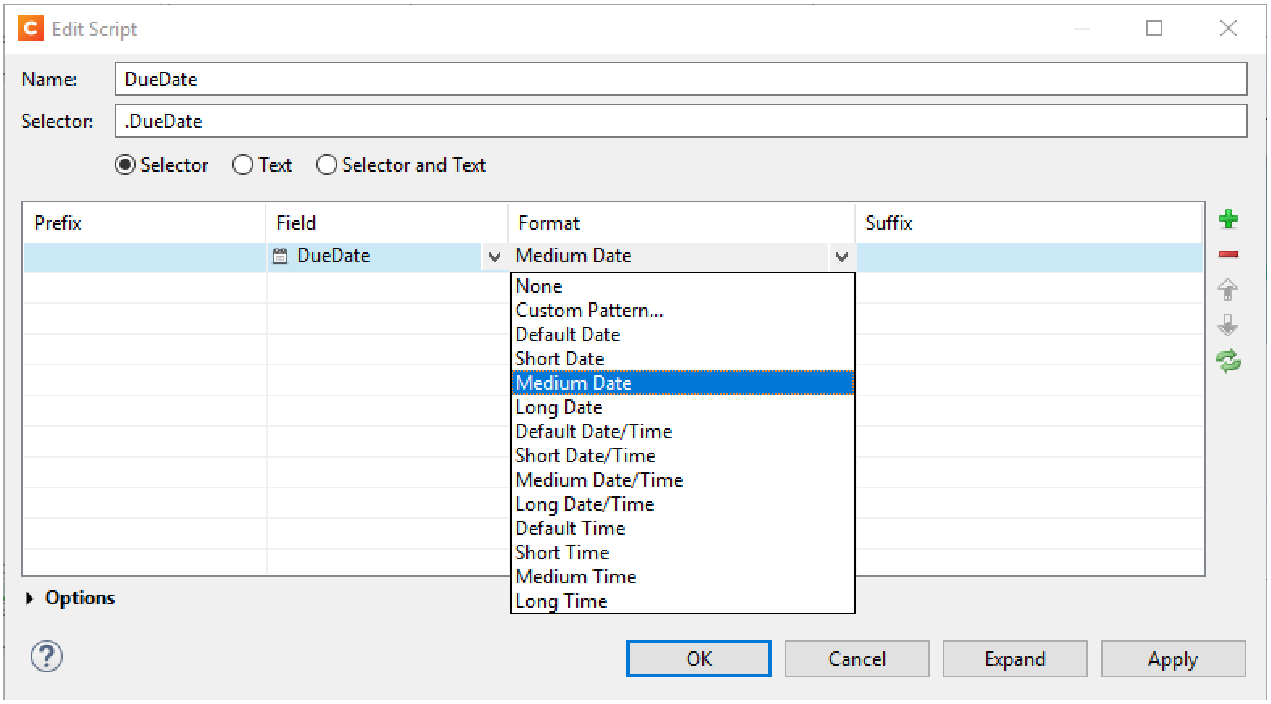
Predefined date format

Dates added by a Text Script have a medium date formatting by default. In this exercise you'll change the formatting of the date to another predefined date format.

1. In the Scripts pane, double-click the script that inserts the date. The Edit Script dialog appears.

> **Tip**
>
> Hovering over the name of a script in the Scripts pane highlights the content that is affected by it. This makes it easy to find the correct script.

2. Select **Long Date** in the **Format** column and click **OK**.

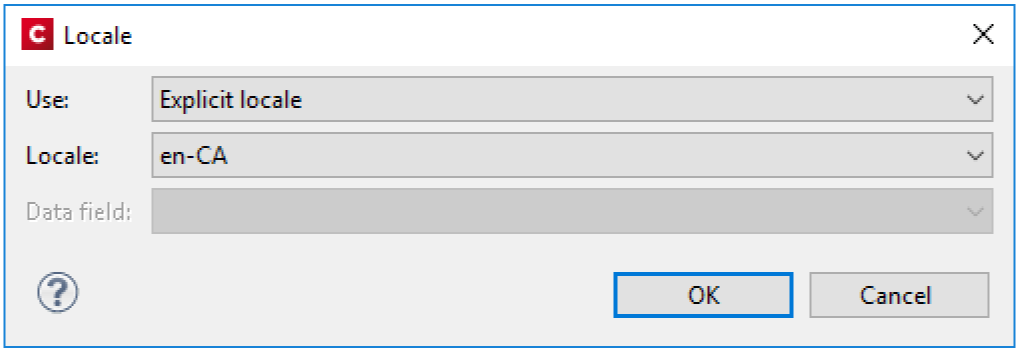


> **Note**
>
> The format options in the Text Script wizard depend on the type of data field. The field type is defined in the DataMapper workflow. Supported field types are: `String`, `HTML String`, `Boolean`, `Date`, `Integer`, `Float`, `Currency` and `Date`.

Locale

The actual date format also depends on the locale, set for the document.

1. Choose: **Edit > Locale…** The **Locale** dialog appears. By default the template makes use of the system locale.



2. Change the **Use** field to **Explicit Locale** and select a different entry from the **Locale** drop-down.
3. Click **OK** to store the new setting and see its effect.

> **Tip**
>
> The **Data field** drop-down in the Locale dialog gives you the possibility to use a variable locale, that is, if your data contains a field that holds a locale code. The locale will be record-specific in this case. Both language codes (en, fr etc.) and language-country codes (en-CA, fr-FRA) are valid locales.
> Yet another option is to use a runtime parameter. Parameters can be defined in the template and filled with a value in Workflow.

Custom date

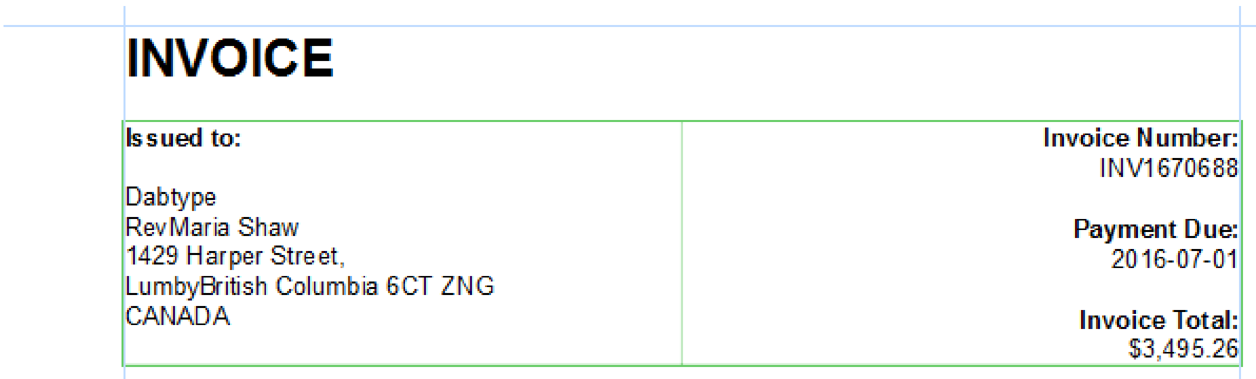
Let's say you prefer a custom format for the date. It is perfectly possible to use a custom format. Reopen the script (repeat step 1 under Predefined date format).

1. Click in the **Format** field and select **Custom pattern**.
2. Type **yyyy-MM-dd** and click **OK**. Now the date looks as follows: 2016-07-01.

6. Aligning text in table cells

The texts in the two table cells are not aligned at the same height. This is because the text is aligned vertically to the middle of the cell. Changing the alignment of the text in the table cells will make the invoice prettier.

1. Switch to the **Design** tab.
2. Select the text in the right table cell. Then click the **Align Right** icon in the toolbar.
3. Select the table as a whole. You can do this by clicking **table #invoice-info** in the breadcrumbs.
4. Select **Format > Table Cell…**
5. On the **Cell** tab, set the **Vertical Align** drop-down to **top**.
6. Click **OK**. The text in both table cells will now be aligned to the top of the cell.
7. Switch to the **Preview** tab to see the result.



Adding the dynamic invoice data

The Dynamic table feature provides an easy way to lay out rows and columns for line item information such as the description of a product, the unit price, total price, quantity etc. Table rows are automatically inserted based on the number of rows in a detail table. Once the table reaches the bottom of the page a new page is inserted automatically. The invoice will continue on the next page. Headers and footers can be repeated across pages and subtotals, transport lines and the invoice’s total can be added automatically.

In this exercise you’ll learn how to insert a dynamic table to lay out the information of a detail table stored in the data set.

1. Adding the dynamic table

1. Toggle to the **Design** mode and place the cursor at the beginning of the heading 'Terms and Conditions'.
2. Choose: **Insert > Table > Dynamic Table...** The **Insert Dynamic Table** dialog appears.
3. Change the value of the ID field to: **invoice-data**.
4. Make sure that the **Detail table** field reads **products**. This is the detail table in the data that holds the invoice line items.
5. From the **Location** drop-down, choose **Before element**. This causes the table to be inserted directly before the level 3 heading (h3).
6. Click **Next**. The Dynamic Table Builder is shown.
   It contains one *'row'* which is associated to the selected detail table. The row will be repeated in the output (or in Preview mode) as many times as necessary to display all the records in the associated detail table.
   The *'fields'* - cells in the table - correspond to data fields in the detail table.
7. Delete the #Shipped and #BackOrder fields by clicking on the red cross. The following fields should be listed:
   - ProdNumber
   - Description
   - UnitPrice

- Shipped
- Total

The fields will appear in the table in the order in which they are listed here. To rearrange them, you can drag and drop them by clicking to the left of a field.

8. Without currency signs the values in the Unit Price and Total columns will look better. Change the **Format** for these fields to **Currency No Symbol**.
9. Note how the **alignment** is set for text in different kinds of fields: text is left-aligned, amounts in currency fields are right-aligned and numbers are centred.
10. Click **Next**. The Dynamic Table Options page is shown. The options on this page let you add subtotals to the footer and transport lines (in case the table runs across multiple pages).
11. Check the **Calculate Subtotals** item.
12. Verify that **Total** is selected as the data field that will be used to calculate the subtotals and totals.
13. Check both **Show subtotal lines** options to have subtotals shown before and after page breaks.
14. Click **Next**. The predefined table styles are shown.
15. Select the 6th table style (the second from the top right) and click **Finish** to insert the table.
How to further style the table is demonstrated later in this walkthrough.
The table is inserted at the current cursor position. It has a column for each of the selected data fields. The cells in the body table row, between the header and footer rows, show the placeholders of the respective data fields (surrounded by @ signs).

ProdNumber	Description	UnitPrice	Shipped	Total
				@Total@
@ProdNumber@	@Description@	@UnitPrice@	@Shipped@	@Total@
				@Total@
				@Total@

Tip

Click the **Show Edges** button on the toolbar to show the edges of the table with thin green lines. These lines are visible in Preview mode, but will not be printed.

16. Toggle to **Preview** mode. You will see that the body table row is repeated for each detail record and that the placeholders are replaced with the corresponding data values.

ProdNumber	Description	UnitPrice	Shipped	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
				$974.81

Note that you will see only *one* of the subtotals rows on each page in output and in Preview mode. The bottom footer row is only shown on the last page. The row above it is shown on all other pages, if the table runs over multiple pages.

2. Adding labels and rows

At this point the table shows the basic information of the invoice line items. In this exercise you'll learn how to add additional rows and information to this table.

To add a label to the subtotals in the footer:

1. In Design mode, place the cursor in the cell next to the @Total@ cell in the first row of the footer of the table. Type **Subtotal**.
2. Do the same in the bottom footer row.

Now add additional rows for the tax and invoice total:

1. Right-click one of the cells in the bottom row and choose **Row > Insert Below** from the shortcut menu. Repeat this to add a second row.

2. On the **Outline** pane, click on the second to last footer row (the third **<tr>** in **<tfoot>**).
3. On the **Attributes** pane, change **Show Row** to: **At end of table**. This prevents that a row is shown on every page if the table runs over multiple pages.
4. Repeat the previous step for the last footer row.
5. Place the cursor below the Subtotal cell and type: **VAT**.
6. Move the cursor one row down and type: **Total inc VAT**.
7. Locate the **InvTaxTotal** data field in the Data model panel and drag this field into the cell next to the VAT cell.
8. Drop the **InvTotal** data field in the last table cell of the table.

Now, in Preview mode the table will look like this:

ProdNumber	Description	UnitPrice	Shipped	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	$974.81
			VAT	$146.22
			Total inc VAT	$1,121.03

Formatting the Dynamic Table

This chapter explains how to format a Dynamic Table. You will not only change the text and text alignment, but also change the column widths, borders and background colors.

> **Note**
>
> These changes are best made in **Design** mode.

1. Formatting text and currencies

In this exercise you will change some labels, text alignments and the formatting of amounts of money. Formatting text in a Dynamic Table is no different from how it is done in a Standard Table.

1. The headers of the columns contain the name of the respective data fields. In Design mode, change them to proper headings: change ProdNumber to **Number**, UnitPrice to **Unit Price** and Shipped to **Quantity**.
2. Select the first **Subtotal** label and click the **Bold** icon on the toolbar. Then set the text alignment of the cell to the right by clicking the **Align Right** icon on the formatting toolbar.
3. Do the same with the other labels in the footer: **Sutbtotal**, **VAT** and **Total inc VAT**.
4. Toggle to **Preview** mode to verify your changes. The table should look like the image below:

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	$974.81
			VAT	$146.22
			Total inc VAT	$1,121.03

We have already set the format for the Unit Price and Total fields when adding the table. To change the formatting of line items and subtotals after adding the table:

1. In Design mode, click on the cell.
2. On the **Attributes** pane, select the desired format from the **Format** drop-down.

If you would want to change the formatting of values outside line items and subtotals, such as the VAT and Total inc VAT fields in this table, here is how to do that:

1. Double-click the respective script on the **Scripts** pane to open the **Edit Script** dialog.
2. Open the drop-down list in the **Format** column and select Currency No Symbol.

2. Changing column widths

The product descriptions are rather long. It would be best if most of them would fit on a single line. This can be achieved by changing the column widths:

1. In **Design** mode, hover the mouse between the Number and Description columns. The cursor changes to a column resizer icon.
2. Click and drag the column separator to the left. Then resize the other columns, from right to left.
3. Toggle to **Preview** mode to see the effect.
4. The widths could be improved in columns where the actual data are less wide than the placeholders. Toggle to **Design** mode, click in the field that holds the **Number** label and on the **Attributes** pane, in the **Geometry** section, set **Width** to a smaller percentage, e.g. 10%.

5. Toggle to Preview mode and back to Design mode, and change the widths of cells in the header row until all labels and (most) line items fit on a single line.

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	$974.81
			VAT	$146.22
			Total inc VAT	$1,121.03

6. To ensure that the widths can't be changed accidentally, we will disable the option to resize the table. Select the table: click somewhere in the table, and then click on `table #invoice-data.table--light` in the breadcrumbs.
7. On the **Attributes** pane, in the **Other** section, uncheck the option **Allow Resizing**. (You may have to scroll down in the Attributes pane to see this option.)

3. Using the Formatting dialog

In this exercise you will learn how to use the **Table Cell Formatting** dialog. The next exercise shows how to use the Stylesheets dialog.

1. In **Design** mode, place the cursor in the first cell of the header row. Press the **Shift** key and click the last cell in this row. The cells of the header row are now selected.
2. Right-click one of the selected cells and select **Cell...** (note the dots) from the contextual menu. The Table Cell Formatting dialog appears.
3. Click the **Border** tab.
4. Deselect the **Same For All Sides** option and make the following settings for the **Top** border:
   - Width: 1pt
   - Style: solid
5. Click the small square next to the **Color** field. The **Color** dialog appears. Under RGB, enter:
   R: 144, G: 144, B: 144.
6. Click **OK** to close the Color dialog.

7. Click **OK** again to apply the border settings to the selected cells.
8. Select the cells in both Subtotal rows and open the Table Cell Formatting dialog.
9. Click the **Background** tab. Click the small square next to the **Color** field. The Color dialog appears.
10. Under RGB, enter: R: 230, G: 230, B: 230. Click **OK** to close the Color dialog and OK again to close the Table Cell Formatting dialog. The table now looks like this:

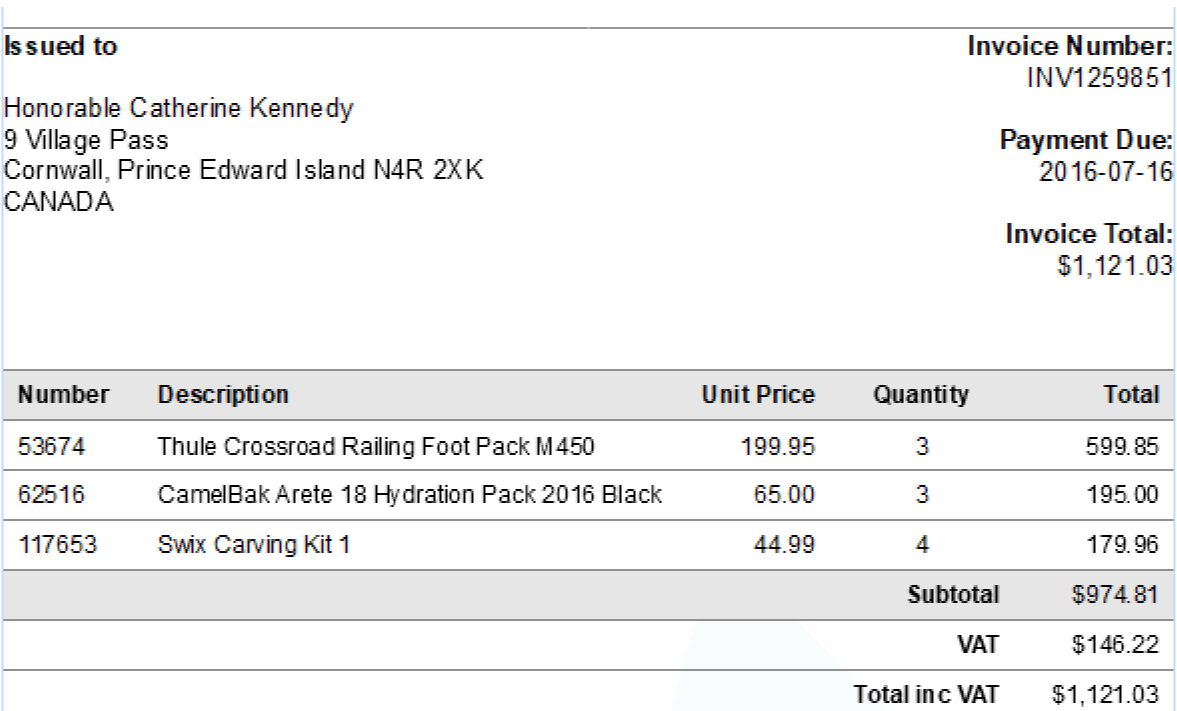
Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	$974.81
			VAT	$146.22
			Total inc VAT	$1,121.03

4. Using the Stylesheets dialog

Horizontal lines make it easier to read the data and they make the table look better. This exercise shows how to change borders and background colors to table cells with CSS (Cascading Style Sheets), via the Stylesheets dialog.

1. Choose **Edit > Stylesheets…**, to make the **Stylesheets** dialog appear.
2. From the **Context** drop-down, choose **Print**, to make the styles apply to Print sections only.
3. Click the **Plus** icon to create a new style rule.
4. In the dialog that appears, type **td** in the Selector field. The selector defines to which elements in the document the rule applies. By stating **td** the rule applies to all table cells. In HTML, a table data cell is a <td>.
5. Click the **Border** tab.
6. Deselect the **Same For All Sides** option and make the following settings for the **Top** border:
    - Width: 1pt
    - Style: solid

7. Click the small square next to the **Color** field. The **Color** dialog appears. Under **RGB**, enter:
   R: 144, G: 144, B: 144.
8. Click **OK** to close the Color dialog.
9. Click **OK** to close the rule editor.
   The top part of the Stylesheets dialog lists selectors (up to now there's only one: **td**) and the preview in the bottom part lists all style rules for the selected selector. In the style rule that you've just made, "border-top" is the CSS property, and "1pt solid rgb(144, 144, 144)" is the value assigned to that property.
10. Click **Save** to close the Stylesheets dialog.
11. Toggle to **Preview** mode and look carefully at both tables in the template: the standard table with the invoice and address information and the Dynamic Table.



Issued to

Honorable Catherine Kennedy
9 Village Pass
Cornwall, Prince Edward Island N4R 2XK
CANADA

Invoice Number:
INV1259851

Payment Due:
2016-07-16

Invoice Total:
$1,121.03

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	$974.81
			VAT	$146.22
			Total inc VAT	$1,121.03

As you can see, the newly added style rules don't just affect cells in the Dynamic Table. They also apply to the table with the invoice information. This is because the selector selects all cells in all tables. So, the selector has to be more specific.

12. Reopen the Stylesheets dialog and select the context: **Print**.
13. Select **td** and click the **Edit** button (with the blue pencil).

14. Change the selector to **#invoice-data td**. Save the settings. Now, the style rule only applies to table cells inside an element that has the ID: invoice-data – which is the Dynamic Table.
15. Create a new rule-set: click the **Add** button, type the selector **#invoice-data tfoot** and on the **Type** tab, check **Bold**. This bolds all text in all footer rows of the Dynamic Table.

> **Tip**
>
> The options in the Rule editor represent the most frequently used CSS properties. If a property is not available here, click the **Advanced** button. In Advanced mode you can add a style rule by typing a CSS property (at the left) and its value (at the right).

16. Save the settings. In Preview mode, the table should now look like this:

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	**$974.81**
			VAT	**$146.22**
			Total inc VAT	**$1,121.03**

17. A different background color and text color will make the total amount of the invoice stand out. Coloring two cells with one style rule is easy, when they have the same class.
In Design mode, click in the cell that contains the text Total inc VAT and use the breadcrumbs or the Outline pane to select the cell (**td**).
18. On the **Attributes** pane, in the **Class** field, type **invtotal**.
19. Repeat the previous two steps for the cell that contains the @InvTotal@ placeholder.

> **Note**
>
> Elements can have more than one class. Separate class names by a space.

20. Open the Stylesheets dialog and click the **Add** button to create a new style-set.
21. As selector, type **.invtotal** (note the dot). This will make the new rules apply to any element that has the class **invtotal**.
22. On the **Type** tab, in the **Color** field, type **White**. This turns the text color into white.
23. Click the small square next to the **Background Color** field. The Color dialog appears. Under **RGB**, enter:
    R: 144, G: 144, B: 144.
24. Click **OK** to close the Color dialog. Now the table looks like this:

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	**$974.81**
			VAT	**$146.22**
			Total inc VAT	**$1,121.03**

5. Editing a style sheet

As you've seen in the Stylesheets dialog, a rule consists of a **selector** and a set of **style rules**.

The selector points to the HTML element you want to style. The style-set contains one or more declarations, each ending with a semicolon. A declaration includes a property name and a value, separated by a colon.

In this exercise you will add padding to table cells and change the font size by editing a CSS file directly, instead of via the Stylesheets dialog. As you gain more knowledge of CSS, this option will become increasingly convenient.

1. On the **Resources** pane, expand the **Stylesheets** folder and double-click **context_print_styles.css**. The file opens in the Workspace. You will see that it already contains the selectors and style rules that were added via the Stylesheets dialog.
2. Add the following style rules to the style-set for **#invoice-data td**:

```
font-size: 10pt;
padding: 6pt 2pt;
```

Padding is the margin inside an element, in this case, a table cell.

3. Press **Ctrl** + **S** to save the style sheet.

> **Note**
>
> Never edit a CSS file in the workspace and via the Stylesheets dialog at the same time!

4. Click the **My OLSG Invoice** tab and toggle to Preview mode. Because of the padding and the changed font size, you will need to resize the columns to make most product descriptions fit on one line again. (Enable the Allow Resizing option first.)
The final table layout will look similar to the following image:

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	3	195.00
117653	Swix Carving Kit 1	44.99	4	179.96
			Subtotal	**$974.81**
			VAT	**$146.22**
			Total inc VAT	**$1,121.03**

Adding a variable address (using a snippet, master page and script)

The only thing that's still missing in the invoice is the address of the sender. The sender is a company that has offices in different cities. All addresses are available in one *snippet*. In this exercise you will learn how to write a script that inserts part of a snippet in the template, depending on the value of a field in the record set.

1. Importing a snippet

Snippets are small HTML files. They are imported in much the same way as images are imported.

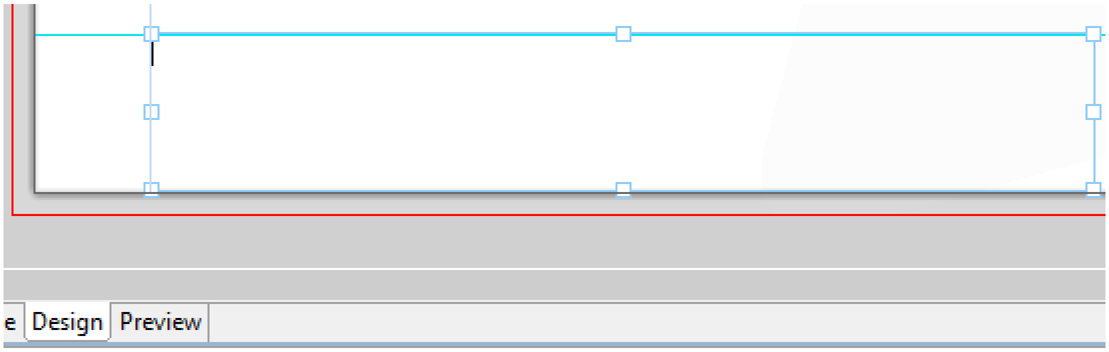
1. Locate the snippet **olsg_address.html**, provided with this tutorial.
2. Drag the snippet to the **Snippets** folder in the **Resources** pane.
3. Click **OK** to confirm that the encoding is UTF-8.
4. Double-click the new snippet to open it in the Workspace.
5. Click the **Source** tab at the bottom of the Workspace to view the HTML of the snippet. Every paragraph in this snippet has an ID that is identical to one of the values used in the StateAbbrev field, as you can see in the Data Model pane. These IDs will eventually be used to select a paragraph from the snippet and insert that in the template.
6. Close the snippet by closing the tab.

2. Inserting a Box on the Master Page

In this invoice, the letterhead is the same on every page and the address should appear on every page as well. The best place for this type of elements is the **Master Page**. In this exercise you will learn how to create a Box on a Master Page.

1. On the **Resources** pane, expand the **Master pages** folder.
2. Double-click **Master page 1** to open it.
3. Click the **Insert Positioned Box** toolbar button.

4. Drag and resize the Box to fit on the lowest part of the page, as in this image:



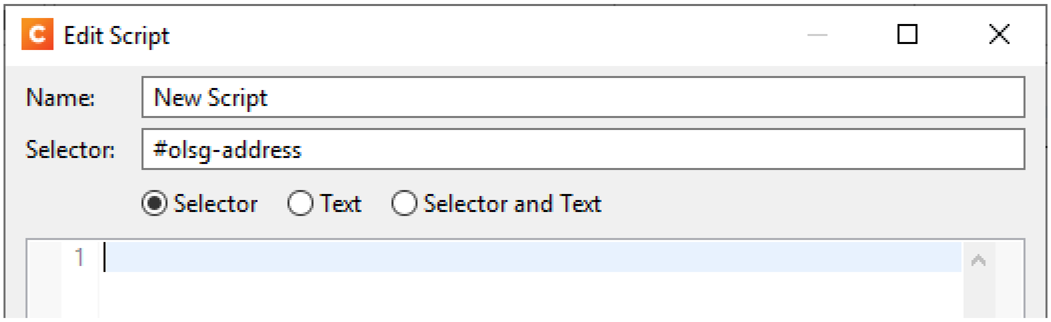
5. Give the Box an ID: on the **Attributes** pane, in the **ID** field, type **olsg-address**. This will be used as the selector of the script. In the box, you could type a placeholder, for example {address}, but that isn't really necessary. In this case the script will simply replace all of the contents of the box.
6. Save the Master Page (**Ctrl S**) and reopen the Invoice template (on the **Resources** pane, expand **Contexts**, **Print** and then double-click the Invoice template).

> **Note**
>
> Although in this walkthrough we will only use one Master Page, it is common to have more than one Master Page and apply different Master Pages to different pages in a template. This is called **Sheet Configuration**. To open the Sheet Configuration dialog, open the Resources pane, expand Contexts, then Print; right-click the Invoice template and select Sheet Configuration.

3. Write a script that uses a snippet

In this exercise you will learn how to write a script that fills the box on the Master Page with a variable address. The addresses are stored in a snippet.

1. Right-click the box and choose **New Script** from the shortcut menu. The **Script editor** appears. The of the script is added automatically.



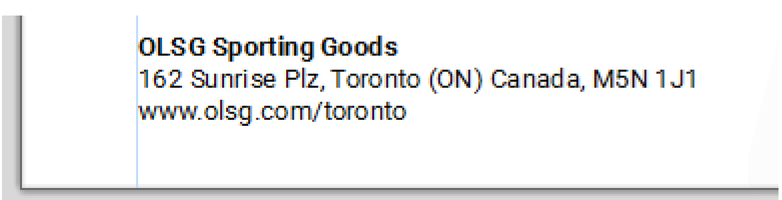
2. Change the script name to **Change Company Address**.
3. Add the following script.

```
var office="";
if(record.fields.StateAbbrev == "ON"){
       office = loadhtml("snippets/olsg_address.html", "#ON");
} else {
       office = loadhtml("snippets/olsg_address.html", "#QC");
}
results.html(office);
```

In Preview mode and when output is generated, this script will read the value of the **StateAbbrev** field in the current record. If it is "ON", for Ontario, it will load the paragraph that contains the address of the office in Ontario from the snippet and insert that in the template. All other recipients get the address of the office in Québec.

> **Tip**
>
> To match every state abbreviation to an address in the snippet, you could use a switch statement; see the file Case_ChangeCompanyAddress.txt that is provided with this tutorial.

4. Click **OK** and switch to Preview mode to see if the correct address appears in the template.

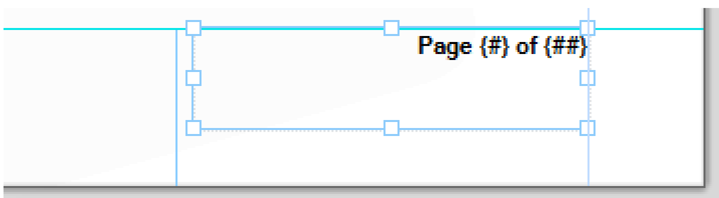


The finishing touch

1. Adding page numbers

Invoices consist of a variable number of pages, so they need to have page numbers. This exercise shows how to add page numbers to a template.

1. Open the **Master Page**. The page number should appear on every page, so the best place to put it in is the Master Page.
2. Add a Positioned Box and put it at the bottom right, next to the box for the company address.
3. In the box, type **Page** (followed by a space).
4. From the menu, select **Insert > Special Character > Markers > Page Number**.
5. Type a space, then **of**, followed by a space.
6. From the menu, select **Insert > Special Character > Markers > Page Count**.



7. Click the **Align Right** icon on the toolbar to align this text to the right of the box.
8. Save the Master Page.
9. Reopen the Invoice template.
10. Toggle to Preview mode to see if the page numbers are inserted correctly.

Tip

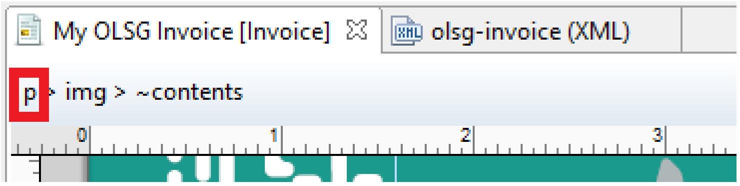
To change the page number format to, for example, uppercase Roman numerals (I, II, III) or lowercase letters (a, b, c), right-click the Invoice template on the **Resources** pane and select **Numbering**.

2. Using an image as a whitespace element

In this exercise you will add an image to the invoice to be used as a white space filler.

White space on an invoice can be very well used to include an advert or announcement. If there is white space on some invoices, but not on others, you may insert an image in the template and tag it as a **whitespace** element. A whitespace element will only be included in the output if it fits in the available white space on the current page.

1. In Design mode, add one new paragraph below the paragraph Terms and Conditions: place the cursor at the end of that paragraph and press **Enter**.
2. Import the image: locate the images folder provided with this tutorial, and drag **olsg_whitespace_hockey_01.pdf** from that folder to the **Images** folder in the **Resources** pane.
3. Place the image in the template: drag **olsg_whitespace_hockey_01.pdf** from the **Images** folder to the empty paragraph. The image is inserted at the cursor position and anchored to the text. This means that new lines added above the image will push the image down.
4. Select the image in the document. When selected, images can be resized by dragging the resize handles. Resize the image if needed. Keep the **Shift** key pressed while resizing to scale the image proportionally.
   Note that the **Source** field in the **Attributes** pane shows the path to the image e.g. “images/olsg_whitespace_hockey_01.pdf”. In this path, "images" refers to the Images folder in the Resources pane.
5. The breadcrumbs show that the selected image is inside a paragraph. Click the **p** in the breadcrumbs to select the paragraph that contains the image.



> **Note**
>
> Only top-level elements can be used as whitespace element. In the breadcrumbs, top-level elements come first.

6. On the **Attributes** pane, check the **Whitespace** option.
7. Switch to Preview mode and browse the records to see that the invoice only shows the image if it has space for it.

> **Note**
>
> If you want a larger distance between the text of the invoice and the whitespace filler image, **don't** add a paragraph; that could result in an extra page. Instead, set a top margin for the image:
>
> 1. Right-click the image and choose **Image…**
> 2. On the **Spacing** tab, in **Margins**, uncheck **All sides** and enter a top margin (for example, 10px).

3. Switching images dynamically

In this exercise you will learn how to write a script that replaces one image by another, depending on values in the record set.

The Marketing department has provided four images:

- The hockey advert should only be presented to people who like hockey; men should get the green version (**olsg_whitespace_hockey_01.pdf**) and women the purple version (**olsg_whitespace_hockey_02.pdf**).
- Recipients whose favorite hobby is to ski should get the skiing advert; **olsg_whitespace_skis_01.pdf** is for men, **olsg_whitespace_skis_02.pdf** for women.

1. Import the extra images: locate the images folder provided with this tutorial and drag the images that are needed to the Images folder in the Resources pane.

2. Click the image in the template to select it and give it an ID: on the **Attributes** pane, in the **ID** field, type **olsg-banner**.
3. Right-click the image and choose **New Script** from the shortcut menu. The Script editor appears. The selector of the script is added automatically.
4. Change the script name to **Switch Banner**.
5. Add the following script:

```
if (record.fields.FavHobby == "skate") {
       if (record.fields.Gender == "M") {
               results.attr("src", "images/olsg_whitespace_hockey_01.pdf");
       } else {
               results.attr("src", "images/olsg_whitespace_hockey_02.pdf");
       }
} else {
       if (record.fields.Gender == "M") {
               results.attr("src", "images/olsg_whitespace_skis_01.pdf");
       } else {
               results.attr("src", "images/olsg_whitespace_skis_02.pdf");
       }
}
```

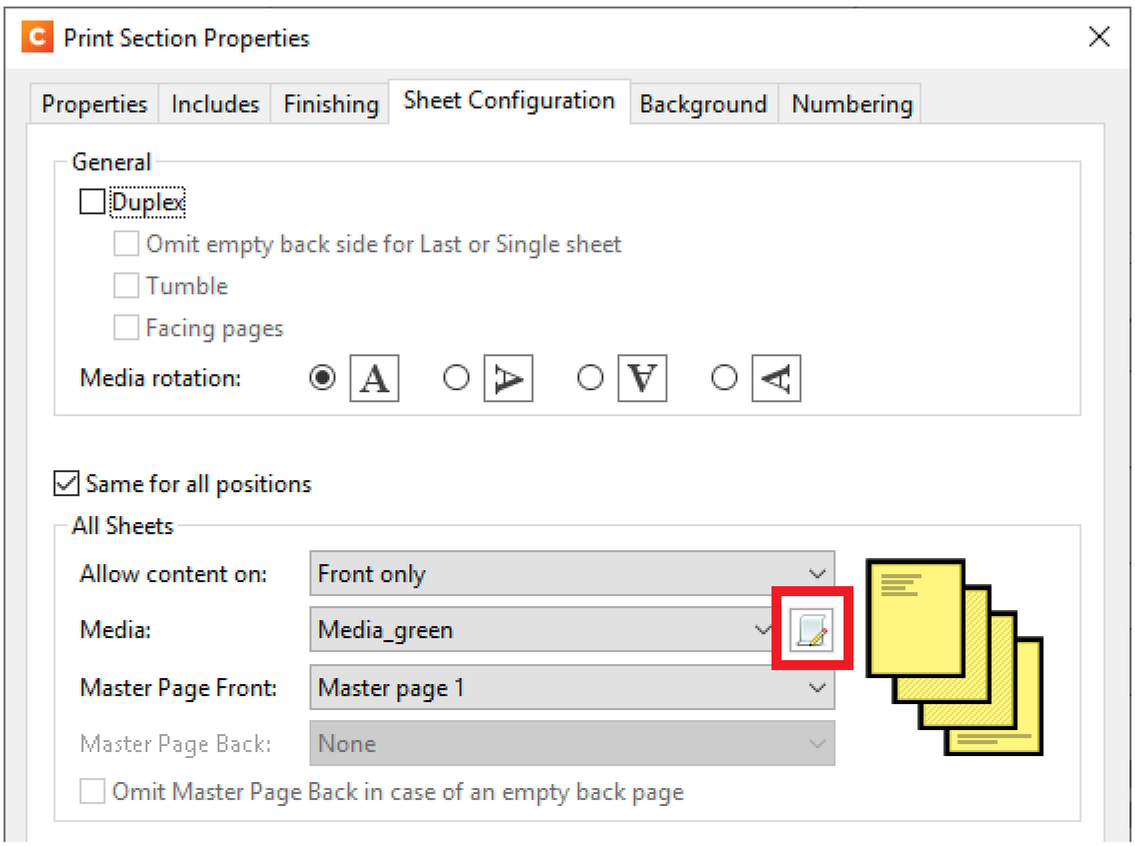
   Scripts start by performing a **query**: they scan the template to find all elements that match the specified **selector**. This script will look for an element that has the ID `olsg-banner`. Then, following the conditions, it attributes a different source to the **results** of that query – which in this case is the image.
6. Click **OK** to close the dialog and toggle to Preview mode to see if the script works as expected.

4. Switching Media dynamically

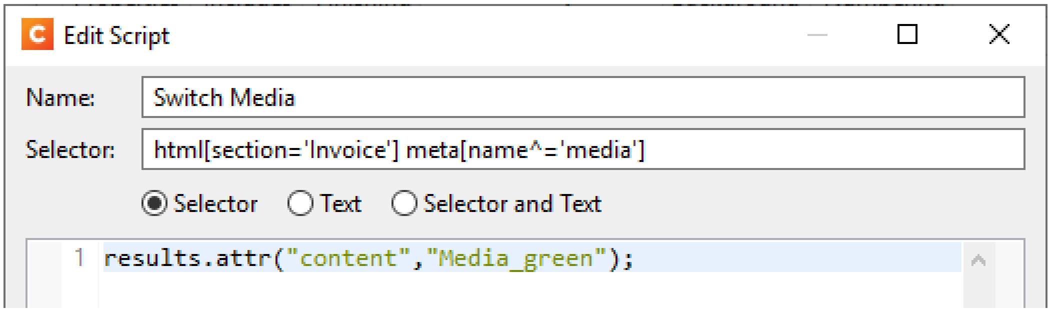
The Marketing department has also provided a new letterhead, to match the images that are colored purple. In this exercise you will use that as a second Media and create a script to switch the Media based on a data value.

1. Import the new letterhead: locate the images folder provided with this tutorial and drag **olsg-letterhead-letter-purple.PDF** to the **Images** folder in the **Resources** pane.

2. Right-click the **Media** folder in the **Resources** pane and select **New Media**. The **Media Properties** dialog appears.
3. On the **Virtual Stationery** tab, check the **Front** option and click the **Select Image** icon.
4. Select **olsg-letterhead-letter-purple.PDF** from the list of resources and click **OK**.
5. Click **OK** to create the new Media entry.
6. Right-click the **Media 1** entry and select **Rename**. Rename the Media to **Media_green**.
7. Rename the second Media entry to **Media_purple**.
8. Open the Sheet Configuration dialog: right-click the invoice and select **Sheet Configuration**.
9. Click the **Edit Script** icon.



10. The Edit Script dialog appears. Change the name of the script to **Switch Media**.



11. Replace the existing script with the following code. It contains a condition to toggle the Media when the hobby of the recipient is skating:

```
if (record.fields.FavHobby == "skate") {
	results.attr("content","Media_green");
} else {
	results.attr("content","Media_purple");
}
```

12. Click **OK** to create the script entry. The entry is added to the Scripts pane.
13. Click **OK** to close the Sheet Configuration dialog.
14. Toggle to the Preview mode and browse through the records to see if the script works as expected.

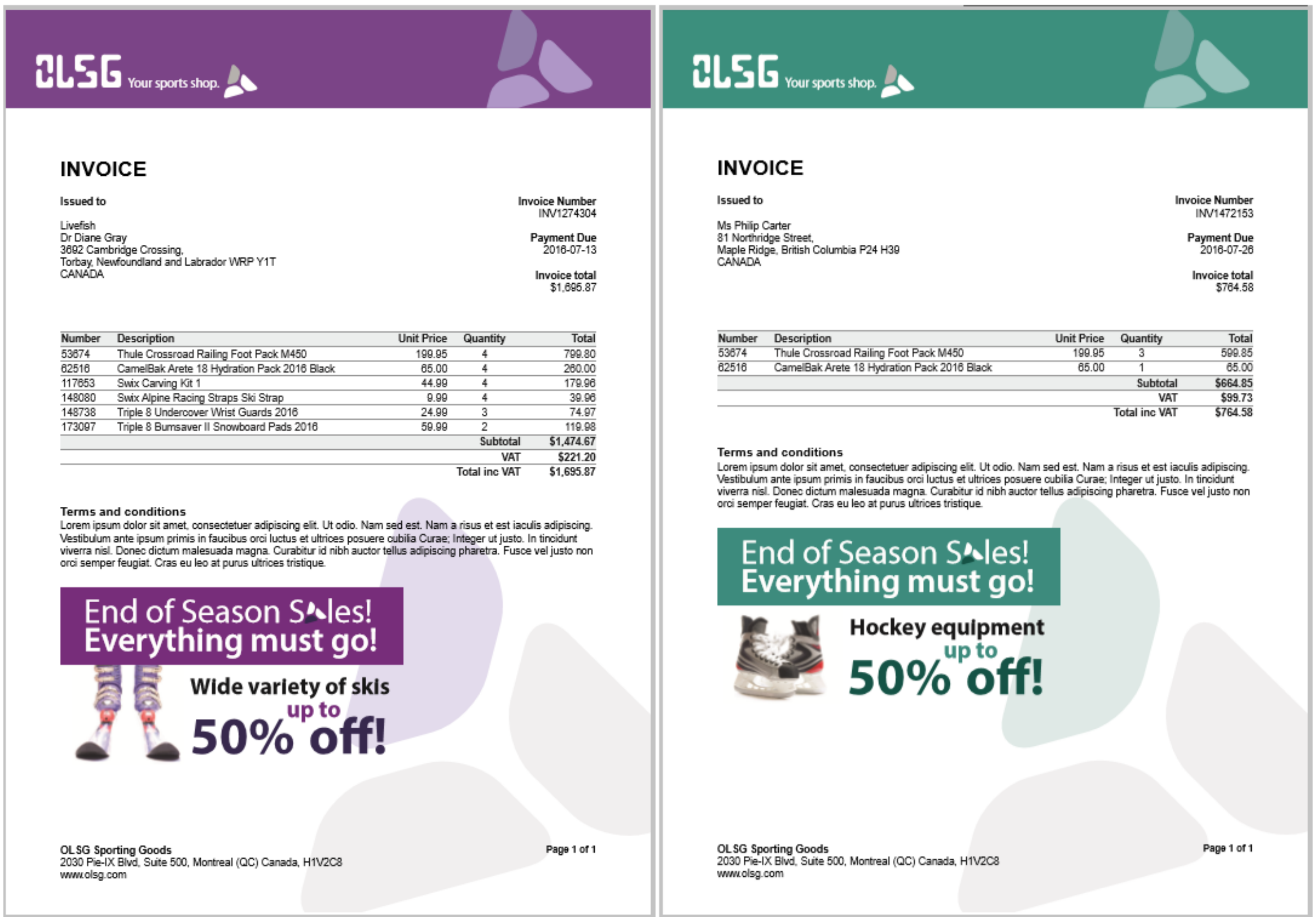
5. Keeping elements together

While browsing the records in Preview mode you may have noticed that sometimes the heading "Terms and conditions" and the paragraph beneath it are on different pages. These two elements should stick together. This can be arranged using the CSS `page-break-after` property.

1. Choose **Edit > Stylesheets…** to make the Stylesheets dialog appear.
2. From the **Context** drop-down, choose **Print**.
3. Click the **Plus** icon to create a new style rule.
4. In the dialog that appears, type **h3** in the **Selector** field. This means that the rule will apply to all level 3 headings.
5. Click the **Formats** tab.

6. In the **Breaks** section, from the **After** drop-down, choose **avoid**.
7. Reduce the space between the heading and the paragraph: on the **Spacing** tab, in **Margins**, uncheck **All sides** and add a margin of **2px** to the bottom of the heading.
8. Click **OK** to close the Rule editor.
9. Click **Save** to close the Stylesheet editor and go to Preview mode to check the effect of the rules.

The invoice is now ready. The result should look similar to this:


OLSG Your sports shop.

INVOICE

Issued to

Livefish
Dr Diane Gray
3692 Cambridge Crossing,
Torbay, Newfoundland and Labrador WRP Y1T
CANADA

Invoice Number
INV1274304

Payment Due
2016-07-13

Invoice total
$1,695.87

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	4	799.80
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	4	260.00
117653	Swix Carving Kit 1	44.99	4	179.96
148080	Swix Alpine Racing Straps Ski Strap	9.99	4	39.96
148738	Triple 8 Undercover Wrist Guards 2016	24.99	3	74.97
173097	Triple 8 Bumsaver II Snowboard Pads 2016	59.99	2	119.98
			Subtotal	$1,474.67
			VAT	$221.20
			Total inc VAT	$1,695.87

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INVOICE

Issued to

Ms Philip Carter
81 Northridge Street,
Maple Ridge, British Columbia P24 H39
CANADA

Invoice Number
INV1472153

Payment Due
2016-07-26

Invoice total
$764.58

Number	Description	Unit Price	Quantity	Total
53674	Thule Crossroad Railing Foot Pack M450	199.95	3	599.85
62516	CamelBak Arete 18 Hydration Pack 2016 Black	65.00	1	65.00
			Subtotal	$664.85
			VAT	$99.73
			Total inc VAT	$764.58

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What's next?

When a template is ready, it can be merged with a record set and outputted to a printer or to a file. It can also be sent to the Workflow module, to be used in automated workflows, in conjunction with a Data Mapping Configuration.

To get an introduction to the DataMapper module, please proceed with the XML Data Mapping Configuration Walkthrough.

This tutorial has taught you to create a basic invoice from scratch. You now know common techniques that are applicable to other document types too. For more techniques and useful tips and tricks, please visit learn.objectiflune.com and help.objectiflune.com.