Order Manager Developer's Cookbook

A developer's guide to configuring the Order Manager.
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Chapter 1

Introduction

The Order Manager is an application that is based on SPEAK, easy to use, and easy to configure to suit your own requirements.

This guide describes how to customize and extend the Order Manager (OM) application in the backend. It is useful for developers who are looking for information about the Order Manager application.

This manual contains the following chapters:

- **Chapter 1 — Introduction**
  This chapter is introduction to the guide.

- **Chapter 2 — Setting up the Application**
  This chapter describes the different layouts of SPEAK and how to set up the OM application in a certain layout.

- **Chapter 3 — Configuring the Order Manager Application in SPEAK**
  This chapter describes how to configure all the pages in the SPEAK layout.

- **Chapter 4 — Configuring the Order Report in Stimulsoft**
  This chapter describes how to configure the order report in Stimulsoft.

- **Chapter 5 — Using the Order Manager API**
  This chapter is an API reference guide for OM.
Chapter 2

Setting up the Application

This chapter provides an overview of the default pages and controls that are available in the Order Manager. All the controls in the pages are customizable. It is also easy to add more pages if the default configuration is not suitable for your business needs.

This chapter describes:

- The structure of the order manager application in SPEAK.
- The navigation diagram of SPEAK.
2.1 The Structure of the Order Manager Application in SPEAK

To work with the OM application, you must install the Order Manager package. For information about installing the OM package, see the SES installation guide.

In the Content Editor, you can navigate to the Order Manager root item:
/sitecore/system/Modules/SPEAK/Order Manager

The following table describes the folders that you can configure in the Order Manager:

<table>
<thead>
<tr>
<th>Folder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Orders</td>
<td>This folder contains links to the navigation filters that appear on the left side navigation panel.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Base templates/Navigaton</td>
</tr>
<tr>
<td>Order Details</td>
<td>This folder contains definitions of the sections and fields on the order details task page.</td>
</tr>
<tr>
<td></td>
<td>For more information, see Configuring the Order Details Task Page.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Pagetypes/Task page</td>
</tr>
<tr>
<td>Print Order</td>
<td>This folder contains the definition of the task page that renders the order details report.</td>
</tr>
<tr>
<td></td>
<td>For more information, see Configuring the Order Report in Stimulsoft.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Pagetypes/Task page</td>
</tr>
<tr>
<td>Repositories</td>
<td>This folder contains miscellaneous SPEAK controls configurations.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Folders/Repositories</td>
</tr>
<tr>
<td>Repositories/Action Panels</td>
<td>This folder contains actions that appear in different action panels.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Folders/Actions</td>
</tr>
<tr>
<td>Repositories/Info Spots</td>
<td>This folder contains the controls that appear in the right hand side of the order details task page.</td>
</tr>
<tr>
<td></td>
<td>Template: /sitecore/templates/SPEAK/Folders/Info spots</td>
</tr>
<tr>
<td>Folder</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Repositories/List Views</td>
<td>This folder contains all the list controls that appear on the dashboard page and the list page. It defines the filter options and list columns. For more information see, Configuring the Order Manager Application in SPEAK. This chapter describes the configuration options in all the SPEAK pages. These configuration options are described in the section The Navigation Diagram of SPEAK. The following sections describes how to: • Set up the controls on the Dashboard. • Configure the navigation filters. • Configure the list page. • Configure the order details task page. • Configure the smart panel. Setting up the Controls on the Dashboard and Configuring the List Page. Template: /sitecore/templates/SPEAK/Folders/List Views</td>
</tr>
<tr>
<td>Repositories/Operators</td>
<td>This folder contains the Order Manager specific operators for filtering orders. By default, it contains the operators: • Is equal to • Search • between Note You should not edit any of these operators because they are part of the implementation details of the Order Manager. However, you can add more operators. Template: /sitecore/templates/Common/Folder</td>
</tr>
<tr>
<td>Repositories/Predefined Filters</td>
<td>This folder contains the list views and filter controls. These are the predefined filter options through which you can filter the order. You can add your own custom options here. For more information, see Configuring the Predefined Filters. Template: /sitecore/templates/SPEAK/Folders/List Views filters</td>
</tr>
<tr>
<td>Repositories/Smart Panels</td>
<td>This folder contains the smart panels content also known as quick views. For more information, see the section Configuring the Smart Panel. Template: /sitecore/templates/SPEAK/Folders/SmartPanels</td>
</tr>
</tbody>
</table>

**Note**
If you upgrade your installation, any configuration changes that you make are overwritten. Therefore, you must always create a backup of your configuration settings in the Order Manager.
2.2 The Navigation Diagram of SPEAK

The following flow diagram illustrates how you navigate in a SPEAK based application.

As illustrated in the previous image, you can configure the layouts of the SPEAK pages in different ways but we have chosen the App 1 theme.

The following table describes every page in the navigation architecture:

<table>
<thead>
<tr>
<th>SPEAK Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login Page</td>
<td>To launch the SPEAK login page, enter its URL in your web browser.</td>
</tr>
<tr>
<td>Launch Application Page</td>
<td>Contains a list of the applications that are available in SPEAK.</td>
</tr>
<tr>
<td>Home Page (Dashboard)</td>
<td>Provides users with an overview of their tasks and what they are currently working on. In the Order Manager, users can have their own individual home page depending on the security roles they have been assigned in Sitecore.</td>
</tr>
<tr>
<td>List Page</td>
<td>Displays the results of saved navigation filters in the left hand navigation panel. The default Order Manager application comes with the following pre-defined navigation filters:</td>
</tr>
<tr>
<td></td>
<td>• Orders</td>
</tr>
<tr>
<td></td>
<td>• Open orders</td>
</tr>
<tr>
<td></td>
<td>• Orders in process</td>
</tr>
<tr>
<td></td>
<td>• Closed orders</td>
</tr>
<tr>
<td></td>
<td>• Cancelled orders</td>
</tr>
<tr>
<td>Task Page</td>
<td>This page is also known as the order details page, displays the full details of an order and enables you to complete specific order management tasks</td>
</tr>
</tbody>
</table>

This guide describes how to configure the dashboard, list pages, and task pages.
Chapter 3

Configuring the Order Manager Application in SPEAK

This chapter describes the configuration options in all the SPEAK pages. These configuration options are described in the section The Navigation Diagram of SPEAK.

The following sections describes how to:

- Set up the controls on the Dashboard.
- Configure the navigation filters.
- Configure the list page.
- Configure the order details task page.
- Configure the smart panel.
3.1 Setting up the Controls on the Dashboard

The dashboard is the first page that you see when you choose the Order Manager application in SPEAK. By default, the dashboard contains the navigation filters on the left hand panel, and the last new orders created and the latest orders that are ready to be captured.

This section describes how to configure the dashboard on the Order Manager page.

3.1.1 Configuring Data Sources

You can configure the data source of an item in the Order Manager. There are two types of data source in SPEAK: fast query and object detail list. In the Order Manager, you use the object detail list to access the order data that is stored in a separate order database.

To configure the data source of the purchase orders in the Content Editor:

1. Navigate to the Purchase Orders item: /sitecore/system/Modules/SPEAK/Order Manager/Repositories/List Views/Purchase Orders
2. Right click Purchase Orders, click Insert, select ObjectDetailList and then call it Sample Orders.
3. In the Content section, navigate to the ObjectDataSourceSettings section.

The following table describes the fields in the Object data source:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnablePaging</td>
<td>Indicates whether or not the data source control supports paging through the data that it retrieves.</td>
</tr>
<tr>
<td>TypeName</td>
<td>The name of the class on which the ObjectDataSource object is based — for example, the type that is responsible for handling the Select, Update, Delete, Insert operations.</td>
</tr>
<tr>
<td>DataObjectTypeName</td>
<td>The name of a class that the ObjectDataSource object uses as the return value in an update, insert, or delete data operation.</td>
</tr>
<tr>
<td>SelectMethod</td>
<td>The name of the method that the ObjectDataSource control invokes in the object that is specified in the TypeName property, to retrieve data.</td>
</tr>
<tr>
<td>SelectParameterName</td>
<td>The name of the parameter that is used in the method specified by the SelectMethod property.</td>
</tr>
<tr>
<td>SelectParameterValue</td>
<td>The value of the parameter that is used in the method specified by the SelectMethod property.</td>
</tr>
<tr>
<td>UpdateMethod</td>
<td>The name of the method that the ObjectDataSource control invokes to update the data.</td>
</tr>
<tr>
<td>OldValuesParameterFormatString</td>
<td>The format string that should be applied to the names of the parameters for original values that are passed to the Delete or Update methods.</td>
</tr>
<tr>
<td>DeleteMethod</td>
<td>The name of the method that the ObjectDataSource control invokes on the object that is specified in TypeName to delete data.</td>
</tr>
<tr>
<td>DeleteParameterName</td>
<td>The name of the parameter that is used by the DeleteMethod method.</td>
</tr>
</tbody>
</table>
### Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeleteParameterValue</td>
<td>The parameters collection that is used by the <code>DeleteMethod</code> method.</td>
</tr>
<tr>
<td>InsertMethod</td>
<td>The name of the method or function that the <code>ObjectDataSource</code> control invokes on the object that is specified in <code>TypeName</code> to insert data.</td>
</tr>
<tr>
<td>SelectCountMethod</td>
<td>The name of the method or function that the <code>ObjectDataSource</code> control invokes to retrieve a row count.</td>
</tr>
</tbody>
</table>

You can also configure the data sources in:

- Lists in the dashboard.
- List pages.
- Order details that have one overall data source and another for each list control.

#### 3.1.2 Configuring a Shop Context

In the Content Editor, a shop context represents a webshop that appears in the Web Store Selector in the client interface. You must configure a shop context for each individual webshop. You can configure as many shop contexts as you need.

To configure the Shop Contexts item in the Content Editor:

1. In the Content Editor, navigate to the Shop Contexts item:
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/Shop Contexts

2. Right click Shop Contexts, click Insert, and then click Shop Context.

3. Call it Third Web Store.

4. On the Content tab, assign values to the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The logical name of the web shop. In this example, call it <code>thirdwebstore</code>.</td>
</tr>
<tr>
<td>Title</td>
<td>The webshop name that appears in the client interface in the web store selector. In the previous step, you called it <code>Third Web Store</code>.</td>
</tr>
<tr>
<td>Tooltip</td>
<td>The hint that describes the shop in the client interface. You can enter <code>third web shop for testing purposes</code>.</td>
</tr>
<tr>
<td>Icon</td>
<td>The icon that appears next to this shop context item in the Content Editor. You can leave it as <code>business/32x32/shoppingcart.png</code>.</td>
</tr>
</tbody>
</table>


    ```xml
    <sites>
      <site name="thirdwebstore" .../>
    </sites>
    ```

Once you have created a shop context, you must specify the users who have access to the webshop:

1. In Sitecore Desktop, click Sitecore Security Tools, and then select Role Manager.

2. In the Role Manager dialog box, click the New tab.

3. In the role Name field, enter `Order Manager Third Web Store Processing` and in the domain field, enter Sitecore.
4. Click the Members tab, click Add, click Users, and then select the user who you want to make a member of the role and then click OK.
3.2 Configuring the Navigation Filters

You can configure as many navigation filters as you want in your application so that you can search for orders according to your own criteria.

To create a navigation filter:

1. In the Content Editor, navigate to the Order List Template
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/List Views/__Order List Template

2. Create a clone of the Order List Template in the Purchase Orders repository.
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/List Views/Purchase Orders

Note
You can also create the filter in the repository instead of cloning the __Order List Template item. However, we recommend that you use cloning for maintenance reasons. If you modify the template, all of the clones are modified as well. For example, you can add a field to all the filters by adding it to the __Order List Template item.

3. Name the new repository Order list page. In the Content section, you can also configure the following if you want:
   - Enable Collapsing
   - In the LoadDataWith field, enter PageScroll or ElementScroll.

Note
The recommended setting for LoadDataWith in SPEAK is PageScroll.

4. Select the EnableFiltering option.
5. In the ObjectDataSourceSettings group, configure the object data source.
   For more information, see the section Configuring Data Sources.
6. Navigate to the **Purchase Orders** item.
   /sitecore/system/Modules/SPEAK/Order Manager/Purchase Orders

7. Right click **Purchase Orders**, click **Insert** and then select **List page** and then call it **Order list page**.

8. On the ribbon, click the **Presentation** tab, in the **Layout** group, click **Details**.

9. On the **Layout Details** dialog box, click **Default Details List**, and then enter the path to the filter created in the **Data Source** field.
   
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/List Views/Purchase Orders/Order list page

**Note**
You can create multiple navigation filters that refer to the same list view.

### 3.2.1 Configuring Navigation Filters According to a User Role

You can configure the Order Manager application to show or hide items according to the user’s role.

To use the standard Sitecore security feature to show or hide navigation filters for different users:

1. In the **Content Editor**, navigate to the **Order list page** filter that you have just created.
2. Click the **Security** tab and then click **Access Viewer**.
3. In the **Access Viewer**, you can then deny any user read access to, for example, the **Order list page** and the **Cancelled orders page**.

For more information about how to use the **Access Viewer**, see the *Security Administrator's Cookbook*. 
3.3 Configuring the List Page

Once you have created the navigation filter, you can configure the list page that the navigation filter generates. This section describes how to:

- Configure the columns on the list page.
- Configure the predefined filters.

3.3.1 Configuring a Column

The list page contains the orders that result from the navigation filter.

You can present any information that belongs to the order on the list page. To add a column to the table on the list page of a navigation filter:

1. In the Content Editor, locate the filter to which you want to add a new column, for example, /sitecore/system/Modules/SPEAK/Order Manager/Repositories/ListViews/Purchase Orders/Orders
2. Right click Orders, click Insert, and then select Column Field. The default selection is the standard Column Field.
3. Name it Currency.
4. Enter a value for the HeaderText. You can use the same name as that of the Column Field — Currency.
5. In the DataField general property, enter the property name that you want to fill the column with — Currency.

Note

In the DataField, you can only enter a property that exists in the Sitecore.Ecommerce.Apps.OrderManagement.Models class.

For more information, see the section Adding a Column to an Order Details List.

3.3.2 Configuring the Predefined Filters

You can use a predefined filter to further refine the list of orders that result from the navigation filter.

This section describes how to configure a predefined filter.

To navigate to the predefined filter options in the Order Manager:

1. In the Order Manager, navigate to the home page.
2. Click a navigation filter to navigate to a list page, for example, the Orders page.
3. On the **Orders** page, click **Filters** and you should see the following filters:

![Orders page screenshot]

### Configuring an Expression Group

Expression groups are predefined filters.

To create an expression group:

1. In the content tree, navigate to the **Purchase Orders** item
   
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/Predefined Filters/Purchase Orders

2. Right click **Purchase Orders**, click **Insert from Template**.

3. In the **Insert from Template** dialog box, navigate to the template
   
   /sitecore/templates/SPEAK/Expression Group and then call the new expression group **Total Amount**.

4. Select **Total Amount**, click the **Content** tab and then assign values for the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>The name of the filter in the UI. You called it <strong>Total Amount</strong> in the previous step.</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td>The logical name of the filter. Call it <strong>TotalAmount</strong>.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>The type of data that the expression group is filtering. You can set it to <strong>Date</strong>, <strong>Enum</strong> or <strong>UTC Date</strong>. In this example, you must select <strong>Enum</strong>.</td>
</tr>
</tbody>
</table>

5. Navigate to the **Orders** filter:
   
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/List Views/Purchase Orders/Orders

6. Click **Orders**, and on the **Content** tab, click **DetailList settings**, **filters**, and then add the **Total Amount** expression group to the **Orders** navigation filter.

### Configuring a Value Based Expression

To add a value based expression to a predefined filter:

1. In the **Content Editor**, navigate to the predefined filter that you want to add the criteria to — for example, **Currency**
2. Right click Currency, and click Insert from Template.
3. In the Insert from Template dialog box, navigate to the template: /sitecore/templates/Ecommerce/Order Manager/Filtering/Nonlocalizable Expression, and name it GBP.

4. On the webshop, navigate to the group orders and you can see that the new filter is added.

**Configuring a Range Based Expression**

You can also configure the Total Amount predefined filter that you created in the section Configuring an Expression Group.

To configure a range based expression:

1. In the content tree, navigate to the Total Amount predefined expression group:
   /sitecore/system/Modules/SPEAK/Order Manager/Repositories/Predefined Filters/Purchase Orders/Total Amount
2. Right click the Total Amount item, click Insert from Template.
3. In the **Insert from Template** dialog box, navigate to the template: 
/sitecore/templates/Ecommerce/Order Manager/Filtering/Nonlocalizable Expression, and name it **1000-2000**

4. Click the **1000-2000** item and on the **Content** section, assign values to the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>[1000,2000]</td>
</tr>
<tr>
<td>Title</td>
<td>[1000,2000]</td>
</tr>
<tr>
<td>Operator</td>
<td><em>between</em> — to select all the orders that have a total amount value within this range.</td>
</tr>
</tbody>
</table>

5. Repeat the previous two steps for the expressions: **2001-4000** and **4001-5000**.

### Creating an Operator

This section describes how to create an operator to search for orders with certain state and substates.

To create a new operator that should be used in the predefined filters:

1. In the content tree, navigate to the **Operators** item:
/sitecore/system/Modules/SPEAK/Order Manager/Repositories/Operators

2. Right click **Operators**, click **Insert**, select **Operator** and name it **substate**.

3. Click **substate**, and in the **Content** section, in the Default field, assign the following condition code:

   ```csharp
   o.field.Substates.Any(s => (s.Code == "values[0]") && s.Active)
   ```

4. Create an expression group and name it **Substates**.

   For more information about how to create an expression group, see the section **Configuring an Expression Group**.

5. Select the **Substates** item and in the **Content** section, assign values to the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Substates</td>
</tr>
<tr>
<td>Name</td>
<td>State</td>
</tr>
<tr>
<td>Type</td>
<td>Enum</td>
</tr>
</tbody>
</table>

6. In **Substates**, create an expression and name it **Captured in Full**.

   For information about how to create an expression, see the section **Configuring a Value Based Expression**.

7. Click **Captured in Full** and in the **Content** section, assign values to the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>Captured In Full</td>
</tr>
<tr>
<td>Title</td>
<td>Captured in full</td>
</tr>
<tr>
<td>Operator</td>
<td><em>Substate</em> — the new operator that you have created.</td>
</tr>
</tbody>
</table>

8. Repeat the previous two steps for the expressions: **Packed in Full** and **Shipped in Full**.
Note
The values in the **Value** fields are case sensitive. Use the same names in the Order Manager database.
3.4 Configuring the Order Details Task Page

The Order Details Task Page is the page that you see after you have click on the order. It contains all the information that is available for the order.

Once you have configured the list page, you can configure the task page. This section describes how to:

- Add a field editor.
- Add an order details list.
- Add a column to the order details list.
- Add a field to the order details list.
- Extend the Order Manager to see the order details that have one-to-many relationships with an order.

3.4.1 Adding a Field Editor

The field editor represents the details that have a one-to-one relationship with the order.

To add an Order Field Editor item:

1. In the Content Editor, navigate to the Order Details item/sitecore/system/Modules/SPEAK/Order Manager/Order Details.
2. Right click Order Details and then click Insert from Template.
3. In the Insert from Template dialog box, navigate to the template /sitecore/templates/Ecommerce/Order Manager/Web Controls/Order Field Editor.
4. Call it Order.

You can also configure the following properties:

- EnableCollapsing
- 2 Columns
- DataKeyNames

5. Configure the object data source in the ObjectDataSourceSettings group. For more information, see the section Configuring Data Sources.

3.4.2 Adding an Order Details List

The detail list represents the details that have a one-to-many relationship with the order.

To add an Order Detail List item:
1. In the **Content Editor**, right click **Order Details** and then click **Insert from Template**.

2. In the **Insert from Template** dialog box, navigate to the template 
   `/sitecore/templates/Ecommerce/Order Manager/Web Controls/Order Detail List`

3. Call it **Order Lines**.

   ![Image]

   You can also configure the following properties:
   - EnableCollapsing
   - LoadDataWith
   - SmartPanel
   - EnableFiltering

4. Configure the object data source in the **ObjectDataSourceSettings** group. For more information, see the section **Configuring Data Sources**.

### 3.4.3 Adding a Column to an Order Details List

You can add a column to an order details item. You can take **OrderLines** as an example of the Order Details Items.

To add a column to **OrderLines**:

1. In the **Content Editor**, navigate to the **Order Lines** item:
   `/sitecore/system/Modules/SPEAK/Order Manager/order/Order Lines`

2. Right click **Order Lines**, click **Insert, Column Field** and then name it **Description**.

   ![Image]
3. Click **Description**, in the **Content** tab, **General, DataField**, enter **Description** — the name of the property that represents this column in the implementation.

![Image showing Content tab with Description selected](image)

### 3.4.4 Adding a Field to the Details List

You can add a column to an order details item. You can take **Delivery** as an example of the details list.

To add a field to **Delivery**:

1. In the **Content Editor**, navigate to the **Delivery** details list
   /sitecore/system/Modules/SPEAK/Order Manager/order/Delivery

2. Right click **Delivery**, click **Insert**, select **Editor field** and then name it **Minimum Quantity**.

3. Change the value of the **Name** field to the data property name whose value is displayed in this field — **DefaultDelivery.MinQuantity**.

The following image shows the properties of a details item:

![Image showing properties of a details item](image)

4. Insert the second **Editor field**, call it **Maximum Quantity** and then Change the value of the **Name** field to **DefaultDelivery.MaxQuantity**.

5. Insert the third **Editor field**, call it **Quantity** and then Change the value of the **Name** field to **DefaultDelivery.Quantity**.
6. In the Order Manager application, navigate to the task page to see the editor fields you have just created.

The following table describes the properties of the details item:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Type</td>
<td>Describes the type of the field, for example, Text, Multi-Line Text and Date.</td>
</tr>
<tr>
<td>Importance</td>
<td>The importance of the field. You can assign it one of the following values:</td>
</tr>
<tr>
<td></td>
<td>• High — the values of this property appear even if you collapse the accordion</td>
</tr>
<tr>
<td></td>
<td>group.</td>
</tr>
<tr>
<td></td>
<td>• Normal — the default appearance of the fields.</td>
</tr>
<tr>
<td></td>
<td>• Low — the values of this property only appear when you click on more.</td>
</tr>
<tr>
<td>ReadOnly</td>
<td>Specifies if the field is Read-only.</td>
</tr>
<tr>
<td>Title</td>
<td>The text to be displayed.</td>
</tr>
<tr>
<td>Name</td>
<td>The property of the model that is used in the data source that is assigned to the field editor.</td>
</tr>
<tr>
<td>Tooltip</td>
<td>The tooltip for the field.</td>
</tr>
</tbody>
</table>
### 3.4.5 Extending the Order Manager to Show Multi-valued Fields

The order details task page does not contain all of the fields that belong to an order. The following are some examples of this limitation:

**FreightForwarderParty**

The Order Manager application shows only one freight forwarder party for each order. The following class diagram shows the FreightForwarderParty relationship in the data model.

![Class Diagram](image-url)
**Delivery**

The Order Manager application shows only one delivery destination for each order. The following class diagram shows the `Delivery` relationship in the data model.

**AllowanceCharge**

The Order Manager application shows only one delivery destination for each order. The following class diagram shows the `AllowanceCharge` relationship in the data model.
**SublineItem**

The Order Manager application shows only one delivery destination for each order. The following class diagram shows the SublineItem relationship in the data model.

If you want to show all the freight forwarder parties, delivery destinations, allowance charges, and subline items for the order, you must

1. Extend the Order Manager application to base the corresponding items on Order details list instead of Field editor
2. Add a Smart Panel. The following section describes how to configure the Smart Panel.
3.5 Configuring the Smart Panel

The Smart Panel is a detail control that is used to view or edit list pages and task pages. You can use this control to edit a list, for example, orders and order lines. There is no inline functionality to edit a list. This is a flexible way to edit the selected items and to edit multiple entities at the same time.

This chapter describes how to:

- Enable the smart panel in your application
- Configure the actions panel
- Add a custom action

3.5.1 Enabling the Smart Panel in your Application

ShowPopup

You can use the ShowPopup method in the Order Manager API to manipulate the smart panel.

The ShowPopup method has the following signature:

```csharp
public static bool ShowPopup(
    this ScriptManager scriptManager,
    string url,
    object parameters,
    PopupType type,
    out string result)
```

Parameters:

- `url` — the URL of the page that you want to open as the popup content.
- `parameters` — the custom parameters that you want to pass to the popup page.
- `type` — the type of the popup content.

If the popup is not opened yet, it returns `false`. If the popup is closed, it returns `true`. The popup result must be processed if it returns `true`.

There are also a few overloads for this method with fewer parameters.


```csharp
var scriptManager = ScriptManager.GetCurrent(this.Page);
string result = null;
if (scriptManager.ShowPopup("/order manager/edit order",
    new { OrderId = "1V203E", DetailedView = true },
    PopupType.Smart, out result))
{
    // the dialog was closed
    // do something with result here
}
```
3.5.2 Configuring the Actions Panels

To configure the General or Order Details global actions in the Action panel:

3. Insert the new action in the folder that corresponds to the action place.

The following table describes the different folders in the Action Panels folder.

<table>
<thead>
<tr>
<th>Folder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global actions/General</td>
<td>Contains the general actions that are displayed in the Action Panel of the List Page.</td>
</tr>
<tr>
<td>Global actions/Order Details</td>
<td>Contains the order details actions that are displayed in the action panel of the List Page.</td>
</tr>
<tr>
<td>Order Details Actions/General</td>
<td>Contains the general actions that are displayed in the action panel of the Task Page.</td>
</tr>
<tr>
<td>Order Lines Actions/Order Line Functions</td>
<td>Contains the order line functions actions that are displayed in the action panel of the Order Lines accordion group.</td>
</tr>
<tr>
<td>OrderLine Info Actions/Order Line Functions</td>
<td>Contains the order line functions actions that are displayed in the action panel of Order Line Details.</td>
</tr>
</tbody>
</table>

3.5.3 Adding a Custom Action

You can create a custom action in the Order Manager. The following code snippet is a Print Custom Action example:

```csharp
{
    using Speak.Extensions;
    using Diagnostics;
    using Ecommerce.OrderManagement.Orders;
    using Logging;
    using Sitecore.Web.UI.WebControls;

    /// <summary>
    /// Defines the print action class.
    /// </summary>
    public class PrintAction : ScriptManagedAction
    {
        /// <summary>
        /// Executes the specified order.
        /// </summary>
        /// <param name="order">The order.</param>
        protected override void Execute([NotNull]Order order)
        {
            Assert.ArgumentNotNull(order, "order");
            this.OrderId = order.OrderId;
            string url = string.Format("{0}ordermanager/printorder?orderid={1}&sc_lang={2}". Extensions.GetVirtualFolder(), this.OrderId, Sitecore.Context.Language.Name);
            string script = string.Format("window.open('{0}','PrintMe','resizeable=yes,scrollbars=yes,location=no');", url);
            this.ScriptManager.RegisterStartupScript(script);
        }

        /// <summary>
        /// Performs the post steps.
        /// </summary>
        protected override void PerformPostSteps()
        {
        }
    }

    /// <summary>
    /// Performs the post steps.
    /// </summary>
    protected override void PerformPostSteps()
    {
    }
}
```
LogEntry logEntry = new LogEntry
{
    Details = new LogEntryDetails(\texttt{Constants\_OrderPrinted}),
    Action = \texttt{Constants\_PrintOrderAction},
    EntityID = \texttt{this.OrderId},
    EntityType = \texttt{Constants\_OrderEntityType},
    LevelCode = \texttt{Constants\_UserLevel},
    Result = \texttt{Constants\_ApprovedResult}
};
\texttt{this.Logger.Write(logEntry);}
Chapter 4  Configuring the Order Report in Stimulsoft

The Stimulsoft reporting tool is used by the Order Manager to render the order confirmation and print the order.

This chapter is not a complete reference for how to configure the Stimulsoft reports, it just contains the customizations you may need for the Order Manager.

To configure the order reports that are defined in Stimulsoft, you can:

- Customize the order details report.
- Set up the data source.
- Create a variable and change its localization.

For information about how to configure the reports, see the Report Designer Cookbook.
4.1 Customizing the Order Details Report

To modify in the order details report:

1. In the folder `/sitecore modules/shell/Ecommerce/Reports`, create an Order Details .mrt file

**Note**
We recommend cloning the Order Details file to preserve all of the properties in the report as we do in our Examples packages which contains the OrderDetailsExtended report: `/sitecore modules/shell/Ecommerce/ReportsExtended/OrderDetailsExtended.mrt`.

2. To set the path of the new report file, open the new file that you created with the Stimulsoft Report Designer, apply your changes and then add the following elements to the `/App_Config/Unity.config` file:

```xml

<register type="StiReportFactory">
  <property name="ReportFile" value="/sitecore modules/shell/Ecommerce/ReportsExtended/OrderDetailsExtended.mrt" />
</register>
```
4.2 Setting up the Data Source

By default, the data is read from the `OrderReportModel` class. This class contains a predefined set of properties that represent variables.

To set up additional data variables for the Stimulsoft report:

1. Create a class, call it `OrderReportModelExtended` that inherits the `OrderReportModel` class — see the `Sitecore.Ecommerce.Custom` assembly in the `Examples` package:

   In the following example, we extend the order report model with the information about the freight forwarder party.

   ```csharp
   public class OrderReportModelExtended : OrderReportModel
   {
     // Getting the account ID of the default freight forwarder party.
     public virtual string FreightForwarderPartyIdentification
     {
       get
       {
         if ((this.Order != null) && (this.Order.DefaultFreightForwarderParty != null))
         {
           return this.Order.DefaultFreightForwarderParty.PartyIdentification;
         }
         return string.Empty;
       }
     }
   }
   
   2. Add the following aliases to register the `OrderReportModelExtended` class in the `/App_Config/Unity.config` file:

   ```xml
   
   <!--Redirecting the mapping from default model to the extended model-->
   <register type="OrderReportModel" mapTo="OrderReportModelExtended" />
   </xml>
   
   3. Open the `OrderReportModel.mrt` file in Visual Studio and then add the `FreightForwarderPartyIdentification` data source variable:

   ```xml
   <DataSources isList="true" count="10">
   <Order isKey="true" Ref="2" type="Stimulsoft.Report.Dictionary.StiBusinessObjectSource">
     <Name>Order</Name>
     <Dictionary isRef="1"/>
     <Alias>Order</Alias>
     <Parameters isList="true" count="0"/>
     <NameInSource>Order</NameInSource>
     <Columns isList="true" count="60">
       ...
       <value>FreightForwarderPartyIdentification, System.String</value>
     </Columns>
   </Order>
   </DataSources>
   ```
4.3 Creating a Variable

To start customizing the Stimulsoft report by inserting a variable, you should download and install the Stimulsoft Report Designer from the Stimulsoft website.

For more information about the Stimulsoft Report Designer, see the Report Designer Cookbook.

To customize a variable:

1. In the Content Editor, navigate to the Dictionary item:
   `/sitecore/system/Dictionary`

2. Right click Dictionary, click Insert and then select Dictionary entry.

3. Call the new entry Party Identification.

4. In the Stimulsoft Report Designer, open the OrderDetailsExtended.mrt report with Stimulsoft Report Designer.

5. Create a variable in the report, call it `TEXT_PartyIdentification` and in the Value field enter the name of the item that you have created — Party Identification.

The following images show the dictionary and the properties of the new variable:

![Dictionary Image]

![Variable Properties Image]

In the code view, the following snippet is the variable representation:

```xml
<Variables isList="true" count="33" />
```
The value of the constant in the OrderDetailsExtended.mrt file — Party_x0020_identification should be exactly the same as the key in the Sitecore dictionary — Party identification — where _x0020_ is the code of the space.

6. In the designer view, extend the markup of the OrderDetailsExtended.mrt file with the information about freight forwarder party, as shown in the following image:
The following image shows the designer view of the text field definition with the `TEXT_PartyIdentification` variable:

The following snippet is the code view of the text field definition with the `TEXT_PartyIdentification` variable:

```xml
<Text>
    {Order.DeliveryPartyName}
    {Order.DeliveryPartyStreetName}
    {Order.DeliveryPartyCityName}{IIF(Length(Order.DeliveryPartyPostalZone) &gt; 0, ",", "")}{Order.DeliveryPartyPostalZone}
    {Order.DeliveryPartyCountry}
    {Order.DeliveryPartyTelephone}
    {Order.DeliveryPartyMail}
    {IIF(Length(Order.DeliveryPartyNote) &gt; 0, TEXT_Note+: "," )}{Order.DeliveryPartyNote}
    {IIF(Length(Order.FreightForwarderPartyIdentification) &gt; 0, TEXT_PartyIdentification+: "," )}{Order.FreightForwarderPartyIdentification}
</Text>
```

You can create variables and fields that do not start with `Text_`.

### 4.3.1 Changing the Localization of the Variable

You can create a Stimulsoft report in different languages. By default, the customer receives the order confirmation in the same language that they created the order in. In the Order Details page, you can use the language value to change the language of the Buyer Customer Party. Sitecore OM currently supports English, Danish, German, and Japanese.

The `StiReportTranslator` class looks up the entry in the Sitecore dictionary and maps it to the corresponding variable in the order report.

To change the localization logic, create a custom version of the `StiReportTranslator` class and register it in the `/App_Config/Unity.config`. For more information about creating a custom version of a class, see the section *Setting up the Data Source*.


The following snippet shows how the `Translate` method is implemented in the `StiReportTranslator`:

```csharp
{
    Assert.ArgumentNotNull(report, "report");
    foreach (StiVariable variable in report.Dictionary.Variables)
    {
        if (this.MustBeTranslated(variable.Name))
        {
            variable.Value = this.TranslatePhraseByLanguage(variable.Value, languageCode);
        }
    }
}
```
protected virtual bool MustBeTranslated([NotNull] string key) {
    Assert.ArgumentNotNull(key, "key");
    return key.StartsWith("TEXT_");
}

    Assert.ArgumentNotNull(phrase, "phrase");
    Assert.ArgumentNotNull(languageCode, "languageCode");
    return Globalization.Translate.TextByLanguage(phrase, Language.Parse(languageCode));
}
Chapter 5

Using the Order Manager API

The API of the Order Manager application consists of three modules: Core Order Manager, Visitor Order Manager and Merchant Order Manager.

This chapter describes how to use the API of each these modules while processing the order.

This chapter contains the following sections:

- Using the Core Order Manager API
- Using the Visitor Order Manager API
- Using the Merchant Order Manager API
5.1 Using the Core Order Manager API

The Core Order Manager API (COM):

- Is a data manipulation layer.
- Is the first layer of abstraction above the actual data storage providers like the Entity Framework or simple Sitecore content items.
- Allows developers to work directly with the entire domain model.
- Does not contain any business logic.
- Supports logging of order processing transactions and changing the order properties.

The following sections describe the most important classes in the COM API and how to use the API to import and export orders.

5.1.1 The COM API Reference

The main classes in the COM API are:

**Sitecore.Ecommerce.Data.Repository<Order>**

This class acts as a layer of abstraction above the actual data storage and allows you to interact with the Sitecore back-end. It checks security, sets the language, intercepts Create, Read, Update, Delete (CRUD) operations on orders and uses `OnOrderSaving` and `OnOrderSaved` events to performs some additional operations.

The `OnOrderSaving` and `OnOrderSaved` events are used to perform some additional actions during and after order saving. You can use the `logger` class to add the logging logic to these events.

**Sitecore.Ecommerce.Logging.Logger**

Almost all of the methods are intentionally marked as `protected internal`. This means that you can only work with them after you create a new implementation that is inherited from the `Repository<Order>` and make a new custom public API.

Developers should use MOM and VOM because they contain the security and business logic. They should not use COM because it has unrestricted access to the historical transaction data.

The `Logger` class has the following methods:

- `GetEntries():IQueryable<LogEntry>` — lists all the orders that the current user has access to.
- `Write(LogEntry):void` — writes information to the log immediately.
- `Log(LogEntry):void` — writes information to the in-memory buffer.
- `Flush():void` — moves the data from the buffer to the location where you store your data.

The last two methods support the transaction logic that manipulates an order.

When a visitor to the webshop updates some fields and creates a new order line in a session, this is regarded as a single unit of work and must be logged with the same transaction ID or completely rejected.


When an order is being processed, this layer performs robust logging of the operations during the orders processing.

By default, no logging occurs. SES developers should use the COM API to handle the log on their own.
The COM API has unrestricted access to the transaction data. You should be careful while using COM API because you can destroy existing orders. You should preferably use a more high-level API such as the VOM or MOM APIs.

5.1.2 Using the Core API to Import and Export Orders

One example of how to use the Core API is to extend the `OrdersPresenter` class in the MVP web store to support the import and export of orders. In this example, you should not use the VOM and MOM APIs, because the front-end validation and security checks that they perform degrades performance.

To extend the `OrdersPresenter` class:

1. Create the public class `SampleOrderManager` that wraps the protected internal methods of the `Repository<Order>` class.

   These methods are internal and protected to force developers to use the VOM and MOM API:

   ```csharp
   public class SampleOrderManager : Repository<Order>
   {
       public SampleOrderManager(CoreOrderStateConfiguration orderStateConfiguration, Repository<Order> repository)
       {
           this.StateConfiguration = orderStateConfiguration;
           this.Repository = repository;
       }

       public virtual IQueryable<Order> GetAllOrders(Expression<Func<Order, bool>> expression)
       {
           return this.GetOrders(expression);
       }

       public virtual void SaveSingleOrder(Order order)
       {
           this.SaveOrder(order);
       }
   }
   ```

2. Register the `SampleOrderManager` class in the `MvpWebStore.Unity.config` file.

3. Override the constructor of the `OrdersPresenter` class in the MVPWebStore so that you can receive the `SampleOrderManager` object as an additional parameter:

   ```csharp
   public OrdersPresenter(IOrdersView view, VisitorOrderRepositoryBase orderRepository, SampleOrderManager orderManager): base(view)
   {
   }
   ```

   For more information, see the `MVPWebstore` on the marketplace.

4. To export the orders, you must use the Core API to retrieve all the orders.

   You can use the JSON.NET serializer to serialize them to the JSON format and write the data to a file:

   ```csharp
   var orders = this.orderManager.GetAllOrders(o => true).ToArray();
   this.View.Model.SerializedOrders = JsonConvert.SerializeObject(orders, Formatting.None, this.settings);
   using (var file = new FileStream(this.filePath, FileMode.Create, FileAccess.Write))
   {
       using (var stream = new StreamWriter(file))
       {
           stream.Write(this.View.Model.SerializedOrders);
       }
   }
   this.HttpContext.Response.Clear();
   this.HttpContext.Response.ContentType = "application/json";
   this.HttpContext.Response.AddHeader("content-disposition", "attachment; filename=" + FileName + "\""); 
   this.HttpContext.Response.WriteFile(this.filePath);
   this.HttpContext.Response.Flush();
   this.HttpContext.Response.End();
   ```
5. To import the orders, you should:
   - upload the file to the server,
   - read its content,
   - deserialize the text from the JSON format to the collection of OIOUBL orders
   - save it in the database:

```csharp
var orders = JsonConvert.DeserializeObject<IEnumerable<Order>>(this.View.Model.SerializedOrders, this.settings).AsQueryable();
foreach (var order in orders) {
    this.orderManager.SaveSingleOrder(order);
}
```
5.2 Using the Visitor Order Manager API

When you create a Webshop, you should use the Visitor Order Manager (VOM) API to create and view orders. The VOM API gives you access to the entire domain model.

The main class in the VOM API is

The VisitorOrderRepository class:

- Is the current default implementation of the


  This value identifies the customer that created the order. You can also use the implementation of the Sitecore.Ecommerce.Users.CustomerManager<T> class to read the CustomerId property in the current user account.

- Manages the visitor who created the orders.

Note
You can also use the VOM API in the Sitecore MVPWebStore application which is based on the WebFormsMVP framework. For more information, see the MVPWebStore Developer’s Guide on the Sitecore Market Place.

The following sections describe how to use the VOM API to:

- Read all orders for a specific customer.
- Cancel an order.
- Create an order.

The last section describes the limitations of the VOM API.

5.2.1 Reading all Orders for a Specific Customer

The MVP Webstore application contains some examples that use the VOM API. To allow visitors to list their orders on the MvpWebstore, you should use the
Sitecore.Ecommerce.MvpWebStore.Presenters.OrdersPresenter class. It presents the orders page. It also handles the user interaction with this page.

To read all the orders that were created by a specific customer and display them in a page:

- The constructor of the OrdersPresenter class takes instances of
  VisitorOrderRepositoryBase and IOrdersView as initializing parameters and binds the Load handler to the Load event of the view:

  ```csharp
  private readonly VisitorOrderRepositoryBase orderRepository;
  public OrdersPresenter(IOrdersView view, VisitorOrderRepositoryBase orderRepository) : base(view)
  {
      this.View.Load += this.Load;
      this.orderRepository = orderRepository;
  }
  ```

- When the user goes to the ~/orders?user=100500 page, the page parses the string value of the user parameter.

  This is a sample. In a real implementation, you should not pass the ID in a query parameter because this could compromise security.
In the page Load method, you should:

- Cast the repository to the IUserAware interface and assign a value for the customer ID,
- Retrieve all the orders that belong to this customer in the order repository,
- Assign the Orders collection of the ViewModel to the retrieved orders.

```csharp
private void Load(object sender, EventArgs e)
{
    var userId = this.HttpContext.Request.QueryString["user"];
    if (string.IsNullOrEmpty(userId))
    {
        return;
    }
    var aware = this.orderRepository as IUserAware;
    if (aware != null)
    {
        aware.CustomerId = userId;
    }
    var orders = this.orderRepository.GetAll(o => true).ToArray();
    this.View.Model.Orders = orders;
}
```

The following image shows the result — it contains the order id, the shop context, and the link to the order cancelation page.

5.2.2 Using the Visitor API to Cancel an Order

In this example, we explain how to use the Visitor API to cancel an order if it is not already processed by the business logic of the webshop.

To cancel the order, you can use the Sitecore.Ecommerce.MvpWebStore.Presenters.CancelOrderPresenter class.

To use the visitor API to cancel an order:

- The constructor of the CancelOrderPresenter class takes instances of the VisitorOrderRepositoryBase, ICANCELORDERVIEW and VisitorOrderProcessorBase classes as initializing parameters and binds the Load handler to the Load event of the view:
```csharp
private readonly VisitorOrderProcessorBase orderProcessor;
private readonly VisitorOrderRepositoryBase orderRepository;

public CancelOrderPresenter(ICancelOrderView view, VisitorOrderRepositoryBase orderRepository, VisitorOrderProcessorBase orderProcessor) : base(view)
{
    this.View.Load += this.Load;
    this.orderRepository = orderRepository;
    this.orderProcessor = orderProcessor;
}
```

**Note**

In this example, we have created a simple page that accepts the IDs of the user and the order in the URL. In a real implementation, you should not pass the ID in a query parameter because this could compromise security.

- When the user goes to the `~/orders/cancelorder?id=zzz&user=100500` page, the page parses the value of the query string — the user and id parameters. If the order ID is not provided, the presenter stops to work. If the order ID is provided, it casts the repository to the IUserAware interface and sets the customer ID. The repository uses the order ID to retrieve the full order and then tries to use the VisitorOrderProcessorBase instance to cancel the order. At the end of the process, the presenter sets the label value of the result message:

```csharp
private void Load(object sender, EventArgs e)
{
    try
    {
        var id = this.HttpContext.Request.QueryString["id"];
        if (string.IsNullOrEmpty(id))
        {
            this.View.Model.Result = Texts.TheOrderIdIsNotSpecified;
            return;
        }
        var userId = this.HttpContext.Request.QueryString["user"];
        var aware = this.orderRepository as IUserAware;
        if (aware != null)
        {
            aware.CustomerId = userId;
        }
        var order = this.orderRepository.GetAll(o => o.OrderId == id).FirstOrDefault();
        this.orderProcessor.CancelOrder(order);
        this.View.Model.Result = string.Format(Texts.TheOrderHasBeenCancelledSuccessfully, id);
    }
    catch (Exception exception)
    {
        this.View.Model.Result = exception.Message;
    }
}
```

- In SES 2.0, we store the state and sub-states as items in the content tree. However, to keep the MvpWebStore solution simple, we have not included them in the package.

- For simplicity, we use a custom implementation of the VisitorOrderSecurity and ProcessingStrategy classes that do not read the information from the content tree to check whether or not the transition between the states is valid. They only read the Order.State.Code value to check that the order is not cancelled or closed.
  - VisitorOrderSecurity applies security restrictions to the order and stops processing if the security restrictions are not satisfied.
  - ProcessingStrategy changes the order state and performs other operations.

The implementations of these classes are registered in the `~/App_Config/MvpWebStore.Unity.config` file:

```xml
```
The following snippet implements the `SampleOrderSecurity` class to check if the order is in one of the following states:

- **New**
- **Open**
- **InProcess**

If it returns `true`, you should allow the order to be cancelled. Otherwise, you should deny the cancelation.

```csharp
// <summary>
// The overrided version of the VisitorOrderSecurity class.
// The 'CanCancel(Order):bool' method is simplified.
// It doesn't perform any sophisticated check like a default one and
// doesn't collaborate in any way with back-end.
// The decision whether to allow to cancel an order is taken when the State is not
// null
// and State.Code is within
// the following set: 'New', 'Open', 'InProcess'
// In opposite situation the cancellation is denied.
// The such is registered in the ~/App_Config/MvpWebStore.Unity.config.
// </summary>
public class SampleOrderSecurity : VisitorOrderSecurity
{
    // <summary>
    // Determines whether this instance can cancel the specified order.
    // </summary>
    // <param name="order">The order</param>
    // <returns>
    // »true« if this instance can cancel the specified order; otherwise,
    // »false«.</returns>
    public override bool CanCancel(Order order)
    {
        if (order.State != null)
        {
            return true;
        }
        return false;
    }
}
```

You can then build the `SampleOrderCancellationStrategy` class:

```csharp
// <summary>
// The simple implementation of the ProcessingStrategy abstract class.
// It sets the State.Code of the provided order to the "Cancelled" value
// without any collaboration with back-end.
// </summary>
public class SampleOrderCancellationStrategy : ProcessingStrategy
```
If the order is successfully cancelled, you should see the following message:

5.2.3 Using the Visitor API to Create an Order

To create an order, you must use the Sitecore.Ecommerce.MvpWebStore.Presenters.ProductDetailsPresenter class.

In SES 2.0, we created an advanced checkout process. However, in MVPWebStore, you can use a single page with a Buy button. MVPWebStore contains instances of the VisitorOrderRepositoryBase, IProductRepository, IProductStockManager, IProductPriceManager and VisitorOrderProcessorBase classes as the required dependencies and binds the Load event handler and the Buy event handler of the view.
When it is loaded, the view is initialized with the name, description, price, stock value of the product and renders the Buy button:

If the stock value of the product is positive, the product is in stock and the order is created when you click the Buy button:

```csharp
private void Buy(object sender, EventArgs e)
{
    if (productStock.Stock <= 0)
    {
        return;
    }
    // As a simple example, the value of the product stock is decremented
    this.stockManager.Update(productStockInfo, productStock.Stock - 1);
    // Initializing the order
    Order order = new Order { State = new State { Code = "New", Name = "New" },
    // Setting the shop context value of the order to mvpwebstore.
    ShopContext = "mvpwebstore",
    OrderId = Guid.NewGuid().ToString(),
    PricingCurrencyCode = "USD" };
    OrderLine orderLine = new OrderLine
    {
        Order = order,
        LineItem = new LineItem
        {
            Price = new Price(new Amount{this.View.Model.Price, "USD"}),
            Quantity = 1,
            TotalTaxAmount = new Amount()
        }
    };
    order.OrderLines.Add(orderLine);
    // Setting the Supplier account ID to the predefined value "100500"
    // The order is sent to the visitor order repository that saves it in the
    // database.
    this.orderRepository.Create(order);
    this.HttpContext.Response.Redirect(this.HttpContext.Request.RawUrl);
}
```

5.2.4 The Limitations of the Visitor API

The VOM API only allows customers to perform some high-level business operations with orders such as Create, Read and Cancel. The main aim is to give web shop visitors limited access to the orders stored in the database.
The most common operations are to:

- Read the existing orders that were created by the current customer.
- Create an order at the end of the checkout process.
- Cancel an order before completing the purchase if necessary.

The VOM API is an additional layer of abstraction on top of the Core Order Manager API. COM supports all CRUD operations, but VOM only supports Create, Read, and Cancel.

The VOM API is defined by the following class and interface definitions:

```csharp
public abstract class VisitorOrderProcessorBase
{
    public abstract void CancelOrder(Order order);
}

public abstract class VisitorOrderRepositoryBase
{
    public abstract void Create(Order order);
    public abstract IQueryable<Order> GetAll(Expression<Func<Order, bool>> expression);
}
```

The `VisitorOrderProcessor` class:

- **Is** the default implementation of the `VisitorOrderProcessorBase` abstract class.
- **Implements** the `VisitorOrderSecurity` class to check whether or not the order is in the appropriate state to be cancelled.
- **Implements** the `VisitorOrderCancelationStrategy` class to cancel the order.

The `VisitorOrderRepository.Create()` and `VisitorOrderProcessor.CancelOrder()` methods are marked with the custom `LogThis` attribute to make the IoC container intercept their work and log the creation and cancellation of the order in the ActionLog database.

```csharp
[LogThis(Commerce.VisitorOrderManager.CreateOrderAction, Commerce.VisitorOrderManager.UserLevel)]
public override void Create(Order order)
{
}

[LogThis(Commerce.VisitorOrderManager.CancelOrderAction, Commerce.VisitorOrderManager.UserLevel)]
public override void CancelOrder(Order order)
{
}
```

The `LogThis` attribute uses the `Sitecore.Ecommerce.Logging.LoggingHandler` and `Sitecore.Ecommerce.Core` classes. This class contains a reference to the Logger and calls it with the provided parameters. You can use the `unity.config` file to configure the interception:

```xml
<register type="VisitorOrderManager" mapTo="DefaultVisitorOrderManager">
    <lifetime type="hierarchical"/>
    <interceptor type="VirtualMethodInterceptor"/>
    <policyInjection/>
</register>

<register type="VisitorOrderProcessorBase" mapTo="VisitorOrderProcessor">
    <lifetime type="hierarchical"/>
    <interceptor type="VirtualMethodInterceptor"/>
    <policyInjection/>
</register>
```

**Note**

If you use the default implementation, you should not worry about logging.

You cannot use the Visitor API to remove an order, the only change that you can make with VOM is to change the `Order.State` to Canceled. You must use the `VisitorOrderProcessor.CancelOrder` method to cancel the order.
You must use the `CancelOrder` method to:

- Statically provide a list of orders on the page or use the `XmlHttpRequest XHR` object and send the list in JSON format from the server to the client.

  `XHR` is a JavaScript object that is used to send asynchronous requests from the client code to the server.

- Create the custom checkout process. In the last stage, you should use the accumulated information to create the order.

- Cancel an existing order. For example, on the history page.
5.3 Using the Merchant Order Manager API

The Merchant Order Manager (MOM) API contains the business logic that is used by the OM web application to manage the orders.

The Merchant Order Manager API is used to:

- Create a new order.
- Assign the order validation when the order is created.
- Update the order suspicious state.

5.3.1 Using the MOM API to Create a New Order

Before you can create an order with MOM, you must:

- Create a custom action class that contains the business logic.
- Create an action panel that is bundled with this class.

Creating a Custom Action Class

To implement the business logic for creating an order, you must create a custom action class:


```csharp
{
    using Sitecore.Web.UI.WebControls;

    /// <summary>
    /// The create order action.
    /// </summary>
    public class CreateOrderAction : Action
    {
        /// <summary>
        /// Executes the specified context.
        /// </summary>
        /// <param name="context">The context.</param>
        public override void Execute([CanBeNull] ActionContext context)
        {
        }

        /// <summary>
        /// Queries the state.
        /// </summary>
        /// <param name="context">The context.</param>
        /// <returns>The state.</returns>
        public override ElementState QueryState([NotNull] ActionContext context)
        {
            return ElementState.Enabled;
        }
    }
}
```

2. To hide the action panel from users who are not members of the Order Processor role, override the QueryState method to return the hidden state.

3. Override the Execute method with some custom logic.

   To implement the business logic, use DefaultOrderFactory to create an order and set the order State to Open.
You must use `MerchantOrderManager` to save the order and then redirect to the order details page with the `OrderId` of the new order in the query string.

```javascript
//Create new order using DefaultOrderFactory.
var order = this.orderFactory.Create();

//Change order state from New to Open.

//Save order with MerchantOrderManager.
this.orderManager.Save(order);

//Redirect to order details page.
this.view.RedirectToOrderDetails(order.OrderId);
```

Create an Action Panel

The previous section describes how to create the custom action class that contains the business logic. The following a procedure describes how to create an action panel that calls the custom action class:

1. In the Action Panels folder, create an item and call it `Order Manager Actions`.
2. In the Order Manager Actions folder, add the create order action that we just created and enter a value in the Title, linkicon, and Click fields.
3. Navigate to the Order Manager root item.
4. In the Content Editor, click the Presentation group and then in the Layout group, click Details and the Layout Details opens.
5. In the Layout Details dialog box, select the placeholder called `top` and in the Data Source field, enter the path to the Order Manager Actions item that you just created.
   
   You must assign the custom action class to the Create Order action item.
6. In the Click field, enter value to CreateOrderAction class name, for example `Sitecore.Ecommerce.Apps.OrderManagement.Views.CreateOrderAction`,
5.3.2 Setting the Order State to Suspicious

When you use the example pages to create an order, the orderCreated pipeline starts to perform additional operations that are not part of the order creation process. To check whether or not the state of the order should be set to suspicious, you can use the orderCreated pipeline to inject the custom order validation logic.

For example, an order can be suspicious if the order line quantity is greater than a certain predefined value or if the order has been placed by the same visitor within a predefined time interval.

The following example describes how to implement a new order validation pipeline that sets the order to suspicious if it is created by the same visitor within ten seconds:

```csharp
namespace Ses.Samples.Merchant.Pipelines.OrderCreated {
    using System;
    using System.Linq;
    using Sitecore.Pipelines;

    // Create a CheckOrderFrequency processor to validate if order created with a proper frequency.
    public class CheckOrderFrequency : CheckOrderProcessorBase {
        public TimeSpan Frequency { get; set; }

        public void Process(PipelineArgs args) {
            // Read the created order using order number stored in pipeline args.
            var order = this.GetOrder(args);

            // Read the customer ID from the new order.
            var customer = order.BuyerCustomerParty.SupplierAssignedAccountID;

            // Read the allowed order creating frequency which is set in pipeline processor property and determine maximum allowed date.
            var recentAllowedOrderDate = DateTime.Now - this.Frequency;

            // Check if the customer has already placed an order recently and determine if the order is suspicious or not.
            var frequentOrders = this.OrderManager.GetOrders().Where(o => o.BuyerCustomerParty.SupplierAssignedAccountID == customer && o.OrderId != order.OrderId && o.IssueDate >= recentAllowedOrderDate);

            // Mark the order as suspicious if there are some orders found.
            if (frequentOrders.Any()) {
                this.MarkOrderAsSuspicious(args, "Order Frequency");
            }
        }
    }
}
```

To run the pipeline, in the Sitecore.Ecommerce.config file, in the orderCreated pipeline, add the first processor in the following snippet.
5.3.3 Getting the Best-Selling Products

To search for the best-selling products:

1. Enumerate all the order lines of all the orders in the repository to calculate the total quantity of every purchased product.
2. Sort the products in descending order according to the evaluated total quantity values.
3. Use the IProductRepository class to transform the product codes into a set of products.

The following code snippet describes how to implement this:

```csharp
// Specify the webshop to get the products from.
const string WebShopName = "example";

// Setup the environment for the webshop.
using (new SiteContextSwitcher(SiteContextFactory.GetSiteContext(WebShopName)))
{
    // Get instance of MerchantOrderManager from IoCContainer.
    MerchantOrderManager merchantOrderManager = Context.Entity.Resolve<MerchantOrderManager>();

    // Get instance of IProductRepository from IoCContainer.

    // Defines number of top products to be selected.
    const int SizeOfSelection = 5;

    // Order products by total quantity and select products by ordered product codes.
    IEnumerable<ProductBaseData> resultingProducts =
        merchantOrderManager.GetOrders() // Get orders first.
            .SelectMany(order => order.OrderLines) // Select all order lines from the orders.
                new { productCode, totalQuantity = orderLines.Sum(orderLine => orderLine.LineItem.Quantity) })
            .OrderByDescending(pair => pair.totalQuantity) // Order groups by calculated total quantity.
            .Take(SizeOfSelection) // Take only the records we need
            .AsEnumerable() // Force query execution on subsequent operations
            .Select(pair => productRepository.Get<ProductBaseData>(pair.productCode));
}
```

5.3.4 Getting the Best Customers for a Webstore

To search for the best customers for the web store:

1. To calculate the total purchase price for every customer, enumerate all the orders.
2. Sort the customer IDs in descending order according to the total value of their purchases.
3. Use ICustomerManager to transform the customer IDs into a set of CustomerInfo objects.
The following code snippet describes how to implement this:

```csharp
// Specify the webshop to get the orders from.
const string WebShopName = "example";

// Setup the environment for the webshop.
using (new SiteContextSwitcher(SiteContextFactory.GetSiteContext(WebShopName)))
{
    // Get instance of MerchantOrderManager from IoCContainer.
    MerchantOrderManager merchantOrderManager = 
        Context.Entity.Resolve<MerchantOrderManager>();
    // Get instance of ICustomerManager from IoCContainer.
    ICustomerManager<CustomerInfo> customerManager = 
        Context.Entity.Resolve<ICustomerManager<CustomerInfo>>();
    // Defines number of top customers to be selected.
    const int SizeOfSelection = 5;
    // Order customers by total price of purchased products and select CustomerInfo.
    IEnumerable<CustomerInfo> topBuyers =
        merchantOrderManager.GetOrders()
        // Group orders by SupplierAssignedAccountID, compute total price of the purchases for
        // each group.
        // Order groups by calculated total price.
        .OrderByDescending(pair => pair.totalPrice)
        // Take only the records we need.
        .Take(SelectionSize)
        // Force query execution on subsequent operations
        .AsEnumerable()
        // and transform them to sequence of objects providing customer information.
        .Select(pair => customerManager.GetCustomerInfo(pair.customerId));
}`