



How to Analyze Model Dependency with Matrix?

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Matrix Diagram is a table, which shows the existence of relationships among model elements of particular types. By reading Matrix Diagram, you can tell easily whether two model elements are related or not and what kind of relationship they have.

Overview of this Tutorial

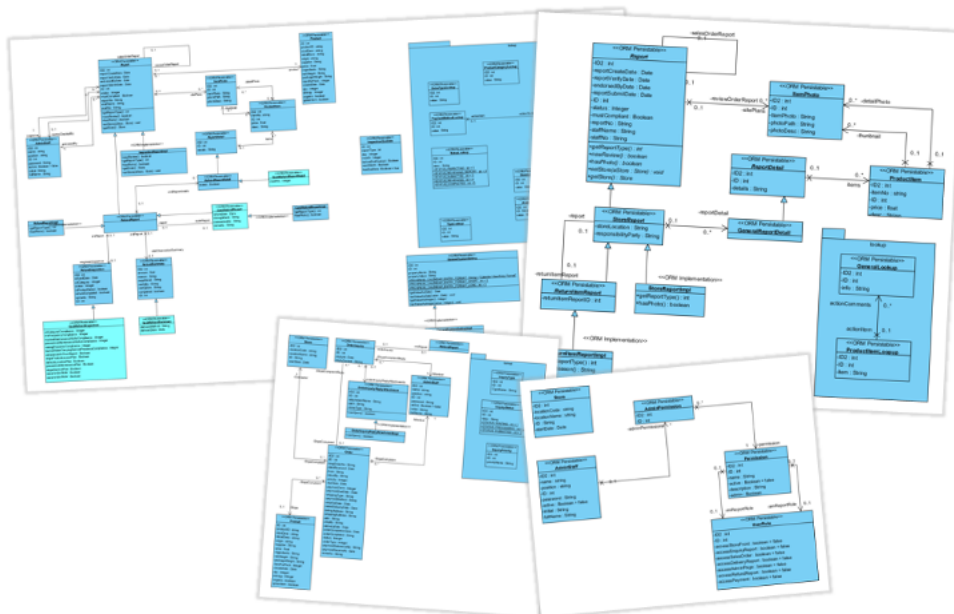
In this tutorial, you will learn how to use Matrix Diagram to find out the relationships between classes in a complicated project.

In order to complete this tutorial you must have Visual Paradigm installed. You also need to have basic knowledge in [UML modeling](#) with [Visual Paradigm](#).

Creating Matrix Diagram

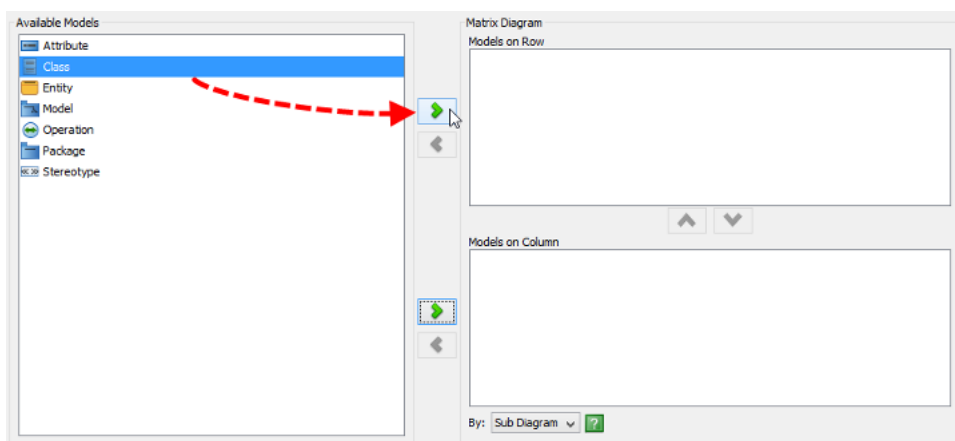
1. Download [Department-Store.vpp](#). You can also find this file at the bottom of this tutorial, under the **Resources** section.

2. Open the downloaded project file in Visual Paradigm. You can find in the project the following [Class Diagrams](#):

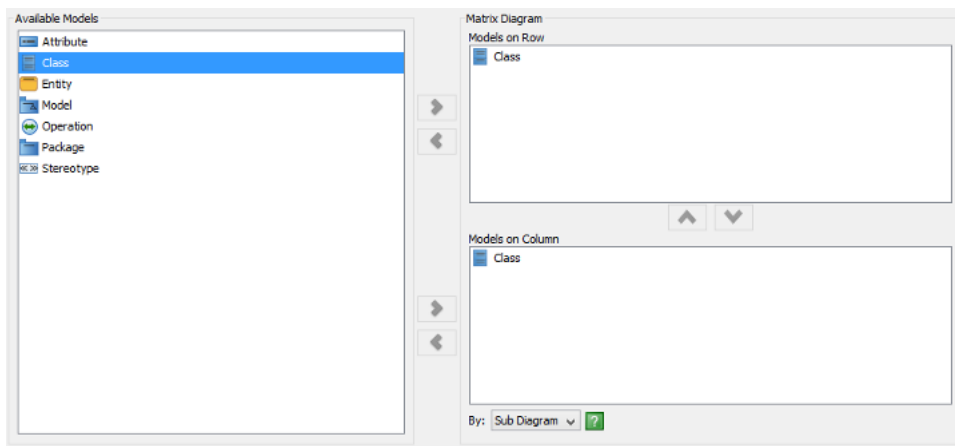


The diagrams contain many classes, with some of them being visualized in multiple diagrams, and with complex relationships in between. With a project like this, it's not easy to tell the relationships of any given class. In order to do this, you can make use of a Matrix Diagram.

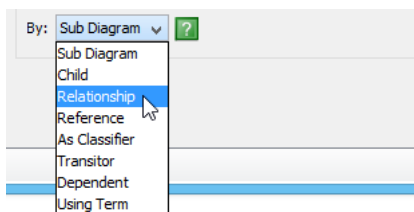
3. To create a Matrix Diagram, select **Modeling > Impact Analysis > Matrix** from the application toolbar.
4. In order to form a matrix you need to choose the things to list on the rows and columns. In this tutorial, we want to show the relationships among classes. Therefore we need to list classes on both rows and columns. In the list of available modes, select **Class** and click > to add it into **Models on Row**.



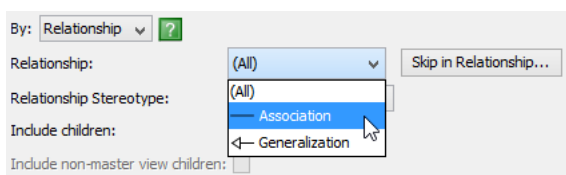
5. Similarly, select **Class** and click > to add it into **Models on Column**.



6. Select **Relationship** from the drop-down menu of **By**. This means that a matrix will be formed by analyzing the relationships among classes.



7. Let's say we want to view specifically the associations among classes. Beside the drop-down menu of **Relationship**, select **Association**.



8. Click **OK** to form a matrix. Here is the matrix formed:

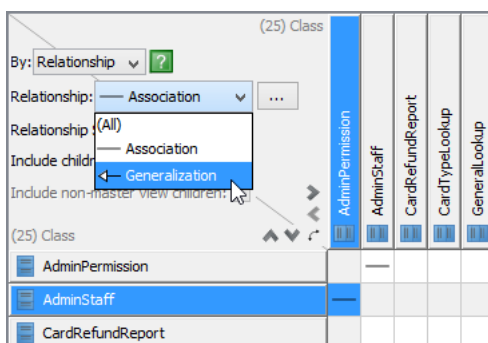
The screenshot shows the Visual Paradigm dependency matrix tool. On the left, there is a control panel with the following settings: 'By: Relationship', 'Relationship: Association', 'Relationship Stereotype: (All)', 'Include children: []', and 'Include non-master view children: []'. Below this is a list of 25 classes. The main area is a matrix with 25 columns and 25 rows, where each cell contains a small icon representing a relationship between the class in the row and the class in the column.

Class	AdminPermission	AdminStaff	CardRefundReport	CardTypeLookup	GeneralLookup	GeneralReportDetail	ItemPhoto	Order	OrderInquiry	OrderInquiryReplyAttachment	PaymentMethodLookup	Permission	Product	ProductItem	ProductItemLookup	RefundInspection	RefundReport	RefundReportDetail	RefundSummary	Report	ReportDetail	ReturnItemReport	Store	StoreReport	UserRole
AdminPermission																									
AdminStaff																									
CardRefundReport																									
CardTypeLookup																									
GeneralLookup																									
GeneralReportDetail																									
ItemPhoto																									
Order																									
OrderInquiry																									
OrderInquiryReplyAttachment																									
PaymentMethodLookup																									
Permission																									
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ProductItem																									
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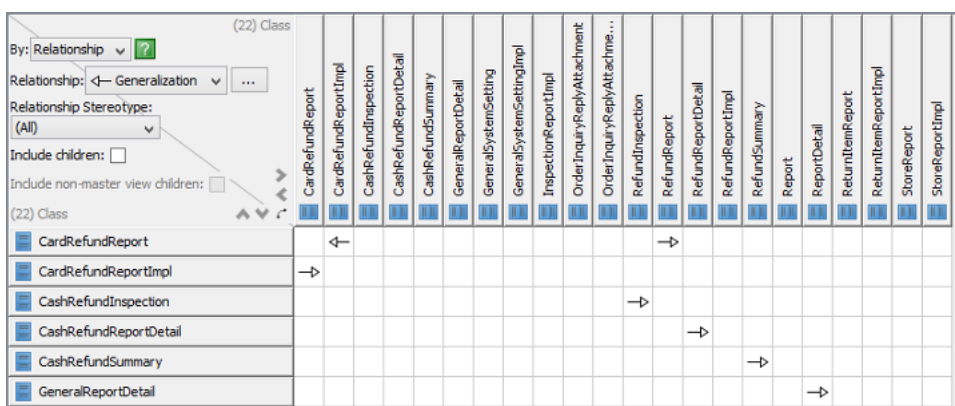
9. Let's say we want to check the associations of the class *AdminStaff*. Click on the *AdminStaff* row or column. You should see the cells highlighted accordingly, indicating the classes to which *AdminStaff* is connected.

This screenshot is identical to the previous one, but with the *AdminStaff* row and column highlighted in blue. This highlights the cells where *AdminStaff* is associated with other classes: *AdminStaff*, *Order*, *OrderInquiry*, and *Report*.

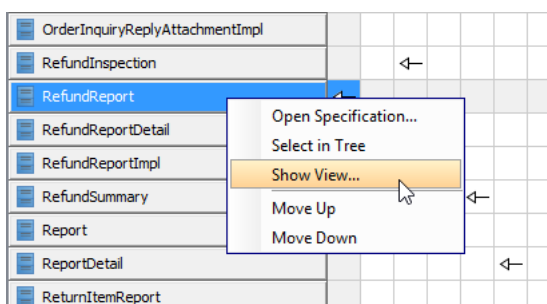
- Let's say you want to check the generalization relationships among classes now. At the top left corner of the matrix, change **Association** to **Generalization** from the drop-down menu of **Relationship**.



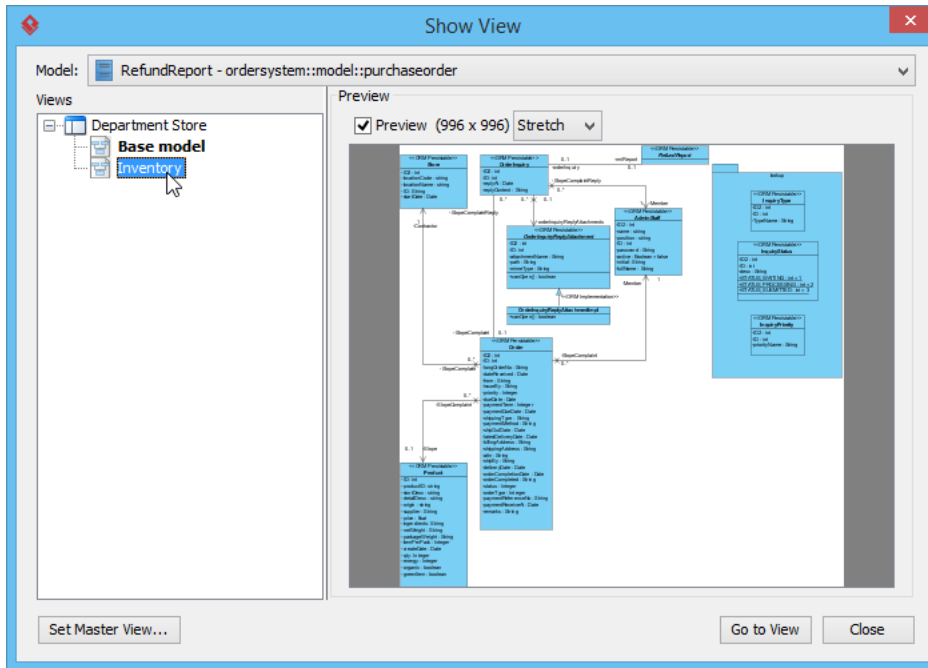
The matrix is updated to present the generalization relationships among classes.



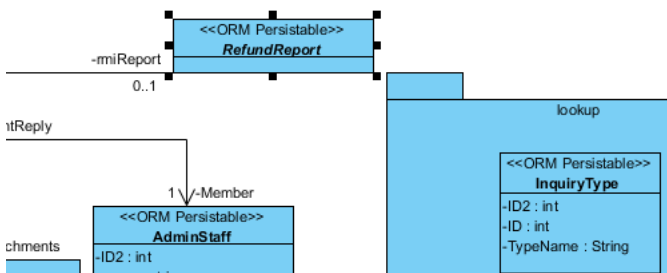
- You can open the diagram in which a chosen class is being visualized. Let's try. Right-click on *RefundReport* class and select **Show View...** from the popup menu.



- In the **Show View** window, select *Inventory* from the list of diagram and then click on **Go to View** at bottom right corner.



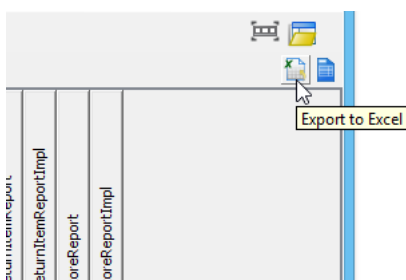
This opens the Inventory diagram with *RefundReport* class selected.



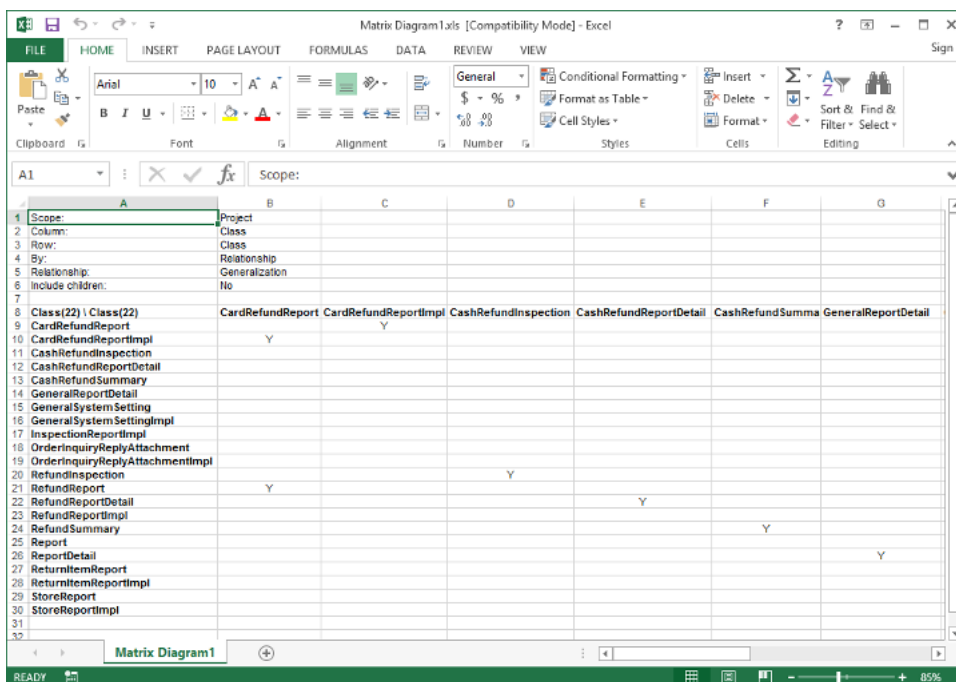
Exporting Matrix Diagram to Excel

You can also export a Matrix Diagram to an Excel file. To export a matrix:

- Click on the **Export to Excel** button at the top right of the matrix.



2. Enter the filename in the file chooser and confirm. The result should look like this:



Resources

1. [Department-Store.vpp](#)

Related Links

- [Visual Paradigm's Impact Analysis features](#)



[Visual Paradigm home page](https://www.visual-paradigm.com/)
(<https://www.visual-paradigm.com/>)

[Visual Paradigm tutorials](https://www.visual-paradigm.com/tutorials/)
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