Networks, Components, and Block

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This document helps you understand the difference between networks, components, and blocks.

STEP 1: *Start Pesseract, Open XBRL instance.*

Open the Pesseract application and the main form is displayed and the "Home" tab of the menu ribbon is displayed. Press the "Open" icon and then "Open XBRL instance". Press the browse button (with the three dots) and open the file:

\Basic\basic-SampleInstance.xml

The XBRL instance is loaded:

There is nothing particularly unique about this XBRL instance. Note that in the right side panel of the application you are on the RENDERING tab.

STEP 2: *Components.*

Note the following items on the screen circled in RED below. Note that in the upper left hand corner of the screen there is a label that says "Components (12)" which means that there are 12 components within the open report. Just below that you see three radio buttons and the "Component View" is selected. That means that you are using the components view of the report.   To the right on the top you see the label "Component (Network and Table". Finally, toward the bottom of the screen on the left you see "Component Properties" which shows you the properties of the selected component.

Note in the Component Properties that a Component has a "Network" property and a "Table" property.
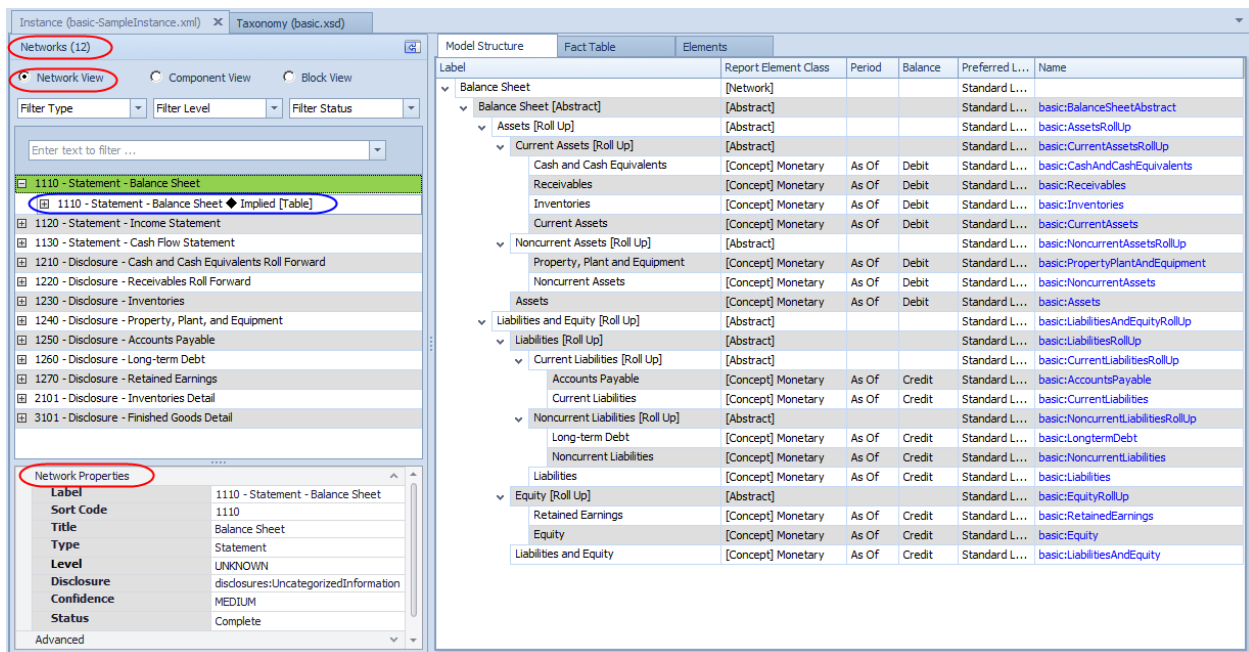
A **Component** is identified by the Network that it is in and the Table (or hypercube) that it is in. Above you see the Network "**1110 – Statement – Balance Sheet**" and the Table "**Implied [Table]**". Every fact which exists within an XBRL report is contained with some network and with some [Table]/hypercube. If an explicitly defined [Table]/hypercube is not provided by the model structure, then the application organizes all facts of that network into an implied hypercube labeled "Implied [Table]".

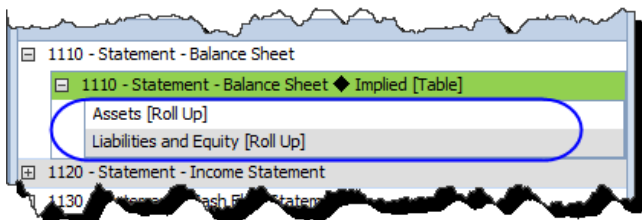A Component will make more sense when you understand Networks.

STEP 3: *Networks.*

Now click on the radio button "Network View". Also, click on the "[+]" sign of the first Network to open the Network. Opening the Network exposes the Components that exist within a Network. Here there is one Component in the Network which is circled in BLUE below.

If you opened each of the Networks you would see that each has only a single Component within the Network. And so, the number of Networks which is 12 is equal to the number of Components which is also 12. Notice that the Rendering tab is not available for Networks, the application shows the Model Structure for the Network. This is because rending a Network makes no sense because a Network could contain any number of [Table]s/hypercubes; what drives a rendering is a hypercube. However, if you click on the Component within the Network, the rendering will appear.

Next, click on the "[+]" sign of the Component of the first Network to show the Blocks which exist within the Component:

Click on each of the blocks and again the rendering is shown for each Block.

STEP 4: *Blocks.*

Now for a moment, go back to the Components view and select the first component and open that component by clicking the "[+]". This reveals the Blocks within that Component. We want to introduce Blocks to you in this view. The notion of a Block is used as a matter of convenience and a technique for creating useful functionality within a software application.

A balance sheet is made up of two Blocks: (1) a roll up of Assets and (2) a roll up of Liabilities and Equity.

If you click on the "Assets [Roll Up]" that Block will appear in the Rendering window on the right. Click on "Liabilities and Equity [Roll Up]" and that Block appears in the rendering.

Providing a full explanation of Blocks is beyond the scope of this example[1].

Here is another view of the Blocks within a report. Please click on the "Blocks" radio button and the following is shown:

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[1] But, if you want a complete understanding of blocks, please read *Putting the Expertise into an XBRL-based Knowledge Based System for Creating Financial Reports*, http://pesseract.azurewebsites.net/PuttingTheExpertiseIntoKnowledgeBasedSystem.pdf

You can see that there are 14 Blocks within this report. Most Networks have ONE Block, but the balance sheet has two Blocks (Assets [Roll Up], Liabilities and Equity [Roll Up]) and the cash flow statement has two Blocks (Net cash flow [Roll Up], Cash and Cash Equivalents [Roll Forward]).

STEP 5: *Further understanding Networks, Components, and Blocks.*

A good way to further understand Networks, Components, and Blocks is to explore the Microsoft 10-K. You can do that by loading that report and exploring the report within Pesseract. Get the report from the Get Started menu icon: