NetVecCad code documentaton

Date: 6/3/2014. If you are reading this after 6/5/2014, it is probably out of date.

Process Flow for creating the default window when creating a new, empty model:

1. Something calls the Model constructor

// Code Documentation Tag 20140603\_01

2. The Model constructor creates a new CadViewPort with its default settings.

// Code Documentation Tag 20140603\_02

3. Model notifies Moderator that a new CadViewPort has been added.

// Code Documentation Tag 20140603\_03

4. Moderator adds new child NVcad2dViewWindow to the WindowContainer and hands the model’s CadViewPort to the new NVcad2dViewWindow. Note: the new NVcad2dViewWindow is added to the WindowContainer referenced by the Moderator but owned by the application’s MainWindow.

// Code Documentation Tag 20140603\_04

5. As part of step 4, a new Nvcad2dViewWindow is created. In this constructor, the CadViewPort of the Model is passed in. During this process, the ViewWindow’s drawing area, primaryCanvas is created. Again, the CadViewPort is passed to the new Nvcad2dViewCanvas constructor.

// Code Documentation Tag 20140603\_05

It is important to understand that no elements are drawn on the canvas at this point because it has not completed initialization and the Canvas’ Height and Width equal zero.

Steps 1 – 5 all happen within the constructor of the Model. At this point we are through with that constructor and back to the method of the original creation of the new model.

6. A timer is started, calling a method to test to see that ActualWidth of child window #0 is greater than 0. It keeps running until it finds this true, at which point it tells all child windows to establish their view transforms.

// Code Documentation Tag 20140603\_06

7. In Nvcad2dViewCanvas.establishTransforms(), the pertinate information is read from its CadViewPort and the tranforms are created accordingly.

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8. The view is refreshed, causing all elements that fall in the view to be drawn on it. The operation is complete.

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Definitions:

Model – Contains all cad elements. Talks to other layers only via interfaces. Has-a collection of CadViewPorts.

CadViewPort – Model-side representation of a view port. Among other things, it has-a Center Point, Height, Width, Scale Vector, Rotation.

Moderator – Like a ViewModel (of MVVM fame), but different. It owns all of the NVcad2dViewWindows on the WPF-side. Moderator also owns 1 Model. So the File (and thus the application) owns multiple Moderators, and there is a 1:1 relationship between Moderators and Models.

NVcad2dViewWindow – The child window which visually contains the Canvas upon which the cad elements are drawn. Inherits Xceed.Wpf.Toolkit.ChildWindow.

NVcad2dViewCanvas – The canvas upon which the cad elements are drawn. Inherits from Canvas. Implements ICadViewChangedNotification.