ShapeMaker Quick Start Guide

An introduction to the ShapeMaker plugin by the Dwarf Horde...

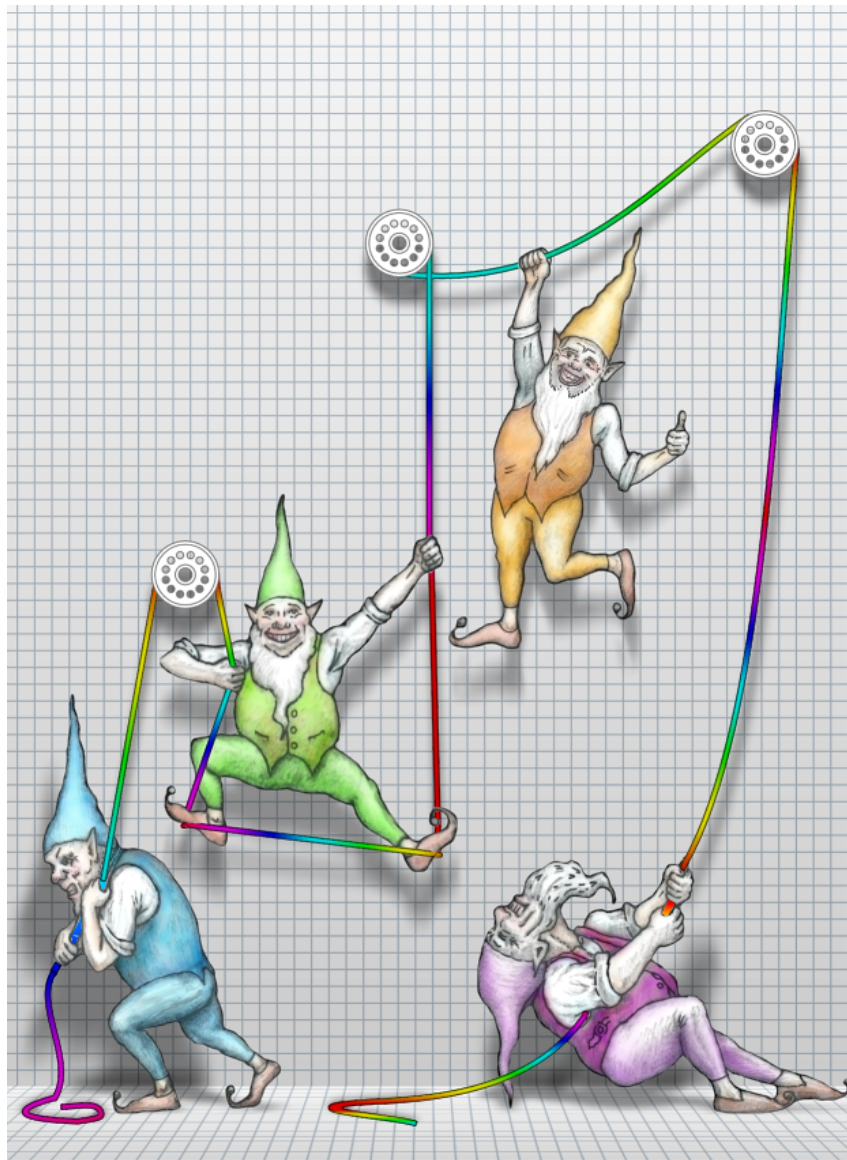Jason Wendt (toe_head2001) – Code Lead (v1.3 onwards), Design

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John Robbins (Red Ochre) – Graphics Lead, Design

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David Issel (BoltBait) – Beta Testing, Design

Definitions

Circle – a compound type consisting of two semi-circular Ellipses.

Compound Types – One of two shapes (Rectangle and Circle) which are composed of individual elements to create the Shape. A Rectangle is composed of four Straight Lines and a Circle is two semi-circular Ellipses. These two compound types are included to ease drawing these common shapes. A kind of macro or shortcut.

Control nub – a little graphic representing a draggable control point.

Curve – any one of a number of Curve types which extend between two points (Start and End). In ShapeMaker, Curves have one or more control nubs which are used to alter them.

Drawing Grid – the square space where Lines, Curves and Paths are created and edited.

Ellipse – a special type of Curve. Ellipses create their own individual Path, and cannot be joined in a series like the other types.

End point – the place where a Line or Curve terminates.

Line – a straight line between two points: Start point and End point.

Mid point – any point occurring in a Path that is not a Start or End point.

Path – a series of continuous connected Lines or Curves <u>of the same type</u>. Ellipses and Circles cannot be joined in series to create a Path.

Path List – Paths that have been created and added to the current Shape are listed in the Path List. The Path List operates like paint.net's Layers window.

Primitive Types – one of the Line/Curve types: Straight Line, Cubic Bézier, Quadratic Bézier or Ellipse.

Rectangle – a compound type consisting of four parallel straight lines.

Shape – the object created from all the Paths in the Path List.

Smooth Types – a subset of Curves which interact with neighboring Curves in the same Path to make the overall Curve continuously smooth. There are two Smooth types: Smooth Cubic Bézier and Smooth Quadratic Bézier.

**Start point –** the place where a Line or Curve begins.

Introduction

In this guide we'll teach you how to make a simple Shape. We've chosen this coffee mug as our example.


The order in which the edges of a Shape are created is important. The edges need to be placed sequentially to create closed regions. This is so the Shape will fill correctly when it is rendered using a colored fill. The easiest way to ensure the shape is closed is to create adjoining edges sequentially and ensure that the last edge meets the starting point.

In our example we'll be creating the outer shape in a clockwise order from the top left point.
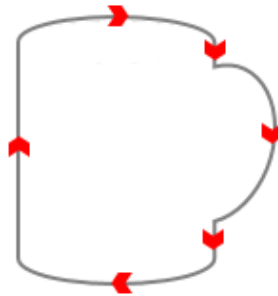
The inner details (inner rim and inside handle) will be created following completion of the outer shape.
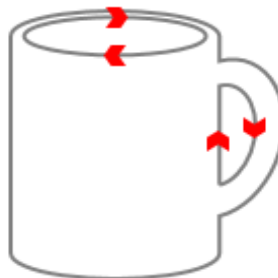

Note the inner regions are closed and are entirely within the outer edge. This means that when the Shape is rendered using a filled option, these internal areas will not be filled. In other words, these areas will be treated as 'holes' in the outer shape.

Installing the Plugin

1. Download the ShapeMaker plugin from the paint.net forum (click here). This is important! Downloading the plugin from any other source not only opens you up to virus attacks - it's also ILLEGAL to redistribute the ShapeMaker plugin in any way, shape or form. Get it from the source.

2. Install the plugin by unzipping it and copying the *.dll and two *.pdf files into your `paint.net/Effects/` folder.

3. Restart paint.net.

Opening ShapeMaker

4. Open the plugin from **Effects > Advanced** menu
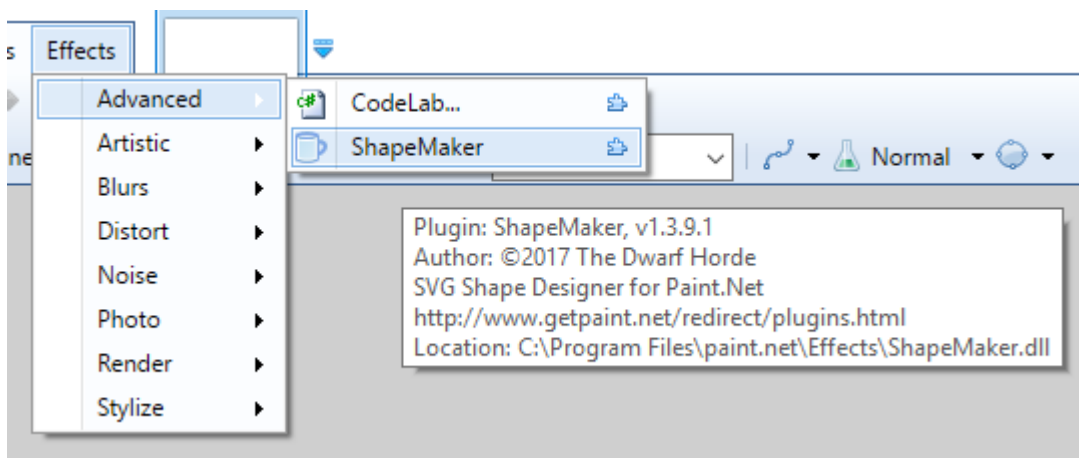
Set up

5. By default the **Snap-to-Grid** option in the Toolbar is enabled . Check this button is "on" (showing the nub located on the crosshairs & the surround is lit). **Ctrl + S** is the keyboard shortcut to toggle this button. The Snap-to-Grid feature will be used for this whole guide.

6. Ensure the **Linked with Previous Line** option in the Toolbar is enabled . Keyboard shortcut for this option is **Ctrl + 3**.

7. Ensure the **Close Individual Path** option is disabled (and not). Keyboard shortcut for this option is **Ctrl + 2**.

The Mug's Outer Edge

8. Select Elliptical Arc by clicking the button [🖉] or using the keyboard shortcut **Ctrl + E**.

9. **Right click** on the Drawing Grid to create a Start point.

10. **Drag** the Start point to location X=50, Y=60 using the **Left mouse button**. TIP: The current nub location is shown in the Status Bar at the bottom of the ShapeMaker UI.

	nub location		Clipboard
0/200 Paths used	50, 60	89, 274	Zoom 1x ▾
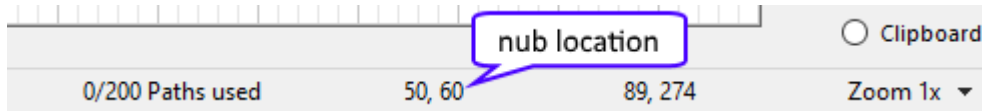
11. **Right click** somewhere else on the Drawing Grid to create an End point. The Ellipse will be drawn from Start to End.

12. With the **Left mouse button**, drag the End point to location X=350, Y=60.
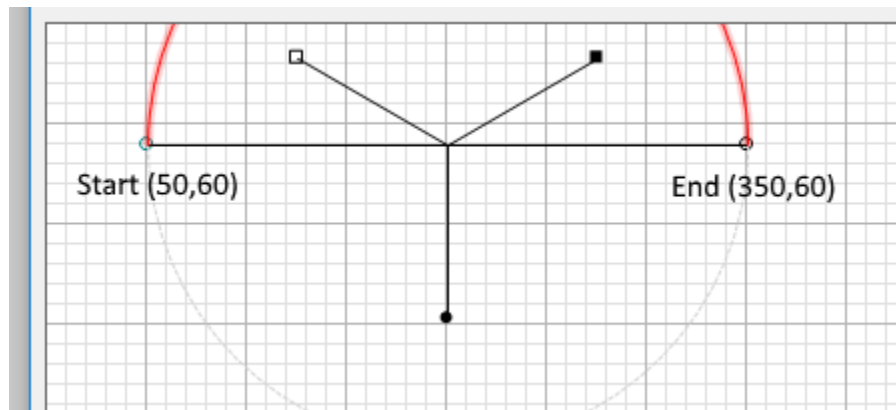

13. Drag the square black control nub to location X=290, Y=20. Drag the white square nub to location X=190, Y=40. The line to the round black control nub (rotation) should run straight down.
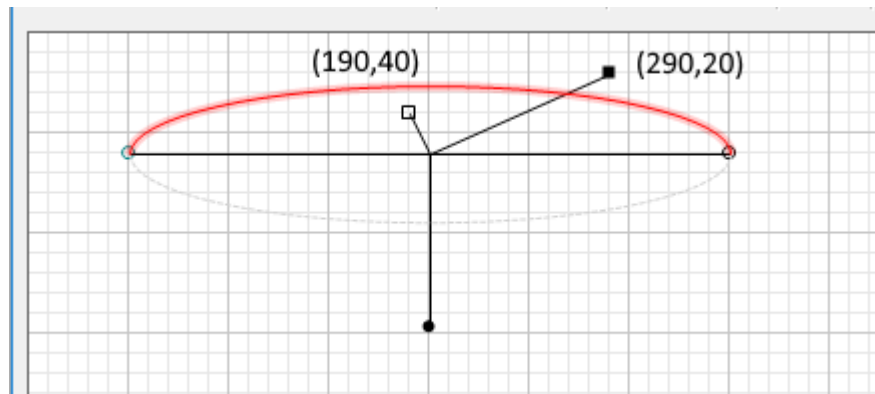
14. Commit this element to the Path List by clicking **Add Path** (**Enter** key). The End point of the Ellipse will retain the editing focus (this behavior is why the **Linked with Previous Line** function was enabled in Step 6).
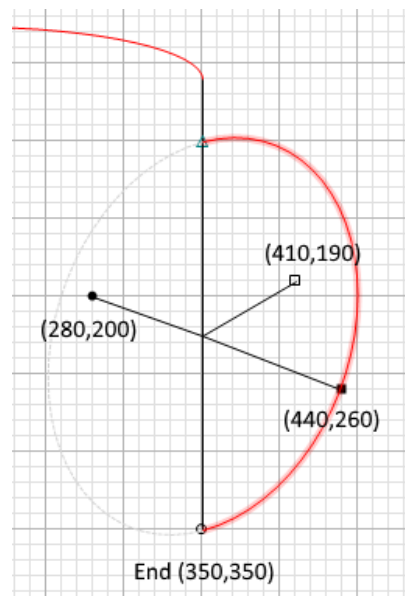
15. Select the Straight Lines tool with **Ctrl + L** or the button [image].

16. **Right click** on the Drawing Grid just below the End point of the Ellipse. A Straight Line will be drawn between this new point and the End point of the Ellipse.

17. **Left click** and drag the point to X=350, Y=100.

(350,100)
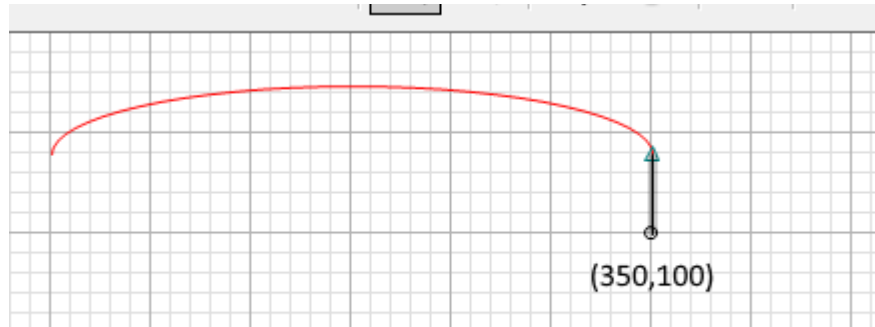
18. Commit this Line to the Path List by clicking **Add Path** (**Enter** key). The Path List should have two entries: Ellipse at the top and Straight Lines underneath.

19. Select Elliptical Arc using the keyboard shortcut **Ctrl + E** or clicking [image].

20. **Right click** on the Drawing Grid somewhere below the previously created Line to create another Ellipse.

21. Drag the End point to X=350, Y=350.

22. Drag the Black Square control nub to X=440, Y=260.

23. Drag the White Square control nub to X=410, Y=190.

24. Drag the Rotation nub (round & black) to X=280, Y=200.

(410,190)

(280,200)

(440,260)

End (350,350)

25. Press **Add Path** (**Enter** key) to commit the second Ellipse to the Path List.

26. Select the Straight Lines tool (**Ctrl + L**) or .

27. **Right click** on the Drawing Grid just below the End point of the last Ellipse.

28. **Left click** and drag the point to X=350, Y=410.


End (350,410)
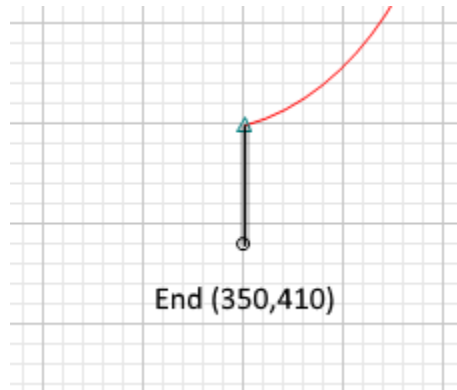
29. Press **Add Path** (**Enter** key) to commit the second Line to the Path List. The Path List should have two Ellipses and two Lines.

30. In the Path List, click on first Ellipse path to select it. It will be highlighted in the Path List when it has the focus.

31. Use **Edit > Clone Path** to create a duplicate of the first Ellipse.

32. Use **Shift + Left mouse** on any nub to drag this new Ellipse until it's somewhere near the bottom of the Drawing Grid.
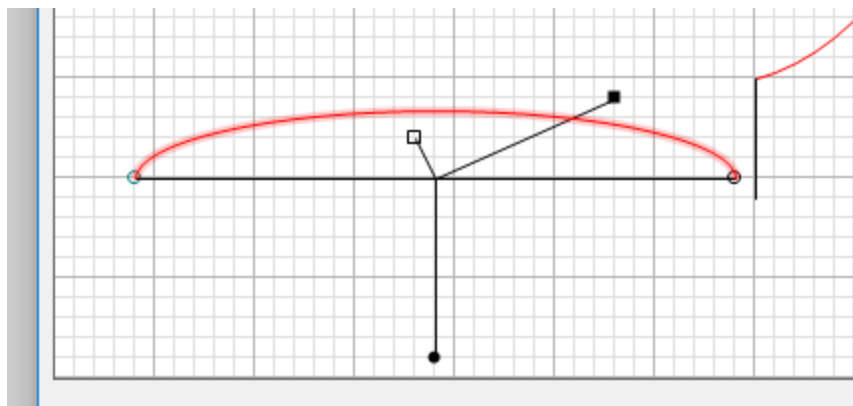

33. Flip the Ellipse horizontally with **Edit > Flip Horizontal**.

34. Also flip the Ellipse vertically with **Edit > Flip Vertical**.

35. **Shift + Drag** any nub to join the Ellipse to the last line.
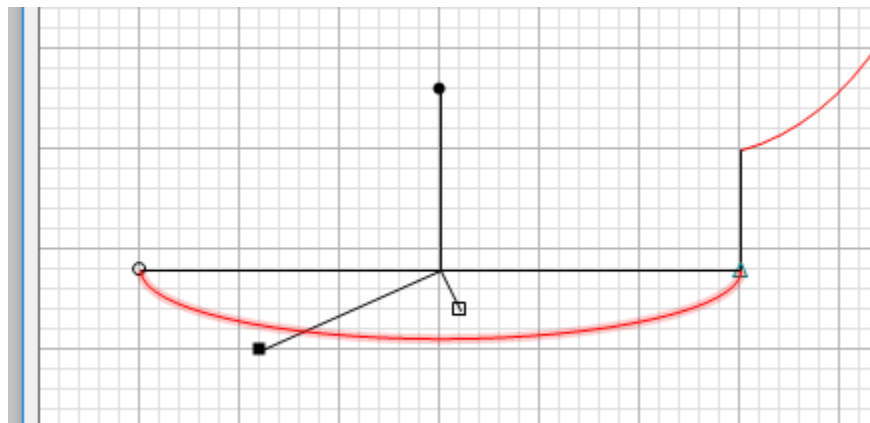
36. With the bottom Ellipse still active, click the Close Contiguous Path button . This will close the mug by linking the end point of the bottom ellipse with the first point created. Notice the prefix (MZ) is added to the last Ellipse in the Path List. The prefix denotes an automatically closed contiguous path.

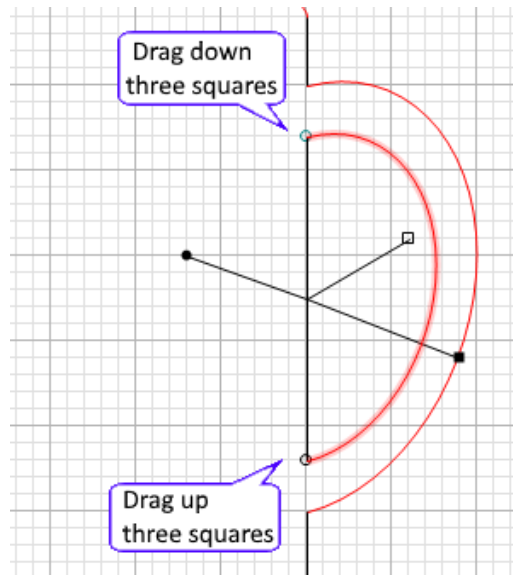37. Click **Deselect** (**Esc** key) to deselect the Line.
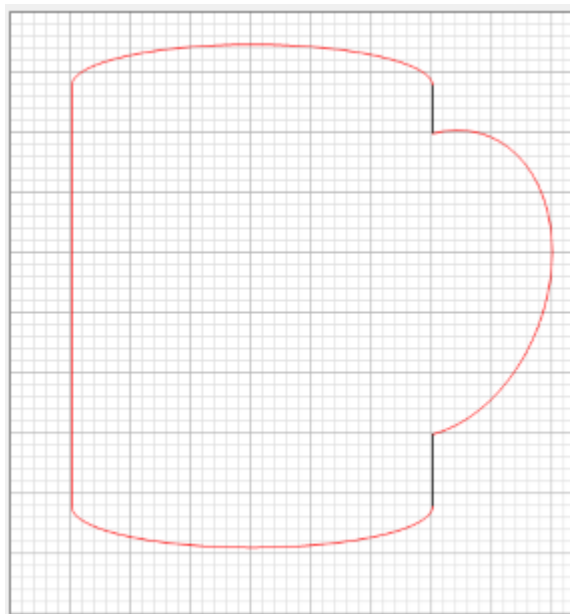

Inner Handle Detail

38. The Path List should have three Ellipses and two Straight Line entries:
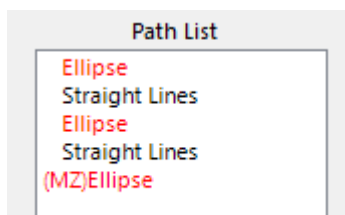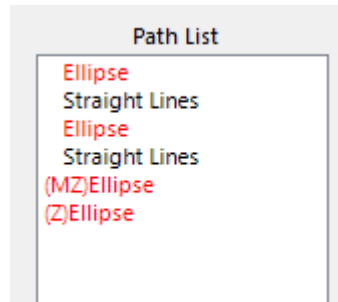
39. Click on the second Ellipse entry in the Path List to select the second Ellipse.

40. Clone the selected Ellipse with **Edit > Clone Path**.

41. Drag the top point of the new Ellipse down three grid squares.

42. Drag the bottom point up three grid squares.

43. Close this Ellipse by clicking the Closed Path button or **Ctrl + 2**. A red line will be drawn between the ends of the Ellipse indicating it has been closed.

44. Click **Deselect** (**Esc** key) to deselect it.
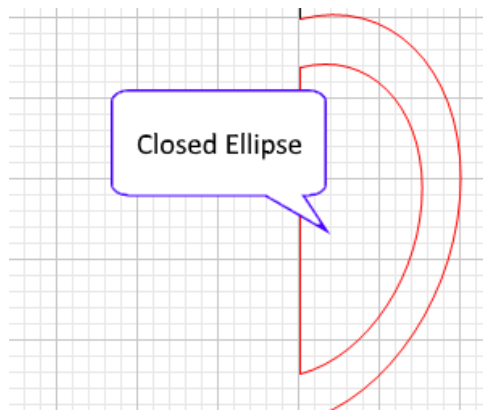
45. Notice that a Z in brackets has been added to the last Ellipse entry in the Path List. This denotes an automatically closed path.

Path List

Ellipse
Straight Lines
Ellipse
Straight Lines
(MZ)Ellipse
(Z)Ellipse

46. Toggle the Closed Path button back to its "off" state ∨ or **Ctrl + 2**.

Inner Brim Detail

47. Click the very first Ellipse entry in the Path List to select it.

48. Use **Edit > Clone Path** to duplicate the Ellipse.

49. Drag both the Start and End points inwards by two grid squares.
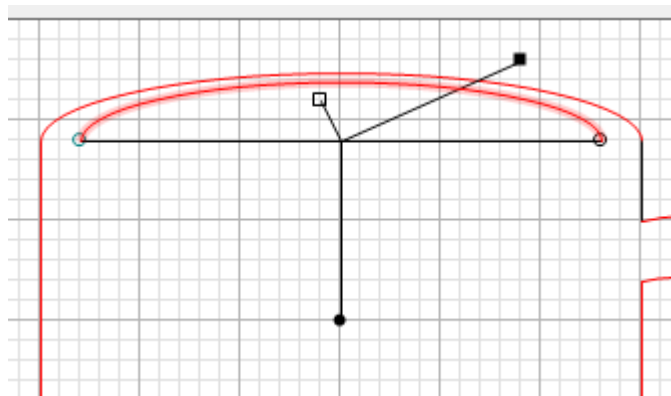
50. Drag the White square nub to X=190, Y=50.

51. Drag the Black square nub to X=270, 20.

52. Use **Edit > Clone Path** Line to duplicate the Ellipse.

53. Drag both Start and End points around to swap their locations or use **Edit > Flip Horizontal** and **Edit > Flip Vertical** to effectively reverse the Ellipse direction & orientation, then drag the Ellipse into place (Shift + click & drag on any nub).

54. Press **Deselect** (**Esc** key) to finish editing. There is no need to press **Add Path** (or the **Enter** key) here as Edit > Clone Path automatically creates an entry in the Path List for the cloned path.

55. The mug Shape is finished!

Saving the Mug

56. To save the mug as a paint.net Shape, first type in the name **CoffeeMug** in the Shape Name text box.
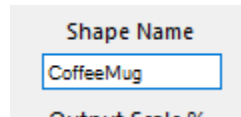
57. Next use **File > Export PDN Shape** to save the file into the paint.net/Shapes/ directory. The Shape name is used to pre-populate the filename.
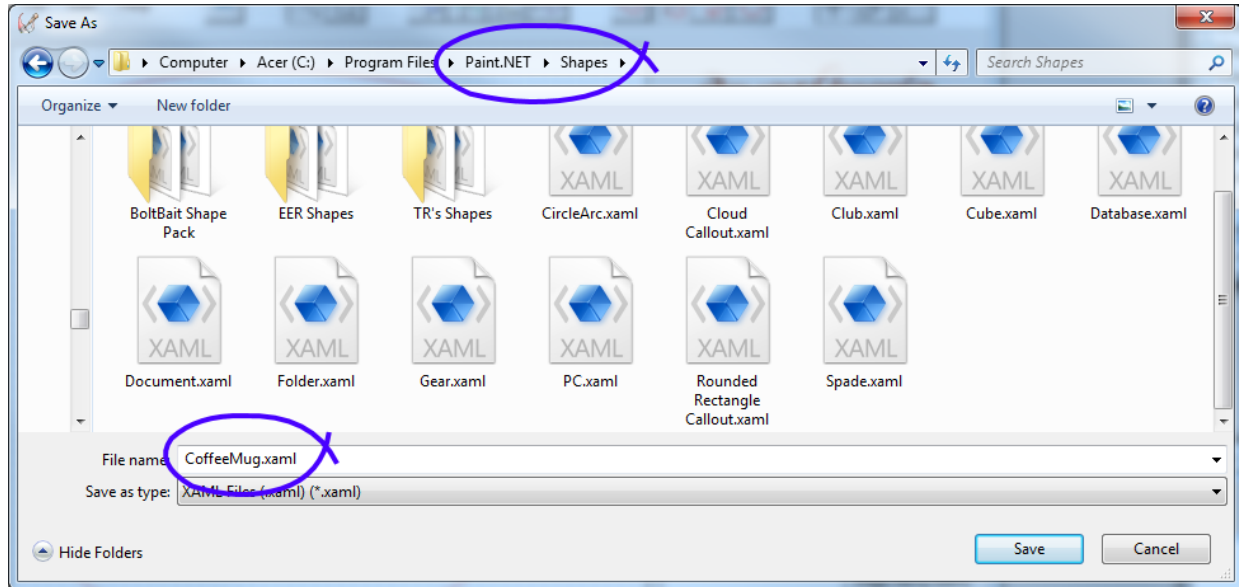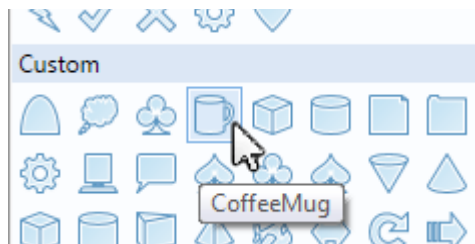
Using the Mug Shape

58. Once the Shape has been saved. Close the ShapeMaker dialog and exit paint.net.

59. Restart paint.net (to reload all the Shapes - including your new one)

60. Activate the Shapes tool. In the drop down menu, inside the Custom section, click on the entry "CoffeeMug" to select it.

61. Left click and drag out the Shape to create a new instance of your mug. The mug will be rendered in the Primary color and with the currently selected Brush Width.
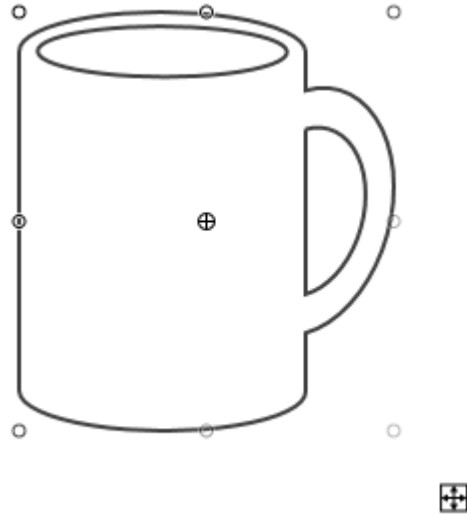
62. If you choose one of the Filled options in paint.net's Toolbar - the mug will be filled with the Secondary color.