The makeshape package*
testshape.tex
A Document for Testing the Package and Custom Shapes

Adrian P. Robson†

22 January 2013

Contents

1 Introduction

Here we discus the `testsample.tex` document that is a test bed for the makeshape package [1] and its sample shape. The package is in `makeshape.sty` and the sample shape is defined in `sampleshape.tex`. The test bed can be usefully adapted to work with any PGF [2] shape developed with the makeshape package.

*This document is part of makeshape 2.1, dated 2013/01/25.

†adrian.robson@nepsweb.co.uk

There are 11 test PGF pictures in the `testsample.tex` document, and we describe what each of these tests achieves, and what aspects are important for custom shapes.

2 The Tests

2.1 Basic Shape

This section shows the shape with its default size and separation options. Cardinal anchor points are show in red; the centre anchor in blue; and the text anchor in green. The green lines show the the text box size.

It tests the package's management of the text box, the text and centre anchors, and the shape's cardinal anchors. *Check that the background path is correct, and that the anchors are in the correct positions.*

2.2 Minimum Dimensions

This tests support for minimum width and height keys. Yellow lines mark the required sizes and centres, and green lines show the text box location. Cardinal anchors are shown in red.

Check that the background path has scaled properly to the correct dimensions; and the anchors are in the right places.

2.3 Inner Separation

This tests support for the inner separation keys. Inner separation is handled by the package and is included in the corrected text box. Green lines show the basic text box location, and blue lines show the corrected text box location. Cardinal anchors are shown in red.

Check that the shape has scaled properly under the influence of the two keys; and the anchors are in the right places.

2.4 Outer Separation

This section tests the outer separation keys. The actual shape is drawn in black. To shown the boundary of the outer separation surface, the shape is expanded and drawn in green. Anchors, which should be on this surface are displayed in red.

Check that the expanded green shape is well formed, and that the anchors are in the correct place.

2.5 Anchorborder

There are three tests that are applied to verify the behaviour of the package's `\anchorborder`, and the shape's anchor path.

2.5.1 External Points with Outer Separation and Minimum Dimensions

This tests the connection of an external point to the shape's surface. It exercises outer separation and minimum dimensions. The black surface is the shape without

any separation, and the outer green surface is where the outer separation surface should be. *Check that the black arrows touch the outer green surface; and that the green shape is correct.*

2.5.2 Internal Points with Minimum Dimensions

This tests the connection of an internal point to the shape's surface. It uses minimum dimensions. *Check that the red arrows touch the outer black surface, and that the black shape is correct.*

2.5.3 Angles with Outer Separation and Minimum Dimensions

This tests the 'connect a line at an angle' feature. Different x and y outer separations and minimum dimensions are used. The black surface is the shape without any separation, and the outer red surface is where the outer separation surface should be. *Check that the blue dots are on the outer red surface, and that the red shape is correct.*

2.6 Simple Node Connections

This tests simple node connection. *Check that the centre shape is connect to the surrounding eight shapes.*

2.7 Scaling

This is a simple scaling test that uses minimum dimensions to draw the shape at three sizes. There are guide lines showing dimensions for each size. *Check that all of the shapes are correct.*

2.8 Package Tests

2.8.1 Text Alignment and the Text Box

This verifies the operation of the text box macros. All combinations of test ascenders and descenders are used. It tests the package's management of the text box and the text and centre anchors. The left hand shapes are standard text boxes.

Check the shape's text boxes align with the standard boxes. Also that the blue centre anchor is at the yellow origin; and the green text anchor is in the correct place. Finally, the red cardinal anchors should be suitably located on the shapes boundary.

2.8.2 Inner, Outer and Angle for Shape Off Origin

This is a test for the correct operation of the package's `\anchorborder` with off-origin shapes. In particular, its use of the `\pgf@relevantforpicturesizefalse` and `\pgftransformreset` commands.

Check that the outer box 'closely' contains the picture, and that the green arrows and points are on the shape's boundary.

3 Reuse

The `testsample.tex` file can be adapted to test other shapes developed using the makeshape package. Find the following section:

```
%%-------------------------------------------------
%% file and shape being tested
\def\filename{sampleshape}   % file being tested
\input{\filename}            % It is a .tex
%%\usepackage{\filename}     % It is a .sty
\def\testshape{sample}       % shape being tested
%%-------------------------------------------------
```

Then change `sampleshape` to the new file name, and `sample` to the particular shape's name. Choose `\input` or `\usepackage` dependinmg on the file type.

The report's ending 'Package Test' section can be deleted, and additional shape specific tests added. The file's makeshape package oriented name and its heading comment should probably be changed as well.

References

[1] Adrian P. Robson, *The makeshape package and a method for creating custom shapes in PGF*, 2013.

[2] Till Tantau, *The TikZ and PGF Packages, Manual for version 2.10*, 2010. Available as `pgfmanual.pdf` from the Comprehensive TeX Archive Network.