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2025 HE Semester (May)

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LAB 1.3 Drawing SVGs

Due Monday by 23:59**Points** None

Aim

Demonstrate basic familiarity with creating and formatting SVG's by creating a webpage that displays an original arrangement of a variety of SVG shapes (i.e., a pattern created by you).

Purpose

In this unit you will learn to use D3 to create web-based visualisations. Scaleable Vector Graphics (SVG's) are the building blocks of D3 visualisations. In this exercise you will create and style some SVGs (see screenshot below). In the later exercises we will get D3 to generate the SVGs using some data to specify the SVG's characteristics (e.g., size, shape, colour)

In this exercise you will demonstrate basic familiarity with creating and formatting SVG's.

Drawing Shapes with SVG



COS30045 Data Visualisation
Semester 1 2020X
Joe Bloggs

Starter Code and/or Resources

none

Resources

Textbook:

- [Chapter 3 SVG Murray \(2017\) Interactive Data Visualisation \(2nd Ed\) on ProQuest](#)

Web Resources:

- [W3Schools](#)
- [codecademy](#)

Overview

To complete this Lab exercise you must have:

code demonstrating

- draw a set of at least 3 SVG shapes in various positions
- colour of shapes is customised (i.e., not default) (e.g., different stroke and fill colours, transparency, stroke width)

Step 1 Draw SVG shapes

Start with a basic html template with appropriately labeled meta data and title. The first step to creating an SVG is to create an SVG element which will act as a canvas on which our shapes will sit.

```
20 <body>
21
22 <h1>Drawing Shapes with SVG</h1>
23
24 <svg width="500" height="50">
25
26   <circle cx="25", cy="25", r="25"/>
27
28 </svg>
29
30 <footer>COS30045 Data Visualisation<br>
31   Joe Bloggs</footer>
32
33 </body>
34 </html>
35
```

In the body of the code, first create a 500 x 50 px SVG element with the SVG tag. To draw a circle you need to specify the type of shape you want to draw (i.e., a circle), the x and y of the *centre* of the circle and the radius.

If you run the code above it will become apparent that the default colour is black. Change the colour to something a bit more exciting. There are a number of [different ways to specify colour](#) ☞, to start with use a simple colour name which will specify a standard [websafe colour](#) ☞ (i.e., cornflowerblue). In the example below a background colour is also specified for the SVG element.

```
20 <body>
21
22 <h1>Drawing Shapes with SVG</h1>
23
24 <svg width="500" height="60" style="background-color:slategrey;">
```

```

25
26     <circle cx="25", cy="30", r="25" fill="cornflowerblue" />
27
28 </svg>
29 <br>
30 <br>
31 <footer style="color:grey">COS30045 Data Visualisation<br>
32   Joe Bloggs</footer>
33
34 </body>

```

There are a large number of [attributes that you can specify for a SVG](#), including animations. Make more circles demonstrating different styling. Do the same with some other shapes such as rectangles, ellipses and lines.



Drawing Shapes with SVG



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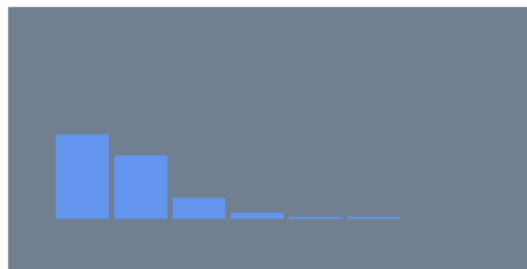
Colour is very important in data visualisation. Try to make your colour combinations harmonious! Try using [colorbrewer](#) for inspiration. Or w3schools' [HTML Colour 'Picker'](#).

Tip: If you position a shape outside of the main SVG canvas it won't be shown.

If you are feeling adventurous you could try hard coding our 2019 pet data using SVG rectangle shapes as per below.

Drawing Shapes with SVG

Pet ownership in 2019



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Next week we will start using D3 to bind data to SVG elements so that we can use the data to help draw the SVG without hard coding it or creating extra variables. For example, we can take a rectangle SVG and create a 'bar' with a height that correlates with the bound data value.