Scalable Vector Graphics (SVG) - A Hands-on Introduction
Practical Session 1 - Basic SVG

Introduction

The aim of this practical session is to give you some practice in constructing a simple picture using SVG. The picture will be developed further in later practical sessions.

The idea is to construct some simple "child-like" drawing using SVG.

Simple Shapes

Experiment with a number of SVG elements, including rectangles, circle, and path.

If you are not familiar with the behaviour of Bezier curves, you might find it helpful to experiment with the interactive demonstration in the files cubic.svg (uses the "C" path command) and scubic.svg (uses the "S" path command). You can vary the positions of the start point and two control points and observe the effect on the shape of the curve.

Construct a canal barge as shown in the top right of the picture below. It is suggested that you build the barge from the shapes shown on the left, plus text and image elements (the latter using as source the file "dolphin.png").

You may find it convenient to build the boat about 300 units wide and 50 units high.

Appearance control is covered in the second lecture and practical. For now, you may find it useful to use the styles defined in template.svg and handson.css. The style "boat" is defined for text. The styles in the table below apply to all types of primitive.

outline	stroke black width 3, no fill
thin	stroke black width 1, no fill
filled	no stroke, fill with colour "lemonchiffon"
both	stroke black width 3, fill with colour "lemonchiffon"

Styles are applied to a primitive through the class attribute, for example:

```
<circle cx="20" cy="20" r="10" class="both"/>
```

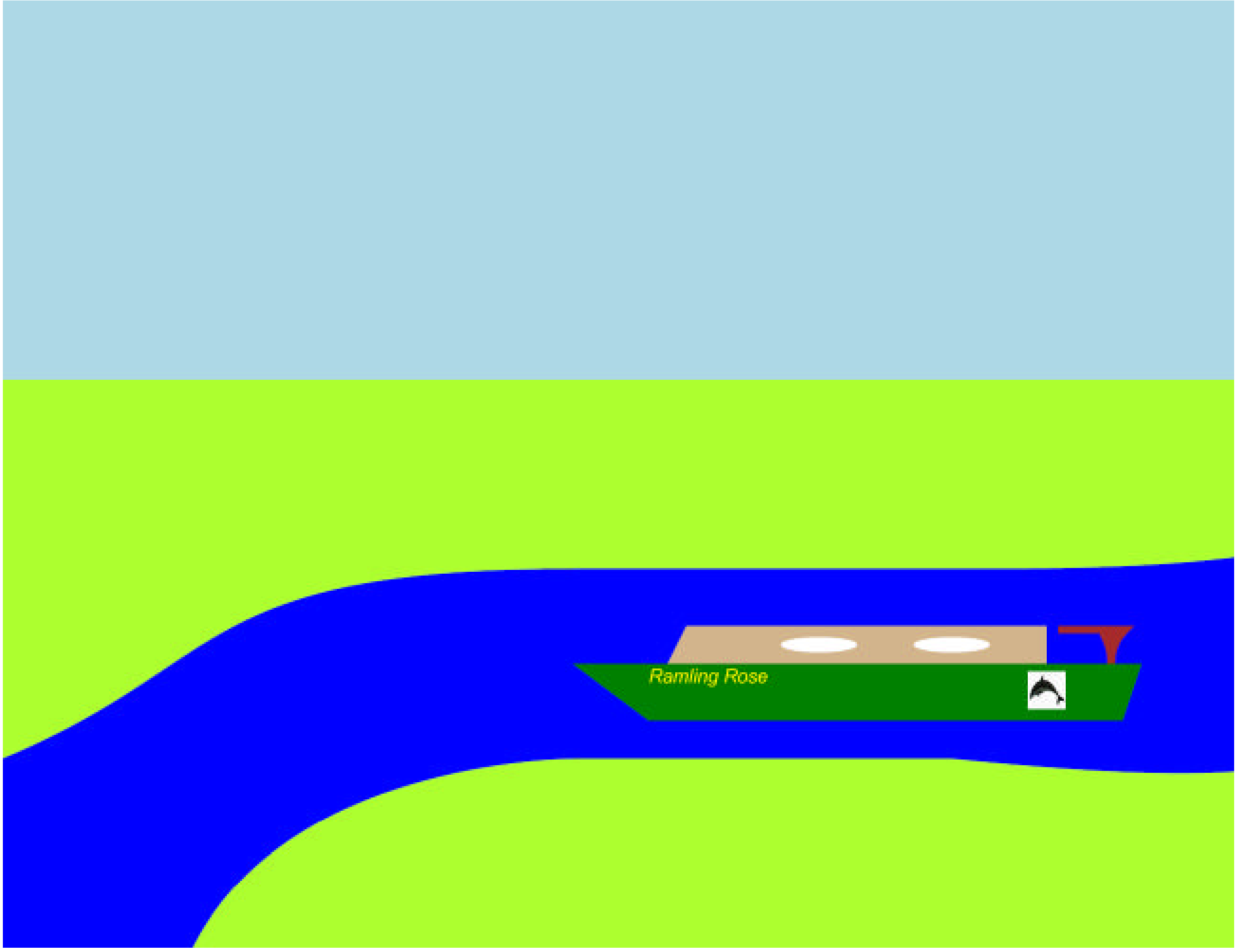
Ramling Rose

Hand-authored Picture

Construct a picture such as that show below, writing the SVG by hand. Your picture should include at least the following elements:

- Sky
- Boat
- Waterway (constructed using paths which incorporate curve elements

An example is shown below.



s

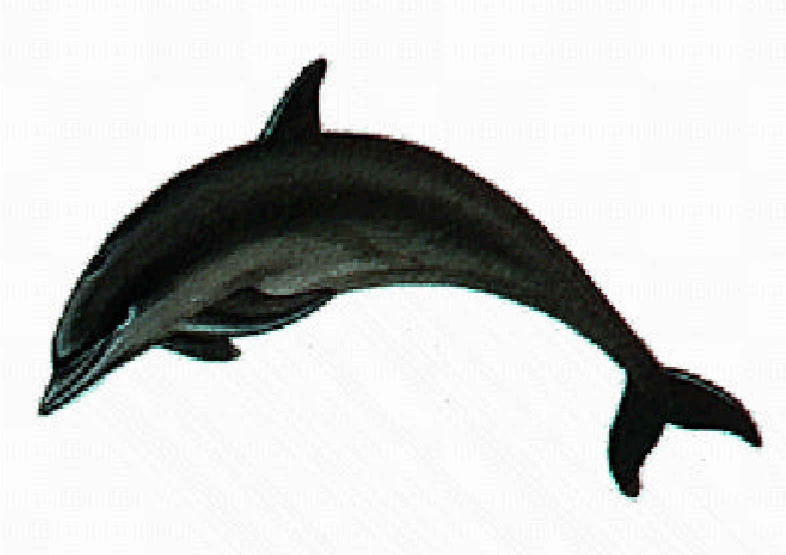
You will probably find that the boat you have drawn in the first part of this practical does not occupy the right region of the space for the second part. This is jumping ahead to the third practical, but you can move the boat by enclosing it inside a <g> element:

```
<g transform="translate(100,200)">
... code for boat
</g>
```

This code will move the boat by 100 units in x and 200 in y.

Experiment with curve elements, try to produce a smoother shape than the one in the figure above.

Try adding extra elements such as a dolphin!



The outline code for the dolphin will be provided dolphin2_begin.svg. This is defined by a path which is a sequence of spline segments. The control points of each spline have been made identical with the endpoints, so that the spline is rendered as a straight line. Try moving the control points to produce a more accurate approximation to the shape of a dolphin. The picture below shows the line outline (in the file dolphin_outline.png) superimposed on a dolphin shape. The dolphin can be reproduced by moving the control points in the C segments of the path. The dolphin's eye is a circle with style="fill:white; stroke:black".