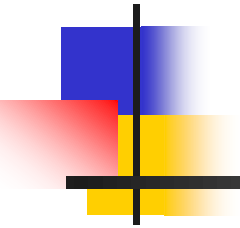
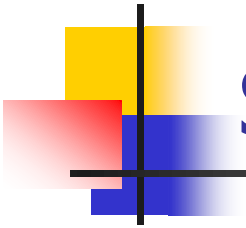


SVG basic features

Jaana Holvikivi,
Metropolia

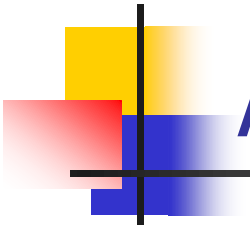


SVG Scalable Vector Graphics

- W3C recommendation 1.1 year 2003
- Mobile profiles SVG Basic and SVG Tiny
- 2D vector graphics
- Combination with styles (CSS)
- Dynamic interfacing using DOM & Javascript, XHTML
- Supported by newest browsers Firefox & Opera, but IE 8.0requires Adobe SVGViewer
- http://code.google.com/p/svg-edit/

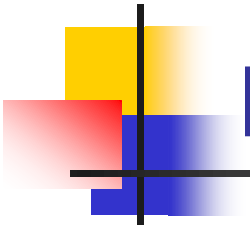
IE9 ja SVG

- Support for Scalable Vector Graphics (SVG) has become one of the most requested features for implementation in Internet Explorer, and is a powerful way to add high-fidelity, easily scalable visuals—from small and simple to large and complex— to a website without the need for a plug-in or separate viewer.
- With Internet Explorer 9, Microsoft is proud to introduce support for the basic SVG feature set. The SVG support in Internet Explorer 9 is based on the SVG 1.1 (Second Edition) specification recommendation (for desktop browsers). The following functionality has been implemented:
- Most SVG document structure, interactivity (scripting events), and styling (inline and through CSS)
- Many presentation elements and their corresponding attributes and DOM interfaces, including:
  - basic shapes
  - filling, stroking, marker, and color
  - gradients and patterns
  - paths
  - text
- Internet Explorer 9 supports the following methods to display SVG markup:
- SVG fragments in HTML5 embedding, without using a foreign object (that is, simply include an <**svg**> tag within your HTML)
- SVG as full document type (with .svg file extension)
- SVG in XML or XHTML (similar to the HTML5 method, only with XML or XHTML files)
- SVG as a CSS image
- SVG using the **object** element, as in the following (note the *type*, *height*, and *width* attributes): <object data="rect2.svg" width="100%" height="400px"
  type="image/svg+xml"></object>
- SVG using the **img**, **embed**, **iframe**, or **frame** elements, as in the following: <**embed** id="Smiley" src="smiley.svg" type="image/svg+xml">
- Lähde:
- http://msdn.microsoft.com/en-us/ie/ff468705.aspx#_Scaling_Vector_Graphics



Advantages of using SVG

- SVG files can be read and modified by a large range of tools (XML text files)
- SVG files are smaller and more compressible than JPEG and GIF images
- SVG images are scalable
- SVG images can be printed with high quality at any resolution
- SVG images are zoomable (and the image can be zoomed without degradation)
- Text in SVG is selectable and searchable (excellent for making maps)
- SVG works with Java technology



Basic features

Vector graphics, raster graphics & text

The painter's model:

- Viewing window
- Drawing surface, canvas; rendering order
- Coordinates

Grouping

Paths and curves

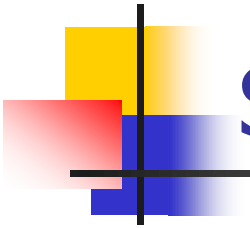
Example shapes :rectangle and circle

```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
   "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">

<svg width="100%" height="100%" version="1.1"
   xmlns="http://www.w3.org/2000/svg">
<rect width="300" height="200"
   style="fill:rgb(0,155,155);stroke-width:1;
   stroke:rgb(0,11,11)"/>

<circle cx="100" cy="50" r="40" stroke="black" stroke-
   width="2" fill="red"/>

</svg>
```



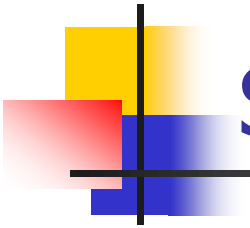
Shapes and positioning

Ellipse:
<ellipse cx="300" cy="150" rx="200" ry="80"
style="fill:rgb(200,100,50); stroke:rgb(0,0,100);stroke-width:2"/>

Positioning from top left corner

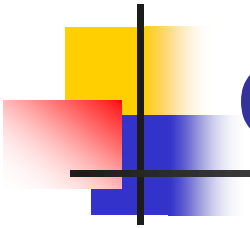
<rect x="20" y="20" width="250" height="250"
style="fill:blue;stroke:pink;stroke-width:5; fill-opacity:0.1;stroke-opacity:0.9"/>

Rounded corners:
<rect x="20" y="20" rx="20" ry="20" width="250" height="100"
style="fill:red;stroke:black; stroke-width:5;opacity:0.5"/>



SVG drawing features

- Shapes: rectangle, circle, ellipse, line, polygon, polyline, path
- Filters
- Gradients, filling
- Text
- Bit maps, masking
- Animation



Geographical data and SVG

- GML data can be transformed into SVG by special tools
- MapInfo and ESRI offer maps in SVG- format
- Google Maps API has an SVG option
- Maps can be modified on client work station:
  - Colors, dataset
  - Layer control
  - Zooming, moving the image