GP2
Generative Programming

Scalable
Vector Graphics
(SVG)

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Scalable Vector Graphics

- Standard for describing two-dimensional vector graphics
- Published in 2001/09 by W3C
- Supported by most web browsers (except MS IE: Use Adobe's SVG plug-in, e.g.)

- Animations: Synchronized Multimedia Integration Language (SMIL)
- Embedding of scripts is possible

SVG's Basis: XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE svg>
<svg xmlns="http://www.w3.org/2000/svg"
    width="1000" height="600"
    viewBox="0 0 5 5">
  <rect id="black"
        fill="#000"
        width="5" height="3"/>
  <rect id="gray_i"
        fill="#444"
        width="5" height="2" y="1"/>
  <rect id="gray_ii"
        fill="#888"
        width="5" height="1" y="2"/>
  <rect id="gray_iii"
        fill="#ccc"
        width="5" height="1" y="3"/>
  <rect id="white"
        fill="#fff"
        width="5" height="1" y="4"/>
</svg>
```
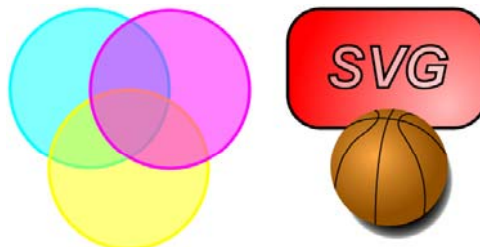
Types of Elements

- Vector graphics
  - Compositions of graphical primitives

- Raster graphics
  - Bitmaps

- Text

Graphical Primitives

- Circle
  - `<circle cx="100" cy="100" r="50" />`

- Ellipse
  - `<ellipse cx="100" cy="100" rx="50" ry="20" />`

- Rectangle
  - `<rect x="100" y="100" width="100" height="200" />`

- Line
  - `<line x1="100" y1="100" x2="200" y2="200" />`

Graphical Primitives

- Polygon
  - `<polyline stroke="#000" stroke-width="0.1" fill="none" points="-2.0 , 2.0 -1.0 ,-1.0 -0.5 , -0.5 -0.25 , 0.25 0.0 , -1.5 0.0 , 1.5 0.25 , -0.25 0.5 , 0.5 1.0 , 1.0 2.0 , -2.0 "/>`

- Text
  - `<text x="100" y="100" font-size="40px"> Hello world!</text>`