Developing Flashy Mobile Applications Using SVG and JSR 226

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Session Goal

Learn how to utilize SVG content developed by graphic artists to create good-looking and interactive Java™ Platform, Micro Edition (Java ME platform) applications

Agenda

Introduction to SVG

Java Specification Request (JSR) 226—Enabling SVG in Java ME applications

Tools for developing SVG/JSR 226 applications

What is coming

Summary

Q&A

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Introduction to SVG

- Vector graphics, animations and events in XML
- W3C standard
- SVG Tiny Viewer 1.1, 1.1+ and 1.2
- 150+ device types on the market, 225M+ devices
- Limitations:
  - No access to device features (camera, messaging…)
  - Accessing remote data might be difficult
  - No secure access to remote data

Source: http://www.svg.org

A Simple SVG File Example

```
<?xml version="1.0" encoding="utf-8"?>
<svg width="240" height="320" viewBox="-120 -160 240 320"
    xmlns="http://www.w3.org/2000/svg"
    version="1.1" baseProfile="tiny">

    <g id="Scene_1">
        <rect x="-120" y="-160" width="240" height="320"
              fill="#5382a1" stroke="#ff0000"/>
        <rect x="-110" y="-150" width="220" height="300"
              fill="#ED9B09">
              <animateTransform attributeName="transform"
                  type="translate" from="0,0" to="60,-40"
begin=”1s” dur="0.5s" fill="freeze"/>
        </rect>
    </g>
</svg>
```

DEMO

SVG Graphics in Action

SVG Tiny Viewer 1.1
7.6 kBytes

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JSR 226—Enabling SVG in Java ME Applications

Where the two worlds meet

- JSR 226
  - Specification led by Nokia
  - Finalized in 2005
  - Supported by Ericsson, Motorola, Nokia, Sony Ericsson, Sun, Symbian…
  - Part of Mobile Service Architecture (JSR 248)
- SVG enables using declarative UI/graphics
- Java ME platform enables accessing device features
- Over 30 devices with JSR 226 support already available

Source: http://www.svg.org

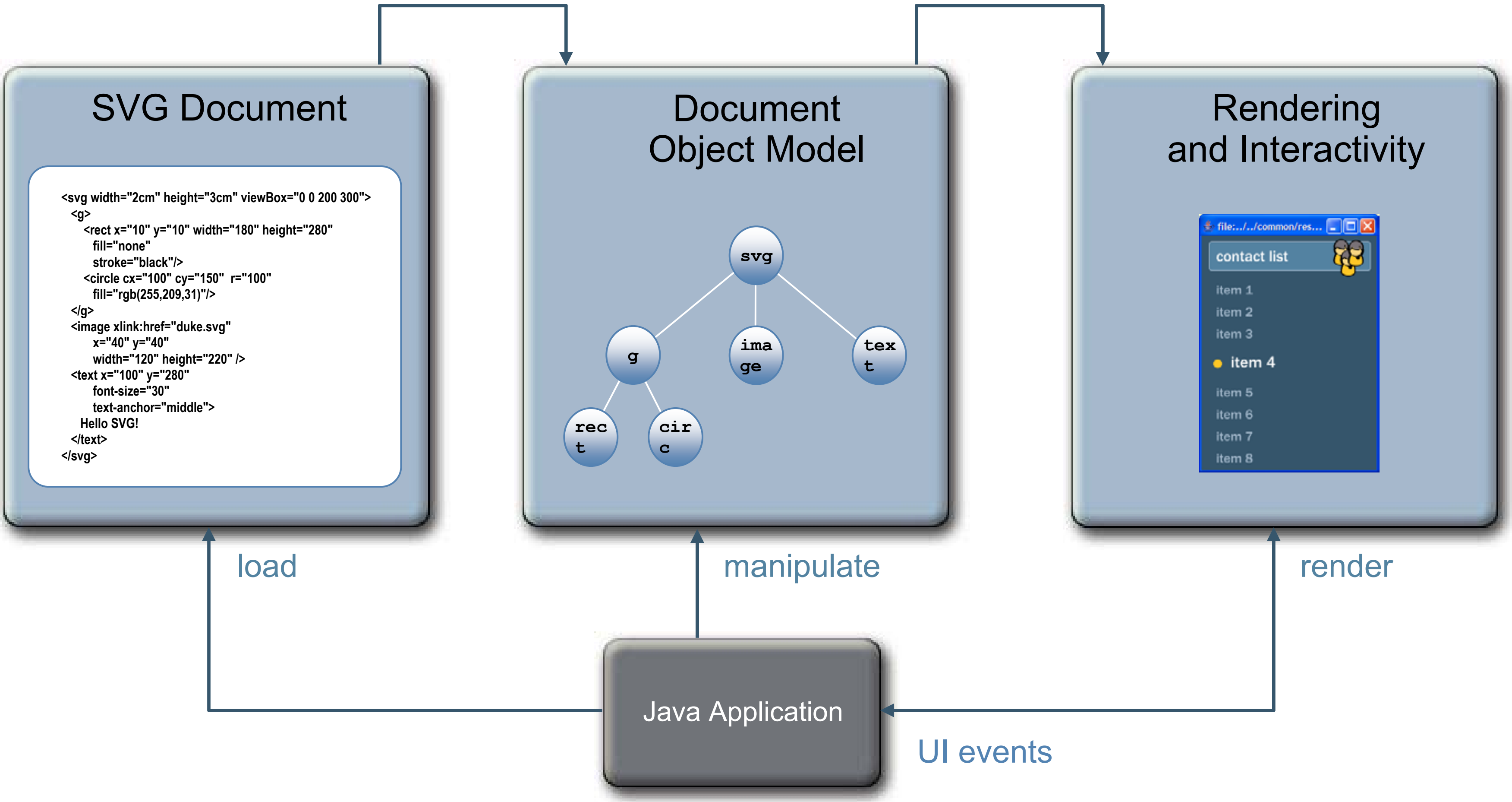
Showing SVG Graphics Using JSR 226

```
// load image
SVGImage svgImage = (SVGImage)ScalableImage.createImage(
       SVGDemo.class.getResourceAsStream("/simple.svg"),
             null);

// create animator
SVGAnimator animator = SVGAnimator.createAnimator(svgImage);

// get display component (Canvas)
Canvas canvas = (Canvas)animator.getTargetComponent();

// display the component
display.setCurrent(canvas);

// play the animation
animator.play();
```

DEMO

Java ME Applications Utilizing SVG

JSR 226 Application Model



```
<svg width="2cm" height="3cm" viewBox="0 0 200 300">
  <g>
     <rect x="10" y="10" width="180" height="280"
        fill="none"
        stroke="black"/>
     <circle cx="100" cy="150"  r="100"
        fill="rgb(255,209,31)"/>
  </g>
  <image xlink:href="duke.svg"
        x="40" y="40"
        width="120" height="220" />
  <text x="100" y="280"
        font-size="30"
        text-anchor="middle">
    Hello SVG!
  </text>
</svg>
```

JSR 226 Flexibility

It isn’t “All or Nothing”

- Using SVG is not “all or nothing”
- Several levels of SVG usage:
  - Use SVG rasterized to bitmaps during development time (JSR 226 not needed)
  - Pre-render SVG to bitmap on device and use bitmaps
  - Use “static” SVG graphics rendered to Canvas
  - Use fully dynamic SVG graphics together with events

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Various Levels of Using SVG
in Java ME Applications

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Authoring Tools for SVG Content

The design domain

- Drawing tools producing SVG graphics:
  - Adobe Illustrator, Corel Draw, Inkscape, Sketsa, Hyperion Mobile Designer…
- Animation tools:
  - Ikivo Animator, Hyperion Mobile Designer…
- Interaction tools:
  - Adobe GoLive, Hyperion Mobile Designer…

Java ME Platform/JSR 226 Developer Tools

The code domain

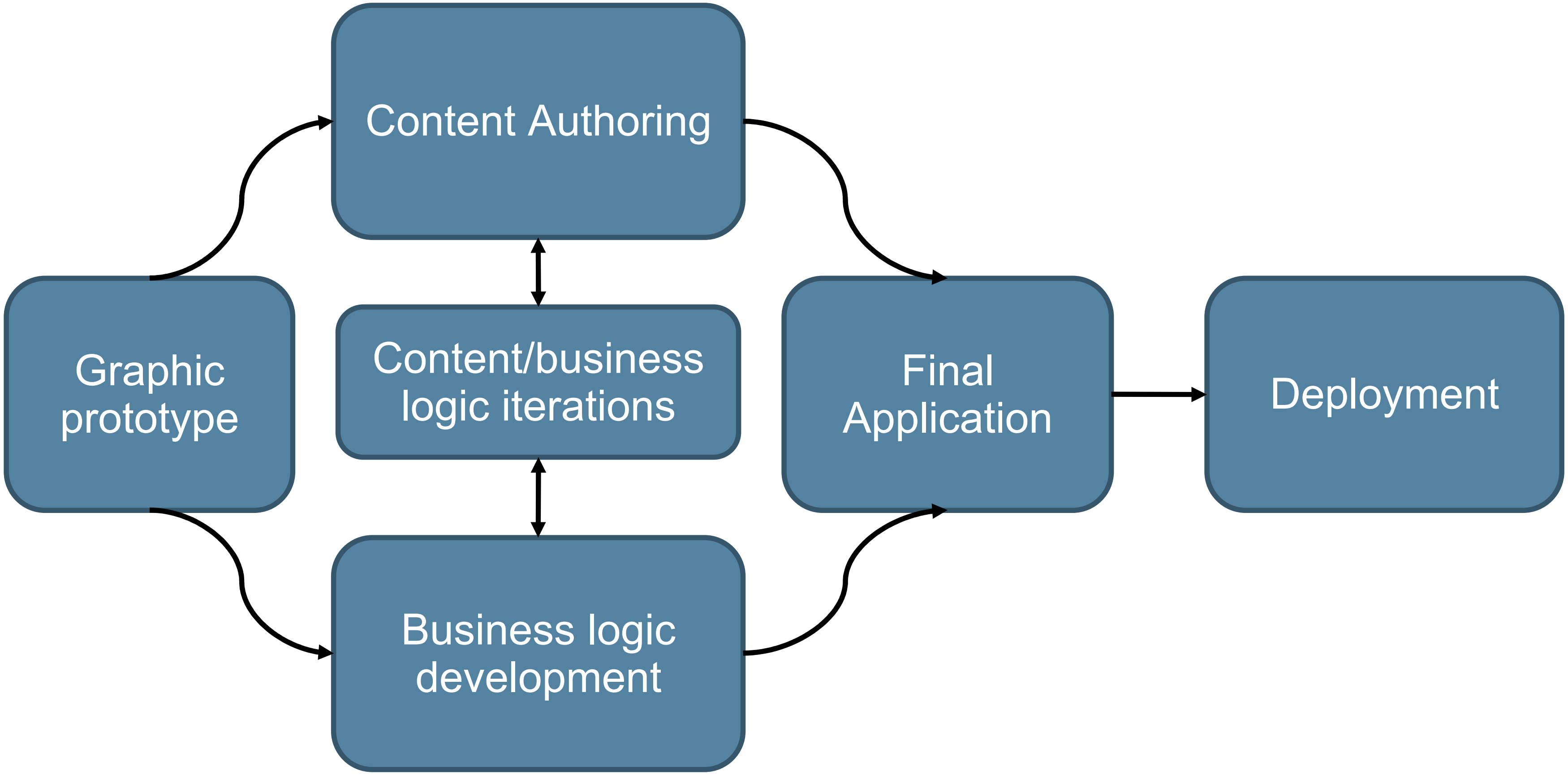
- Any IDE supporting Java ME platform is a good start
- SDK supporting JSR 226 is required:
  - Sun Java Wireless Toolkit 2.5
  - Nokia Series 40, 3rd edition, Feature Pack 2 SDK
  - Nokia S60, 3rd edition, Feature Pack 1 MIDP SDK
  - Others…
- A device supporting JSR 226:
  - Motorola, Nokia, Sony Ericsson…

Advanced Environment for Creating SVG/JSR 226 Applications

Combining the powers

- NetBeans™ Mobility Pack
  - Provides specific support handling SVG graphics and for developing JSR 226 applications
  - Integrates with SVG authoring tools
- Hyperion Mobile Designer
  - Provides support for creating interactive and animated SVG graphics
  - Based on NetBeans Platform
  - Integrates with NetBeans Mobility Pack

Typical Workflow for SVG/JSR 226 Application Development



DEMO

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- More devices with JSR 226 support
- SVG Tiny Viewer 1.2
- JSR 287
- Advanced integration of NetBeans Mobility Pack and Hyperion Mobile Designer

Summary

- SVG is here!
- JSR 226 enables Java ME platform developers to easily use SVG content created by graphics artists
- SVG is already widely used for UIs on devices
- JSR 226 is part of MSA (JSR 248)—The next generation mobile platform
- First class tools for developing SVG/JSR 226 Java ME applications are available

For More Information

- Links:
  - SVG specification: http://www.w3.org/TR/SVG/
  - JSR 226 specification: http://www.jcp.org/en/jsr/detail?id=226
  - SVG.org homepage: http://www.svg.org
  - NetBeans IDE homepage: http://www.netbeans.org
- Other JavaOne Sessions:
  - TS-5743—Graphical, Scripted, and Animated User Interfaces on Java Platform, Micro Edition (Java ME)
  - TS-5626—Data Binding and Java ME

Q&A

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