JavaFX 8

Weiqi Gao, November 13, 2014
St. Louis Java Users Group

About the Presenter

- Java developer since 1998

- Principal Software Engineer @OCI

- Co-author of Pro JavaFX 8

- Steering committee of St. Louis JUG

- weiqigao.blogspot.com and @weiqigao

Agenda

- Introduction

- SceneBuilder

- JavaFX 3D

- Printing
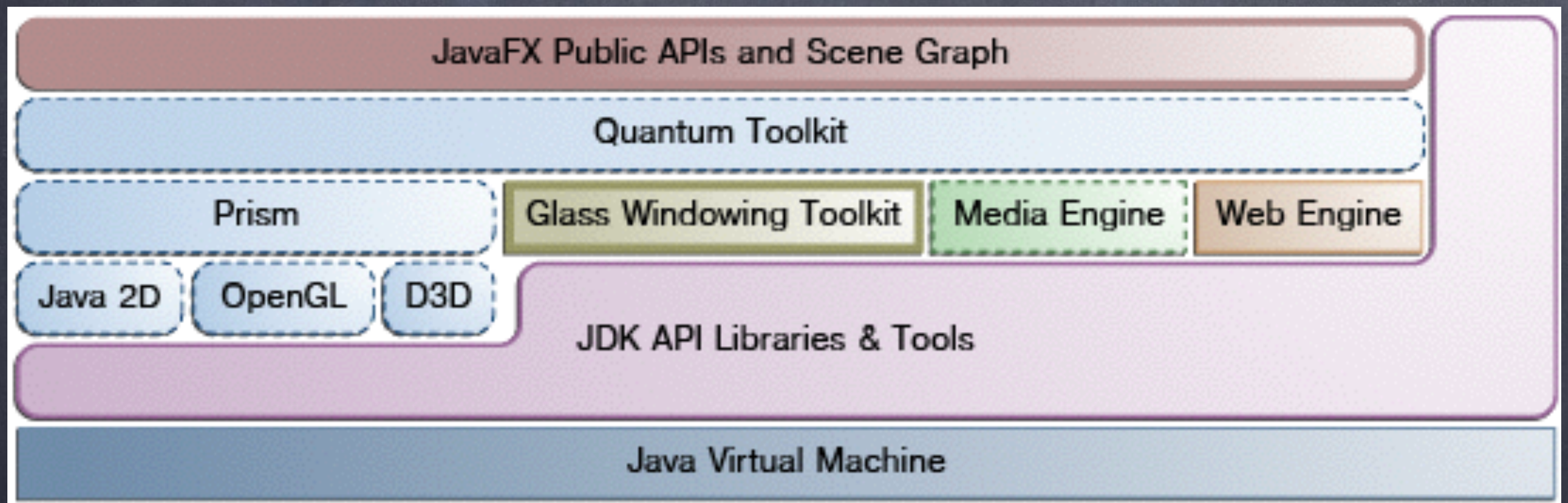
- CSS Support

- iOS, Android, and Raspberry PI

History

- JavaFX 1.0 (12/08, JavaFX Script, Win, Mac)

- JavaFX 1.1 (02/09, Mobile)

- JavaFX 1.2 (06/09, Linux/Solaris, charting)

- JavaFX 1.3 (04/10, End of line for 1.0)

- JavaFX 2.0 (10/11, Java API, WebView, FXML)

- JavaFX 2.1 (04/12, Mac support)

- JavaFX 2.2 (08/12, Linux support, Canvas/ImageOps)

- JavaFX 8 (03/14, 3D, Printing & Rich Text, Part of JRE)

Architecture

SceneBuilder

- Open Source, Written in JavaFX

- GUI Painter of Scenes

- Serializes to FXML format

- Runtime FXMLLoader loads FXML

- Supports Controllers with backing code

SceneBuilder

- Integrated into IDEs (IDEA 14.0, etc.)

- Provide visual guides as controls are dragged in a container

- Provide hierarchical (document) view

- Property, layout, Code panels

- Supports user defined components

FXML Files

- Declarative UI information

- FXMLLoader loads FXML files into a Node

- Can have Companion Controller class

- Hand (IDE) editable as well as SceneBuilder editable

- fx:controller, fx:id, fx:define, fx:reference, fx:constant, fx:value, fx:script, fx:root, fx:include, fx:factory

JavaFX 3D

- Hardware accelerated

- Shape3D

- Primitives: Sphere, Cylinder, Box

- Custom shapes: MeshView, TriangleMesh

- Support materials, lights, and cameras

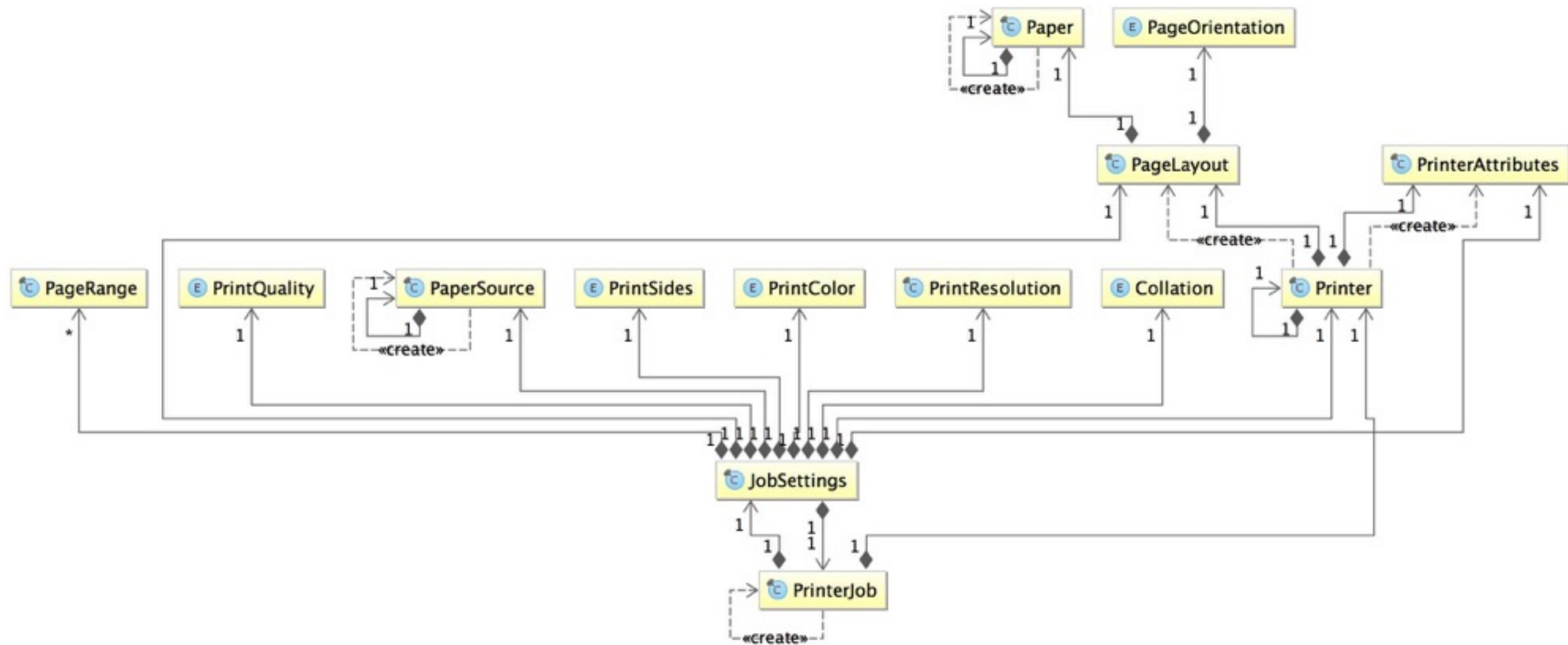- Importing 3D models generated elsewhere

JavaFX 3D

- ParallelCamera

- PerspectiveCamera

- AmbientLight

- PointLight

- PhongMaterial

  - diffuseColor, specularColor,

  - diffuseMap, specularMap,

  - bumpMap, selfIlluminationMap

Printing

CSS Support

- Borrowed from Web (CSS 2.1, 3)

- Split designer and developer workflow

- Stylesheets files or inline styles

- "-fx-" prefix for all properties

- Type, class, id selectors

- JavaFX Extensions

- Custom components can support CSS (javafx.css API)

CSS Support

- System default style: modena

- Find modena.css in jfxrt.jar

- Stylesheets can be specified in code or FXML

- Controls, containers, charts, etc. are CSS stylable
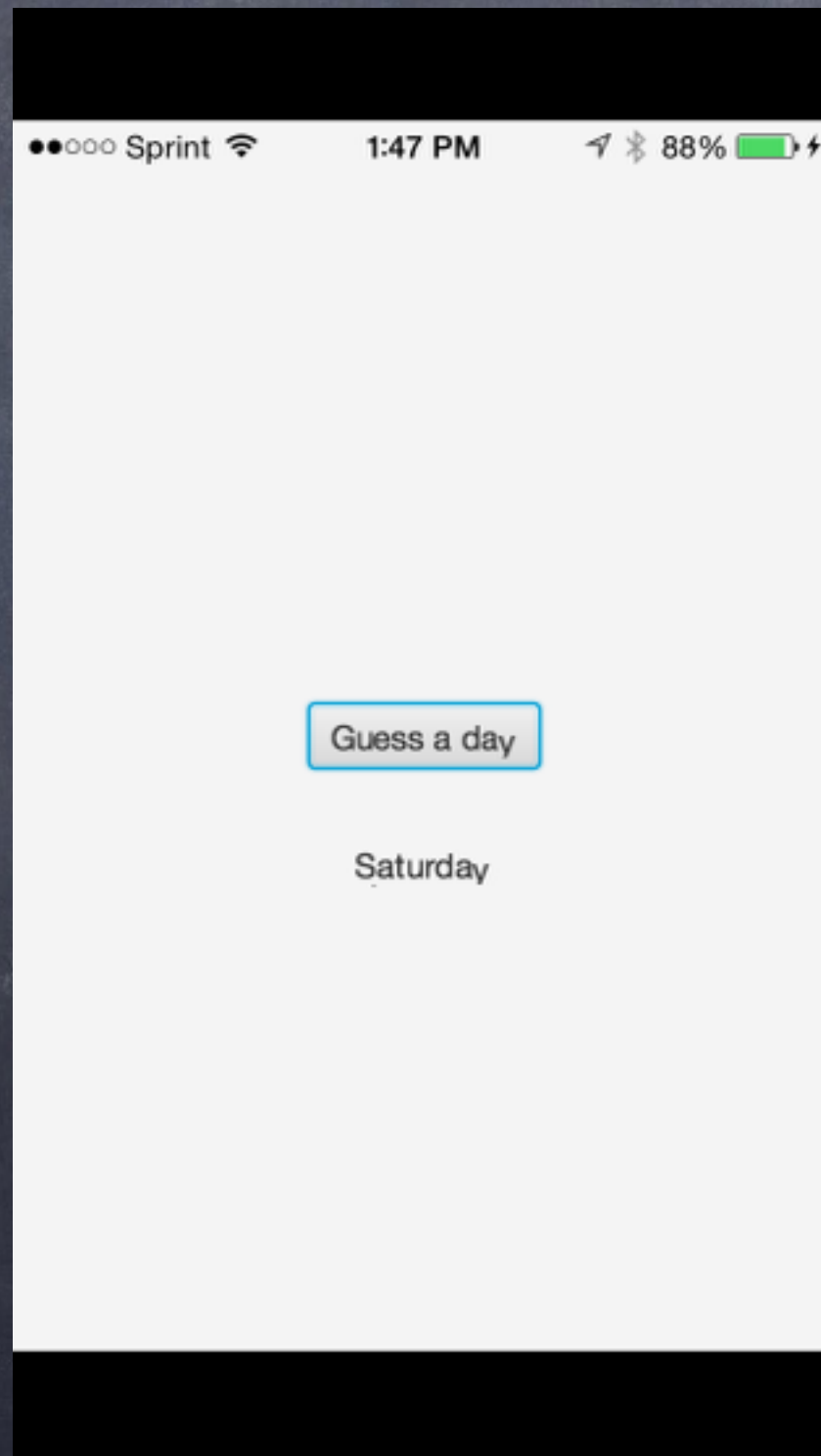
- Supports BSS files

JavaFX on iOS

- Apple iOS Developer Program, signing identities, provisioning profile

- RoboVM http://robovm.com

- Eclipse plugin, command line tool, Maven plugin

- Compiles Java byte code to native

- Run in simulator, device

- Submit to App Store

JavaFX on iOS

JavaFX on Android

- Needs the ADT

- The Dalvik SDK for JavaFX

- Compile JavaFX app with java

- Compile to *.apk using ADT tools

- Run in Simulator, device

- Upload to Play Store

On Raspberry PI

- Install raspbian

- Install JDK for ARM

- Feels and works essentially like any other Linux system.

Resources

- http://www.robovm.com (RoboVM)

- http://javafxports.org/page/home (Dalvik SDK for JavaFX)

- http://www.apress.com/9781430265740 (Pro JavaFX 8)

- https://bitbucket.org/projavafx/projavafx8 (Source code for Pro JavaFX 8)