

CISC 3115 TY3

# C29b: Overview of JavaFX

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# Outline

- Overview of JavaFX
  - Features and architecture of JavaFX

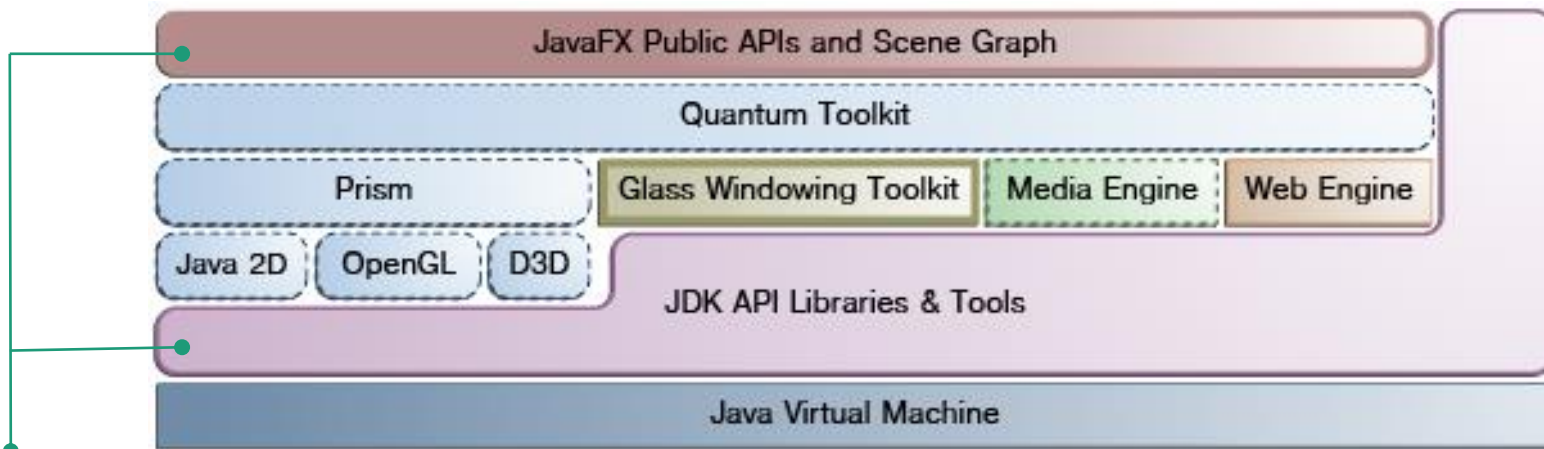
# GUI Application in Java

- JavaFX is a Java API
  - “JavaFX is a set of graphics and media packages that enables developers to design, create, test, debug, and deploy rich client applications that operate consistently across diverse platforms.”
  - Shipped with JDK 8
  - Become an independent module since JDK 11
- Designed to replace Java AWT and Swing

# JavaFX Overview

- A Java API
  - Consisting of classes & interfaces in a few Java packages
  - Dealing with graphics and media
  - for creating rich client applications
    - whose look & feel are customizable via Cascading Style Sheets (CSS)
  - cross platforms
    - Desktop, mobile, embedded, and the Web

# JavaFX Architecture



- Develop apps with JavaFX public APIs and JDK API libraries and tools
- Powered by JVM, Graphic System, and Windowing toolkit

# Features of JavaFX

- Graphics: supports *DirectX* and *OpenGL*, software render fallback (via Prism, [OpenGL](#), [Direct3D](#))
  - 3D graphics: supports light sources, material, camera, 3-D shapes and transformations; Common visual effects
- Interfacing with native operating systems to provide windows management, timers, and event queues (*Glass windows toolkit*)
- Multimedia: support playbacks of web multimedia content based on the [GStreamer](#) multimedia framework (*Media engine*)
- Web: provides a Web viewer and full browsing functionality based on [WebKit](#) (*Web engine*)
- Multi-threaded: concurrent application, Prism render, and media threads (*Quantum toolkit*)
- Text: supports [bi-directional text](#) and [complex text scripts](#)
- I/O devices: supports multi-touch and Hi-DPI
- Build-in UI controls, layouts, themes, and *CSS* styling
- Swing interoperability
- [JavaFX API](#): application lifecycle; stage; scene; transition & animation; canvas; print; event; css; fxml; collections; utils; Java beans; javascript

# JavaFX API

- Full package list at <http://docs.oracle.com/javase/8/javafx/api/toc.htm>
  - `javafx.application`: provides the application life-cycle classes.
  - `javafx.stage`: provides the top-level container classes for JavaFX content.
  - `javafx.scene`: provides the core set of base classes for the JavaFX Scene Graph API.
  - `javafx.scene.control`: prebuilt UI control classes
  - `javafx.scene.text`: provides the set of classes for fonts and renderable text.
  - `javafx.scene.layout`: prebuilt container classes defining user interface layout.
  - .....

# Questions?

- An overview at 10,000-foot altitude