



JavaFx™ GUI Development



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What is JavaFX?

- ▶ Rich Internet Application (RIA) Development Platform
- ▶ An API included in Java SE 8 for UI Development
- ▶ Similar in feel to other UI toolkits (Swing, etc)

Why JavaFX?

- ▶ Simplifies Application Development (Easy)
- ▶ Cross Platform
- ▶ Uses MVC Design Pattern
- ▶ Drag and Drop Application
- ▶ Integrates easily with existing Swing Applications (Compatible)
- ▶ High Performance hardware, ...and more



JavaFX!

What you should know?

- ▶ Java Programming
- ▶ Classes and Objects in Java
- ▶ Integrated Development Enviroments (IDE)
- ▶ Optional: CSS (Cascading Style Sheet)

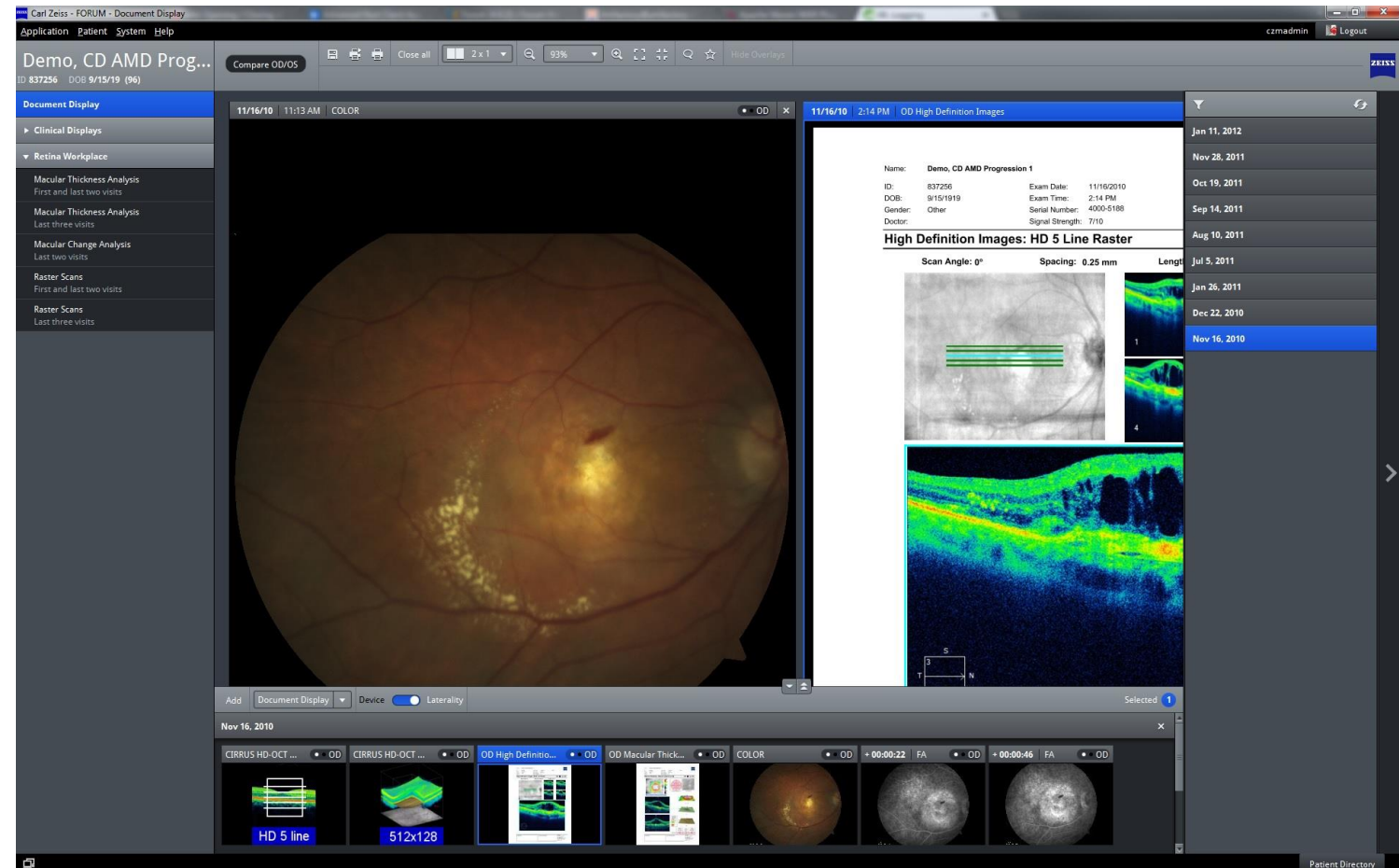
Real-world applications

Real-world applications

1- Carl Zeiss Meditec AG

It is an archive software for clinical patient data in ophthalmology

Dev by: **Saxonia Systems AG**



Real-world applications

2- CuratorOR Caliop

It is being installed in wall-mounted. used to look up patient data, to document the surgery, and to store the produced documents in the central hospital database.

Dev by: **EIZO GmbH**

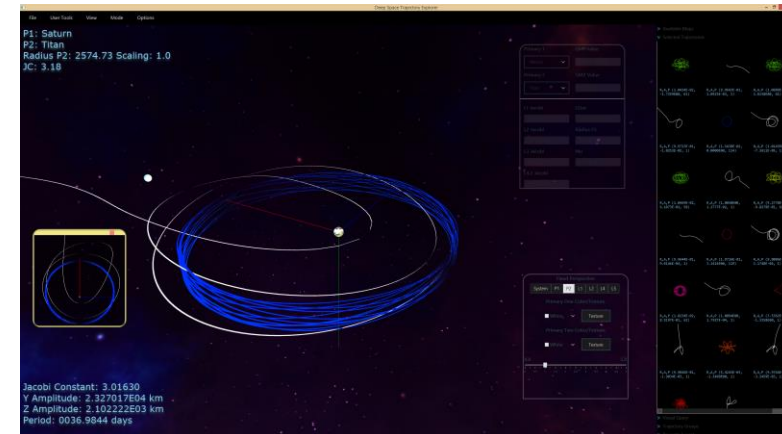
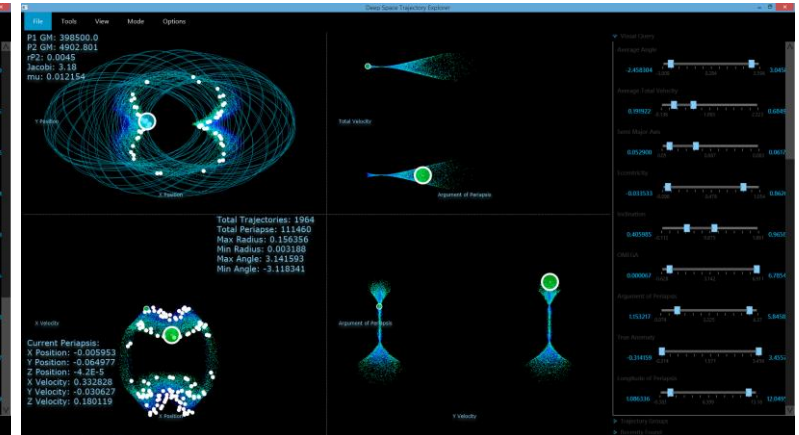
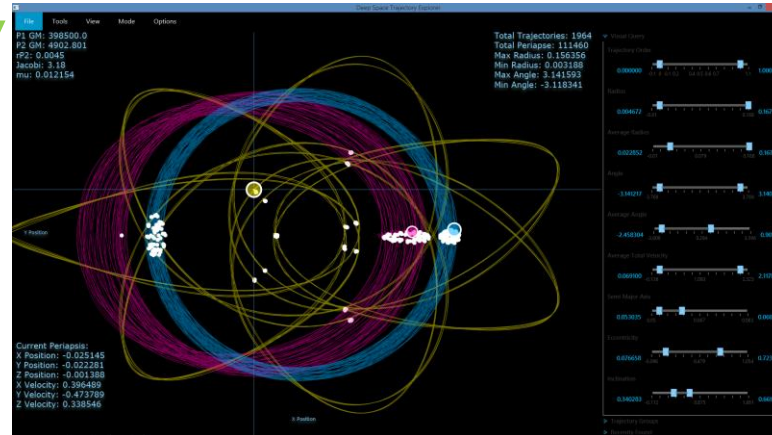


Real-world applications

3- Deep Space Trajectory Explorer

Custom JavaFX tools have been built that provide high performance, interactive analysis for dimensional data sets.

Dev by: **NASA**



JavaFx - Features

- ▶ Has a library written as a Java API
- ▶ Uses the MVC (Model View Controller) Design pattern
- ▶ Supports the use of CSS and FXML
- ▶ Separates presentation from application logic using FXML

Where can learn JavaFX?



- Mohammed Al-Shawwa
- Khalid ESSAADANI – خالد السعداني
- TheNewBoston
- Genuine Coder
- KeepToo, Rashid Coder, Houari Zegai, Benny Coder, ...



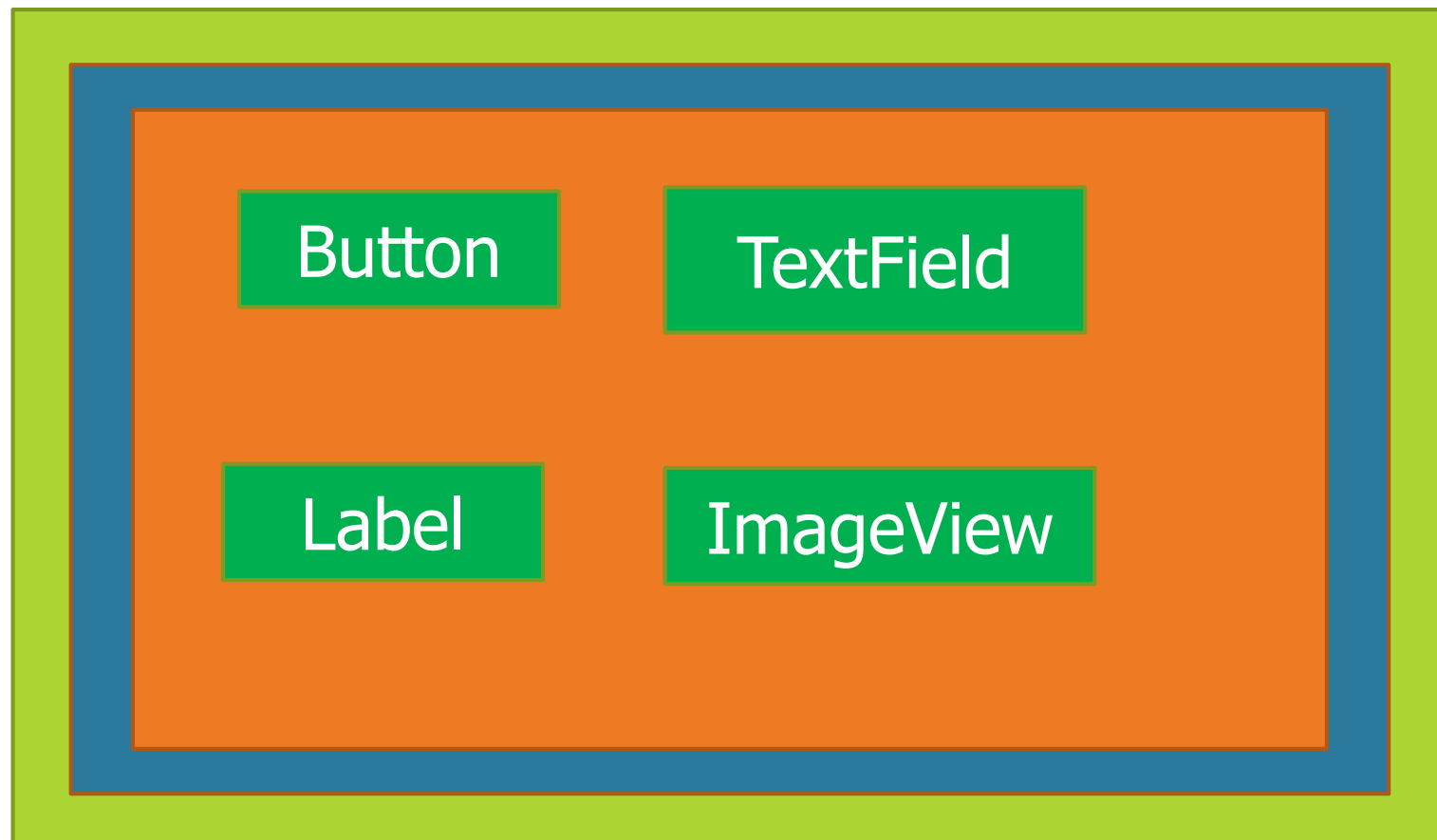
WebSites

- docs.oracle.com/javase/8/javafx/api
- harmash.com/javafx
- www.tutorialspoint.com/javafx
- zetcode.com/gui/javafx
- ...

Basic information

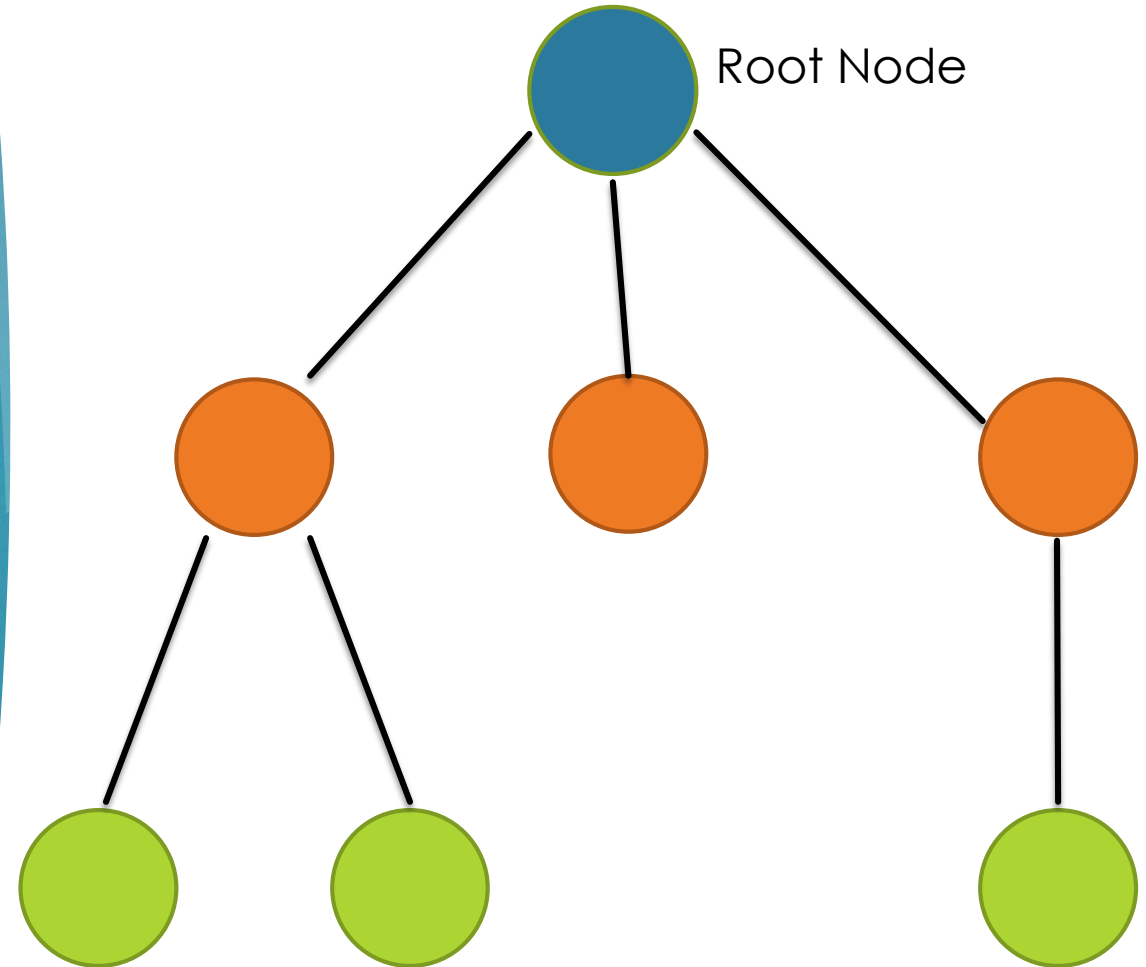
Architecture of JavaFx

- Stage
- Scene
- Root Node
- Nodes



JavaFx Scene Graph

- It depicts hierarchical tree of nodes
- Each element is called a **Node**



JavaFX Scene Graph

- ▶ The root node is the base node and has no parent nodes
- ▶ Other nodes have one parent and zero or more children
- ▶ Nodes have an id, style class, and bounding volume

JavaFX Nodes

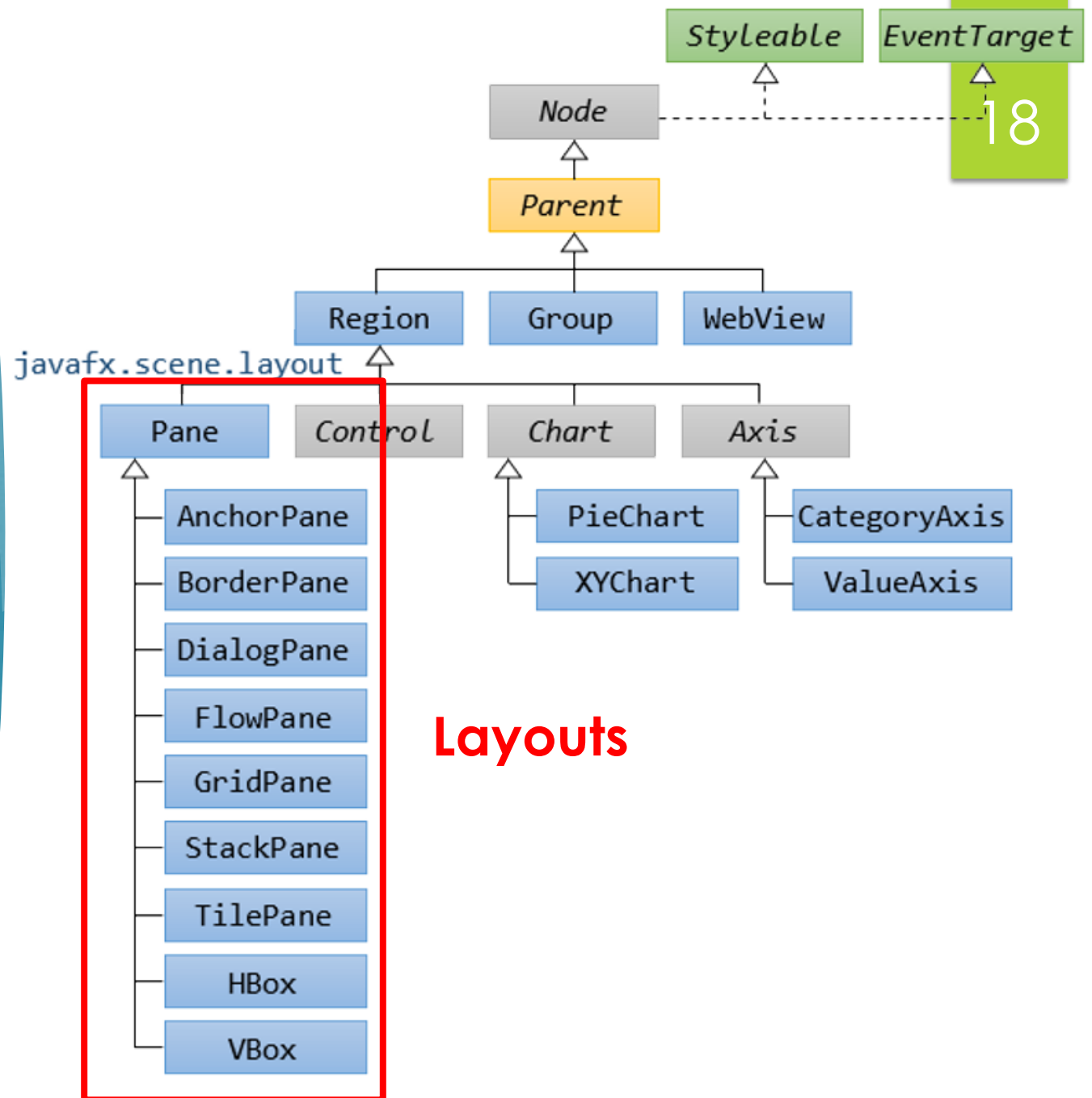
- ▶ Effects (blurs, shadow, ...)
- ▶ Opacity
- ▶ Transforms
- ▶ Event handlers
- ▶ ...

Layouts



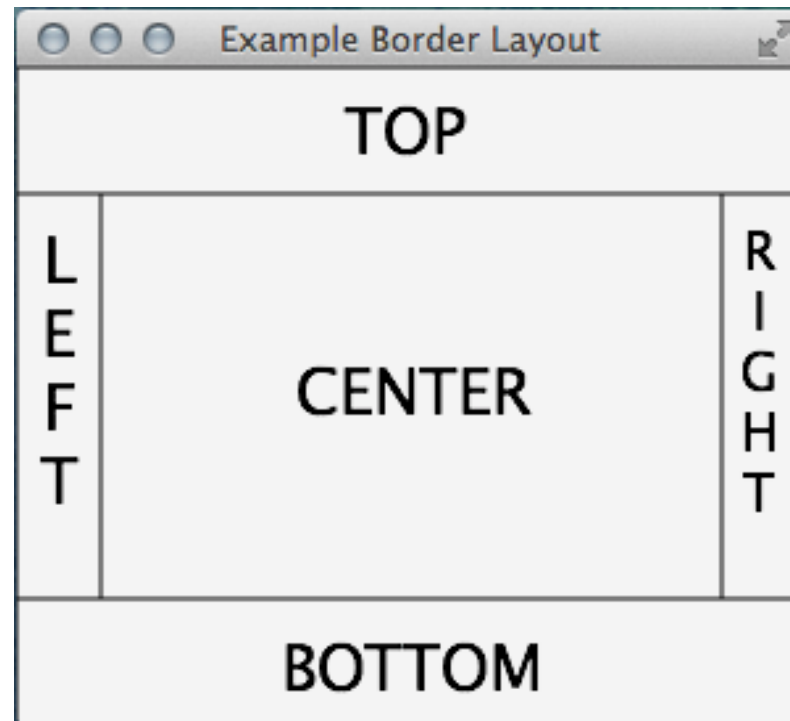
Layout

Parent Class



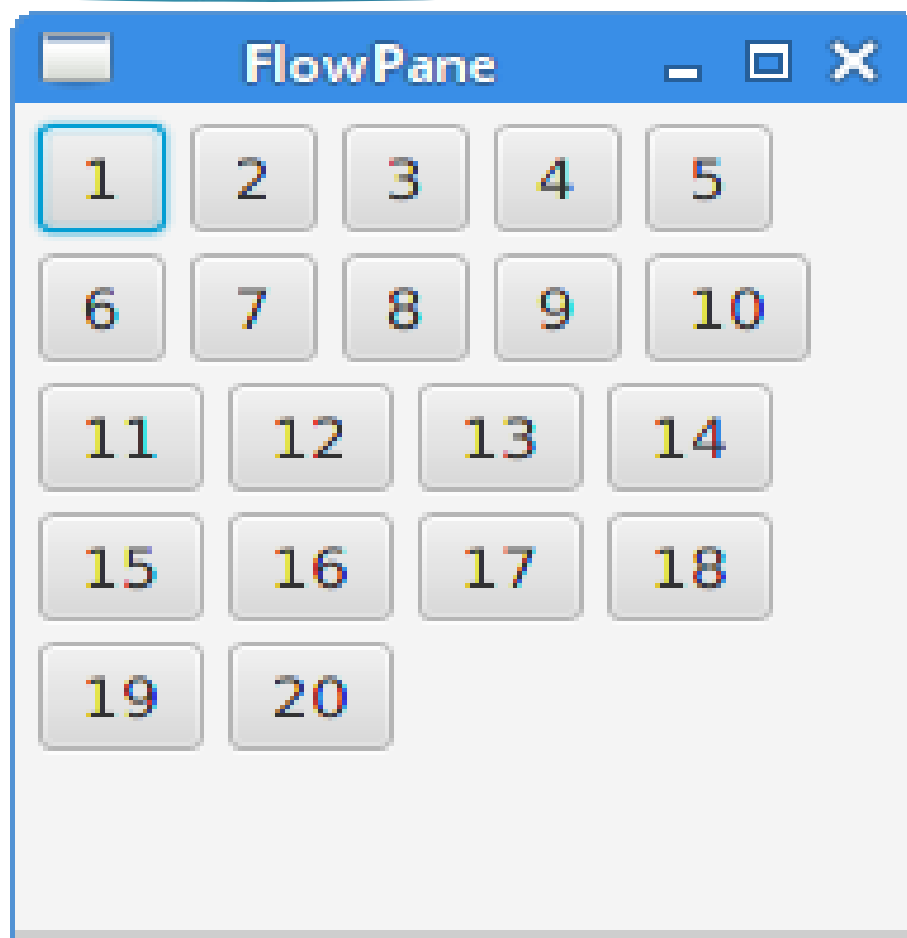
Layout

BorderPane



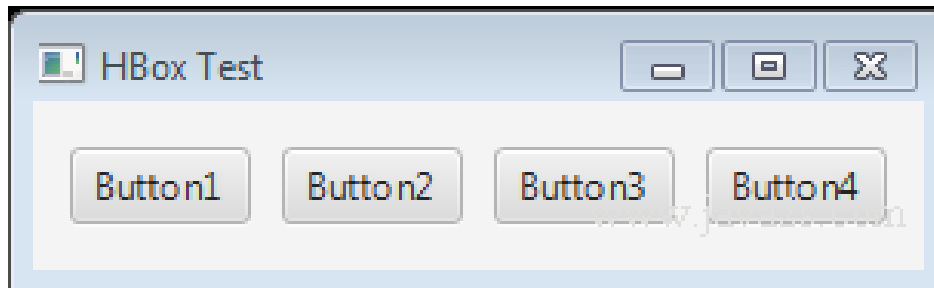
Layout

FlowPane



Layout

HBox

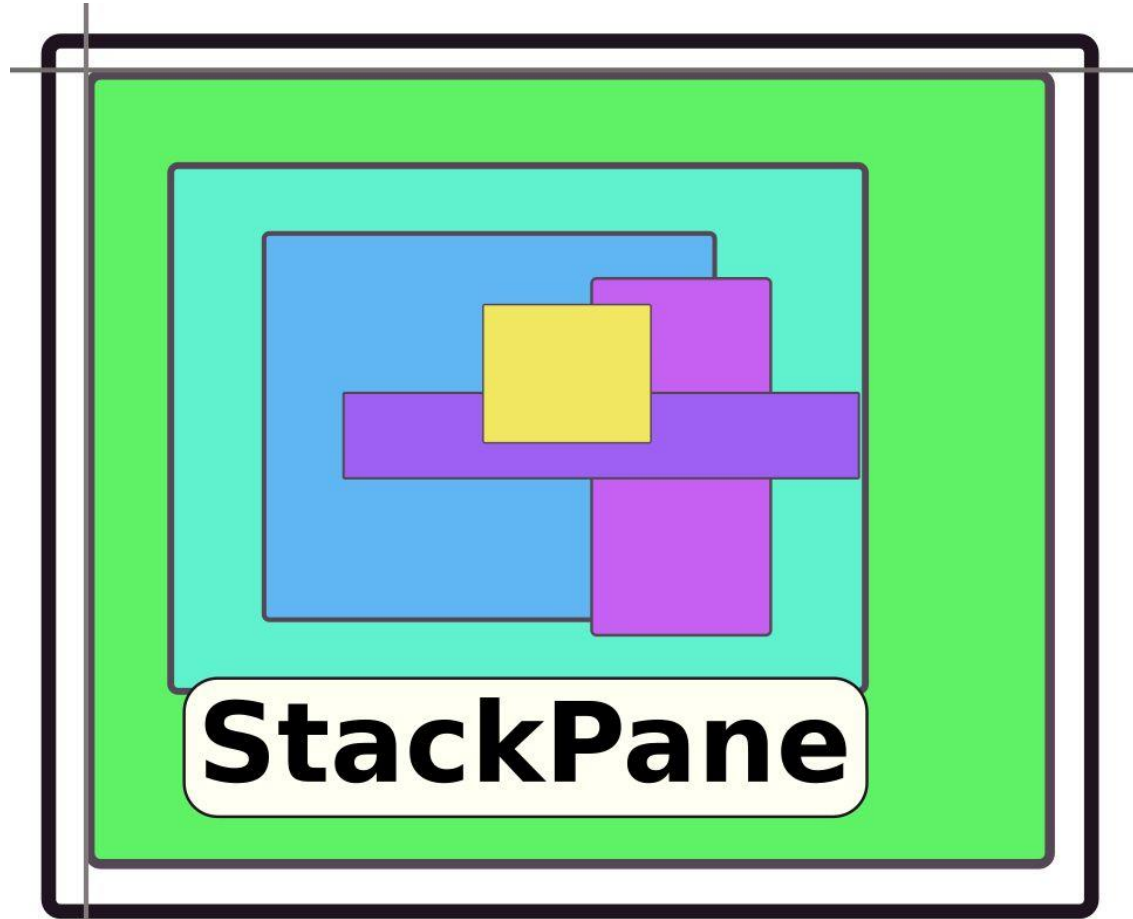


VBox



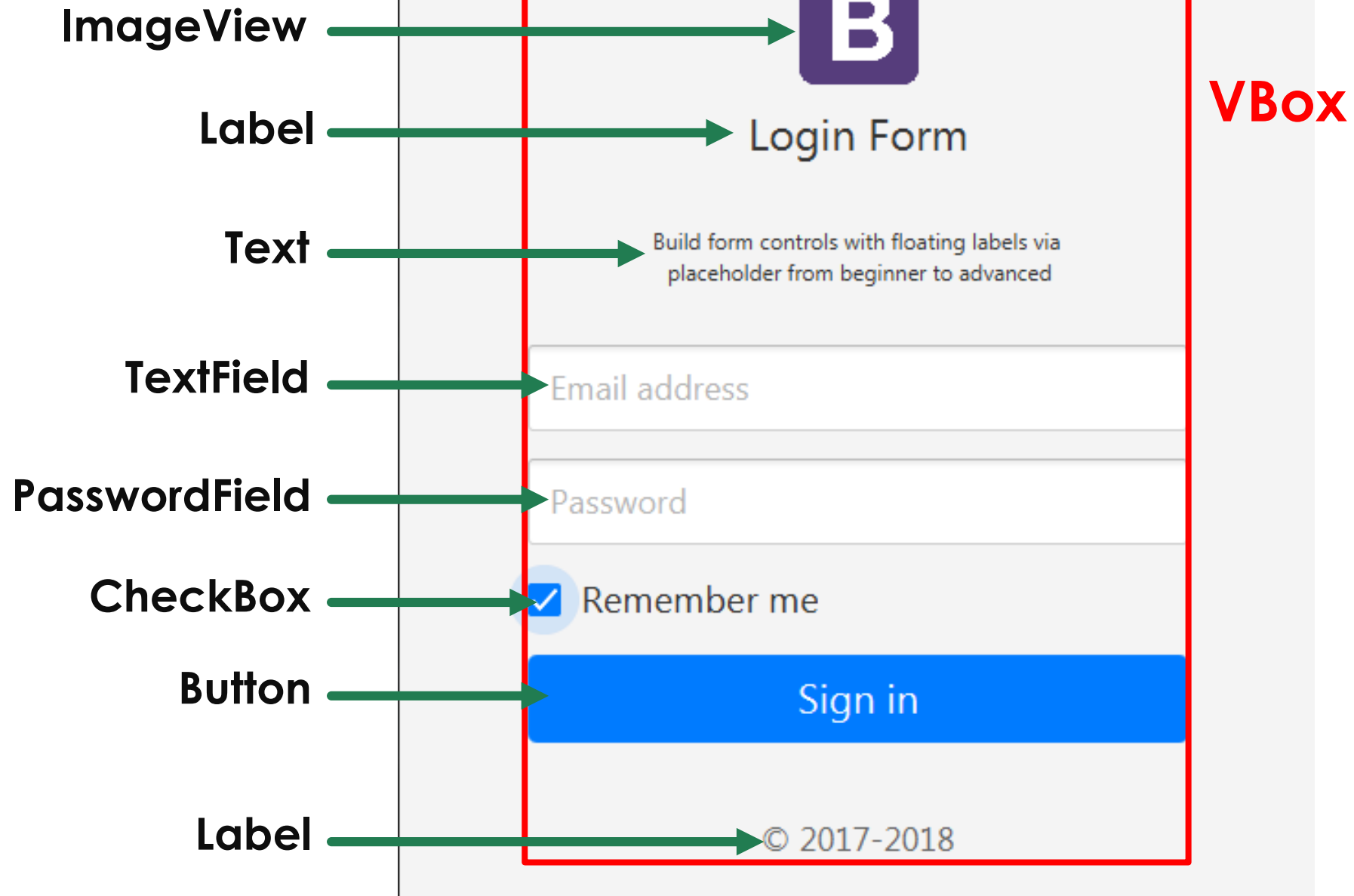
Layout

StackPane



Example 1:

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Let's do some code! :D

Programs & Tools



Java 8



IntelliJ IDEA



Scene Builder

Run first application

```
public class FirstApp extends Application {  
    @Override  
    public void start(Stage stage) {  
        Button btn = new Button("Say Hello !");  
        VBox root = new VBox();  
        root.getChildren().add(btn);  
        Scene scene = new Scene(root, 400, 400);  
        stage.setScene(scene);  
        stage.show();  
    }  
  
    public static void main(String[] args) {  
        launch(args);  
    }  
}
```

