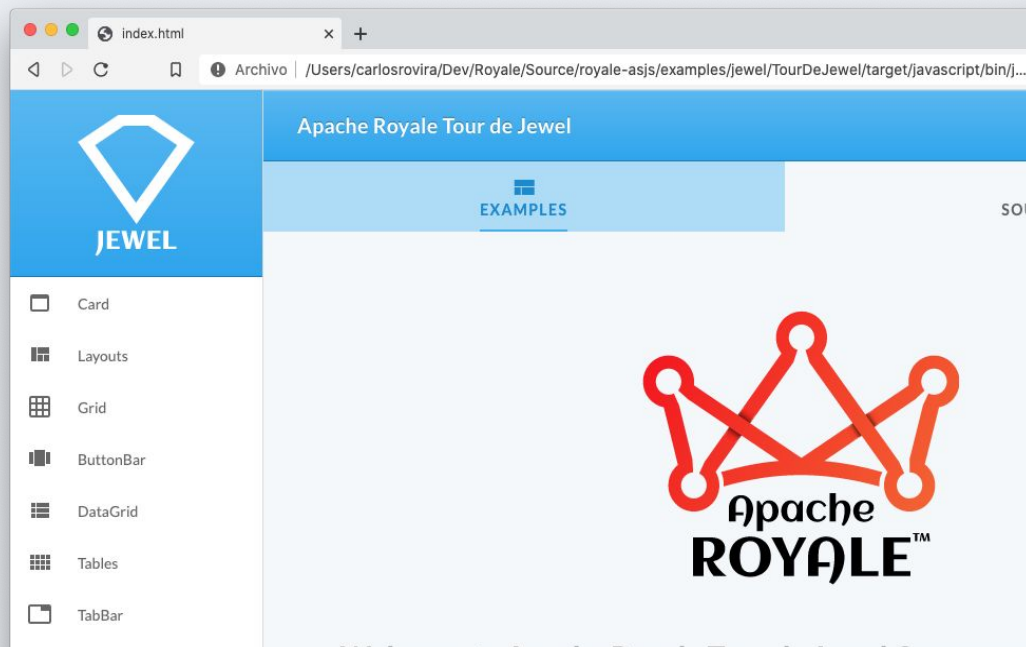


# Apache Royale

## Tour De Jewel

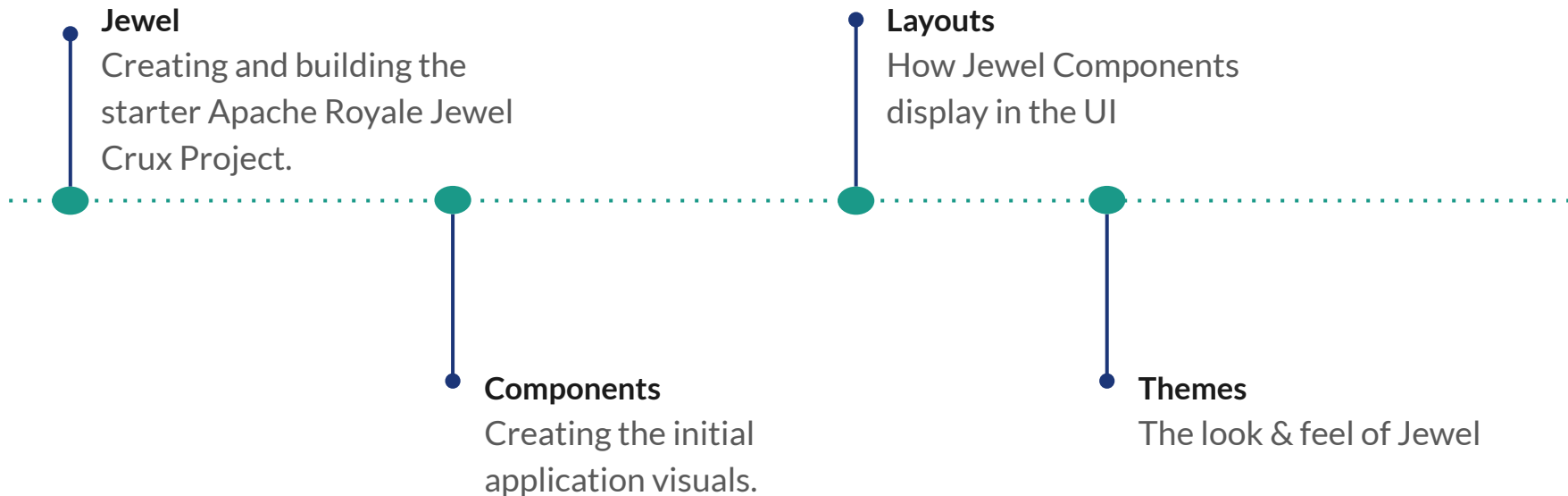
01.10.2020 18:55 CEST

Carlos Rovira & Andrew Wetmore





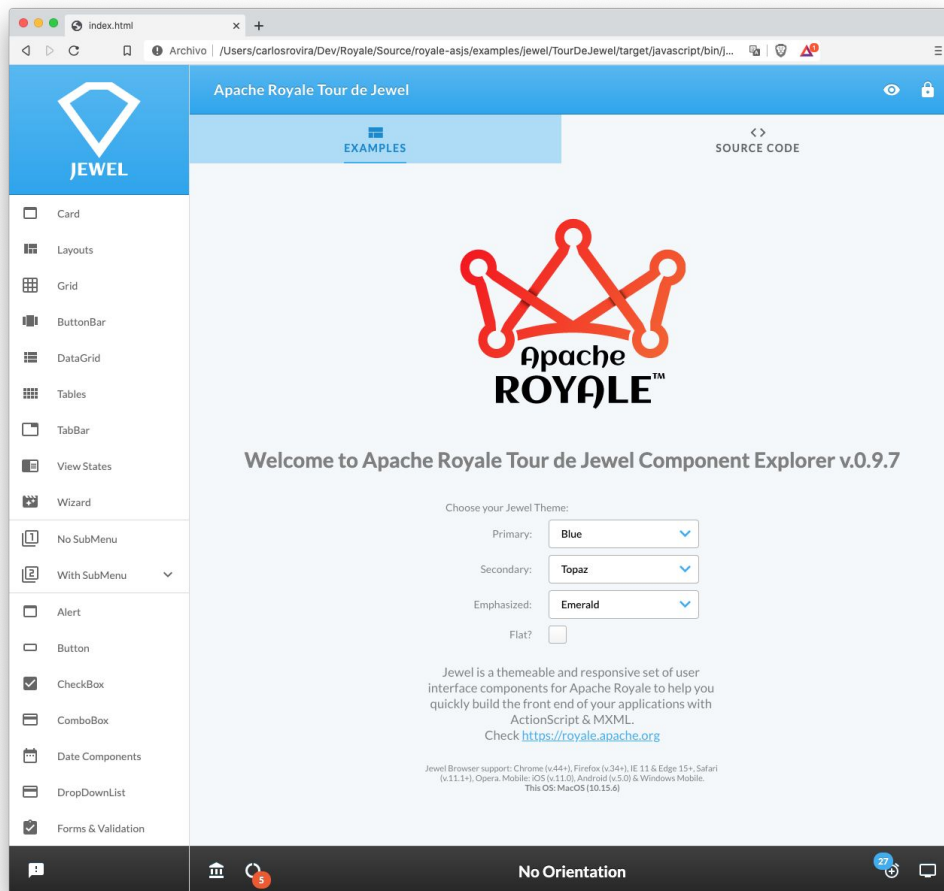
# Journey



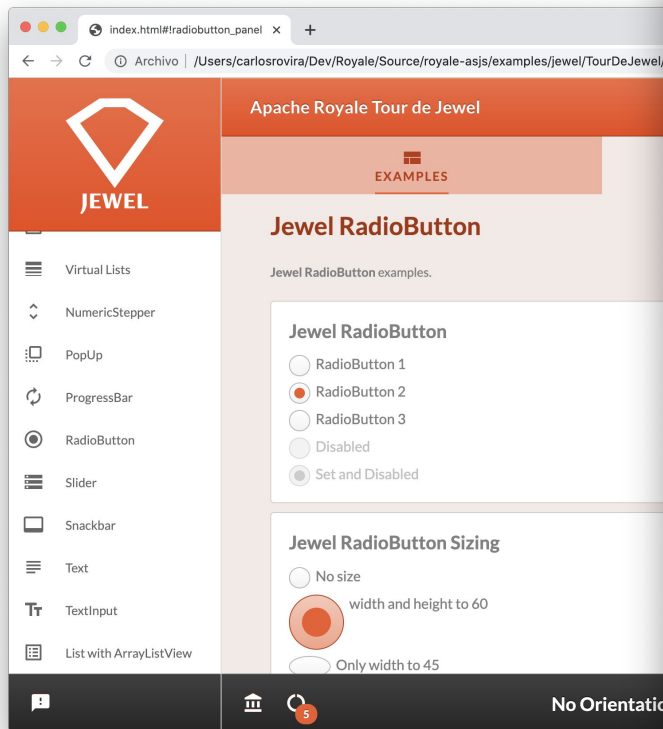
# Jewel

Know what is Jewel, the UI Set behind Tour de Jewel

---



The screenshot shows a web browser window displaying the Apache Royale Tour de Jewel Component Explorer v0.9.7. The browser's address bar shows the file path: `/Users/carlosrovira/Dev/Royale/Source/royale-asjs/examples/jewel/TourDeJewel/target/javascript/bin/j...`. The application has a blue header with the "JEWEL" logo on the left and "Apache Royale Tour de Jewel" on the right. Below the header, there are tabs for "EXAMPLES" (selected) and "SOURCE CODE". A left sidebar contains a list of component categories: Card, Layouts, Grid, ButtonBar, DataGrid, Tables, TabBar, View States, Wizard, No SubMenu, With SubMenu (expanded), Alert, Button, CheckBox, ComboBox, Date Components, DropDownList, and Forms & Validation. The main content area features the Apache Royale logo, a welcome message "Welcome to Apache Royale Tour de Jewel Component Explorer v0.9.7", and a "Choose your Jewel Theme:" section with three dropdown menus: "Primary" (Blue), "Secondary" (Topaz), and "Emphasized" (Emerald). There is also a "Flat?" checkbox. Below the theme selection, a paragraph describes Jewel as a themeable and responsive set of user interface components for Apache Royale, intended to help build the front end of applications with ActionScript & MXML. It includes a link to <https://royale.apache.org>. At the bottom, a footer section lists browser support: Chrome (v44+), Firefox (v34+), IE 11 & Edge 15+, Safari (v11.1+), Opera Mobile: K2S (v11.0), Android (v5.0) & Windows Mobile, and Thin OS: MacOS (10.15.6). The bottom status bar shows "No Orientation" and a "27" notification badge.



index.html#radiobutton\_panel

Apache Royale Tour de Jewel

**Jewel RadioButton**

Jewel RadioButton examples.

**Jewel RadioButton**

- ☐ RadioButton 1
- ☒ RadioButton 2
- ☐ RadioButton 3
- ☐ Disabled
- ☐ Set and Disabled

**Jewel RadioButton Sizing**

- ☐ No size
- ☒ width and height to 60
- ☐ Only width to 45

Virtual Lists

NumericStepper

PopUp

ProgressBar

RadioButton

Slider

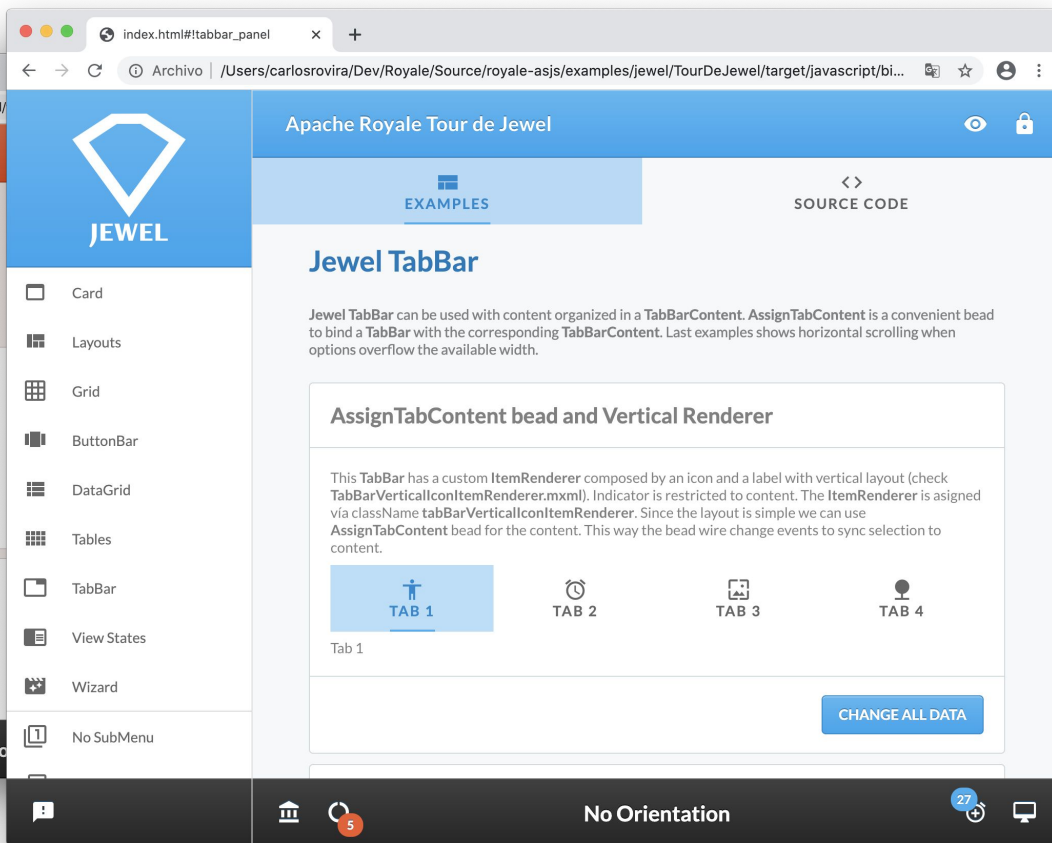
Snackbar

Text

TextInput

List with ArrayListView

No Orientation



index.html#tabbar\_panel

Apache Royale Tour de Jewel

**Jewel TabBar**

Jewel TabBar can be used with content organized in a **TabBarContent**. **AssignTabContent** is a convenient bead to bind a **TabBar** with the corresponding **TabBarContent**. Last examples shows horizontal scrolling when options overflow the available width.

**AssignTabContent bead and Vertical Renderer**

This **TabBar** has a custom **ItemRenderer** composed by an icon and a label with vertical layout (check **TabBarVerticalContentRenderer.mxml**). Indicator is restricted to content. The **ItemRenderer** is assigned via **className tabBarVerticalContentRenderer**. Since the layout is simple we can use **AssignTabContent** bead for the content. This way the bead wire change events to sync selection to content.

TAB 1 TAB 2 TAB 3 TAB 4

Tab 1

CHANGE ALL DATA

Card

Layouts

Grid

ButtonBar

DataGrid

Tables

TabBar

View States


Wizard

No SubMenu

No Orientation

index.html#datecomponents... x +

Archivo | /Users/carlosrovira/Dev/Royale/Source/royale-asjs/examples/jewel/TourDeJewel/target/javascript/bin/js-release/ind...


**JEWEL**

Apache Royale Tour de Jewel

EXAMPLES

## Jewel DateField & DateChooser

Jewel DateField & DateChooser examples.

### Jewel DateChooser (Default)

OCT 2020 < >

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### Jewel DateField

OCT 2020 < >


L	M
5	6
12	13
19	20
26	27

- Virtual Lists
- NumericStepper
- PopUp
- ProgressBar
- RadioButton
- Slider
- Snackbar
- Text
- TextInput
- List with ArrayListView

No Orientation

index.html#textInput\_panel x +

Archivo | /Users/carlosrovira/Dev/Royale/Source/royale-asjs/examples/jewel/TourDeJewel/target/javascript/bin/js-release/ind... ☆ ⓘ ⌵


**JEWEL**

Apache Royale Tour de Jewel

EXAMPLES

SOURCE CODE

## Jewel TextInput

Jewel TextInput examples.

### Jewel TextInput

CHECK IT! A TextInput

With prompt... CHANGE PROMPT

Disabled with text...

Disabled with prompt...

HSlider resize... A label to check layout

textInput.width='156'

BEAD FOR TEXT UPPE!

### TextInput Sizes

Size xsmall

Size small

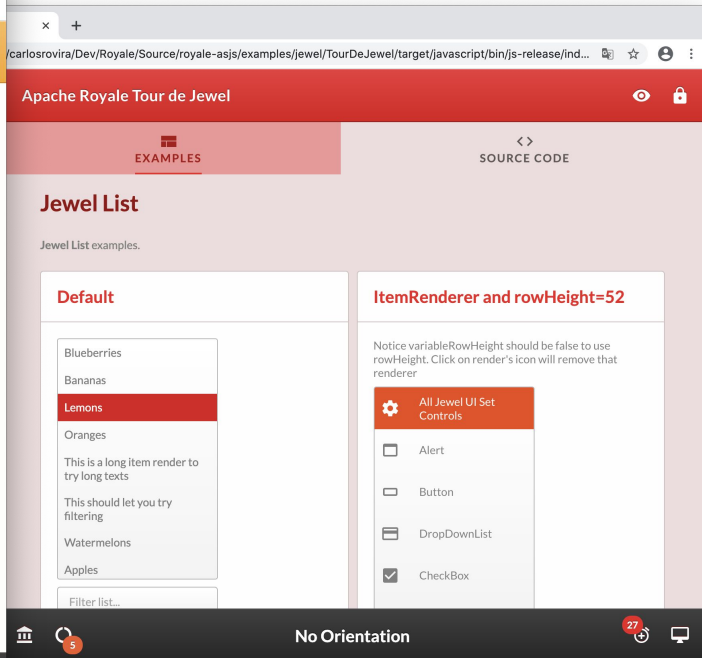
Size normal

Size large

Size xlarge


- Virtual Lists
- NumericStepper
- PopUp
- ProgressBar
- RadioButton
- Slider
- Snackbar
- Text
- TextInput
- List with ArrayListView

No Orientation



index.html#?form\_validation\_pa
+

← → ↻
Archivo
/Users/carlosrovira/Dev/Royale/Source/royale-asjs/examples/jewel/TourDeJewel/target/javascript/bin/js-release/ind...


**JEWEL**

Apache Royale Tour de Jewel

EXAMPLES


## Jewel Forms & Validation


Jewel Forms & Validation examples.

### Jewel Form And Validators

#### Form with validation example

Your name \*

Your born date \*  

Your Favorite Avenger \*  

☐ The Godfather

☐ Scent of a woman



☐ Star Wars

☐ The Shawshank Redemption

Favorite movies (at least 2) \*


Verification code: \* 08589

- Button
- ☒ CheckBox
- ComboBox
- Date Components
- DropDownList
- ☒ Forms & Validation
- Icon
- Images
- Label
- List
- Virtual Lists



5
**No Orientation**

index.html#?card\_panel
+

← → ↻
Archivo
file:///Users/carlosrovira/Dev/Royale/Source/royale-asjs/examples/jewel/TourDeJewel/target/javascript/bin/js-release/


**JEWEL**

Apache Royale Tour de Jewel

EXAMPLES

## Jewel Card

This page shows how to use **Jewel Card** alone or with other companion components like **CardHeader**, **CardPrimaryContent** and **CardActions**. You can see how content is aligned in each section and how to add variations in order to get several configurations. Special attention to different button styles and text colors. Notice that unlike other pages, this one doesn't use **ItemsVerticalAlign** set to "itemsSameHeight" in order to show how Card height works depending on content.

### Jewel Simple Card

Apache Royale Card simplest version uses just a Card component that layout content elements vertically with some default gap between them. It applies some default padding. Card width is 100%.

### Jewel Simple Card



Below this text the element is an **HGroup** with **ItemsExpand** that makes internal content expand all available space.

### Jewel Card

This Card use **CardPrimaryContent** to add the main

This Card with **CardPrimaryContent** and **CardActions** align action buttons to the right with **ItemsHorizontalAlign** property set to "itemsRight". This label is colored with "primary-normal" color.

- ☐ Card
- ☐ Layouts
- ☐ Grid
- ☐ ButtonBar
- ☐ DataGrid
- ☐ Tables
- ☐ TabBar
- ☐ View States
- ☐ Wizard
- ☐ No SubMenu



5
**No Orientation**



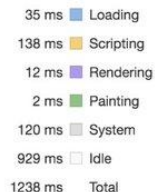
# Why Royale?

First why choose Royale instead other mainstream tech?

- **Supported by Apache.** No Big Corporations driving decisions for its interest.
- **Best of Flex and web dev.** Brings the best of latest 20 years in web development.
- **Multi-Target.** Right now: JS,SWF. In the future: WASM? iOS? Android?.
- **Compiled / Transpiled Apps.** Processing of source code
- **Powerful features (not available any other technology):**
  - **MXML.** Declarative language is the real power behind Royale.
  - **AMF protocol.** Best performance for RPC calls (over JSON). **RemoteObject** to interact with Java, .NET, PHP, Python,...
  - **Crux + Metadata.** **IoC**(Inversion of Control), **DI** (Dependency Injection).
  - **Data Binding.** Change model values and update views and use in conjunction with MXML
  - **Modules.** Separate your app in pieces and load independently.
  - **Performance:** Is amazing if we compared with other current mainstream tech (i.e React)
    - (\*) See comparsion image for the same component Royale vs React.
- **OOP, Strongly typing, Error Checking...**
- **Composition:** PAYG & Strand & Beads.

DevTools -  
[unhurdle.github.io/spectrum-royale/](http://unhurdle.github.io/spectrum-royale/)

Range: 2.32 s – 3.56 s



DevTools -  
[opensource.adobe.com/spectrum-css/components/accordion/](https://opensource.adobe.com/spectrum-css/components/accordion/)

Range: 2.55 s – 4.36 s





# Royale UI Sets

- Different UI Sets
  - Basic
  - Express
  - Jewel
  - Emulation (for Flex MX/Spark)

So...



## Why Jewel?

- **Modern browser web development**
  - Modern components (i.e: Drawer, Grid, Card...)
  - Support Browser **Responsiveness**
- **Style customization**
  - **Themeable** (libraries to change all UI component styles at once)
  - Set of predefined themes (144 different combinations)
- Components adapt to different screens (i.e: DateField)





## Jewel Considerations

- Get the best of what we had with Flex and modern web development
  - **Best of Flex** (i.e: MXML, RemoteObject and AMF,...)
  - **Best of Browsers** (i.e: CSS, No plugins,...)
- **PAYG**
  - But with a bit of balance to keep in mind real world needs (Jewel is a bit more permissive than Basic).
- **Styling**
  - Promote **SASS** over CSS (but don't enforce for end users)



# Browser Support

	Browser	Minimum Version	Release Date
Desktop	Google Chrome	44+	July, 21, 2015
	Mozilla Firefox	34+	Dec, 1, 2014
	Apple Safari	11.1+(High Sierra)	Feb, 22 2018
	Microsoft Edge	15+	
	Microsoft IE	11+	
	Opera		
Mobile	iOS SafariMobile	11.0+	Sep, 19, 2017
	Android	5.0	2014
	Windows Mobile		

<https://apache.github.io/royale-docs/component-sets/jewel#browser-support>

# Basic vs Jewel

- **Basic is:**
  - Foundation of Royale components and beads.
  - 100% PAYG.
  - The most basic representation of components.
    - No additional structure considerations for visuals.
    - Visuals are very raw (no fonts, margins, colors,...mostly black/white)
  - SWF and JS considered.
- **Jewel is:**
  - Build on top of Basic Foundation.
  - PAYG (but not 100%).
  - Advanced representation of components.
    - Internal structures to build good visuals.
    - Separation of styles between structure (jewel.swc) and styling (themes.swc).
  - Only JS considered (for now, but could be extended in the future).

# Components

Jewel set of available components and containers ready to use





# Components

- **Containers and Components**
  - **Containers** can hold an arbitrary set of other containers and/or components. Can be populated via code or data.
  - **Components** has a concrete functionality
  - **60+** containers and components and growing.
  - For a full list see:
    - <https://apache.github.io/royale-docs/component-sets/jewel#components>
- **Beads**
  - **Common** (i.e: **Disabled**) and **Specialized** (PasswordInput for TextInput)





## Containers (Code Based Population)

- View / ResponsiveView
- Group / Container
  - HGroup, VGroup / HContainer, VContainer
- Card
- Grid & GridCell
- SectionContent / ScrollableSectionContent / TabBarContent
- Form / FormItem
- Drawer
- Module
- Others (Wizard, TopAppBar, ...)

# Containers (Code Based Population)

```
<j:Container width="100%">
  <j:beads>
    <j:TileHorizontalLayout localId="thl" verticalGap="6"
      horizontalGap="6" requestedColumnCount="3"/>
  </j:beads>

  <html:Div className="box" text="1"/>
  <html:Div className="box" text="2"/>
  <html:Div className="box" text="3"/>
  <html:Div className="box" text="4"/>
  <html:Div className="box" text="5"/>
  <html:Div className="box" text="6"/>
  <html:Div className="box" text="7"/>
  <html:Div className="box" text="8"/>
  <html:Div className="box" text="9"/>
  <html:Div className="box" text="10"/>
  <html:Div className="box" text="11"/>
  <html:Div className="box" text="12"/>

</j:Container>
```



## Containers (Data Based Population)

- DataContainer
- List
  - TabBar
  - ButtonBar, IconButtonBar,...
  - Navigator
- ComboBox
- DropDownList
- Table, SimpleTable
- DataGrid

### Considerations:

- Data populate through **dataProvider**.
  - **ArrayList**
  - **ArrayListView** (for sort and filtering)
- **ItemRenderer** (data item visualization)

# Containers (Data Based Population)

```
<j:DataContainer width="100%" height="250"
  itemRenderer="itemRenderers.VerticalIconListItemRenderer">
  <j:beads>
    <j:ScrollingViewport/>
    <j:TileHorizontalLayout localId="thll" verticalGap="6"
      horizontalGap="6" columnWidth="130" rowHeight="70"/>
  </j:beads>

  <js:ArrayList>
    <fx:Array>
      <vos:IconListV0 label="Ank" icon="{FontAwesome5IconType.ANKH}" />
      <vos:IconListV0 label="Atom" icon="{FontAwesome5IconType.ATOM}" />
      <vos:IconListV0 label="Burn" icon="{FontAwesome5IconType.BURN}" />
      <vos:IconListV0 label="Candy Cane" icon="{FontAwesome5IconType.CANDY_CANE}" />
      <vos:IconListV0 label="Fire" icon="{FontAwesome5IconType.FIRE_ALT}" />
      <vos:IconListV0 label="Duck" icon="{FontAwesome5IconType.DUCK}" />
      <vos:IconListV0 label="Cloud And Moon" icon="{FontAwesome5IconType.CLOUD_MOON}" />
      <vos:IconListV0 label="Europe" icon="{FontAwesome5IconType.GLOBE_EUROPE}" />
      <vos:IconListV0 label="Electric Guitar" icon="{FontAwesome5IconType.GUITAR_ELECTRIC}" />
      <vos:IconListV0 label="Mask" icon="{FontAwesome5IconType.MASK}" />
      <vos:IconListV0 label="Skull" icon="{FontAwesome5IconType.SKULL}" />
      <vos:IconListV0 label="Spider" icon="{FontAwesome5IconType.SPIDER}" />
    </fx:Array>
  </js:ArrayList>
</j:DataContainer>
```



# Components

- Button, IconButton, ToggleButton
- TextInput, IconTextInput, TextArea
- CheckBox, RadioButton
- DateField, DateChooser
- Image, Icon
- Label
- NumericStepper
- Slider
- Others (PopUp, SimpleLoader,...)
- Based on **StyledUIBase** (that extends **Basic UIBase**)
- Composed by Beads (Model, View, Controller, Layout,...)
- Beads are configured in CSS

# Components

```
<j:Card visible="true" visible.loggedIn="false">
  <html:H1 text="View States with dot notation"/>
  <j:TextInput text="someuser"/>
  <j:TextInput text="somepass">
    <j:beads>
      <j>PasswordInput/>
    </j:beads>
  </j:TextInput>
  <j:Button text="Login" emphasis="primary" click="currentState = 'loggedIn'"/>
</j:Card>
```



# Beads

- **Common**

- Disabled
- SizeControl
- ToolTip
- ResponsivSize

- **Specialized**

- TabBar -> AssignTabContent
- TextInput and TextArea -> TextPrompt

# Default Beads

- Defined through CSS (SASS):
- i.e: List is composed of the following beads:

```
j|List
  IBeadView: ClassReference("org.apache.royale.jewel.beads.views.ListView")
  IBeadController: ClassReference("org.apache.royale.jewel.beads.controllers.ListSingleSelectionMouseController")
  IBeadKeyController: ClassReference("org.apache.royale.jewel.beads.controllers.ListKeyDownController")
  IItemRendererClassFactory: ClassReference("org.apache.royale.core.SelectableItemRendererClassFactory")
  IItemRenderer: ClassReference("org.apache.royale.jewel.itemRenderers.ListItemRenderer")
  IItemRendererInitializer: ClassReference("org.apache.royale.jewel.beads.itemRenderers.ListItemRendererInitializer")
  ISelectableItemRenderer: ClassReference("org.apache.royale.jewel.beads.itemRenderers.ClassSelectorListSelectableItemRendererBead")
  IViewport: ClassReference("org.apache.royale.jewel.supportClasses.scrollbar.ScrollingViewport")
  IBeadModel: ClassReference("org.apache.royale.jewel.beads.models.ArrayListSelectionModel")
  IDataProviderItemRendererMapper: ClassReference("org.apache.royale.html.beads.SelectionDataItemRendererFactoryForCollectionView")
```



# Layouts

How Jewel components are displayed in screen




# Layout Beads



- Based on CSS “flex”
- Tries to delegate layout to the browser when possible
- BasicLayout is for absolute positioning
- HorizontalLayout / VerticalLayout
- HorizontalCenteredLayout / VerticalCenteredLayout
- much more...

### BasicLayout



Jewel BasicLayout (width:200, height:200px)




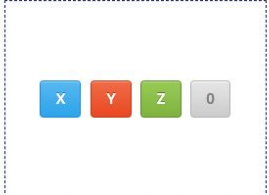
### HorizontalLayout





### VerticalLayout



### HorizontalCenteredLayout




### VerticalCenteredLayout




# Layouts Beads


- TileHorizontalLayout uses a combination of css flex and AS3


## Using TileHorizontalLayout


 **TILE CONTAINER**


 **TILE LIST**


1	2	3	4
5	6	7	8
9	10	11	12

columnWidth  


horizontalGap  


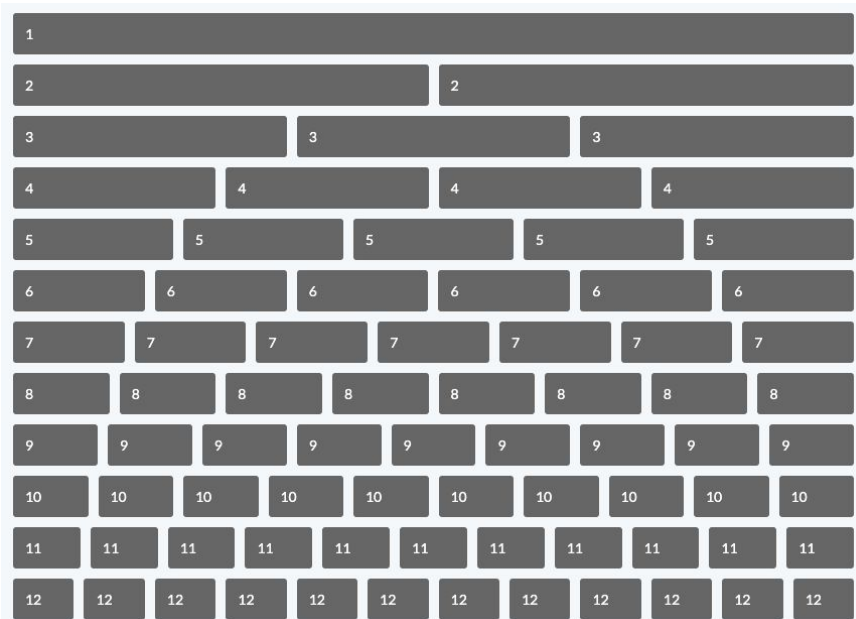
requestedColumnCount  


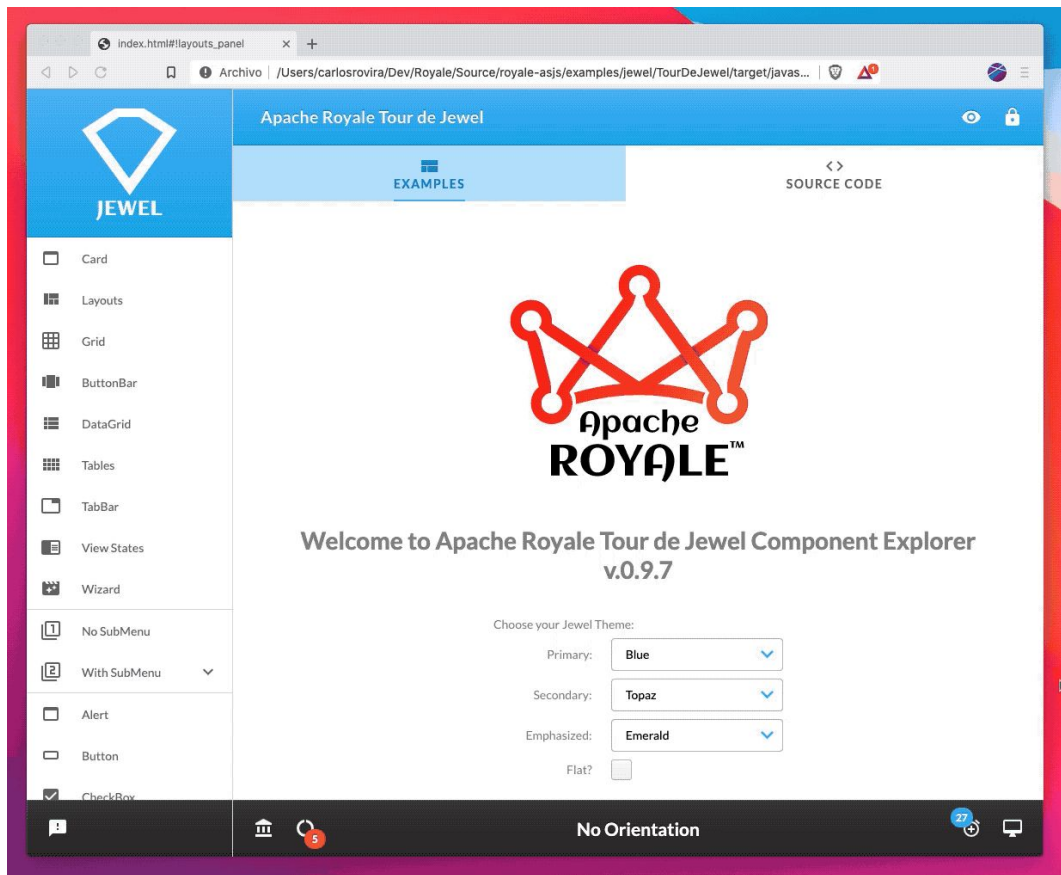
rowHeight  


verticalGap  


# Responsive Layout

- Grid / GridCell
  - GridLayout / GridCellLayout
- Sizes can adapt to screen width
  - Fonts size change between mobile / tablet / desktop
- ResponsiveView (instead of View)
- Beads:
  - ResponsiveVisibility
  - ResponsiveSize
  - ...





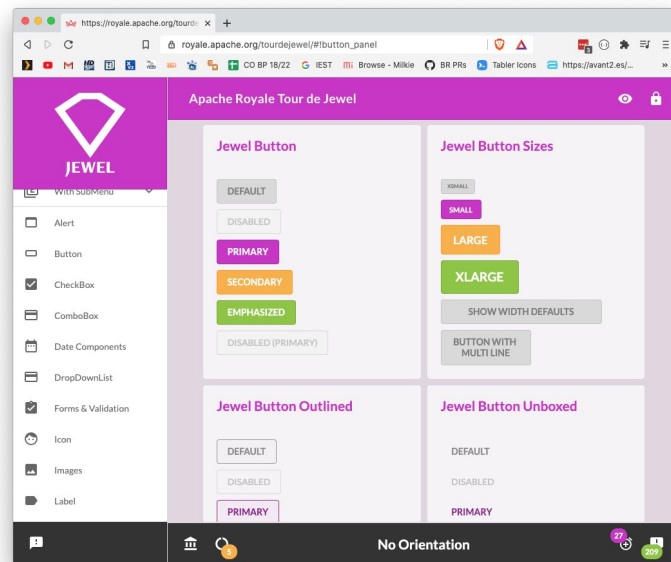
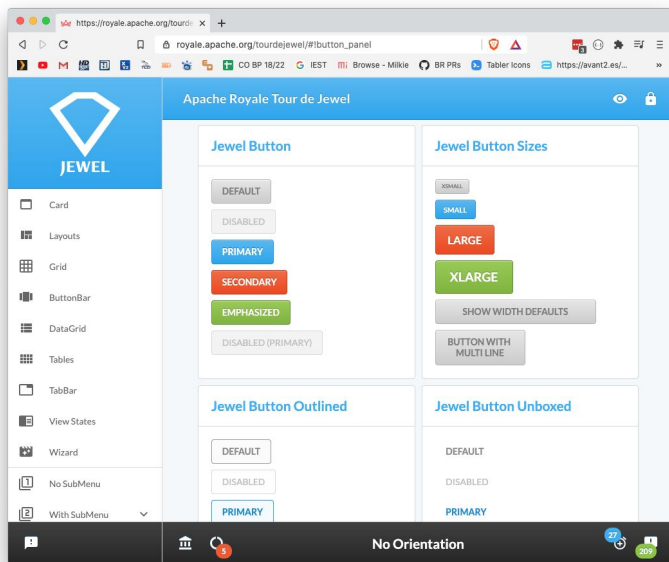
The screenshot shows a web browser displaying the Apache Royale Tour de Jewel Component Explorer. The browser's address bar shows the URL: `index.html#layouts_panel`. The page title is "Apache Royale Tour de Jewel". The interface features a blue header with the "JEWEL" logo and a navigation bar with "EXAMPLES" and "SOURCE CODE" tabs. A left sidebar lists various UI components: Card, Layouts, Grid, ButtonBar, DataGrid, Tables, TabBar, View States, Wizard, No SubMenu, With SubMenu (expanded), Alert, Button, and CheckBox. The main content area displays the Apache Royale logo and the text "Welcome to Apache Royale Tour de Jewel Component Explorer v.0.9.7". Below this, there is a "Choose your Jewel Theme:" section with three dropdown menus: "Primary" (set to Blue), "Secondary" (set to Topaz), and "Emphasized" (set to Emerald). A "Flat?" checkbox is also present. The bottom status bar shows "No Orientation" and a notification icon with the number 27.

# Themes

The look & feel of Jewel

---

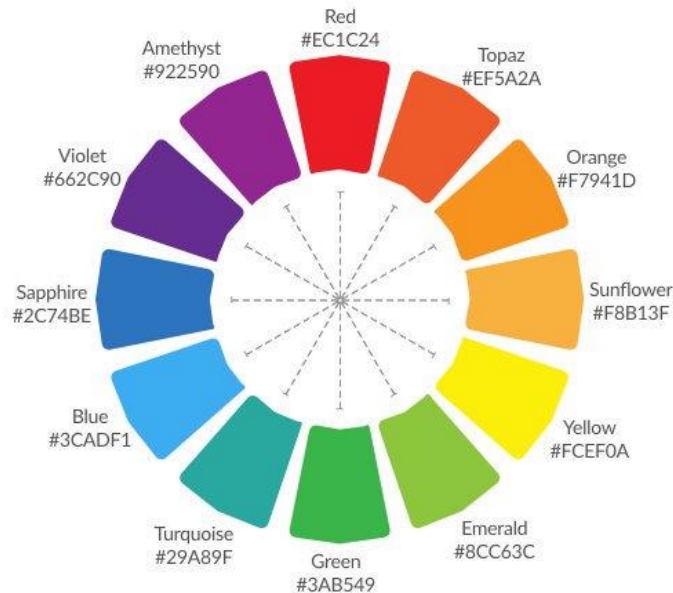
# Themes



# About themes

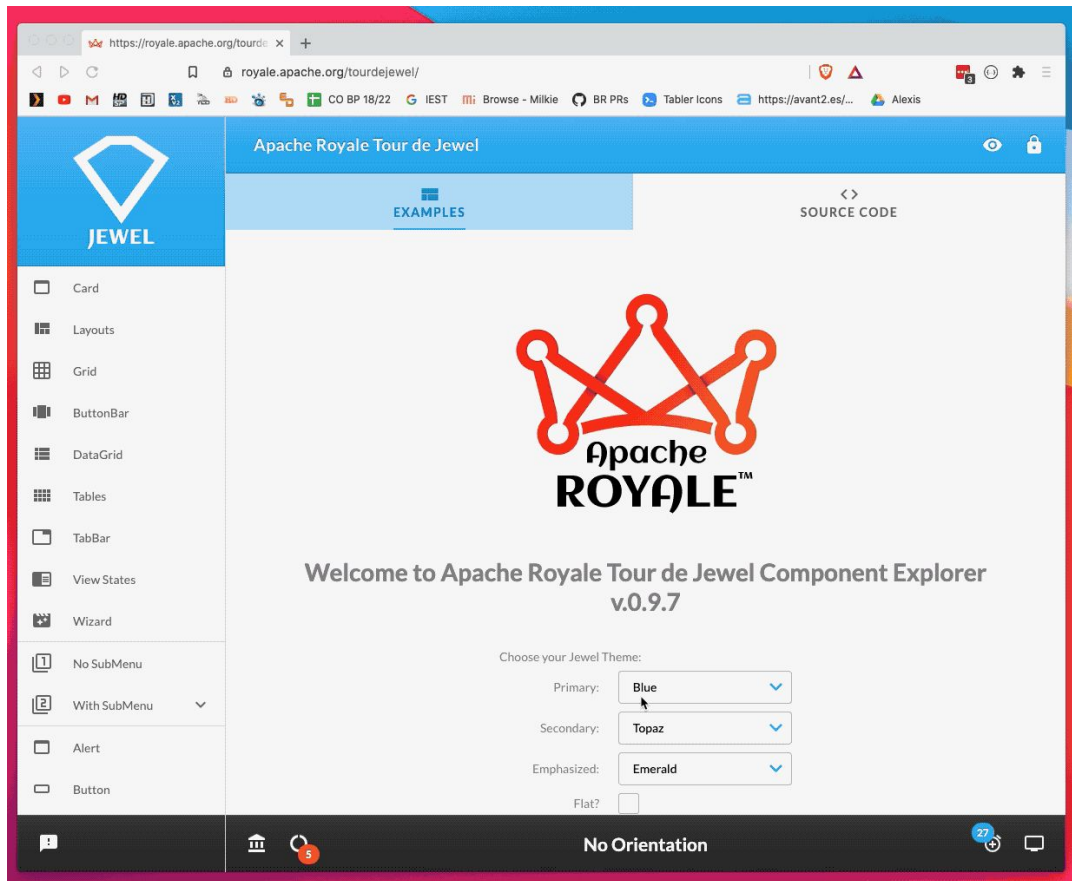
- JewelTheme is the master theme
- Use SASS
- Light/Dark and Flat/No Flat variations
- 12 Colors
- primary, secondary and emphasized
- 144 variations
- We can use
  - Jewel Theme (if you can compile SASS)
  - A combination of three themes (primary, secondary and emphasized)
- Dark themes still WIP

Apache Royale Jewel 12 Color Wheel





# Themes Runtime Switching



The screenshot shows the Apache Royale Tour de Jewel Component Explorer v0.9.7 web application. The browser address bar displays <https://royale.apache.org/tourdejewel/>. The application has a blue header with the title "Apache Royale Tour de Jewel" and a "JEWEL" logo. Below the header, there are two tabs: "EXAMPLES" (selected) and "SOURCE CODE". The main content area features the Apache Royale logo and the text "Welcome to Apache Royale Tour de Jewel Component Explorer v0.9.7". Below this, there is a section titled "Choose your Jewel Theme:" with three dropdown menus: "Primary" (set to "Blue"), "Secondary" (set to "Topaz"), and "Emphasized" (set to "Emerald"). There is also a "Flat?" checkbox which is currently unchecked. On the left side of the application, there is a sidebar with a list of components: Card, Layouts, Grid, ButtonBar, DataGrid, Tables, TabBar, View States, Wizard, No SubMenu, With SubMenu (with a dropdown arrow), Alert, and Button. The bottom of the application has a dark footer with the text "No Orientation" and a small "23" badge.



## Jewel Links

- Tour de Jewel
  - <https://royale.apache.org/tourdejewel>
- Jewel Blog Examples
  - <https://royale.apache.org/category/jewel-ui-set/>
- Jewel Documentation
  - <https://apache.github.io/royale-docs/component-sets/jewel>

# Future

A look into the Jewel future

---



# Jewel's Future

- Continue improving the UI Set
  - Continue improving actual components
    - Provide missing functionality
    - Bug fixing
  - Develop new features
    - Components still missing
    - new beads
  - Dark Themes

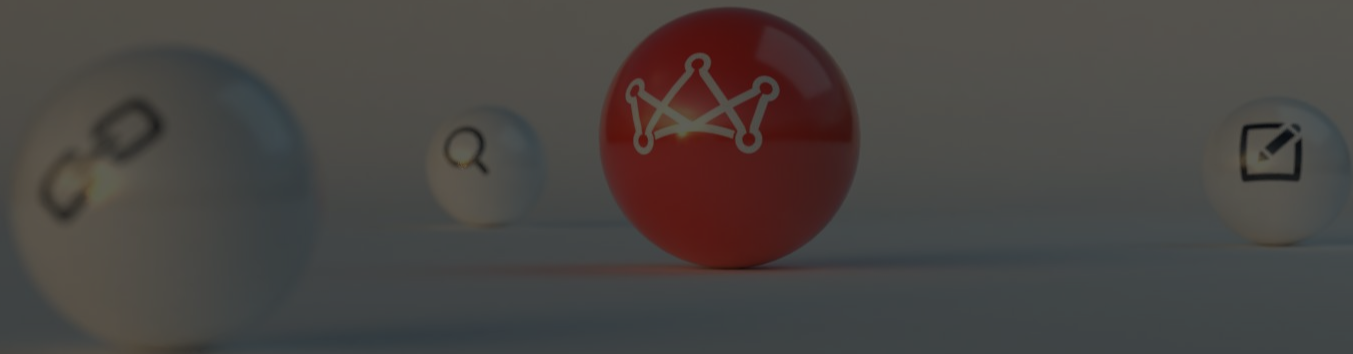


## Where to go from here

- Join our mailing list (“users” or “dev”)
  - <https://royale.apache.org/mailling-lists/>
- Do you want to join us?
  - <https://royale.apache.org/get-involved/>
- StackOverflow
  - <https://stackoverflow.com/questions/tagged/apache-royale>
- If you care this project -> Follow us on Social Networks!! :)
  - **Twitter:** <https://twitter.com/apacheroyale>
  - **LinkedIn:** <https://www.linkedin.com/groups/12118437>
  - **FaceBook:** <https://www.facebook.com/ApacheRoyaleSDK>

# Thank you for your attention!

## Questions?



[royale.apache.org](http://royale.apache.org)