

2D Drawing Basics

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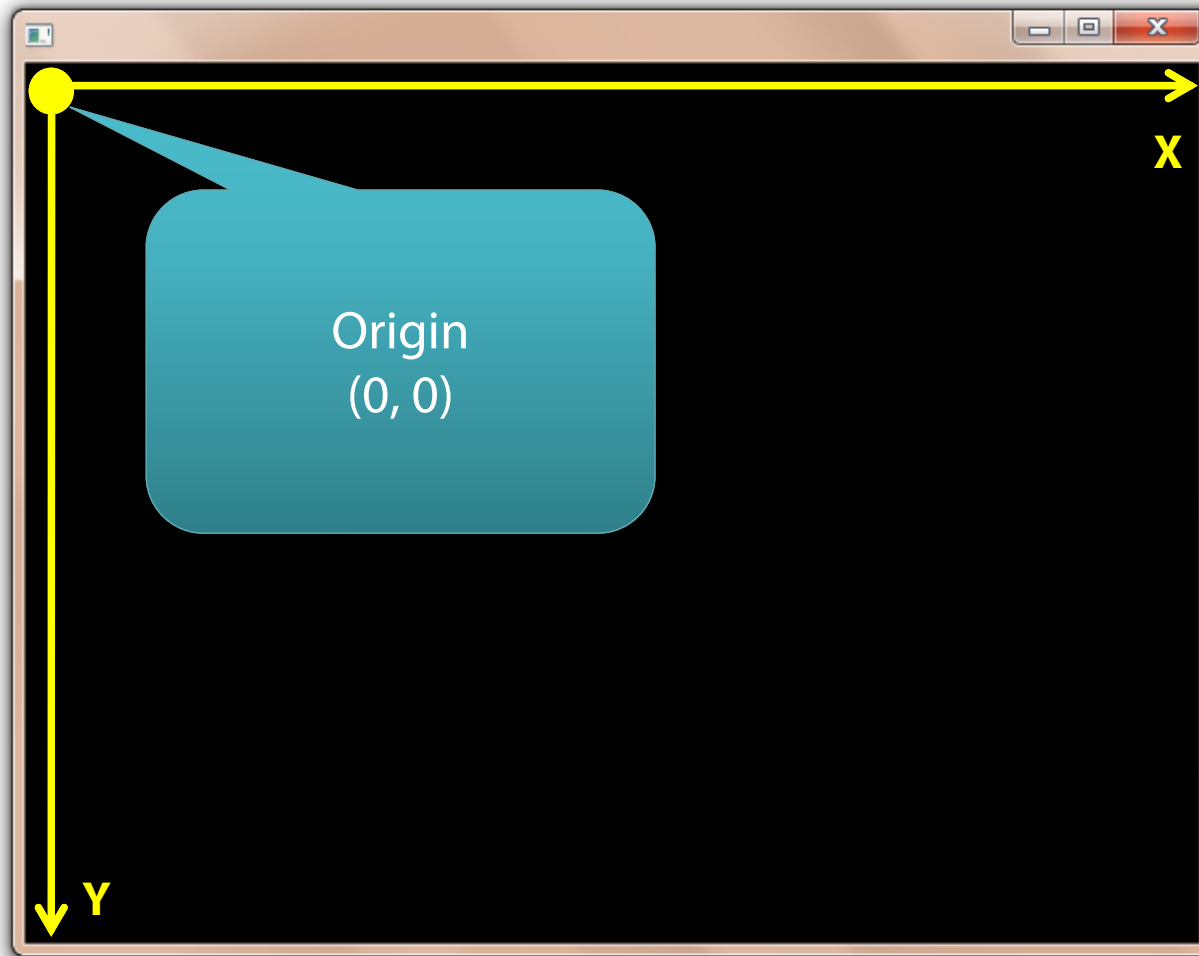
pluralsight 
hardcore dev and IT training



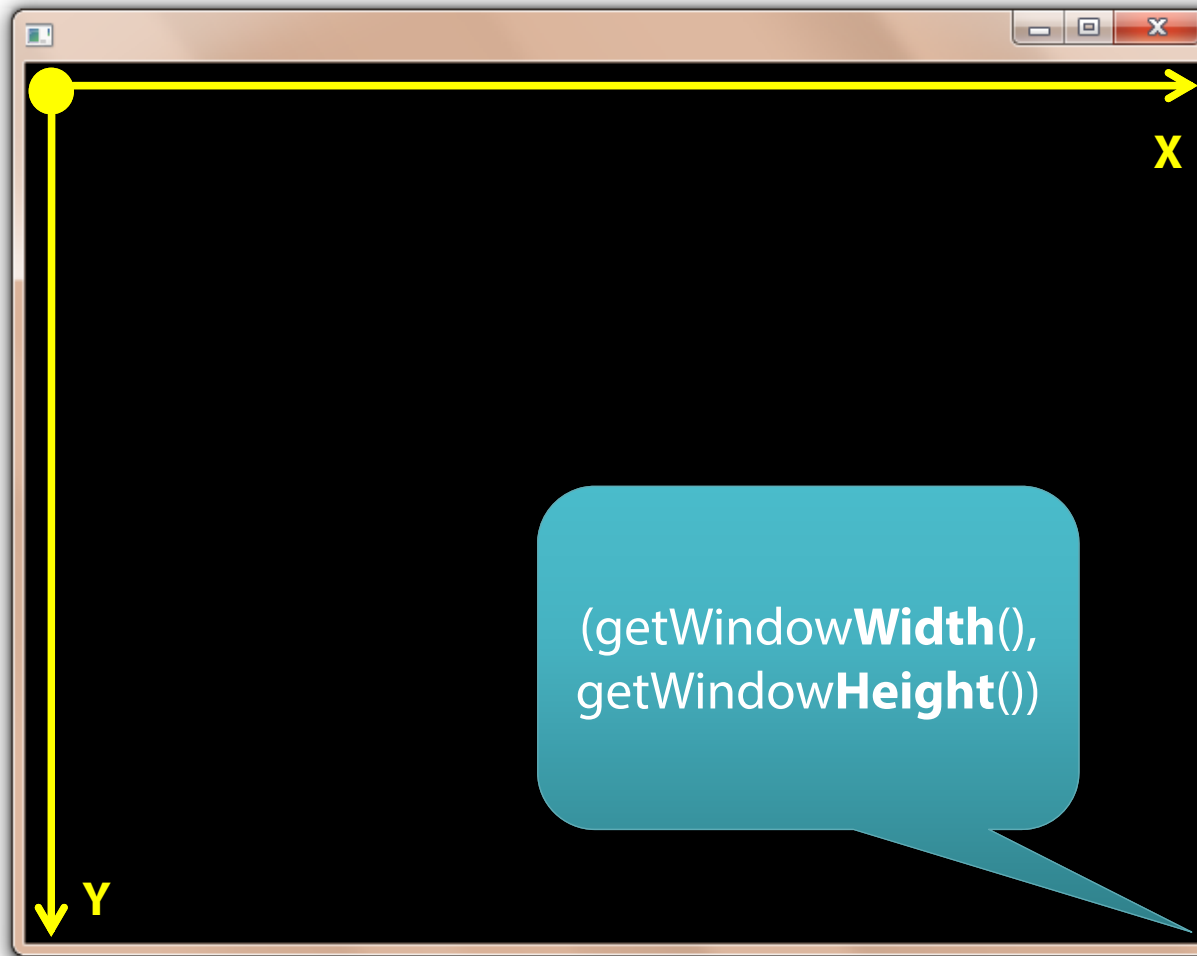
Topics

- **2D coordinate system in Cinder**
- **Utility classes**
 - Vec2f
 - Color, ColorA
- **Draw basic shapes (2D)**
 - Lines
 - Rectangles
 - Circles
 - ...

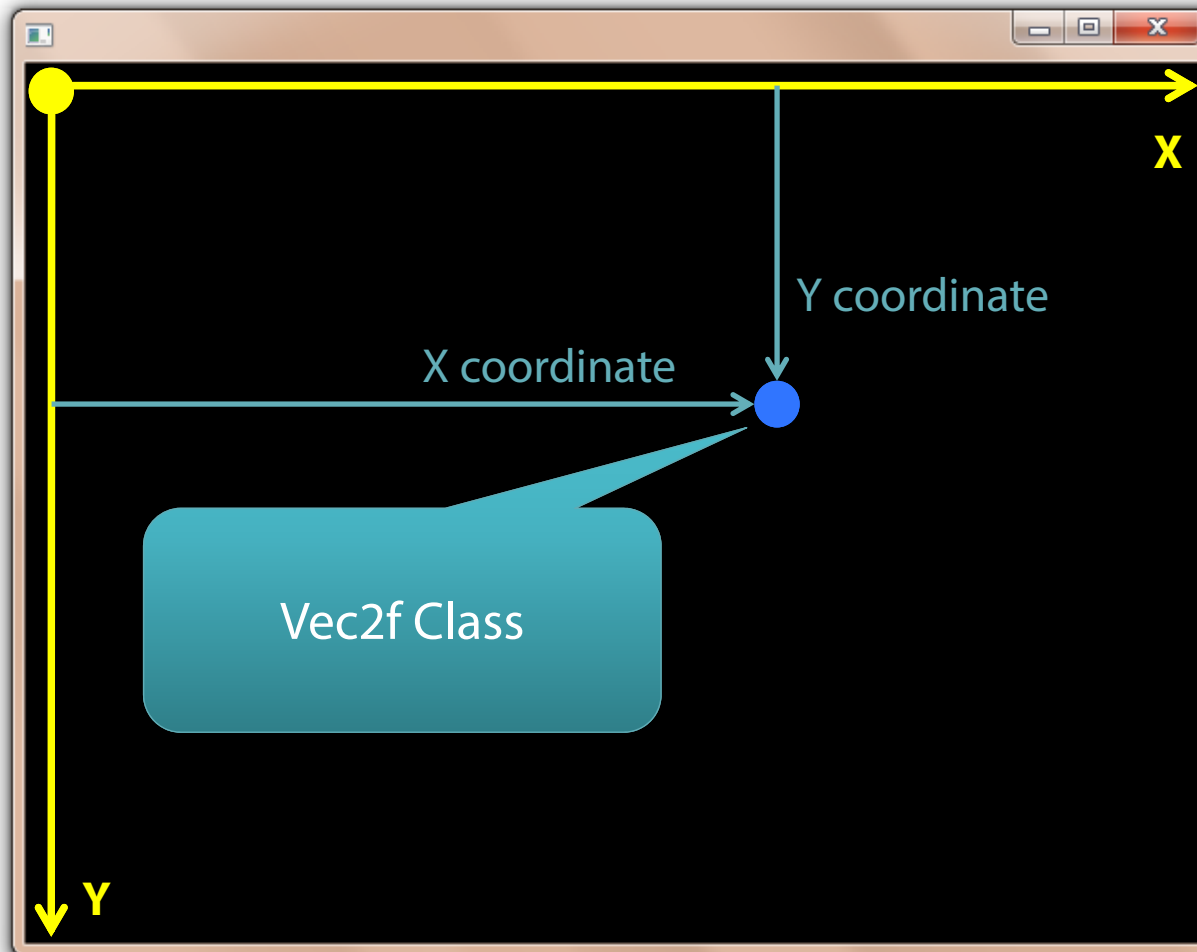
2D Coordinate System in Cinder



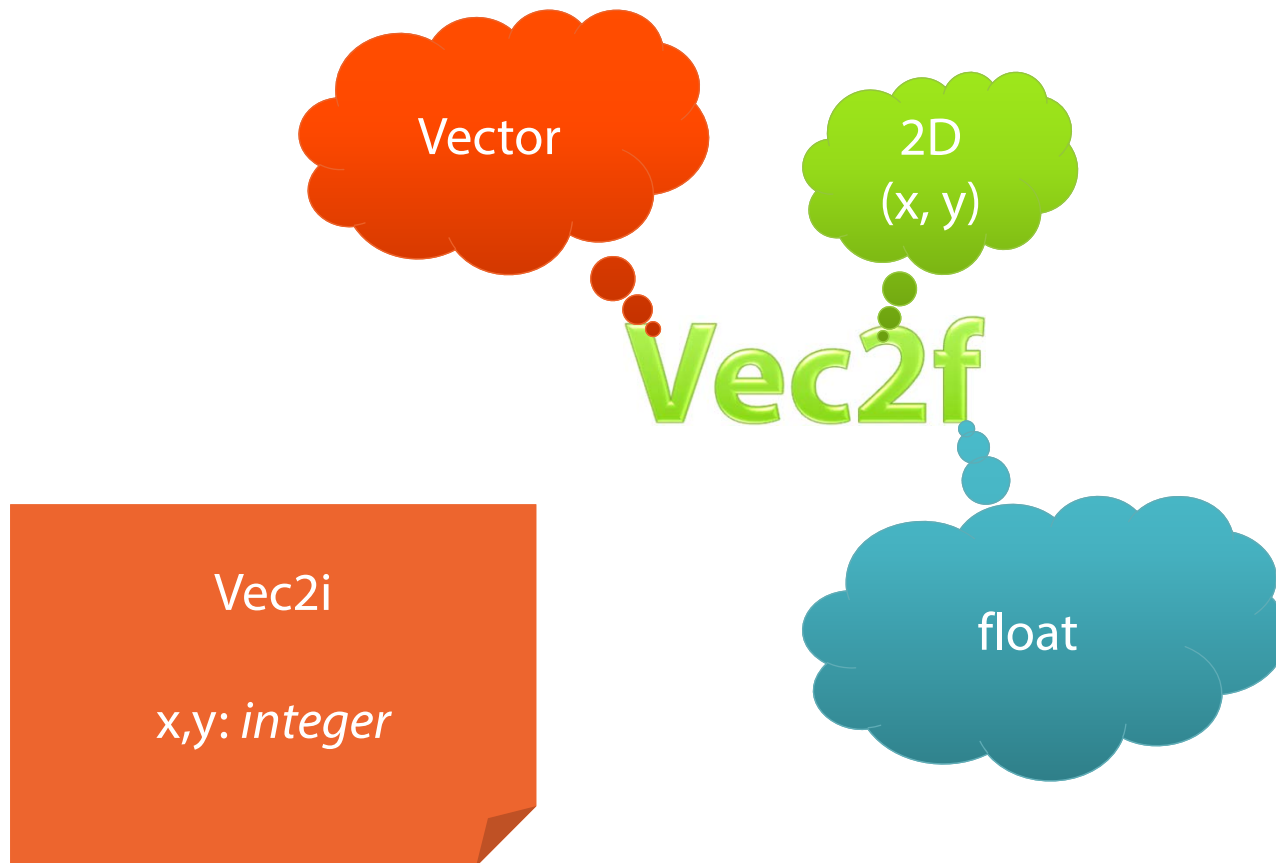
2D Coordinate System in Cinder



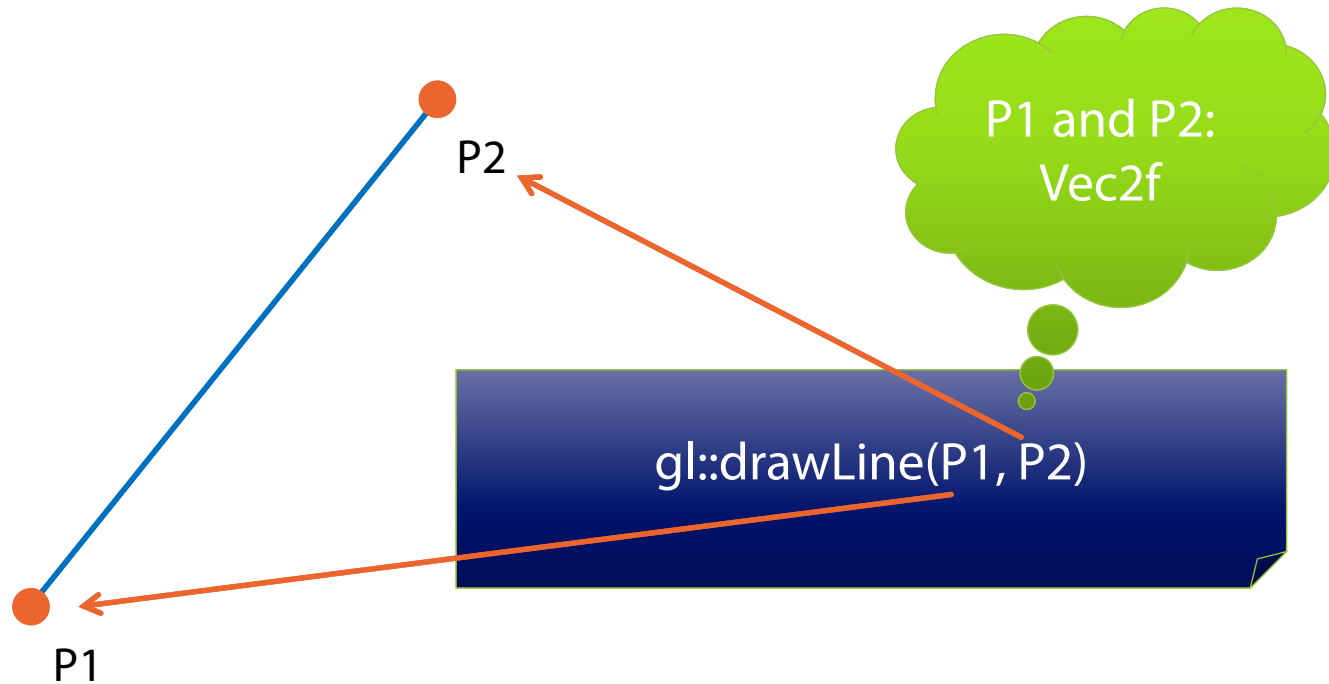
2D Coordinate System in Cinder



The Vec2f Class

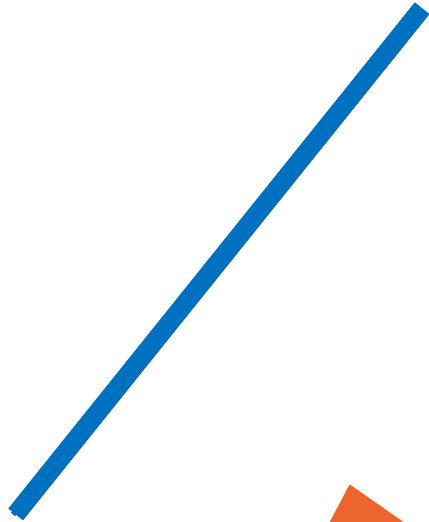


Lines



```
#include  
"cinder/gl/gl.h"
```

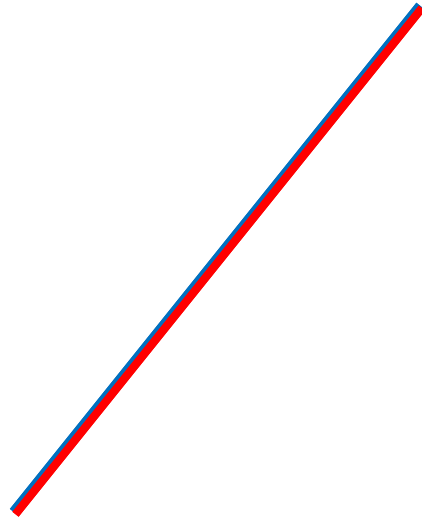
Line Width



```
gl::lineWidth( float width )
```

Calling *lineWidth()* will
influence the
following calls to
drawLine().

Drawing Color



`gl::color()`

Color
ColorA
float r, g, b (,a)

Drawing Color – Usage Pattern

1. Call *gl::color()*



2. Call *gl::drawLine()*



Color and ColorA Classes

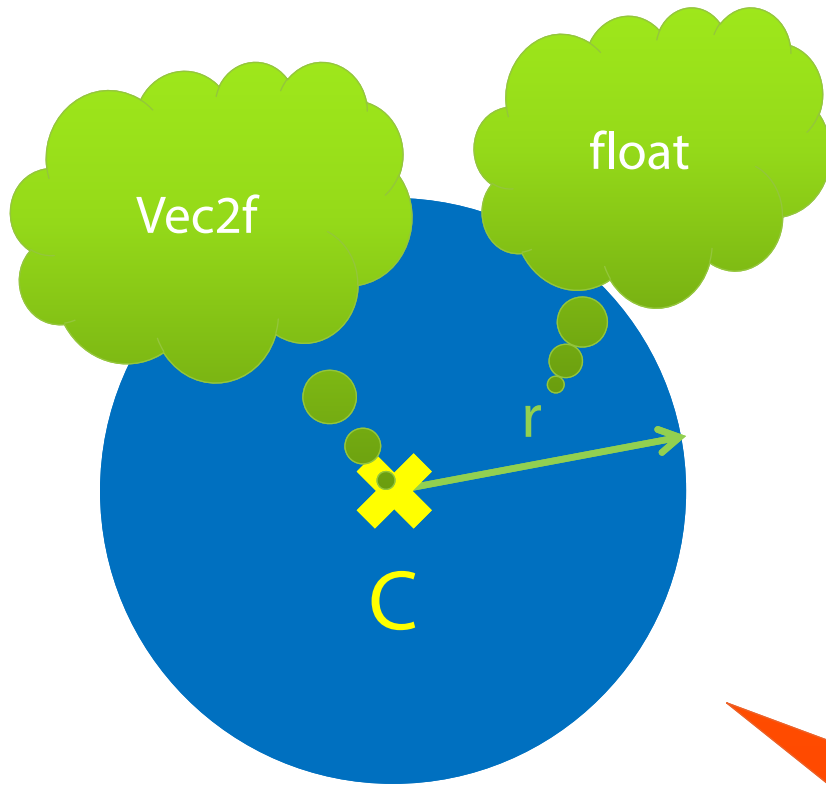
Color: a mix of
Red
Green
Blue
(*RGB*)

Component Range: 0-1

Alpha: transparency

HSV
(hue-saturation-value)
support

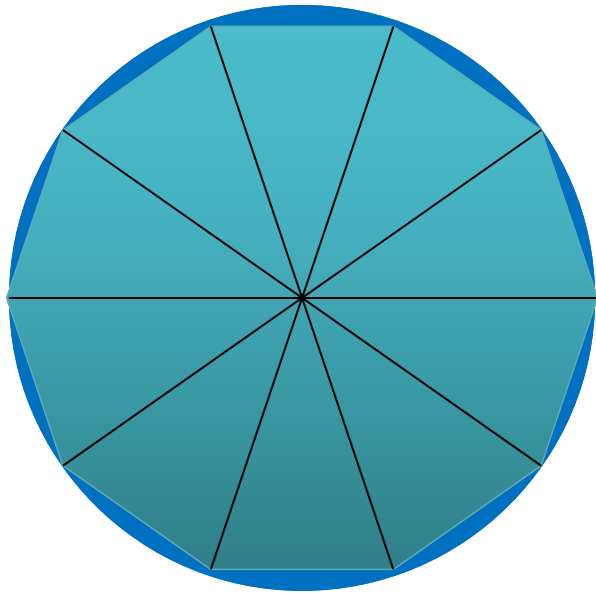
Circles



```
gl::drawSolidCircle(C, r)
```

gl::color() sets
fill color

Segmented Circles

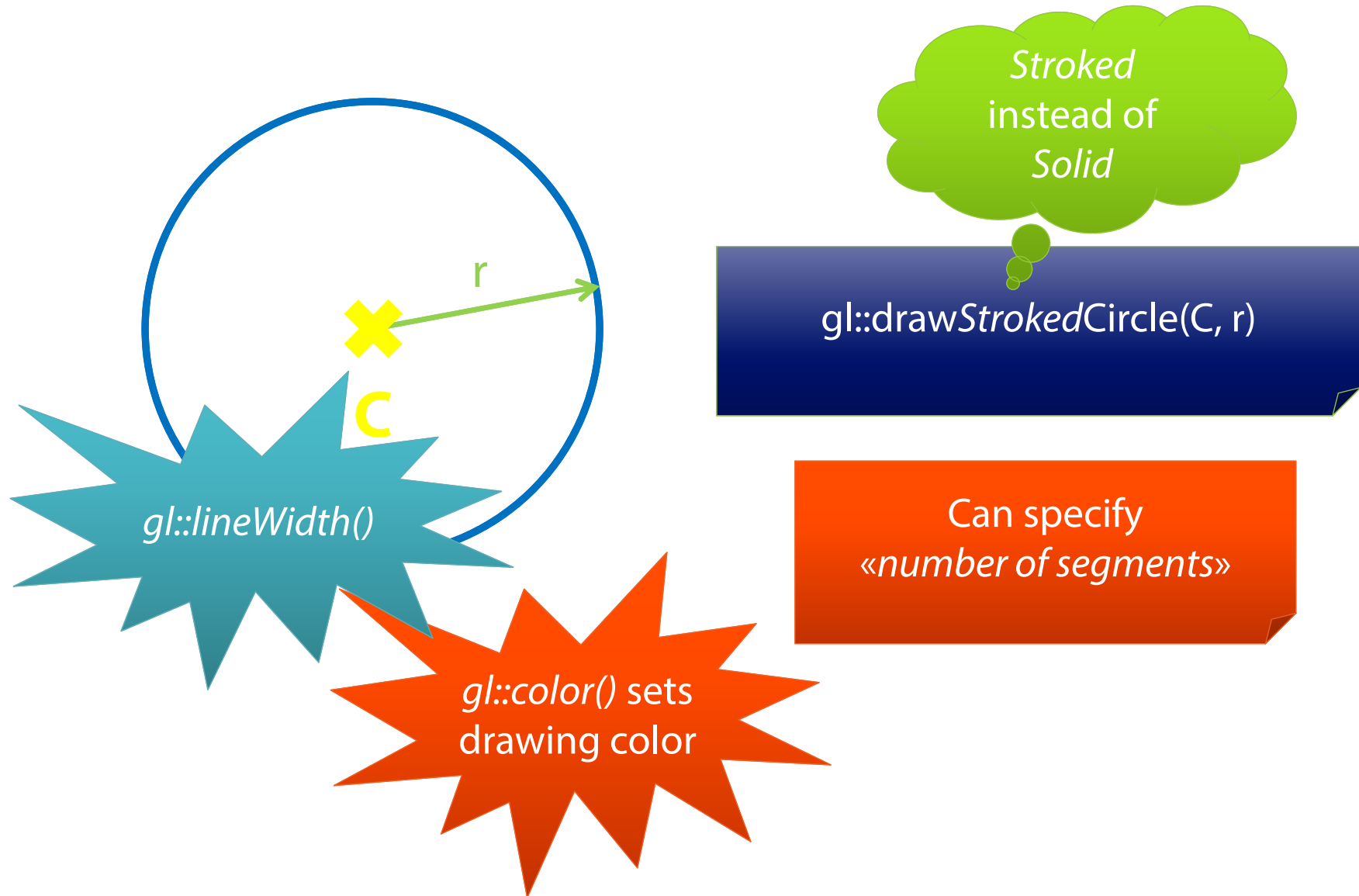


$N = 10$

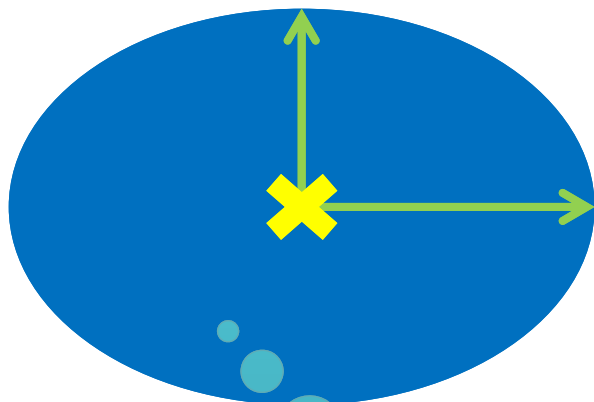
Number of
segments
on the circle's
circumference

```
gl::drawSolidCircle(C, r, N)
```

Solid vs. Stroked



Ellipses

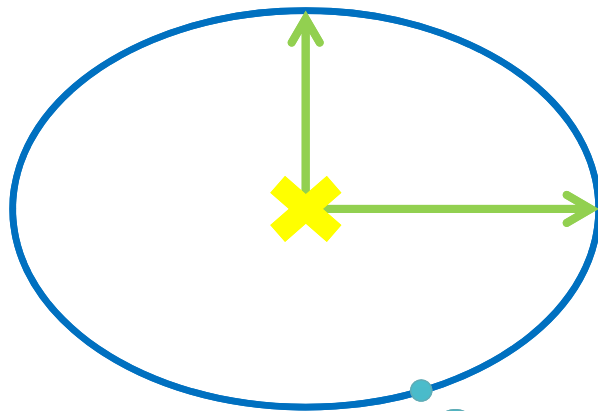


`gl::color()`

```
gl::drawSolidEllipse(  
    const Vec2f& center,  
    float radiusX,  
    float radiusY  
);
```

Optional
number of
segments

Ellipses



`gl::color()`

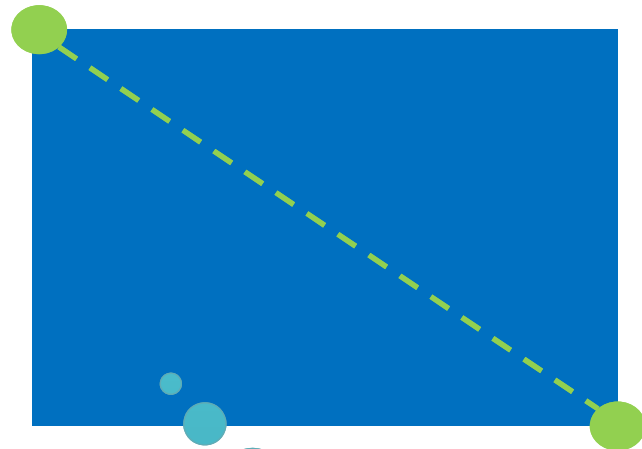
*Stroked
instead of
Solid*

```
gl::drawStrokedEllipse(
```

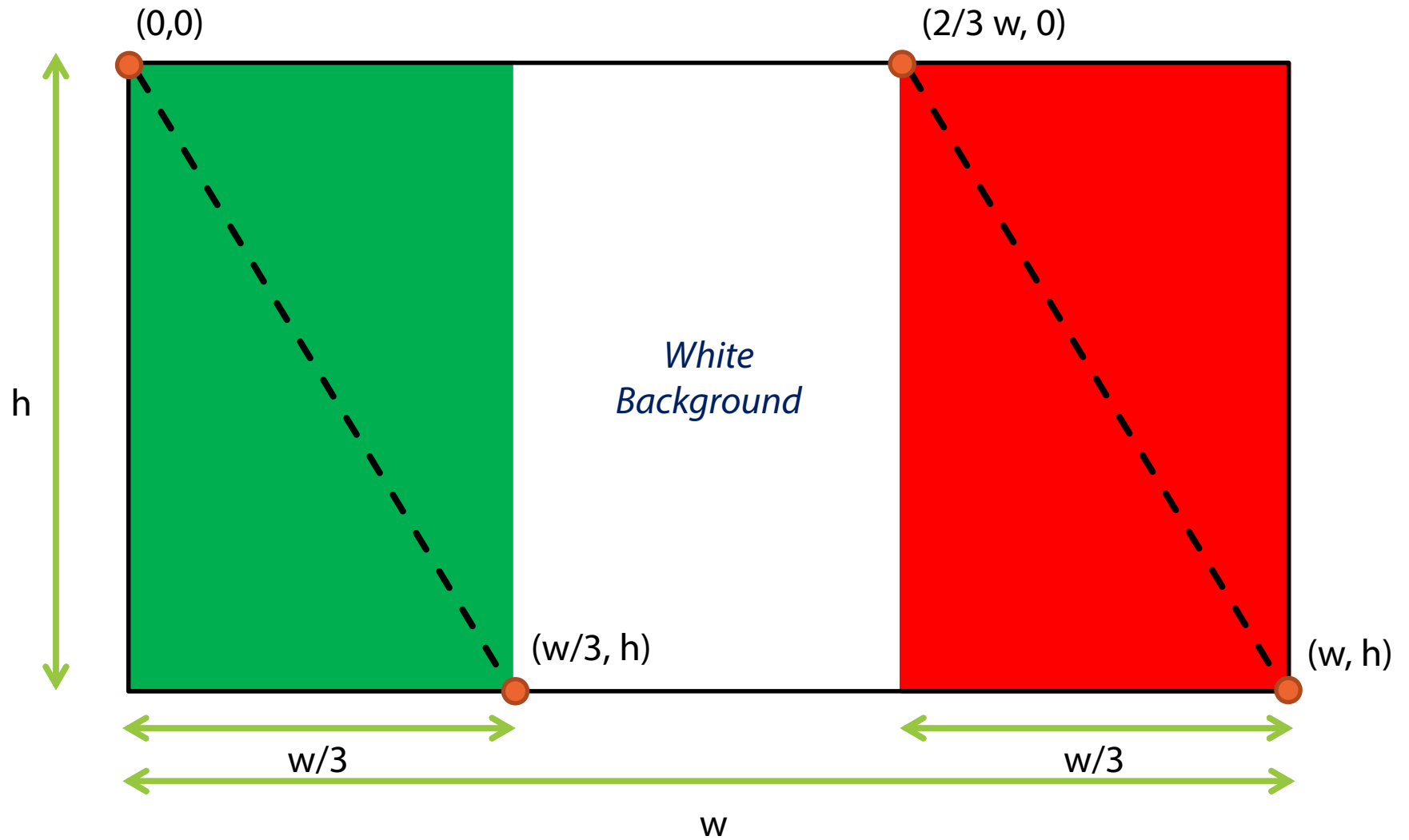
```
    const Vec2f& center,  
    float radiusX,  
    float radiusY
```

```
);
```

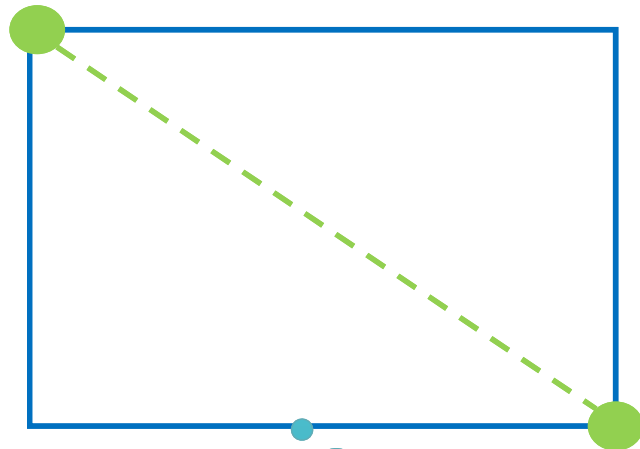

Rectangles



Geometry of the Flag of Italy



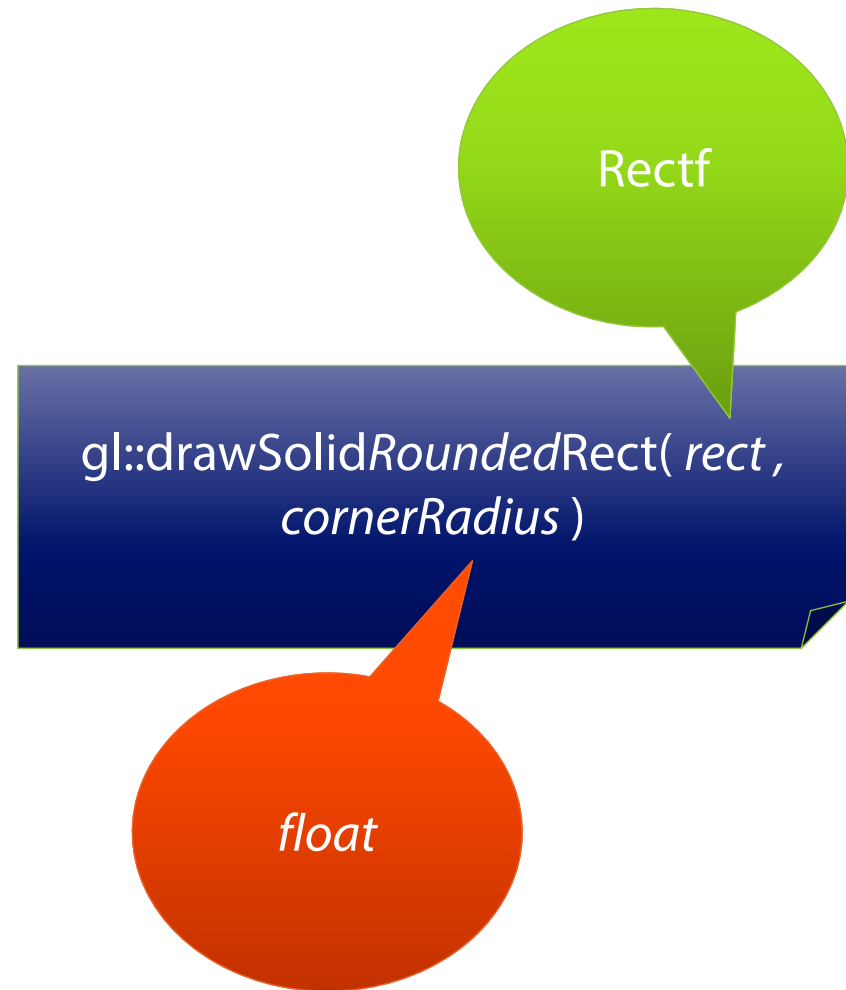
Rectangles



*Stroked
instead of
Solid*

```
gl::drawStrokedRect( rect )
```

Rounded Rectangles



Rounded Rectangles



`gl::color()`

*Stroked
instead of
Solid*

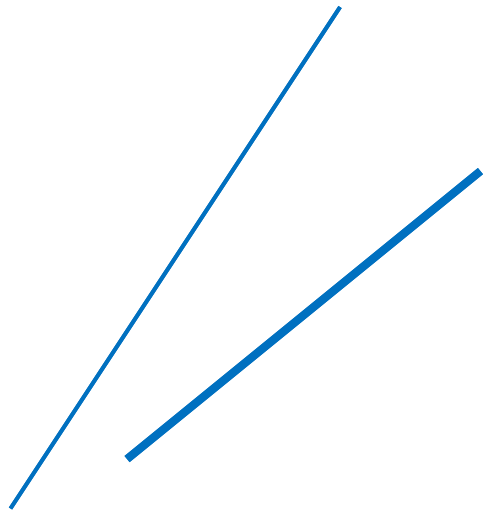
```
gl::drawStrokedRoundedRect( rect,  
                             cornerRadius )
```

Cinder's Drawing Functions (URL)

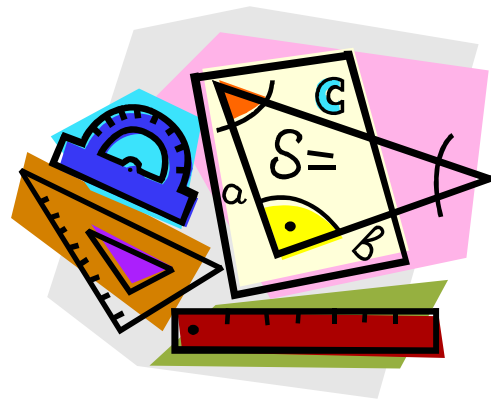
A green ribbon banner with a central rectangular box containing a URL. The ribbon has pointed ends on both sides and a slight 3D effect with a darker green shadow underneath.

<http://tinyurl.com/ptfxnxu>

Summary (1/2)



`gl::drawLine()`
`gl::lineWidth()`



`Vec2f`
`Rectf`

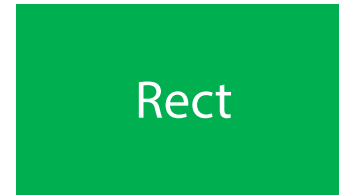
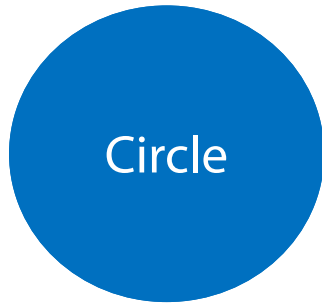


`Color`
`ColorA`

`gl::color()`

Summary (2/2)

gl::drawSolid...



gl::drawStroked...

