AKIRA
Building a UX design application from scratch
WORKSHOP

- 20 minutes (ish) presentation
  - Why a new app
  - The differences with other available apps
  - The technology stack
- Demo + Q&A
  - Ideas, suggestions, criticisms, etc.
FOLLOW AKIRA

https://github.com/akiraux/Akira

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WHO AM I

Alessandro, Italian, I love pizza and hate soccer.

- UI/UX Designer
- Full stack developer for 15+ years
- Lead UX Architect at Thunderbird
- FOSS lover and user

Twitter/Mastodon: @alecadd
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DISCLAIMER!

All opinions are mine and are not meant to offend or criticize the work of anyone.

**GIMP** is amazing!

**Inkscape** is mind blowing!

**Krita** is a far superior painting app than others!

etc...

I’m just that guy in a meeting asking “is there a better way to do this?”
WHAT IS IT

2D vector graphical application for UI/UX design

Akira is NOT:

- Photo retouching or manipulation
- Digital painting
- 3D graphics
- Toolkit/Code generator
- Print design...maybe?
Akira aims to be the Linux alternative of:

- Sketch
- Figma
- Adobe Xd
- Affinity Designer
IS NOT A REPLACEMENT FOR

- GIMP
- Inkscape
- Krita
- Darktable
- LibreOffice Draw
- Pencil
- Glade
- or any other graphical tool currently available for Linux.
WHY DO WE NEED A NEW APP

Pretty much anything can be done with FOSS applications that can be done with proprietary or closed source applications.

The problem is not the inability to create something, but rather the speed and efficiency in which you create that “something”.

Inkscape  GIMP  Krita  Figma
CHANGES IN THE MARKET

Closed source

Open source

New UX oriented apps

Adobe chickened out
WHAT ARE THE PROBLEMS

Currently available Linux design applications are not a viable solution for a large collaborative professional environment.

- They’re not widely adopted
- They’re not compatible with each other
- The usability and UX paradigms are outdated
- They lack features that are now standard and expected:
  - Reusable (linked) components
  - Built-in version control
  - Multiple Artboards
  - Collaboration and hands off
  - Many more...
FEATURES EXAMPLE

https://uxplanet.org/figma-all-you-need-to-know-156b52b88e54
CONTRIBUTING TO EXISTING APPS

Original attempt to fork Inkscape and slowly contribute upstream, but the complexity of the application was too disconnected from the primary goal I was trying to reach, which was to create a simple and very focused design application with a very narrow objective.

- Massive monolithic code base (my fault)
- Drastic code changes likely rejected
- Drastic UI changes likely rejected
- The goals and new features don’t align with the current scope
THE STACK

The objective was to keep a very simple and easy to install stack, with few dependencies, and a clean and easy to read code base.

- GTK
- Vala
- elementary OS HIG, stylesheet, and icons
- Cairo (via GooCanvas API...for now)
WHY VALA

```csharp
public class MyApp : Gtk.Application {
    public MyApp () {
        Object {
            application_id: "com.github.yourusername.yourrepositoryname",
            flags: ApplicationFlags.FLAGS_NONE
        };
    }

    protected override void activate () {
        var main_window = new Gtk.ApplicationWindow (this) {
            default_height = 300,
            default_width = 300,
            title = "Hello World"
        };
        main_window.show_all ();
    }

    public static int main (string[] args) {
        return new MyApp ().run (args);
    }
}
```
WHY ELEMENTARY OS HIG

https://docs.elementary.io/hig/
WHY GOOCANVAS

double x = 25.6;
y = 25.6;
width = 284.8;
height = 284.8;
aspect = 1.0;
corner_radius = height / 10.0;

double radius = corner_radius / aspect;
double degrees = M_PI / 180.0;
cairo_new_sub_path (cr);
cairo_arc (cr, x + width - radius, y + radius, radius, -90 * degrees, 0 * degrees);
cairo_arc (cr, x + width - radius, y + height - radius, radius, 0 * degrees, 90 * degrees);
cairo_arc (cr, x + radius, y + radius, radius, 90 * degrees, 180 * degrees);
cairo_arc (cr, x + radius, y + radius, radius, 180 * degrees, 270 * degrees);
cairo_close_path (cr);
cairo_set_source_rgb (cr, 0.5, 0.5, 1);
cairo_fill_preserve (cr);
cairo_set_source_rgba (cr, 0.5, 0, 0, 0.5);
cairo_set_line_width (cr, 10.0);
cairo_stroke (cr);
public class Akira.Lib.Components BorderRadius : Component {
    public double x { get; set; }
    public double y { get; set; }
    public bool uniform { get; set; }
    public bool autoscale { get; set; }

    public BorderRadius (Items.CanvasItem _item) {
        item = _item;
        x = y = 0.8;
        uniform = true;
        autoscale = false;
        this.notify["x"].connect (update);
        this.notify["y"].connect (update);
    }

    public void update () {
        // We use the X value for both radii in case the radius is set to uniform.
        if (uniform) {
            item.set ("radius-x", x);
            item.set ("radius-y", x);
        }
    }
}
IT’S DEMO TIME!

Let’s do this...

flatpak remote-add flathub-beta
https://flathub.org/beta-repo/flathub-beta.flatpakrepo

flatpak install akira