

MINOΣ2 — A GUI for net2o

Widgets and Layout Engine

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4 Years after Snowden

What has changed?

Politics

- Fake News/Hate Speech as excuse for censorship #NetzDG
- Crypto Wars 4.0: Discuss about ban of cryptography
- Legalize it (dragnet surveillance)
- Kill the link (EuGH and LG Humburg)
- Privacy: nobody is forced to use the Interwebs (Jim Sensenbrenner)

Competition

- faces Stasi-like Zersetzung (Tor project)

Solutions

- net2o starts becoming useable

Outlook from 2013

- The next presentation should be rendered with MINOΣ2
- Texts, videos, and images should be get with net2o, shouldn't be on the device
- Typesetting engine with boxes and glues, line breaking and hyphenation missing
- a lot less classes than MINOΣ — but more objects
- add a zbox for vertical layering
- integrated animations
- combine the GLSL programs into one program?

MINOΣ2 vs. MINOΣ

Rendering: OpenGL (ES) instead of Xlib, Vulkan backend planned

Coordinates: Single float instead of integer, origin bottom left (Xlib: top left)

Typesetting: Boxes&Glues closer to LaTeX — including ascender&descender

Glues can shrink, not just grow

Object System: Mini-OOF2 instead of BerndOOF

Class number: Fewer classes, more combinations

MINOΣ2 Widgets

Design principle is a Lego-style combination of many extremely simple objects

actor base class that reacts on all actions (clicks, touches, keys)

widget base class for all visible objects

glue base class for flexible objects

tile colored rectangle

frame colored rectangle with borders

text text element

edit editable text element (`text` with cursor)

icon image from an icon texture

image larger image

animation action for animations

canvas vector graphics (TBD)

MINOΣ2 Boxes

Just like LaTeX: Boxes arrange widgets/text

hbox Horizontal box, common baseline

vbox Vertical box, minimum distance a baselineskip (of the hbboxes below)

zbox Overlapping several boxes

grid Free widget placements (TBD)

There will be some more variants for tables and wrapped paragraphs

MINOΣ2 Displays

Render into different kinds of displays

texture Into a texture, which can be used as image, also used as viewport (TBD)

display To the actual display

Minimize Draw Calls

OpenGL wants as few draw-calls per frame, so different contexts are drawn in stacks with a draw-call each

init Initialization round

bg Background round

icon draw items of the icon texture

thumbnail draw items of the thumbnail texture

image images with one draw call per image

text text round

marking cursor/selection highlight round

Bonus page: BlockChain

Challenge Avoid double-spending

State of the art: Proof of work

Problem: Proof of work burns energy and GPUs

Alternative 1: Proof of stake (money buys influence)

Problem: Money corrupts, and corrupt entities misbehave

Alternative 2: Proof of well-behaving

How? Having signed many blocks in the chain

Multiple signers Not only have one signer, but many

Suspicion Don't accept transactions in low confidence blocks

Literature&Links

Bernd Paysan *net2o fossil repository*

<https://fossil.net2o.de/net2o/>