

ElmPrague at elm Europe 2019

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elm Europe 2019

2019.elmeurope.org

The Last Thing First

Incremental Type-Driven Development

-  **Red**
 - make a wish
-  **Green**
 - quick, dirty, hardcoded fix
-  **Yellow**
 - un-hardcode
 - make change easy, so you can make easy change



Example? - result

Day 1

Keynote

Richard Feldman

- "Custom Types All the Way"
- `MyEffect` instead of `Cmd`:

```
type MyEffect = SendHTTP | ReloadBrowser | ...
run: MyEffect -> Cmd a
runWithDebug: MyEffect -> Cmd a
-- elm-test
```

- faster `Array`
 - now: [HAMT](#)
 - possible new: [RRBT](#)

Elm compiler in Elm!

Martin Janiczek



- [elm-in-elm/compiler](#)
- **✗ Non-goal:** replace official Elm compiler
- **✓ Goals:**
 - compile in browser
 - extend and experiment
 - tools (editors, analysis, debugging)
 - ...
- [roadmap](#)

Fighting the Laws of Physics with Elm



- [w0rm/elm-physics](#)
- **Evan** is working on high-level 3D renderer for Elm

Actor Model in Elm

- [webbhuset/elm-actor-model](#)
-  **Monolith ->**
 **Actors passing messages**
- actor example:
 - PageHeader
 - ProductList
 - ShoppingCart
 - NewsletterForm
- [mdgriffith/elm-ui](#)

Demo:
elm-actor-model
+
elm-ui

[jakubea/actor-model-elm-ui](#)

Elm for Games

- libs
 - Entity-component-system:
 - [justgook/elm-game-logic](#)
 - Tiled maps:
 - [justgook/elm-tiled-decode](#)
 - for [Tiled map editor](#)
- [chrilves/elm-io](#) pattern

chrilves/elm-io

"Elm Architecture without update"

- update model in view:

```
view : Model -> Html (IO Model Msg)
view model =
  div [] [
    div [] [text (String.fromInt model)],
    button [onClick increment] [text "+1"],
    button [onClick reset] [text "reset"]
  ]
increment : IO Model Msg
increment = IO.modify ((+) 1)

reset : IO Model Msg
reset = IO.set 0
```

- no Elm 0.19 release 😢

LiaScript

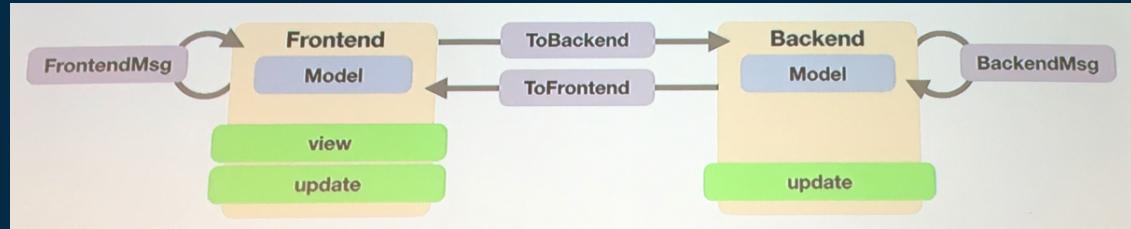
- improved Markdown for online education
- [presentation in LiaScript](#)
 - [raw markdown](#)
- Elm frontend ([closed source](#))
 - <https://gitlab.com/Freinet/LiaScript>

Day 2

Elm as a service

Lamdera

- "Universal Elm Runtime"



- example: [Lamdera/lamdera-counter-example](#)
- private alpha: lamdera.com
- limits (no real DB, max data: ~100MB, ...)

Working with Bytes

- replace JSON API with binary format
- `JSON.Decode` is fast!
- binary data performance:
 - worse for small data
 - worse for a lot of strings
 - good for large data

Elm side effects

```
type InfoForOutside =
    | FileSelected String String
    | DisplayFile String
    | InitSearch String
    | PostErrorLog String
    | InitSSE POID
    | GenerateChart String ChartType (List ( String, Float, String ))
    | GoToUrl String
    | ScrollToId String
    | SaveToLocalStorage E.Value
    | ReadFromLocalStorage
    | StartIntercomForOrga String
    | InitPaylineWidget String

type InfoForElm =
    | FileRead FilePortData
    | PlaceSelected PlaceSelectedData
    | MessageReceived POID (List Patch)
    | DataInLocalStorage E.Value
    | CardRegistered

type alias GenericOutsideData =
    { tag : String
    , data : E.Value
    }

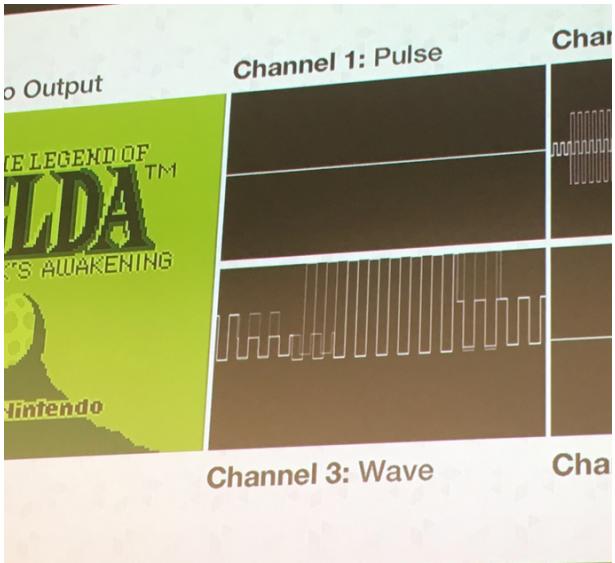
port infoForOutside : GenericOutsideData -> Cmd msg

port infoForElm : (GenericOutsideData -> msg) -> Sub msg
```

Honorable Mentions

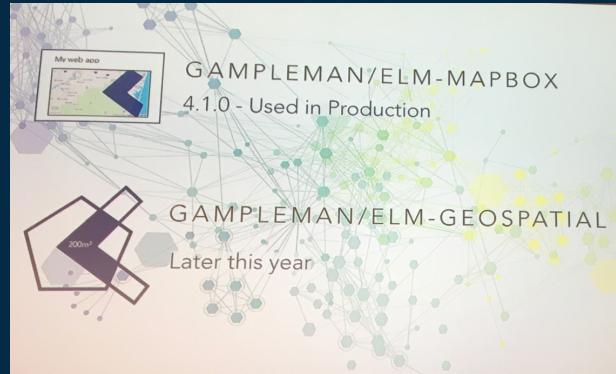
Game Boy Audio

[Malax/elmboy](#)



Geospatial Analysis

[gampleman/elm-mapbox](#)
[gampleman/elm-visualization](#)
[gampleman/elm-geospatial](#)





Questions?



Thank You!

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What would you like to see next time?