Elm Friendly functional frontend

CONCEPTS

> Read compiler errors top to bottom: they usually name the fix.

Model all state
↓ `view`
View Html Msg
↓ `user event`
Msg what happened
↓ `update`
Update returns new Model
The Elm Architecture

PROJECT

`elm init`
Create elm.json and src/

`elm install` *`<author/package>`*
Add a dependency

`elm repl`
Start an interactive session

BUILD

`elm make src/Main.elm`
Compile to index.html

`elm make src/Main.elm --output=elm.js`
Compile to a JS file

`elm make src/Main.elm --optimize`
Optimized build, no Debug

`elm make src/Main.elm --debug`
Add the time-travel debugger

`elm make src/Main.elm --output=/dev/null`
Type-check only, no output

`elm reactor`
Serve the project at :8000

PACKAGES

`elm install elm/json`
JSON encode and decode

TOOLING

`elm-format src/ --yes`
Format all files in place

`elm-test init`
Create tests/ and test deps

TOOLING (cont.)

`elm-test`
Run all tests in tests/

SYNTAX

`module Main exposing (main)`
Module header

`import Html exposing (Html, div, text)`
Import names

`name : Int → String`
Type annotation

`type alias User = { name : String }`
Name a record type

`type Msg = Inc | Dec`
Custom type

`case x of ... → ...`
Pattern match

`let y = 1 in y + 1`
Local bindings

`{ model | count = 1 }`
Update record fields

`x |> f |> g`
Pipe left to right

CORE LIBRARY

`List.map f xs`
Transform each item

`List.filter f xs`
Keep matching items

`String.fromInt n / String.toInt s`
Int to string / parse (Maybe)

`Maybe.withDefault 0 m`
Unwrap Maybe with fallback

`Debug.log "label" value`
Print and return value

PROGRAMS

`Browser.sandbox`
Simple app: init, view, update

`Browser.element`
App with Cmd, Sub and flags

`Html.Events.onClick Msg`
Send a Msg on click