

enact



LG's JavaScript Framework

Overview and Introduction

July 2017

Introduction

- Steve Winston, VP Engineering, LG Silicon Valley Lab
- Automotive & Advanced Platform team.
- Previously led webOS platform team.
- Focused on AGL platform enhancements around app frameworks, window managers, compositors and media.

What is Enact?

- Comprehensive web application framework
- LG owned and developed
- Open source (soon to be)
- Built on top of learnings from the Enyo framework, which is used on millions of LG devices and the HP Touchpad
- Multi-platform

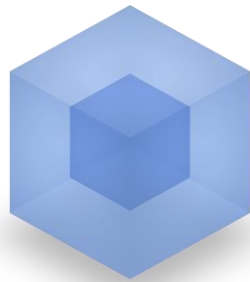
Why is a framework necessary?

- Consistent look, feel and behavior across apps
- Consistently high performance across apps
- Ability to make improvements across apps, quickly and efficiently
- Avoidance of duplicated effort across app teams
- Consistency of architecture, practices and style across app teams
 - Increased ability to share code between apps
 - Increased ability to transfer engineers between app teams
 - Reduced fragmentation

Enact Goals

- Reduce Developer Error
- Improve Performance
- Reduce Time to Develop Application
- Take Advantage of JavaScript Ecosystem
- Adopt Modern JavaScript Features
- Create Safe Styling API

ESLint



node

BABEL

CSS
MODULES



webpack
MODULE BUNDLER

Flux

npm



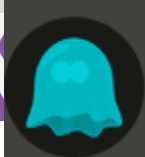
Redux

ARMIA

IMMUTABLE

JS

X



PhantomJS

ES6

The Parts of Enact

- Support Libraries

- Spotlight
- I18n
- webOS

- UI
- eslint-config-enact
- eslint-plugin-enact

- Tooling

- enact-dev
- enact-ui-tests
- enact-bench
- Travis

- Documentation

- Samples and Patterns

- Enact-samples
- Sampler

App Scaffolding

- CLI tool
- Generate a starter application
- Supports debugging with built-in server that auto reloads
- Built-in test runner
- License auditing

UI Theming

- Customizable component styling
- Flexible styling API
- Multiple UI libraries
- Layout library

Focus Management

- Handles on-screen focus of UI elements
- Supports touch, 5-way d-pad, and pointer
- Utilizes algorithm developed by Mozilla for FirefoxOS
- Minimizes developer effort in managing navigation

Accessibility

- Web-based accessibility standards i.e. ARIA
- Customizable ARIA properties for developer override
- Voice readout
- Specification of labels and control of reading order

Internationalization

- Based on the iLib internationalization library
- Enables locale-awareness for components
- Supports text directionality
- String translation
- Utilities for converting dates, numbers, addresses, currency, and more

Dynamic Resolution

- Screen sizes and resolutions can vary across platforms
- Write-once, deploy-anywhere model for layout
- Ability to specify scaling for target platform or resolution

Performance Tuning

- Pre-render initial screen of an application to decrease time to first meaningful paint
- V8 snapshot support to further decrease launch time
- Compatible with tools such as ReactPerf to analyze component perf

Environment Support

- Development using modern desktop browsers
- Emulator support
- Ability to use advanced debugging tools and features

Enact Apps

- Same application
- Exactly the same underlying code and markup
- Different themes

FIRST



Click me

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Change Skin!

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FIRST



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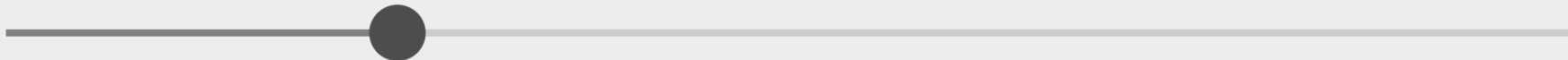
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Demo

What we are showing:

- QML Window Manager & Compositor
- Simple Home screen UI
- QtWebview wrapper for Enact applications

Summary

Enact Summary:

- Robust web-standards application framework
- Soon to be fully open-sourced
- LG will continue to work closely with AGL

Thank you!

The Enact Framework team

