Bootstrap, from twitter

Ground Up

Syed Awase

Bootstrap, from twitter

12. OTHER ALTERNATIVE FRAMEWORKS

Framework?

- A free collection of tools for creating enterprise class applications quickly with predefined and tested resources.

- HTML and CSS design templates are mostly provided for typography, forms, buttons, navigation and interface components

Why Frameworks?

- Fun to use
- Make it quicker to build an MVP
- Work around lumps/bugs in the platform
- Knowing a framework means i get paid.

USER NEEDS

- Sites and apps should load quickly
- Smooth interactions and responsive gesture
- HCI
- Better performance on any mobile device
- Compatible with any resolution and screen
- Feature rich
- Ergonomic design

DEVELOPER COSTS

- Time to learn a framework

- Bandwidth

- CPU usage(battery)

- Frame rate

- Memory usage

http://www.chromium.org/developers/how-tos/trace-event-profiling-tool

Frameworks

Frameworks

- Angular Material Design
- ChocolateChip UI
- Framework 7
- Ionic IO
- Ratchet
- Ruboto

- Bootstrap
- Zurb Foundation
- Yeoman.io

Cross Platform Architecture

Design

- DOM
- User Interface
- Design
- Style

Functional

- JavaScript
- JavaScript to use APIs

Wrapper

- Webview
- APIs
- Build Tools

CSS   HTML5

JAVASCRIPT

WEBVIEW

WRAPPER
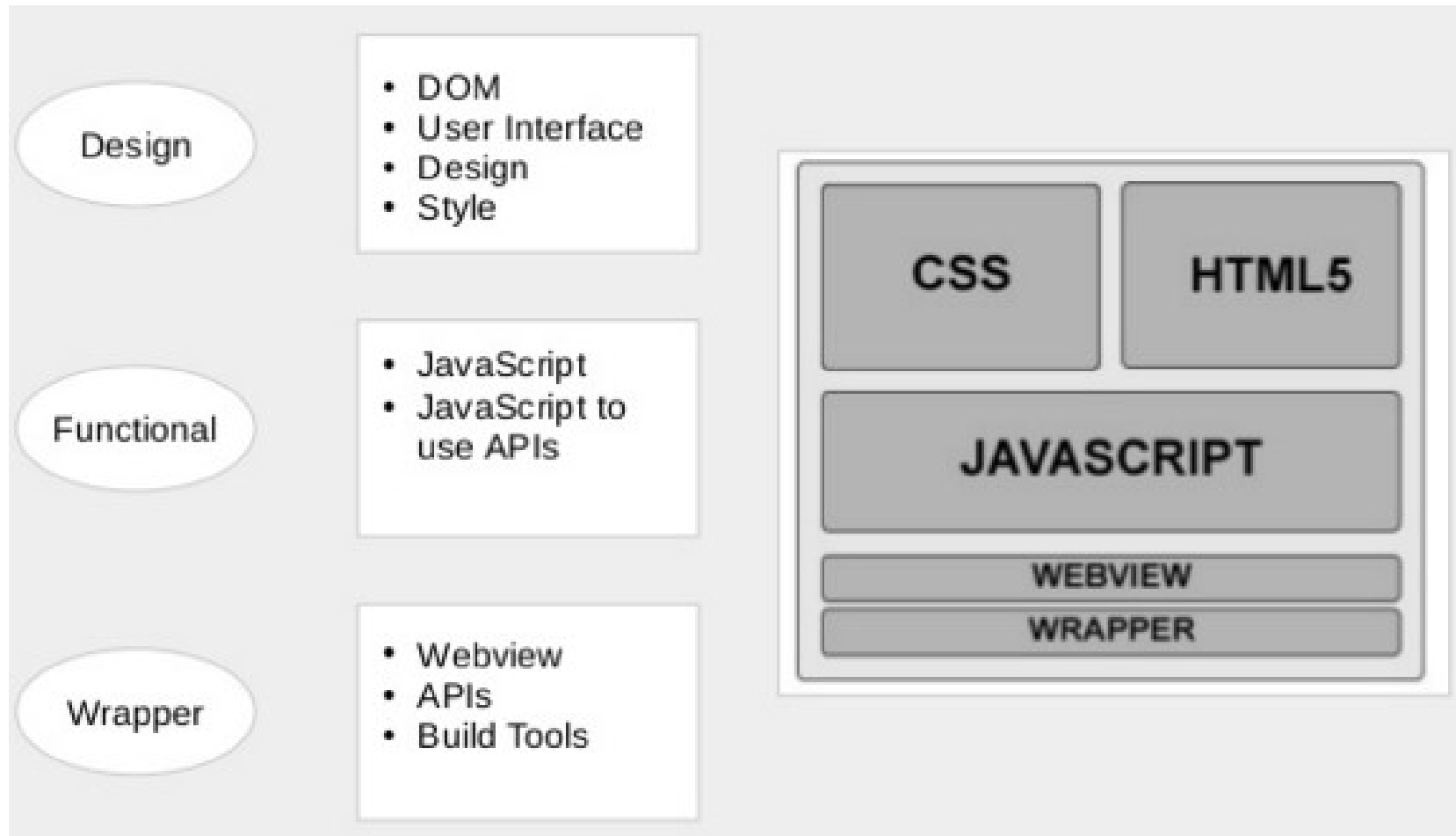
Why use a framework?

Advantages

- Rapid prototyping
- Streamline your design process
- Save development time because tested
- Scale your design on all devices
- Secure/cost/Support/Efficiency

Disadvantages

- Code bloat by customization
- Know your code
- Updating can break up things
- Collaborations in teams

Bootstrap Framework

MOBILE FIRST DESIGN

GRID   SMALL – MEDIUM – LARGE – X-LARGE

UI ELEMENTS   EXTENSIVE UI ELEMENTS

UNITS   PIXELS

PREPROCESSOR   {less} + SASS

PHILOSOPHY   RAPID DEVELOPMENT PROTOTYPES

Bootstrap Resources

- Bootswatch.com

- Bootsnipp.com

- Bootply.com

- Startbootstrap.com

- Expo.getbootstrap.com

- Lovebootstrap.com

- Layoutit.com

- Pingendo.com

- Shoelace.io

- Fontawesome

Bootstrap

Bootstrap specifies four pixel-based media query breakpoints.

Screens	Viewport Size	Container Width	Class Prefix
Extra small screens	< 768px	auto	`.col-xs-*`
Small screens	≥ 768px	750px	`.col-sm-*`
Medium screens	≥ 992px	970px	`.col-md-*`
Large screens	≥ 1200px	1170px	`.col-lg-*`

FOUNDATION 5 Framework

MOBILE FIRST DESIGN

GRID		**SMALL – MEDIUM – LARGE**
UI ELEMENTS		**COMPACT UI ELEMENTS**
UNITS		**ROOT EM**
PREPROCESSOR		*SASS*
PHILOSOPHY		**DESIGN IT YOURSELF APPROACH**

Foundation 5

Foundation includes five em-based media queries.

Screens	Viewport Size	Class Prefix (Default Grid)	Class Prefix (Block Grid)
Small screens	≤ 40em (640px)	`.small-*` `.column(s)`	`.small-block-grid-*`
Medium screens	≥ 40.063em (641px)	`.medium-*` `.column(s)`	`.medium-block-grid-*`
Large screens	≥ 64.063em (1025px)	`.large-*` `.column(s)`	`.large-block-grid-*`
XLarge screens	≥ 90.063em (1441px)	Not Activated	Not Activated
XXLarge screens	≥ 120.063em (1921px)	Not Activated	Not Activated

Foundation Resources

- Foundation.zurb.com
- Foundation.zurb.com/templates.html
- Foundation.zurb.com/docs
- Mixture.io

Yeoman.io

- Web scaffolding tool for modern web apps
- Modern workflows for modern apps
- Three key components
  - Yo
  - Bower
  - Grunt
- Generators are available for Angular, Backbone, React, Polymer

Yeoman.io

- Scaffolding tool

- Similar Rails Generators

- Scaffolds project structure, defaults and Grunt file

- Existing generators for
  - AngularJS, ChromeApp, Flask, Silex, Sinatra, Frefox OS

Yo:Generators

- Node Modules
- Available via NPM (node package manager)
- Npm search yeoman-generator
- Rolling your own
  - http://yeoman.io/generators.html#writing-your-first-generator

BOWER

- Package manager for the web
- Created at twitter
- Runs over GIT
- No System wide dependencies
- No cross project dependencies
- Flattens dependency tree

Bower:Dependencies

- Dependencies are documents in bower.json
- Bower CLI tool allows:
  - Searching for dependencies
  - Installing dependencies
  - Registering packages
- Packages available for
  - jQuery, D3, Three.js, Backbon.js, Modernizr, AngularJS

Grunt

- Javascript built tool
- Automation of repetitive development tasks
- Allows develops to test, preview and build project
- Plugins used to mix and match per project
- Configurable tasks

Grunt:Plugins

- Node Module

- JavaScript/CoffeeScript

- Creating a plugin
  - http://gruntjs.com/creating-plugins

- Plugins available for
  - HTMLmin, Mocha, PHPUnit, RECESS, SCSS/LESS

Yeoman.io

- Installing Yo, Grunt and Bower
  – Npm install –g yo grunt-cli bower
- Installing a generator
  – Npm install –g generator-backbone generator-mocha

Creating a project

- Creating a new empty project folder
- Mkdir –p ~/projects/backbone && cd~/projects/backbone
- Scaffolding the project
- Yo backbone

Building App

- ## Create Model
  - Yo backbone:model url
- ## Create a collection
  - Yo backbone:collection url
- ## Create a view
  - Yo backbone:view url
- ## Create a router
  - Yo backbone:router url

Adding a dependency

- Finding a dependency
  - Bower search backbone.localStorage

- Installing a dependency
  - Bower install backbone.localStorage

Testing

- Mocha + Expect
- Running the tests:
  - Grunt test
- Preview + Building
  - Previewing
    - Grunt server
  - Building
    - Grunt build

Ionic framework

- Free and open source, ionic offers a library of mobile-optimized HTML, CSS and JS componenets, gestures and tools for uilding highly interactive apps. Built with Sass and optimized for AngularJS

- Enables any developer with knowledge of HTML,CSS and JS to build mobile hybrid applications in no time.

IONIC FRAMEWORK

- Combines Apache Cordova with Angular JS
- Create enterprise class Applications/Hybrid mobile application
- Supported devices
  - IOS6+
  - Android 4+
  - Windows Phone 8+
  - Firefox OS

Design	Functional
Custom DOM	AngularJS
Custom CSS	
Custom JS	

	Android	iOS	WP
Ionic		7	

IONIC FRAMEWORK

- Founded in 2012 by Ben Sperry(CEO) and Max Lynch (CTO)

- Creators of Codiqa, JetStrap and Ionic

- Ionic is built on top of cordova , wraps many of its commands

- Commands like build, platform, plugin all directly call cordova

- http://ionicons.com

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IONIC LAB WEB

- Build and test iOS and Android versions side-by-side. See changes instantly
  - Ionic serve –lab
- Livereload
  - Instantly update your apps with code changes, even when running directly on your device
    - Ionic run –livereload
- ICON/SPLASH generation
  - Generate icons and splash screens for all devices and device sizes with a single command
- Share your ionic apps with clients, customers and testers all around the world. All without ever going through the APP Store!

IONIC.IO Platform

- Full-stack backend services and tools for your Ionic app
  - Finally a service that embraces mobile web dev!
    - Push
    - Analytics
    - Deploy
    - Users
    - Creator
    - Lab
    - Market

Chocolate Chip UI

Advantages

- Cross platform
  - Android –IOS-WP
- Event Optimization depending on the OS
- Documentation
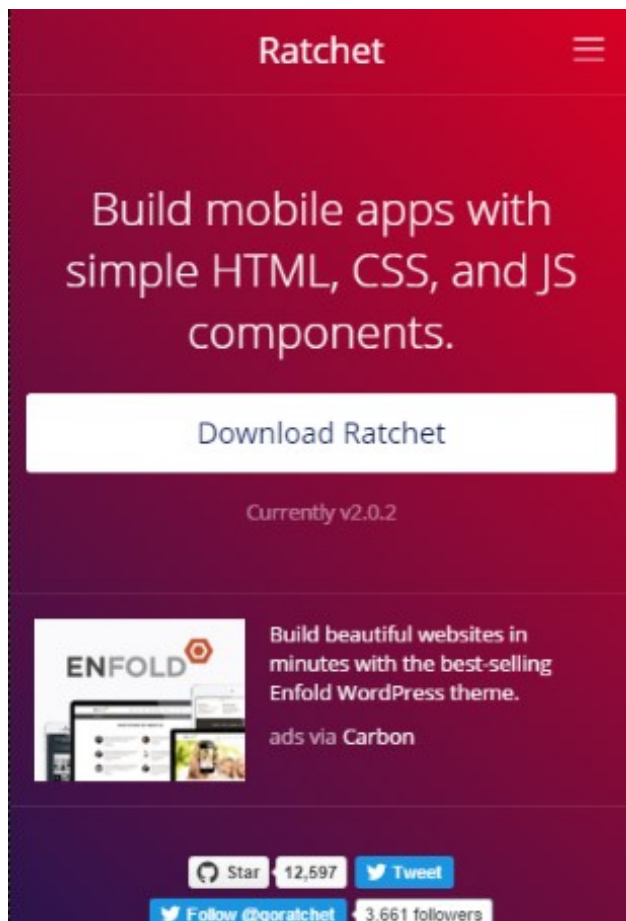- ChocolateChipJS
- Easy
- Good Performance

Disadvantages

- Old User Interface
- Jquery: Easy but not the best

Ratchet

	Android	iOS	WP
Ratchet	4	7	

Design	Functional
HTML5 DOM	Slider.js
Custom CSS	Push.js
	jQuery

Goratchet.com

- Build mobile apps with simple HTML,CSS and JS Components
- Advantages
  - Very Easy
- Disadvantages
  - Low user interface
  - Only CSS(UI)
  - Only iOS

Framework 7

	Android	iOS	WP
F7		7	

Design	Functional
Custom DOM	DOM $$
Custom CSS	jQuery

- Advantages
  - Good performance
  - Easy and Good Documentation
- Disadvantages
  - DOM – easy but not the best approach
  - Only iOS

- Framework 7 is a free and open source mobile HTML framework to develop hybrid mobile apps or web apps with iOS native look and feel

Angular Material

Design	Functional
Custom DOM	AngularJS
Custom CSS	
Custom JS	

- An implementation of material design in Angular.js
- A set of reusable, well-tested and accessible UI components based on the Material Design System

- Advantages
  - High Functions (AngularJS)
  - Documentation
  - Good Performance
- Disadvantage
  - AngularJS not easy
  - Only Material Design

	Android	iOS	WP
AM	Material		

Ruboto

	Android	iOS	WP
Ruboto	4		

- A framework and tool chain to develop native android apps, using the ruby language we all know and love

Design	Functional
Android	Ruby/JRuby
	Android
	APIs

- Advantages
  - Ruby based
- Disadvantages
  - Android+Ruby =Android
  - Old User Interface
  - Only Android

Framework Analysis

Framework Name	Jquery	AngularJS	DOM	OWN JS	Open /Commercial
Angular Material		X			
Bootstrap					
IONIC.IO		X			
ChocolateChip UI	X			X	
Kendo UI					
Yeoman.io					
ratchet					
ruboto					
Zurb foundation					
Onesen UI					
Framework 7			X		

Framework Analysis

Framework Name	Android	iOS	Windows Phone	Web	
Angular Material	Material				
Bootstrap	4	4		Y	
IONIC.IO					
ChocolateChip UI	4	7	8		
Kendo UI					
Yeoman.io					
ratchet	4	7			
ruboto					
Zurb foundation					
Onesen UI					
Framework 7		7			