Agile Development with JavaScript

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Agile Principles Refresher

- Satisfy the customer through early and continuous delivery of valuable software.

- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
Smaller More Independent Batches

Simpler to:
1. Estimate
2. Test
3. Release Frequently
4. Get Feedback
5. Work in parallel!
3 Practices to Reduce Dependencies

1. Component Based Architecture
2. Centralized State Management
3. Design systems
The popularity of JavaScript and related ecosystem has exploded. It is widely used for web development and sees further use beyond the web.
Page Based
Design & Development
Page Based Design & Development

- Website is a collection of pages
- Pages provide context – purpose, function & behavior
Page Based Design & Development

- Designers create initial page mockups
- There is a “hand-off” to the development team
- A PO divides mockups into tickets for devs
MVC Architecture Pattern

- Model – Data & Logic
- View – Presentation
- Controller – mediator between View & Model
Delivering Steps in a Workflow
Dress shoes

Filter + Sort by Relevance

128 items

New
Spakeman —— $100
New
Drayniel —— $100
Shopper wants to see a list of shoes and prices (to decide which shoes to buy)

Shopper wants to see a thumbnail pic of shoes

Shopper wants to sort by price or newest or top-rated

Shopper wants to search for black shoes or shoes with a heel height less than 1"

Shopper wants to like shoes and find them later

Shopper wants to buy shoes
Component Based Architecture

- A Component is small, self-contained & reusable slice of the UI.
- Application is modelled as a tree of components.
- Separation of concerns by function.

Independent & Small!

image by Brad Westfall
Component Hierarchy Example

ProductCard

  Image

  ProductTag

  FavouriteButton

Heading

Price
Component Based Architecture
Component Based Architecture Benefits

- Reduces dependencies by making it possible to work in smaller, more self-contained and re-usable batches.

- When you compose components to build larger views or share a component across multiple apps, you can make a change in one place rather than many.

- It takes fewer tasks to complete a valuable user story and testing is simpler.
State Management in Web Development

Refers to the management of the state of UI controls — such as forms, buttons, tabs, etc. — and any data used to render content.
Decentralized State Management
State Management with Redux

image by Brad Westfall
State Management with Redux

based on image by Brad Westfall
State Management with Redux - Easier to Estimate

- **Decentralized**: low complexity to start. Complexity increases as app grows.

- **Redux**: higher complexity to start. But, complexity remains relatively stable regardless of how large the app gets.
Centralized State Management

Benefits

- Reduces dependencies by isolating state and controlling how it is accessed.
- There is one place to get your data, and it's highly organized.
- For example, all the data about products is one place
- The impact of making changes is smaller, more predictable and easier to test.
Design System
Page Based Design & Component Based Development

- Designers create initial page mockups
- Dev team divides mockups into components
- Team delivers value a component at a time
image by Burdock Brewery
A Design System for the Brewery
Design systems use what we know to anticipate what we don't know.

From: https://design.google/library/design-2018-general-information/
Design System = Components + Design Language
Design Language (Tokens)

<table>
<thead>
<tr>
<th>Type</th>
<th>A11y Color</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title 1 · 44/56</td>
<td>Rausch #FF5A5F 3.05:1</td>
<td>8 · tiny</td>
</tr>
<tr>
<td>Title 2 · 32/36</td>
<td>A11y Bebu #00A699 3.03:1</td>
<td>16 · small</td>
</tr>
<tr>
<td>Title 3 · 24/28</td>
<td>A11y Archos #FC542D 3.0:1</td>
<td>24 · base</td>
</tr>
<tr>
<td>Large · 19/24</td>
<td>A11y Hof #4B8448 9.14:1</td>
<td>48 · large</td>
</tr>
<tr>
<td>Regular · 17/22</td>
<td>A11y Foggy #767676 4.54:1</td>
<td>64 · x-large</td>
</tr>
<tr>
<td>Small · 14/18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

image from Building a Visual Language
Create isolated & extensible components

Cadilia
$110
System Components

- Lowest-level building block
- Encapsulate styles and contain no logic
Macro Components

- Composition of system-components
- May contain some UI logic
- Contain no application logic
ProductCard
Compose Other Macro Components

Jerienia —— $110
Sale

Afericen —— $7500
New

Venecias —— $140 $7998

Cowien —— $80.00

Ongaro —— $85

Spokeman —— $100
Sale

Mcvery —— $130 $99.98

Reptil —— $85
#wilby_arthur
Living Documentation

Use tools such as StoryBook to create living documentation of your design system. e.g.:

- [Sh​op​ify Pol​aris](#)
- [IBM Carbon StoryBook](#)
- [Priceline Design System](#)
Design System Benefits

- Reduces dependencies between designers and developers.
- Isolates design changes to a single place.
- Creates a more consistent look, feel and behaviour.
- Reduces up front design.
Summary

Men / Footwear / Dress shoes

Filter  +  Sort by Relevance

128 items

New

New
Suggested Reading

Component Based Architecture


Centralized State Management


Design Systems

- [https://www.designbetter.co/design-systems-handbook](https://www.designbetter.co/design-systems-handbook)
Thank You!

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