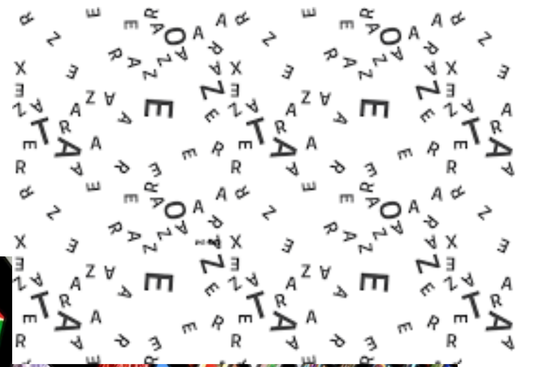
Introduction to Web App Development

Building a Web Site

- Step 1: Determine Theme + Content
- Step 2: Devise Navigation Structure
- Step 3: Create Page Structure
- Step 4: Factor out Page Structure in (reusable) Templates
- Step 5: Apply a Style
- Step 6: Build, Test & Deploy

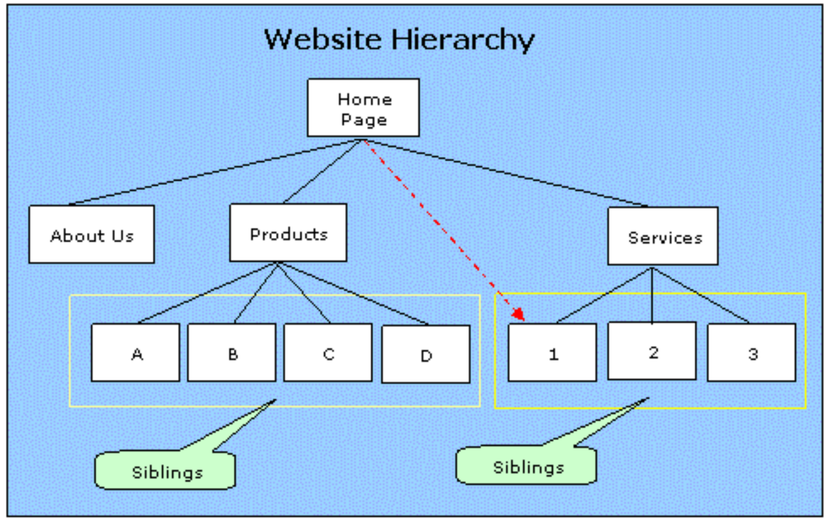
Web Site: Step 1: Determine Theme + Content

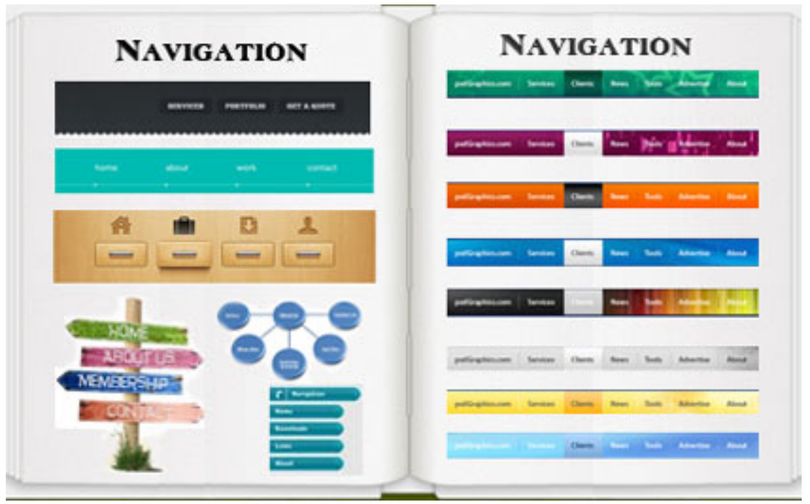
- Agree a ‘theme’ and ‘look and feel’ for site with customer
- Acquire or develop the core ‘content’ of the site
  - Text
  - Images
  - Media (video/audio)



Web Site: Step 2: Determine Navigation Structure

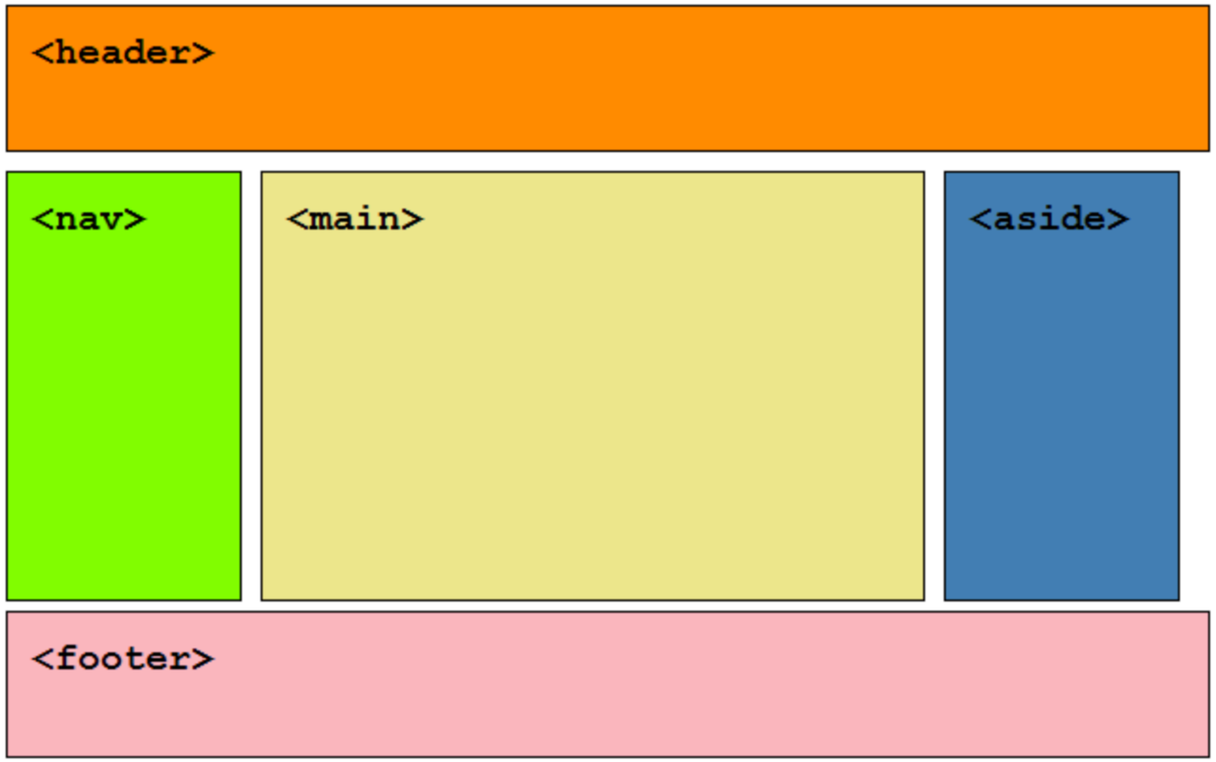
- Determine number of pages in the site
- Decide on navigation ‘metaphor’
  - ‘Tabs’
  - Sidebar
  - Menubar





Web Site: Step 3: Create Page Structure

- Typical Sections:
  - Header
  - Footer
  - Navigation
  - Main Content
  - Primary
  - Secondary



index.html

```
<div id="navigation">
  <ul id="menu"...>
</div>
<div id="maincontent">
  <div id="primary"...>
  <div id="secondary"...>
</div>
```

apps.html

```
<div id="navigation">
  <ul id="menu"...>
</div>
<div id="maincontent">
  <div id="primary"...>
</div>
```

directions.html

```
<div id="navigation">
  <ul id="menu"...>
</div>
<div id="maincontent">
  <div id="primary"...>
</div>
```

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Bundle APP Store</title>
    <link rel="stylesheet" href="./css/home.css">
  </head>
  <body>
    <img src="images/banner.png" class="large-centre-img">
    <div class="container">
      <%- include('./partials/_header.ejs'); %>
      <%- yield %>
      <%- include('./partials/_footer.ejs'); %>
    </div>
  </body>
</html>
```

_header.html

```
<div id="header">
  <h1>Welcome to the App Bundle Store</
</div>
```

_footer.html

```
<div id="footer">
  <p> Contact us at : bundle@store.co
</div>
```

Step 4: Factor out Page Structure in (reusable) Templates

Web Site: Step 5: Apply a Style

- Compose CSS to capture
  - Navigation
  - Layout : structure, layout, number of columns, positioning
  - Look and Feel (theme)

Web Site: Step 6: Build, Test & Deploy

- Build the site itself
- Verify that all links work as expected
- “Push” the site to an external server.

Publish any folder, right from the CLI

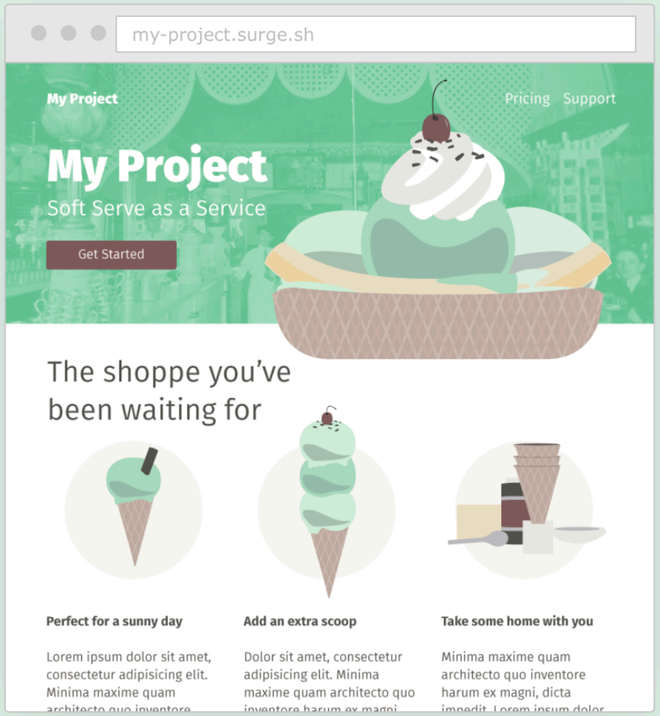
Front-end developers like you are better with the command line than ever—take advantage of it. Publish any directory on your machine with a single command: `surge`.

Install the Surge CLI globally through npm, and get any static assets or client-side app online, **for free**.

```
$ npm install --global surge
$ surge

  project: ~/Jane/Desktop/my-project/
   domain: my-project.surge.sh
   upload: [============]

Success! Published and running at my-project.surge.sh
```

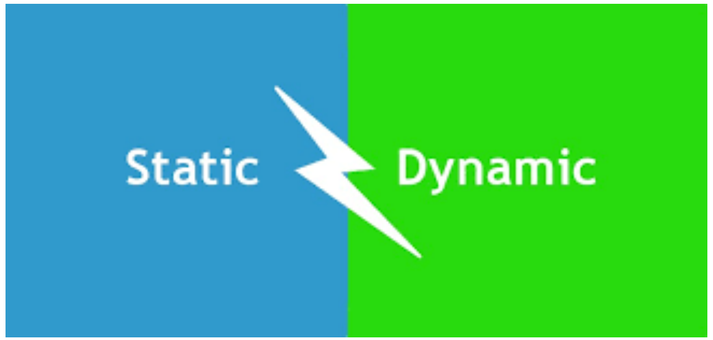


What if...?

- A user is to “Log in” to a site?
- A user needs to supply information to the site?
- The content of some of the pages is not known until the site is ‘live’?
- The content of some pages is very specific to the identity of the current user?
- The site is to implement a ‘business process’ such as
  - shopping cart
  - payment for a good or service
  - communication with other users - such as messaging

- Such features require a ***Dynamic Web Site*** or a ***Web Application***

Static vs Dynamic



- A knowledge of HTML, CSS + simple web deployment is necessary in order to build a *Static Web Site*
- However, these skills are ***not sufficient*** to build a ***Web Application***
- A Web Application is capable of:
  - Responding to user interaction
  - Generating new information based on context
  - Allowing a user to provide information
  - Implement core business processes
- A ***Static Web Site*** is not capable of these features.

Web App Development

- Solid understanding of HTML & CSS, including page structure, layout, styling and approaches to navigation

  + *knowledge of:*

  - Structure of the Internet, including role of HTTP, DNS & how URLs are structured
  - Detailed understanding of the nature of the HTTP protocol
  - Client / Server Architecture
  - How pages can be composed of templates
  - Databases
  - ***How to Programme Application Features (in Java)***

!!!

- Structure of the Internet, including role of DNS & **URLs**
- Nature of the **HTTP protocol**
- **Client / Server** Architecture
- Pages decomposed using **templates**
- **Databases**
- How to **Programme Java** Application Features

- Expanded understanding of the nature of the Internet

However, modern tools & frameworks are starting to dramatically simplify the process.

Play Framework

- A toolkit to enable to construction of ***Web Applications*** in the Java Programming language
- Does not replace the use of HTML + CSS - the toolkit is for building Web Applications, which is built on these technologies
- However, HTML + CSS constructs are restructured to enable them to interoperate with **Programs** written in **Java**
- Play is a **Web Application Development Framework**