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Introduction to Twitter's Bootstrap

.NET Cohort

Coding Bootcamp

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Why Do We Care?

Building responsive websites with nice layouts, good color themes, and a standard look and feel is often challenging for server-side developers.

Bootstrap is a CSS and JavaScript framework that is open-source (so it can be customized) and ultimately designed to allow mere mortals like developers to create good-looking web pages in spite of not being design experts.

Growth in "mentions" of Bootstrap in job ads is up 45,000% since 2007.

Benefits of using a CSS Framework

- Faster development

- Organized and maintainable code

- Spend more time on your app rather than re-inventing the wheel

Do I have to use Bootstrap?

No. You can roll your own CSS if you have a good designer, but even if you do, you may be better off customizing Bootstrap rather than re-writing.

You can also use some other frameworks:
- Foundation
- Semantic UI
- Gumby

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What is Responsive Web Design?

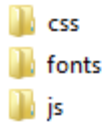Simply put, a responsive website adjusts the content to changes in screen size of the viewing device.

See swcguild.com for an example of this.

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Let's get Started

First, create a directory for our work and download bootstrap from:

http://getbootstrap.com/getting-started/

Extract the zip file contents to your directory. It should look something like this:

css
fonts
js

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Create the Page

Create a new HTML page in a text editor (I like Notepad++). Add the css and theme files to the header, plus a hyperlink to swcguild.com.

```html
<html>
    <head>
        <link rel="stylesheet" type="text/css" href="css/bootstrap.css">
        <link rel="stylesheet" type="text/css" href="css/bootstrap-theme.css">
    </head>
    <body>
        <a href="www.swcguild.com" class="btn btn-primary">Go To Guild</a>
    </body>
</html>
```

Go To Guild

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Grid System

Bootstrap uses a grid system, which divides the screen into rows and columns that can be used to create various sizes of layouts.

In Bootstrap, the screen is divided into 12 columns in each row. (You can have as many rows as you want.)
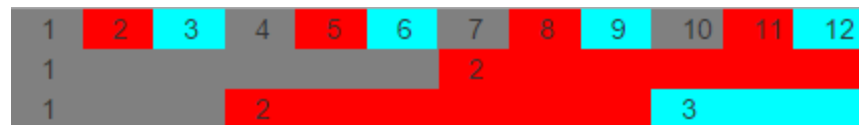
Grid System - Continued

We will put our rows into a div with the class container, which makes the layout fixed width.

Within each row, we will create multiple divs with a class signifying how wide they should be. Notice that 1 is 1/12 the width, 6 is 50% the width, etc.

You can mix and match these widths to create columns as long as the totals do not exceed 12.

Note: they can be less than 12; the remainder will be whitespace.

```html
<div class="container">
    <div class="row">
        <div class="col-xs-1" style="background-color: gray">1</div>
        <div class="col-xs-1" style="background-color: red">2</div>
        <div class="col-xs-1" style="background-color: cyan">3</div>
        <div class="col-xs-1" style="background-color: gray">4</div>
        <div class="col-xs-1" style="background-color: red">5</div>
        <div class="col-xs-1" style="background-color: cyan">6</div>
        <div class="col-xs-1" style="background-color: gray">7</div>
        <div class="col-xs-1" style="background-color: red">8</div>
        <div class="col-xs-1" style="background-color: cyan">9</div>
        <div class="col-xs-1" style="background-color: gray">10</div>
        <div class="col-xs-1" style="background-color: red">11</div>
        <div class="col-xs-1" style="background-color: cyan">12</div>
    </div>
    <div class="row">
        <div class="col-xs-6" style="background-color: gray">1</div>
        <div class="col-xs-6" style="background-color: red">2</div>
    </div>
    <div class="row">
        <div class="col-xs-3" style="background-color: gray">1</div>
        <div class="col-xs-6" style="background-color: red">2</div>
        <div class="col-xs-3" style="background-color: cyan">3</div>
    </div>
</div>
```

col-

Class	Screen Size
col-xs	< 768px
col-sm	>= 768px
col-md	>= 992px
col-lg	>= 1200px

col-xs-12 means the element should span all 12 columns on extra small screens. This also handles larger displays, because it will automatically expand if you do not specify otherwise.

Changing Layouts Based on Screen Size is Easy in Bootstrap

Say we want a single column on extra-small devices and two columns side by side on devices larger than that:

```html
<div class="row">
    <div class="col-xs-12 col-sm-6" style="background-color: gray">
        <h4>Column 1</h4>
    </div>
    <div class="col-xs-12 col-sm-6" style="background-color: red">
        <h4>Column 2</h4>
    </div>
</div>
```

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Responsive Grid

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Nesting and Offsetting Columns
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Page Styles

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Color Codes

You will notice that various styles in Bootstrap allow a dash with a color label. In the default theme, they usually work like this:

- o primary- dark blue
- o default- gray
- o success- green
- o info- sky blue
- o warning- yellow
- o danger- red

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Buttons and Labels

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Glyphicons

Glyphicons are small icons that you can embed in your site to enhance things like textboxes, labels, buttons, etc. See the full list here:

http://getbootstrap.com/components/#glyphicons

You can download more glyphicon packs from other sites.

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Navbars – Now you need bootstrap.js and jquery

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Forms

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Advanced JavaScript Functionality

Bootstrap.js also includes some awesome JavaScript functionality like dropdowns, tabs, tooltips, modal windows, alerts, carousels, etc.

There are also a multitude of plug-ins by the open source community available. You can check out source and documentation for JavaScript components here:

http://getbootstrap.com/javascript/

You should have a working knowledge of jQuery to use these effectively.

Gut Check

- How can we make side-by-side links and buttons look the same?
  - Add class="btn btn-default" to both.
- How many columns is a Bootstrap layout divided into?
  - 12

- Interview question: What does "responsive layout" mean?

  - The layout adapts to fill the space appropriately, regardless of screen width.

  - Bonus interview answer: This is driven by "CSS media queries." Bootstrap sets these up for us and we interact with them using the CSS classes that define the grid system. (Very few developers will hand-roll these.)