RESPONSIVE WEB DESIGN
Responsive means...

TO PROVIDE “RESPONSES OR ADAPTIVENESS QUICKLY AND POSITIVELY” TO THE USERS

ALSO KNOW AS ADAPTIVE WEB DESIGNING (AWD)
• What is a Responsive Web Design (RWD)

• What is the Need to Construct a Responsive Design

• Basics of Responsive Web Designing

• Essentials to Create your First Responsive Website

• Advantages of RWD
MOBILE DEVICE EXPLOSION

• Study from 8/14/13 - Nearly 1 in 3 Web site Visits Come from Mobile

• Web visits coming from mobile devices increased 73 percent since the second quarter in 2012

• 77% of world's population has a mobile device
Important Guidelines

- Resizing images to fit the screen resolution
- Hiding non-essential elements for smaller screen sizes
- Do not use web technologies that do not work on mobile
- Make sure the website gets loaded properly in seconds
- Optimize your page for vertical scrolling
Creating a Catalog of Multi-Device Layout patterns

HOW MOBILE WEB DIFFERS

• Mobile browser support is inconsistent
• Mobile devices are smaller and slower
• Different input tools (stylus, fingers)
• Different browsers
• 320 x 480 pixels is a common resolution for mobile
• Responsive Web Designing (RWD) is a process of designing a single website to be used and compatible on different portable or hand electronic devices.

• Also known as Adaptive Web Designing (AWD)

• To give an optimal viewing user experience across a variety of devices from desktop to mobile.
WHAT TO CONSIDER

CONTENT

Core Elements
1. Meta Tags
2. CSS3 Media Queries
3. Grid Systems
4. Frameworks
• What is the purpose of the site

• Who are the users

• What sort of data is being accessed by them

• User’s locations

• What’s the capacity of the devices and screen information such as size resolution, pixel density, and color information from which information is being accessed
DEVELOPMENT OPTIONS

- Mobile-responsive Web site
- Progressive Enhancement
- Mobile-specific Version of a Web site
RESPONSIVE WEB DESIGN

- most commonly used - becoming de facto standard

- defined by Ethan Marcotte

- A List Apart article in 2010
  
  book - A Book Apart - Responsive Web Design

- a responsive site is no more a mobile site than it is a desktop site or a tablet site

  "adopting a more flexible device-agnostic approach to designing for the web"

  - Ethan Marcotte
RESPONSIVE WEB DESIGN

• fluidly change and respond to fit any screen or device size

• deliver same HTML and CSS to all devices
  • only custom CSS for elements that need to be treated differently

• akin to Progressive Enhancement on steroids
Use Appropriate layout to suit completely different screen sizes

- Phones 480px and below
- Phones to Tablets 767px and below
- Portrait Tablets 768px and above
- Net Book 990px to 1024px
- Monitor 1024px and above
Build Pages

1. Crisp
2. Clean
3. Succinct
How to make a website Responsive? [contd...]
Fluid Web Design: Automatically fits in all screens. But… It becomes uncomfortable in certain resolutions and view ports.
Important Guidelines

• Resizing images to fit the screen resolution

• Hiding non-essential elements especially for smaller screen

• Avoid web technologies that don’t work on mobile

• Make sure that website can be read in seconds

• Optimize your page for vertical scrolling
Components of a Responsive Site

• Meta Tags
  – a coding statement in HTML

• CSS Media Queries

• Grid Systems

• Frameworks
What are Meta Tags

• A coding statement in HTML

• It describes few aspects of the contents of a web page

• Information provided in the meta tags are used by the search engines for page indexation

• Placed at the top of a web page as part of heading

• Viewport meta tags are for making a web page Mobile Optimized
3 different meta tags that work for old, new and modern hand held devices

• Example: Put these 3 lines in the head section of your site
  
  `<meta name="HandheldFriendly" content="true"/>

  `<meta name="MobileOptimized" content="320"/>

  `<meta name="viewport" content="width=device-width, initial-scale=1.0"/>

• A responsive designer needs to add these meta tags to make a website mobile optimized
Use CSS Media Queries

A media query allows you to gain information about the viewport from which the user/visitor is looking at the website and target that particular screen size by applying specific CSS styles.
What are CSS3 Media Queries

- CSS3 Media Queries consists of a media type and zero or an optional expression to assign different style-sheets depending on the browser window size using media features such as width, height, orientation, resolution, pixel aspect ration, and color etc.

- Using CSS3 media queries, presentations can be tailored to a specific range of output devices without changing the content itself.

- You can use media queries in different ways for different reasons.
Example 1: Media Queries

- Using the following CSS media query syntax for calling an external stylesheet:

```html
<link rel='stylesheet' media='screen and (min-width: 320px) and (max-width: 480px)' href='css/phone.css'/>
```
Media Queries

CSS3 media queries go hand in hand with the flexible grid to make responsive web design work.

Luckily CSS3 is supported by many modern browsers.

```css
@media screen and (max-width: 960px)
{
    ...
    ...
    ...
}
```
And you can control CSS presentation in the CSS file also

```css
@media screen{
  body{
    width:75%;
  }
}

@media print{
  body{
    width:100%
  }
}
```
more advanced CSS media queries like:

```css
@media all and (max-width: 699px) and (min-width: 520), (min-width: 1151px) {
  body {
    background: #ccc;
  }
}
```
Media Queries [contd...]

Most important media feature is the “min-width”, this property allows us to apply specific CSS styles if the browser window (in pixels) drops below a particular width.

Most common pixel min-widths:

320px
480px
600px
768px
900px
1200px
Media Queries [contd...]

Sample Media Query code:

```css
<style type="text/css">
@media (min-width: 481px) and (max-width: 768px) {
  #banner { width: 740px; }
  #banner img { max-width: 740px; max-height: 222px; }
  #main { width: 740px; }
  #main-content { width: 450px; float: left; }
  #widget-container { width: 200px; float: right; }
  .widget-content { width: 160px; }
}
@media (min-width: 321px) and (max-width: 480px) {
  #banner { width: 450px; }
  #banner img { max-width: 450px; max-height: 135px; }
  #main { width: 450px; }
  #main-content { width: 400px; }
  #widget-container { width: 400px; }
  .widget-content { width: 120px; margin: 5px; float: left; }
  .widget-text { display: none; }
}
@media (max-width: 320px) {
  #banner { width: 275px; }
  #banner img { max-width: 275px; max-height: 83px; }
  #main { width: 250px; }
  #main-content { width: 250px; padding: 0px; }
  #widget-container { width: 250px; padding: 0px; }
  .widget-content { width: 250px; margin: 5px; }
  .widget-text { display: none; }
}
</style>
```
What is a Grid System

• A grid is a set of number of “columns” and intervening “gutters” (margins) inside a “container” with any width and flexibility

• It gives a feeling of considered organization of one’s website

• Josef Muller Brockmann, “The grid system is an aid, not a guarantee. It permits a number of possible uses and each designer can look for a solution appropriate to his personal style. But one must learn how to use the grid; it is an art that requires practice.”
Commonly Used Grid Systems

- YUI CSS Grid

- 960 Grid System
  [http://960.gs/](http://960.gs/)

- Golden Grid System (*referred to the folding Grid*)
Frameworks of RWD

CSS3 frameworks provide the following benefits

1. Faster designing and building of creative websites
2. Designers can focus on crucial segments of the website like grid, browser compliance, creation of multiple layouts, etc.
Popular frameworks that web designers and developers use to develop responsive websites

• Skeleton

• Foundation

• Bootstrap
  – Concrete5 uses bootstrap
FLUID LAYOUTS

• Default body font size of 100%
• Adjust percentages for widths
• Set images and objects to a max width of 100%
  • img, object { max-width: 100%; }
• Don't use IMG width and height attributes
Advantages of Responsive

• Flexible to use

• Automatically shuffles content, resizes images, and adjusts font size

• Users area able to read information as per their needs and preferences

• Helps encountering fast and intelligent sites

• Saves user’s time while browsing the site

• Helps increasing the user experience
Advantages to the Web Designer

- Simplifies the process
- Saves time and effort
- Eliminates the need to maintain multiple websites
- Minimizes maintenance and development cost
- Improved SEO rank
RWD in Action

www.bostonglobe.com

http://clearairchallenge.com/