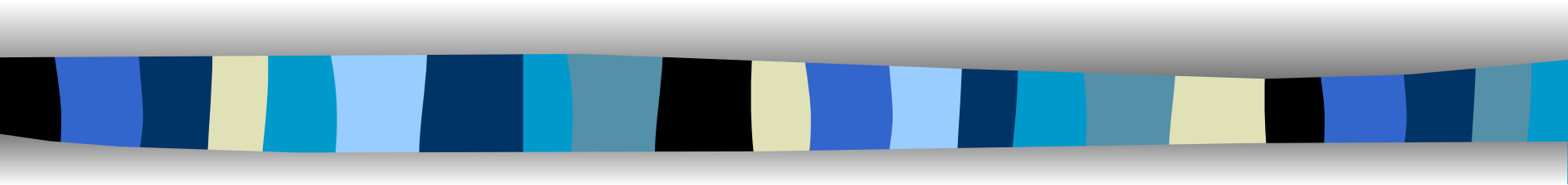


Responsive Web Design



CSCI 3000
Web Programming

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Responsive Web Design (RWD)

- ❑ Makes the look and feel of a web site optimal in all types of devices.
- ❑ It uses only HTML and CSS.
- ❑ It handles inconsistent window widths, screen resolutions, user preferences, and users' installed fonts.
- ❑ The layout changes based on the size and capabilities of the device.
- ❑ It does not leave out information for the website to fit smaller devices, but rather adapt its content to fit any device.



Responsive Web Design (RWD)

RWD – Viewport

- ❑ The viewport is the user's visible area of a web page.
- ❑ Pages optimized for a variety of devices must include a `<meta>` viewport tag in the `<head>` of the HTML document.

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

RWD – Viewport

- ❑ The `<meta>` viewport tag controls the width and scaling of the browser's viewport.
- ❑ The `width=device-width` matches the screen's width in device-independent pixels.
- ❑ The `initial-scale=1.0` establishes a 1:1 relationship between CSS pixels and device-independent pixels.

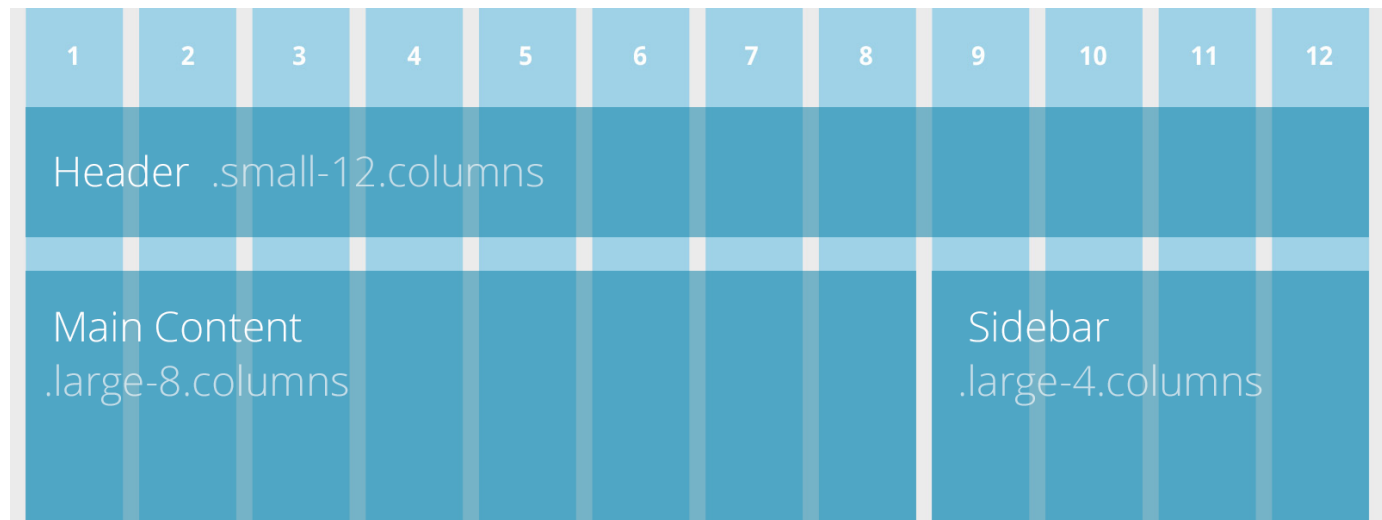


Size Content to The Viewport

- ❑ Users are used to scroll websites vertically on both desktop and mobile devices - but not horizontally.
- ❑ Basic rules to follow:
 - ❑ Do not use large fixed width elements.
 - ❑ Content should not rely on a particular viewport width to render well.
 - ❑ Use CSS media queries to apply different styling for small and large screens. In general use relative width values, such as width: 100%.

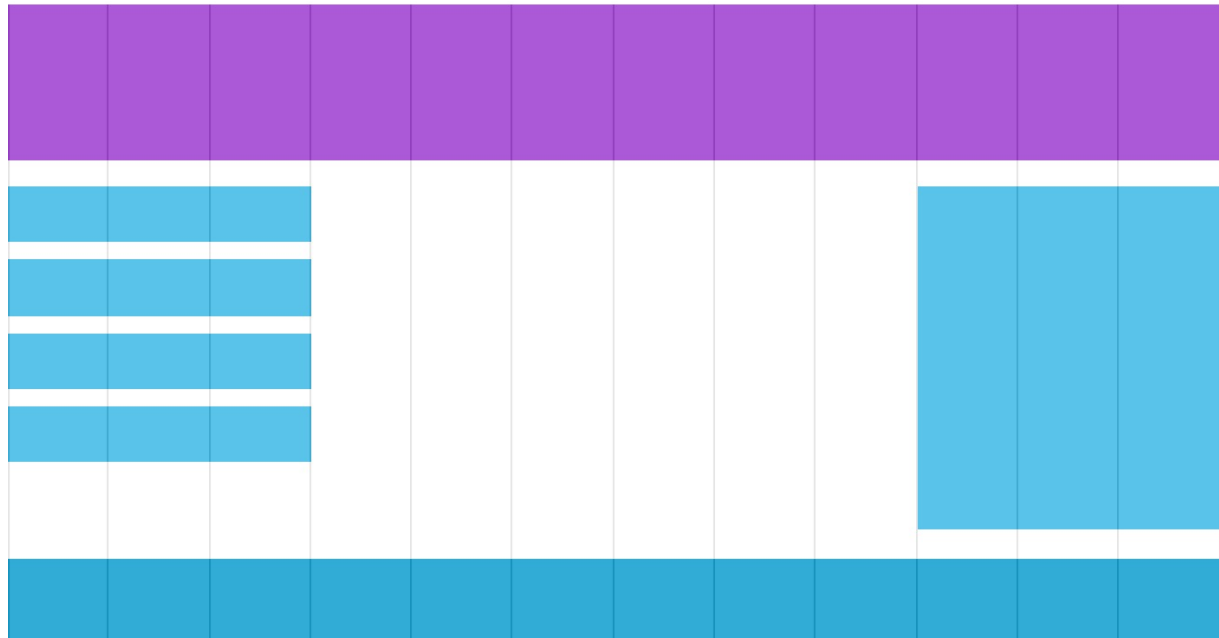
RWD - Grid-View

- ❑ Web pages based on a grid-view are divided into columns.
- ❑ Using a grid-view is very helpful when designing web pages. It makes it easier to place elements on the page.



RWD - Grid-View

- ❑ A responsive grid-view often has 12 columns, and has a total width of 100%, and will shrink and expand as you resize the browser window.





Responsive Grid View

- ❑ Example 1: See
www.responsivegridsystem.com
- ❑ Example 2: Download
[myResponsiveGrid.html](#)
- ❑ Example 3: See
the next 7 slides.

Responsive Grid View (1/7)

```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport"
content="width=device-width, initial-
scale=1.0">
</head>
<body>
<div class="header">
  <h1>Chania</h1>
</div>
<div class="row">
```

Responsive Grid View (2/7)

```
<div class="col-3 menu">  
  <ul>  
    <li>The Flight</li>  
    <li>The City</li>  
    <li>The Island</li>  
    <li>The Food</li>  
  </ul>  
</div>
```



Responsive Grid View (4/7)

```
* {  
    box-sizing: border-box;  
}  
.row::after {  
    content: "";  
    clear: both;  
    display: table;  
}  
[class*="col-"] {  
    float: left;  
    padding: 15px;  
}
```

Responsive Grid View (5/7)

```
.col-1 {width: 8.33%;}  
.col-2 {width: 16.66%;}  
.col-3 {width: 25%;}  
.col-4 {width: 33.33%;}  
.col-5 {width: 41.66%;}  
.col-6 {width: 50%;}  
.col-7 {width: 58.33%;}  
.col-8 {width: 66.66%;}  
.col-9 {width: 75%;}  
.col-10 {width: 83.33%;}  
.col-11 {width: 91.66%;}  
.col-12 {width: 100%;}
```

Responsive Grid View (6/7)

```
html {  
    font-family: "Lucida Sans", sans-serif;  
}  
.header {  
    background-color: #9933cc;  
    color: #ffffff;  
    padding: 15px;  
}  
.menu ul {  
    list-style-type: none;  
    margin: 0;  
    padding: 0;  
}
```

Responsive Grid View (7/7)

```
.menu li {  
    padding: 8px;  
    margin-bottom: 7px;  
    background-color: #33b5e5;  
    color: #ffffff;  
    box-shadow: 0 1px 3px rgba(0,0,0,0.12),  
0 1px 2px rgba(0,0,0,0.24);  
}  
.menu li:hover {  
    background-color: #0099cc;  
}
```


RWD – Media Query

- ❑ Media query is a CSS technique introduced in CSS3.
- ❑ It uses the `@media` rule to include a block of CSS properties only if a certain condition is true.

```
@media only screen and (max-width: 480px) {  
    body {  
        background-color: lightblue;  
    }  
}
```

RWD – Media Query

- ❑ In previous examples 2 and 3 add the following to the CSS file

```
@media only screen and (max-width: 768px) {  
    /* For mobile phones: */  
    [class*="col-"] {  
        width: 100%;  
    }  
}
```

RWD – Media Query

❑ Mobile First Design:

```
/* For mobile phones: */
[class*="col-"] {
    width: 100%;
}
@media only screen and (min-width: 768px) {
    /* For desktop: */
    .col-1 {width: 8.33%;}
    .col-2 {width: 16.66%;}
    ...
    .col-12 {width: 100%;}
}
```

