Responsive Design using Bootstarp

Responsive Design

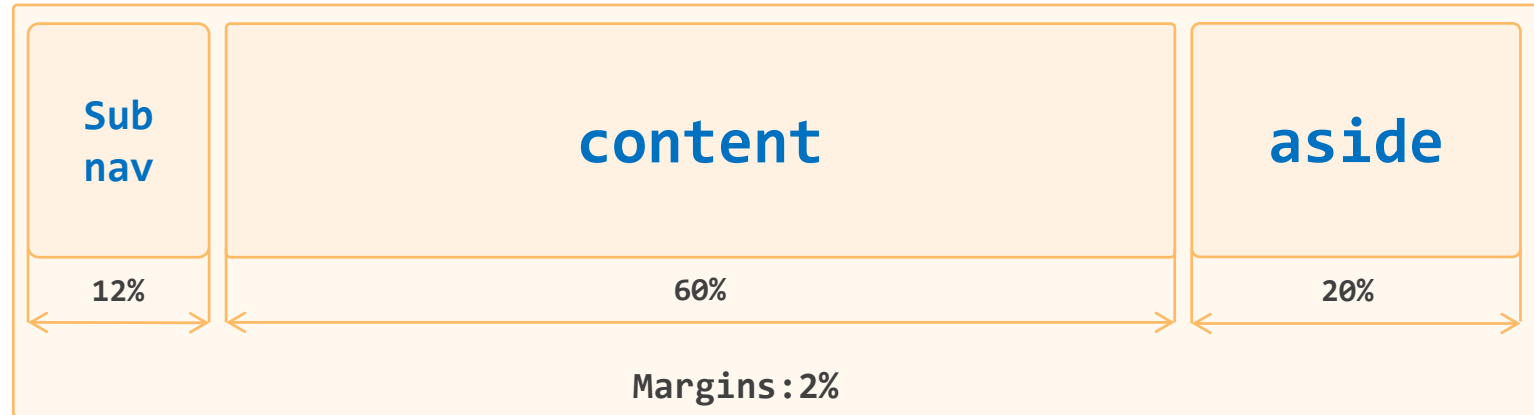Responsive Web Design

1024+   1023 - 768   767 - 320
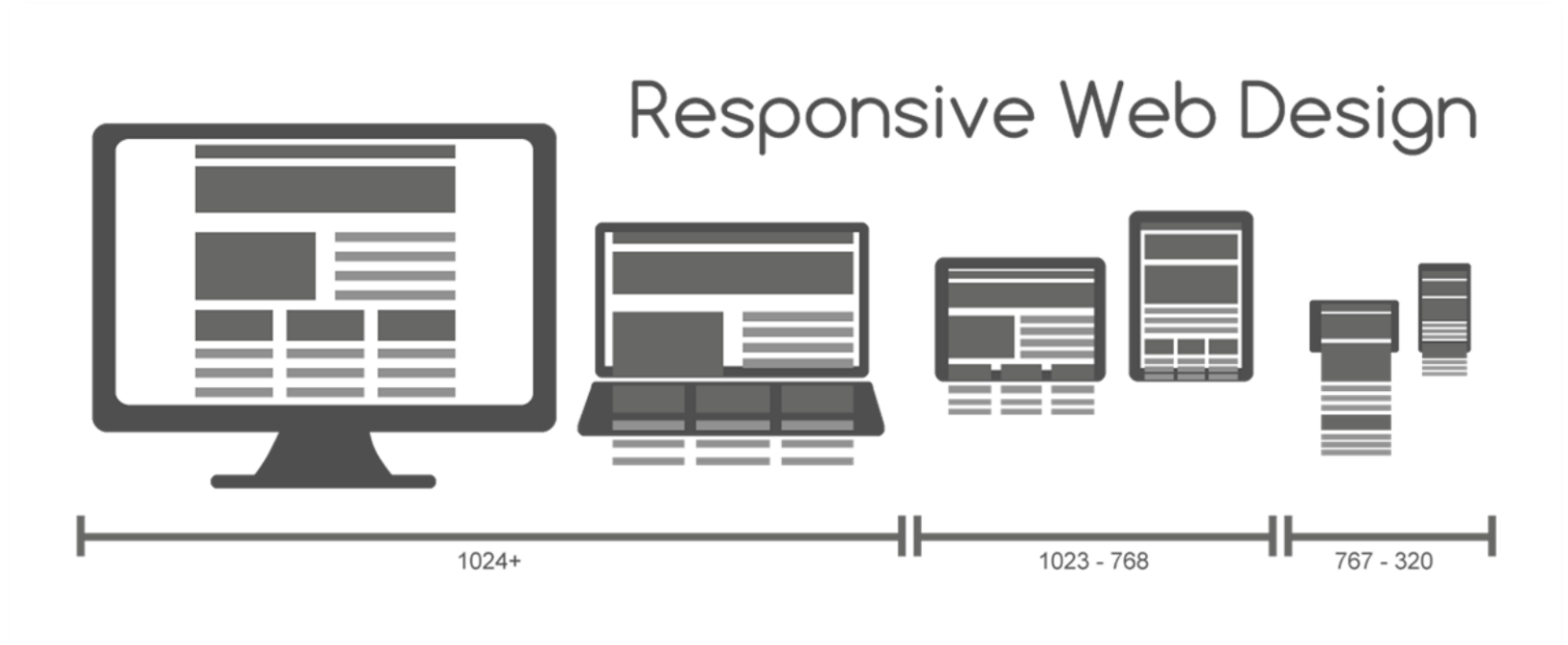
- Responsive design is an approach to **optimize the viewing experience on range of devices**: mobile, desktop, tablet, TV…

- Responsive design can be accomplished by using **Fluid layout** & **Media Queries**

Fluid Layout

Fluid layout uses proportional sizes

Sub nav	content	aside
12%	60%	20%

Margins:2%

Pros:

- UI responds better to the client resolution

Cons:

- More whitespace on large screens (e.g., TV)
- Broken when using elements with fixed size such as images

Media Queries

- Media queries (MQs) are part of CSS 3

- A media query consists of a media type and at least one expression using media features such as width and height

- MQs change the presentation of content

```
@media (max-width: 480px) {
      h1 { font-size: 18px; }
 }
@media (min-width: 980px) {
      h1 { font-size: 32px; }
}
```
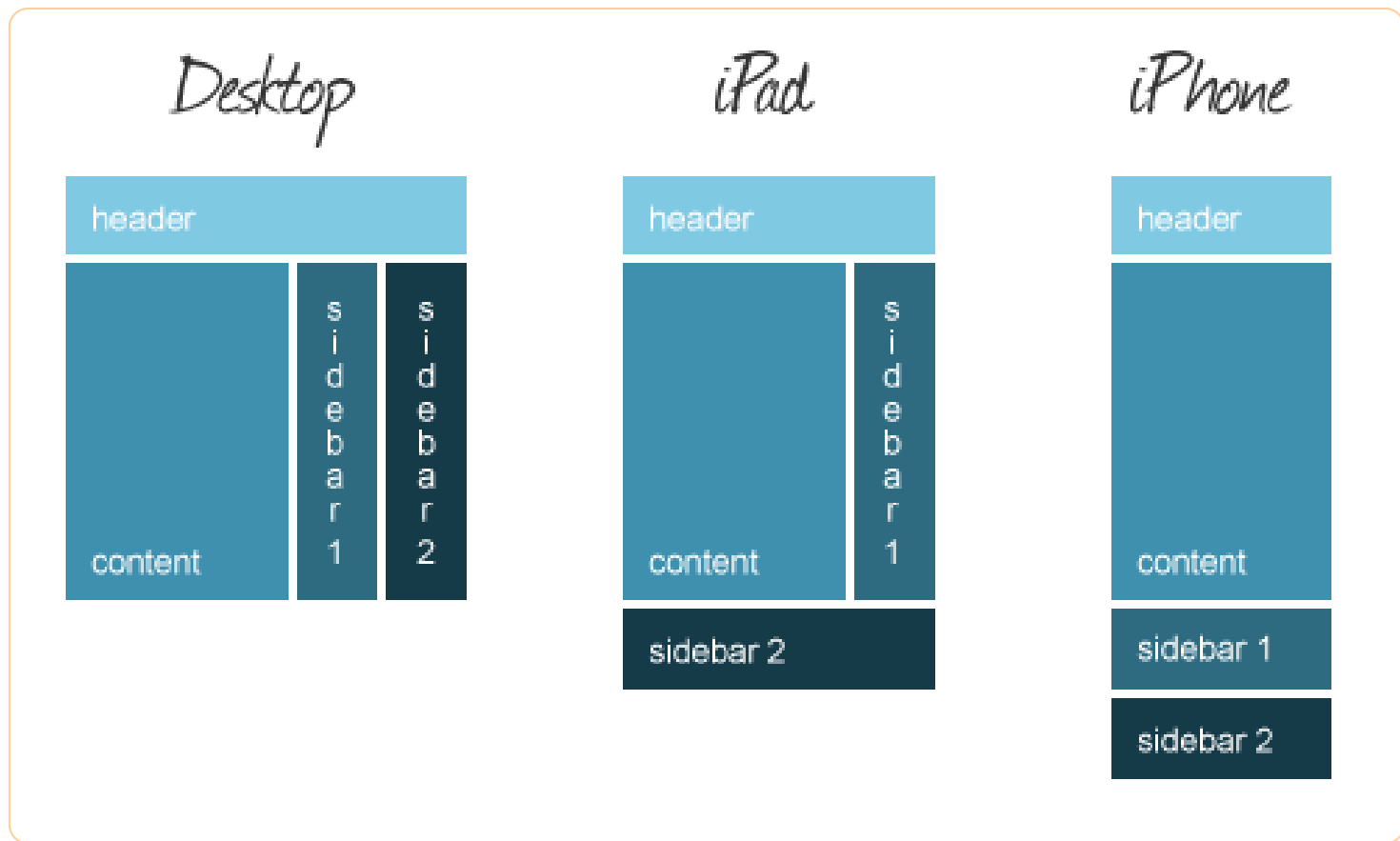
Media Queries (2)

◆ Media queries consist of a `media type` and expressions evaluated to TRUE or FALSE

- • If the evaluated result is TRUE, the styles in the query are applied

```
.box {width: 250px; height: 250px; display: inline-block}

@media only screen and (max-width: 1024px) {
  .box {width: 300px; height: 300px}
}

@media only screen and (max-width: 960px) {
  .box {width: 310px; height: 310px}
}

@media only screen and (max-width: 480px) {
  .box { display: block; width: 95%; height: auto}
}
```

Media Queries

Constructing a Responsive Design

The construction of responsive design using Fluid layout and Media queries

    => CSS becomes complex and very hard to maintain

    CSS Framework such as **Bootstrap** comes to the rescue

Bootstarp

What is Bootstrap?

Bootstrap is a front-end framework for responsive Web sites

- Bootstrap was originally built by Twitter

- Open-source, available at GitHub:
  https://github.com/twbs/bootstrap

- Dramatically simplifies the development of responsive sites

  – A lot of themes (free and paid)

  – Bootstrap has a very detailed documentation. Development involves copy pasting from the examples and getting a usable result fast.

- Complete and feature-rich CSS framework

- Official site: http://getbootstrap.com

Bootstrap Features

Grid system

- 12-column fluid grid system for phones / tablets / desktops

CSS styles predefined UI design for the most page elements

- Typography: headings, subheadings, fonts, colors, lists, etc.
- Navigation bars, Tables, forms and controls, buttons, image shapes, etc.

Components

- Dropdowns, button groups, input groups, tabs, navigation bars (site headers), breadcrumps, pagers, labels, badges, thumbnails, alerts, list groups, …

Bootstrap Grid System

- Bootstrap grid splits the page into **12 equally sized columns**.
  - .container class for grid wrapper
  - .row class for rows
  - .col-md-# for columns

Examples - http://getbootstrap.com/examples/grid/

Top Navigation

Logo

Header

Column 1

Main Content

Column 3

Bootstrap Screen Sizes

Bootstrap is designed to support 4 types of devices:

- **Extra small devices** like smart phones (width < 768px) – **xs**

- **Small devices** like tablets (width ≥ 768px) – **sm**

- **Medium devices** like desktop computers (width ≥ 992px) – **md**

- **Large devices** like large desktops (width ≥ 1200px) – **lg**

It may define column spans for different screen sizes

- Show / hide columns (e.g. hide the sidebar for smart phones)

- Done through CSS classes, no additional CSS, no JavaScript

Bootstrap

Grid system options

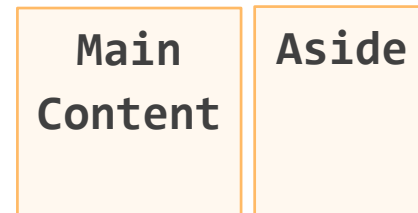|	Extra small devices Phones (<768px)	Small devices Tablets (≥768px)	Medium devices Desktops (≥992px)	Large devices Desktops (≥1200px)
Grid behavior	Horizontal at all times	Collapsed to start, horizontal above breakpoints		
Max container width	None (auto)	750px	970px	1170px
Class prefix	`.col-xs-`	`.col-sm-`	`.col-md-`	`.col-lg-`
# of columns	12			
Max column width	Auto	60px	78px	95px
Gutter width	30px (15px on each side of a column)			
Nestable	Yes			
Offsets	Yes			
Column ordering	Yes			

Bootstrap Grid: CSS Classes

Put everything in `.container > .row`

Use `.col-sm-9` to use 9 columns for tablets and larger screens

Use `.col-lg-3` to use 3 columns for desktops and larger screens

```
<div class="container">
  <div class="row">
    <div class="col-sm-9">
      Main Content</div>
    <aside class="col-sm-3">
  </div>
</div>
```

Tablet+
(sm, md, lg)

→

| Main Content | Aside |

Smartphone
(xs)

→

| Main Content |
| Aside |

Bootstrap

Typography – text colors

.text-muted – grey

.text-primary – light blue

.text-success – green

.text-info – dark blue

.text-warning – yellow

.text-danger – red

Typography - alignment classes

.text-left

.text-center

.text-right

Bootstrap

Tables - on <table> elements

- .table – default table
- .table-striped – every second row is colored
- .table-bordered – adds border to a table
- .table-hover – adds hover element to a table
- .table-condensed – makes the table compact

Tables – on <tr> and <td> elements

- .active, .success, .warning, .danger

Bootstrap

Forms

- Add .form to the <form> element

- Add .form-control to all form elements

- Group them with .form-group

Buttons

- .btn for buttons

- .btn-primary, .btn-danger, … for colors

- .btn-lg, btn-sm, btn-xs for sizes

Bootstrap

Images

- .img-rounded – for image with round edges

- .img-circle – for image as circle

- .img-thumbnail – adds small border

Helper classes

- Close icon - .close on any button

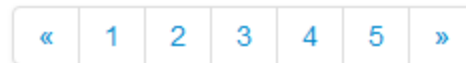- Quick float - .pull-left, .pull-right

Bootstrap UI Components

➢ Buttons:

| Action ▾ | Action ▾ | Danger ▾ | Warning ▾ | Success ▾ | Info ▾ | Inverse ▾ |

➢ Tabs:

| Home | Profile | Messages |

➢ Breadcrumb:

Home / Library / Data

➢ Pagination:

« 1 2 3 4 5 »

➢ Alerts:

Warning! Best check yo self, you're not looking too good. ✕
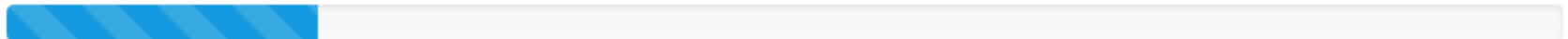
➢ Progress bar:

Summary

Bootstrap

- Powerful front-end framework for responsive Web sites

- Defined ready-to-use CSS classes and UI components

Bootstrap fluid grid system

- Use `.container` `.row` div

- Use the `.col-xs-5`, `.col-md-3`, …

Getting started

https://getbootstrap.com/docs/4.0/getting-started/introduction/