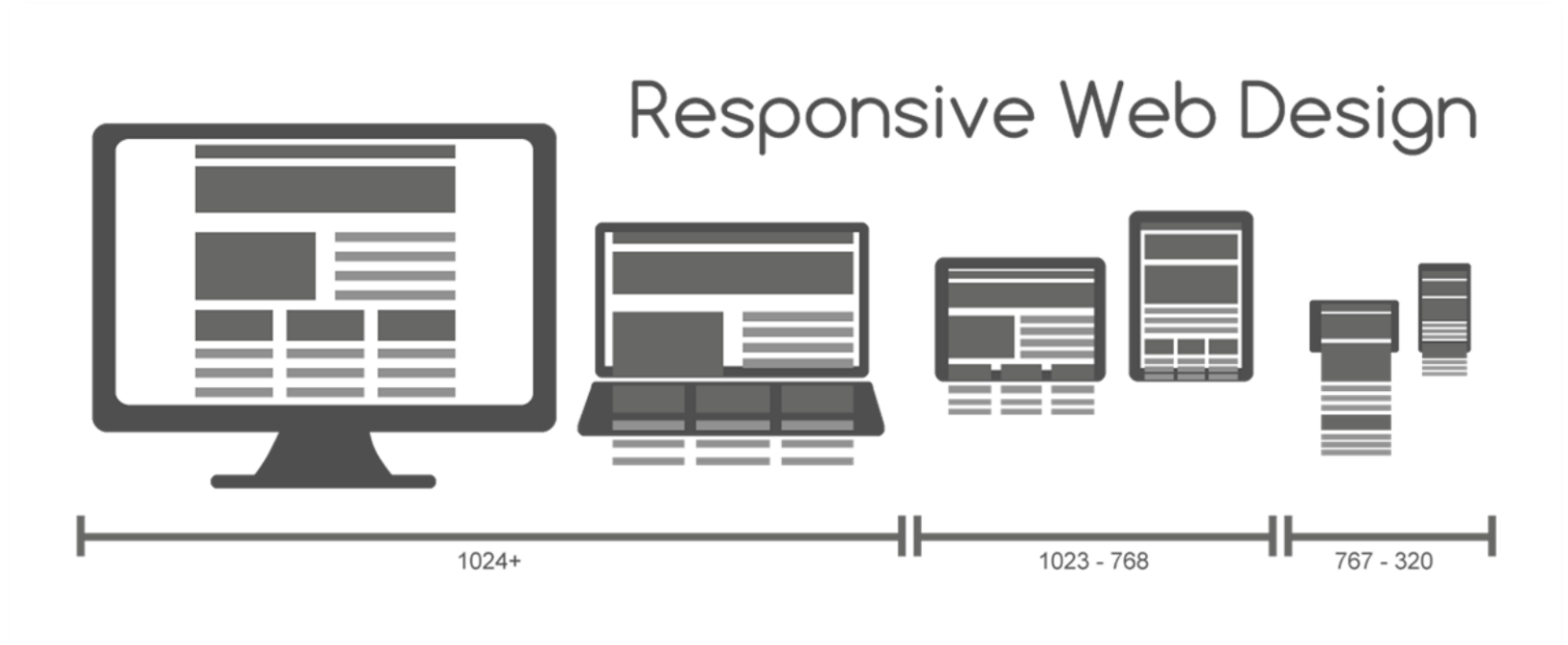


Responsive Design using Bootstarp



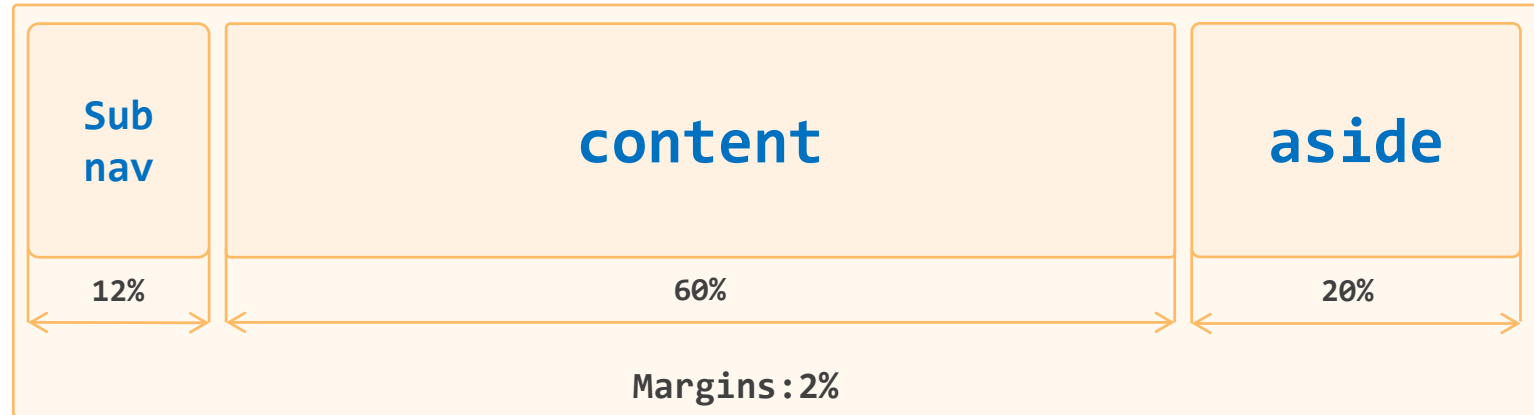
Responsive Design



- 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



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)

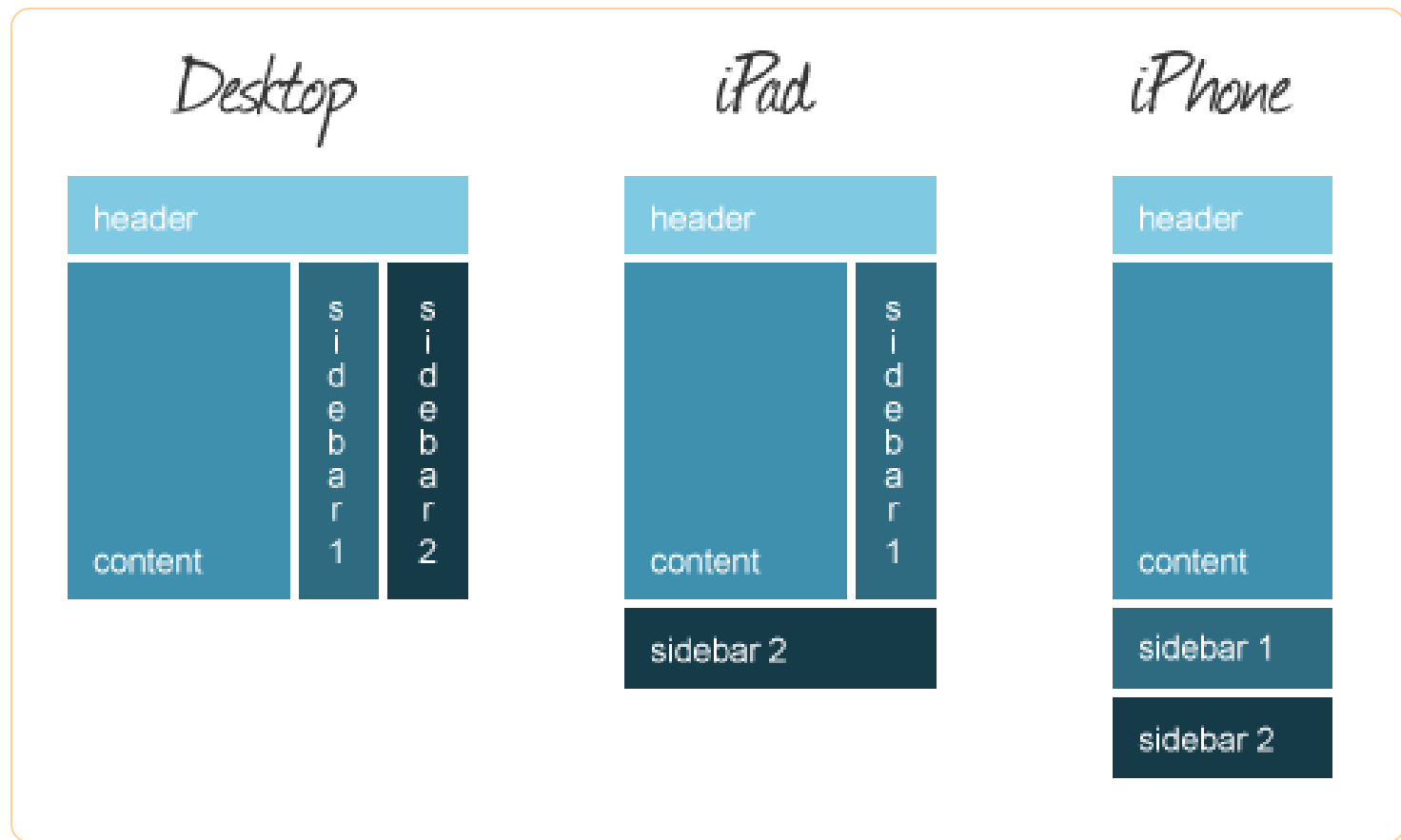
- ◆ Media queries consist of a **media type** and expressions evaluated to **TRUE** or **FALSE**
 - If the evaluated result is **TRUE**, the styles in the query are applied

```
.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), breadcrumbs, 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 3.0

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 | <code>.col-xs-</code> | <code>.col-sm-</code> | <code>.col-md-</code> | <code>.col-lg-</code> |
| # 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 | | | |

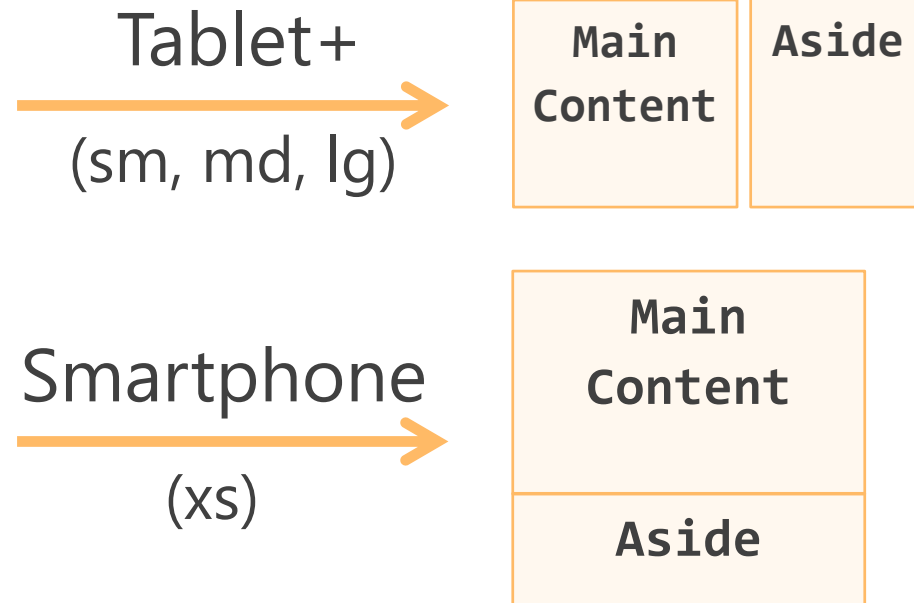
Bootstrap Grid: CSS Classes

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>
```



Bootstrap 3

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 3

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 3

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 3

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:



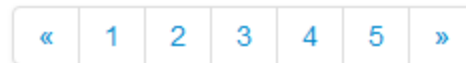
➤ Tabs:



➤ Breadcrumb:



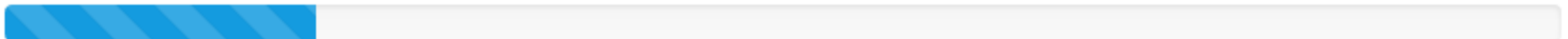
➤ Pagination:



➤ Alerts:



➤ 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

<http://getbootstrap.com/css/>