



DEPARTMENT OF
COMPUTER SCIENCE
計算機科學系



RESPONSIVE WEB DESIGN

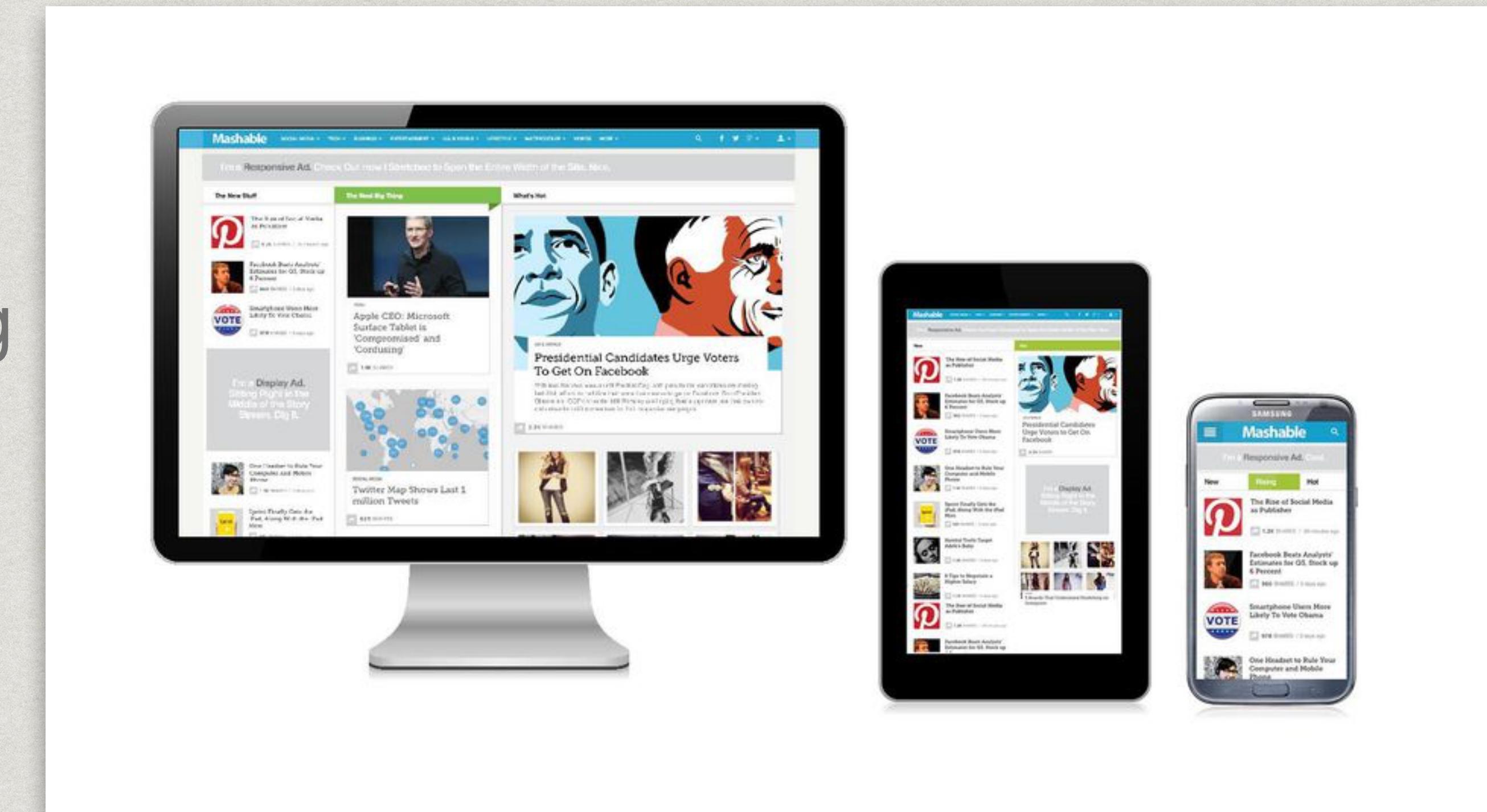
ITEC2016 - DATA-DRIVEN VISUALIZATION FOR THE WEB

CHAPTER 3 - 2018 - HKBU

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Responsive Web Design

- * **Responsive Web Design** (RWD) is an approach to web design aimed at crafting sites to provide an **optimal viewing** and interaction experience **across a wide range of devices**



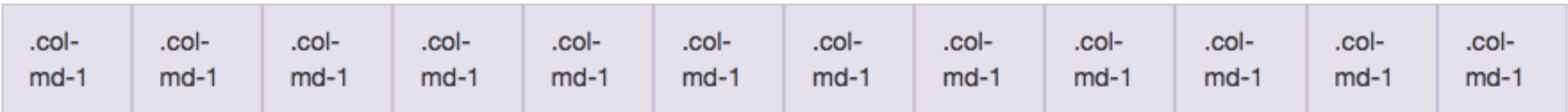
Why RWD?

- * It is becoming more important as the **amount of mobile traffic now accounts for more than half of total internet traffic.**
- * This trend is so prevalent that Google has begun to **boost the ratings of sites that are mobile friendly** if the search was made from a mobile device.
- * This has the net effect of **penalizing sites that are not mobile friendly.**

Bootstrap

- * Originally named **Twitter Blueprint**.
- * Supports responsive web design by **breaking any container into 12 columns**.
 - * Developers can specify **how many columns are needed** for each component under different screen sizes.
 - * Bootstrap will then **re-arrange the components** to fit each screen size.

Bootstrap

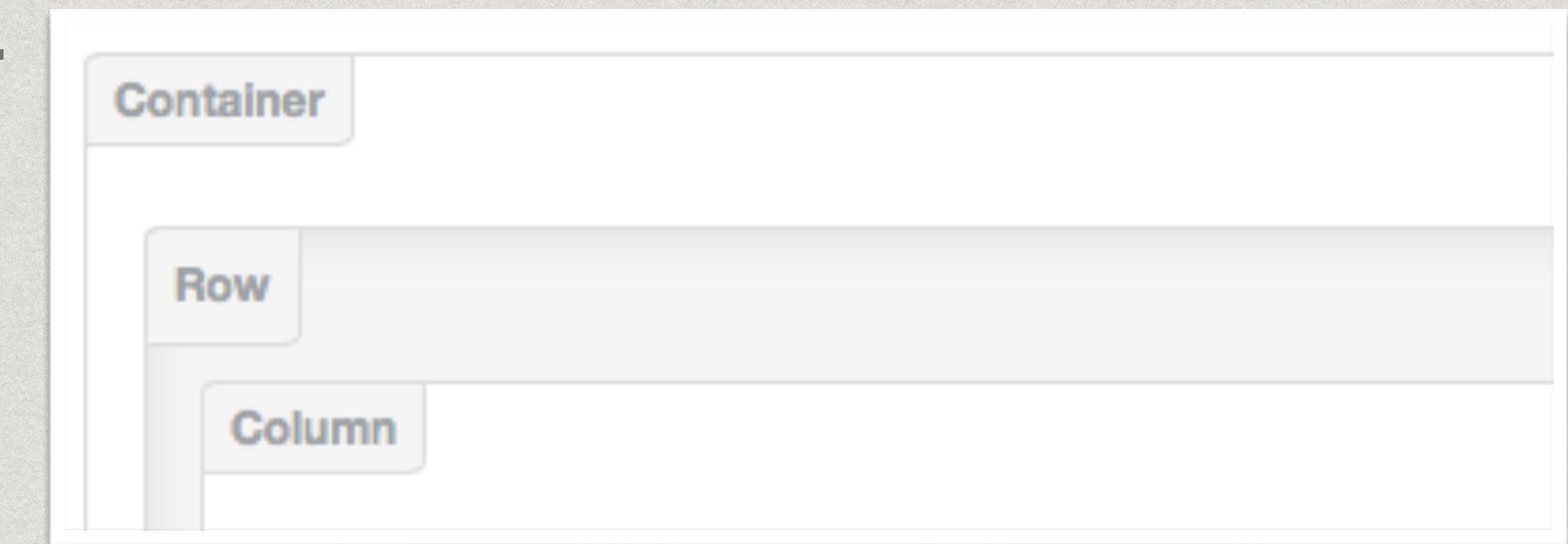


- * Bootstrap includes a **responsive, mobile first** fluid grid system that appropriately scales up to **12 columns** as the device or viewport size increases.
- * It includes **predefined classes** for easy layout options.

```
<div class="row">
  <div class="col-md-1">.col-md-1</div>
  <div class="col-md-1">.col-md-1</div>
```

Container and Row

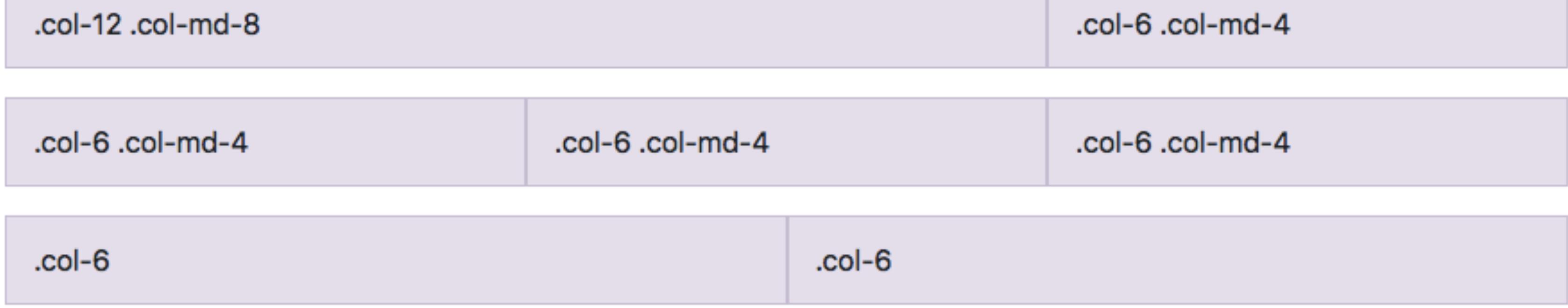
- * Rows must be placed within a **.container** for proper alignment and padding.
 - * Use **rows** to create horizontal groups of columns.
 - * Content should be placed within columns, and only columns may be immediate children of rows.



Grid System and Columns

	Extra small <code><576px</code>	Small <code>≥576px</code>	Medium <code>≥768px</code>	Large <code>≥992px</code>	Extra large <code>≥1200px</code>
Max container width	None (auto)	540px	720px	960px	1140px
Class prefix	<code>.col-</code>	<code>.col-sm-</code>	<code>.col-md-</code>	<code>.col-lg-</code>	<code>.col-xl-</code>
# of columns	12				
Gutter width	30px (15px on each side of a column)				
Nestable	Yes				
Column ordering	Yes				

Being displayed on tablet



```
<div class="row">
  <div class="col-12 col-md-8">.col-12 .col-md-8</div>
  <div class="col-6 col-md-4">.col-6 .col-md-4</div>
```

```
  <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  <div class="col-6 col-md-4">.col-6 .col-md-4</div>
```

```
  <div class="col-6">.col-6</div>
  <div class="col-6">.col-6</div>
</div>
```

What if it is being displayed on mobile phone?

Grid Classes

- * Grid classes apply to devices with screen widths greater than or equal to the breakpoint sizes, and override grid classes targeted at smaller devices.
- * Therefore, e.g. applying any **.col-md-*** class to an element will not only affect its styling on medium devices but also on large devices if a **.col-lg-*** class is not present.

Nesting

Level 1: .col-sm-9

Level 2: .col-8 .col-sm-6

Level 2: .col-4 .col-sm-6

```
<div class="row">
  <div class="col-sm-9">
    Level 1: .col-sm-9
    <div class="row">
      <div class="col-8 col-sm-6">
        Level 2: .col-8 .col-sm-6
      </div>
      <div class="col-4 col-sm-6">
        Level 2: .col-4 .col-sm-6
      </div>
    </div>
  </div>
</div>
```

Number of columns
with respect to
its container

Card title

Card subtitle

Some quick example text to build on the card title and make up the bulk of the card's content.

[Card link](#) [Another link](#)

Bootstrap Components - Card

<https://getbootstrap.com/docs/4.0/components/card/#titles-text-and-links>

```
<div class="card" style="width: 20rem;">
  <div class="card-body">
    <h4 class="card-title">Card title</h4>
    <h6 class="card-subtitle mb-2 text-muted">Card subtitle</h6>
    <p class="card-text">Some quick example text to build on the card title and make up the bulk of t
    <a href="#" class="card-link">Card link</a>
    <a href="#" class="card-link">Another link</a>
  </div>
</div>
```

Copy

Default Theme Colors

Theme colors

We use a subset of all colors to create a smaller color palette for generating color schemes, also available as Sass variables and a Sass map in our `scss/_variables.scss` file.

Primary

Secondary

Success

Danger

Warning

Info

Light

Dark