COMP4021
Internet Computing

Introduction to Bootstrap

Gibson Lam & David Rossiter

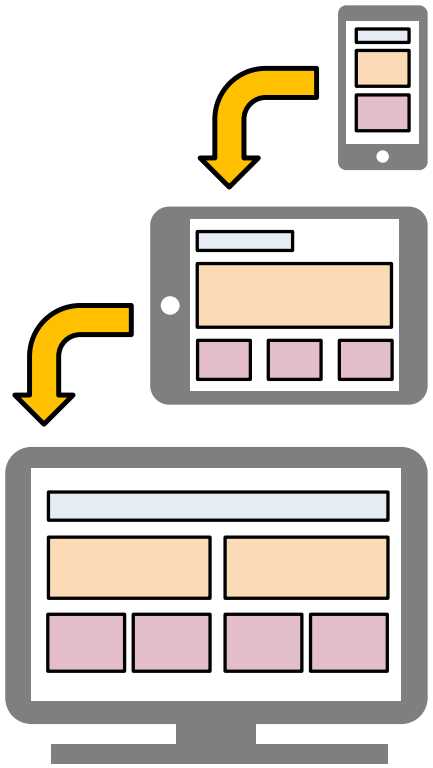
Bootstrap

- Bootstrap is a popular front-end JavaScript library for multiple devices and browsers

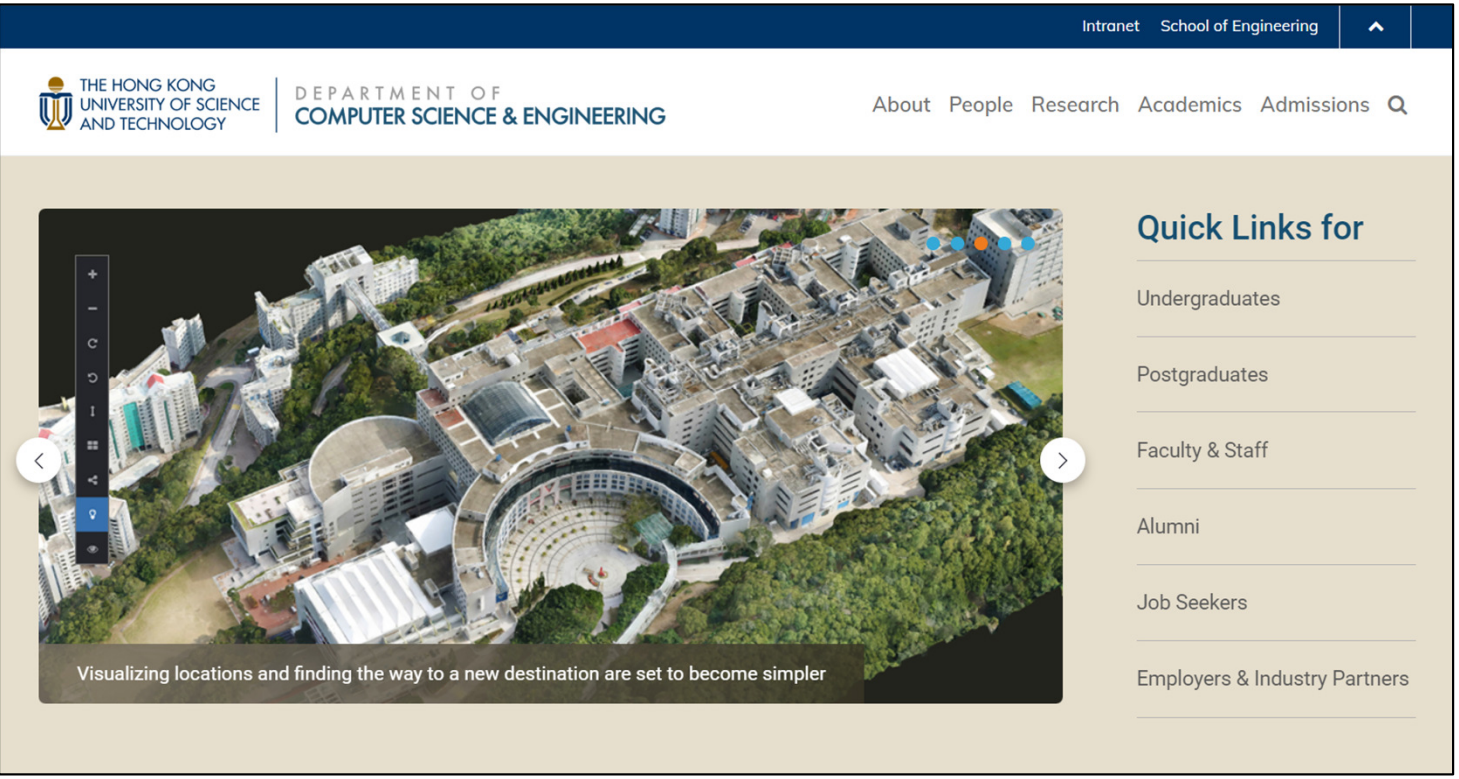
- With Bootstrap you can make your layout good for mobile devices as well as regular computers
- Also, Bootstrap handles any browser differences

Taking a 'Mobile-First' Approach

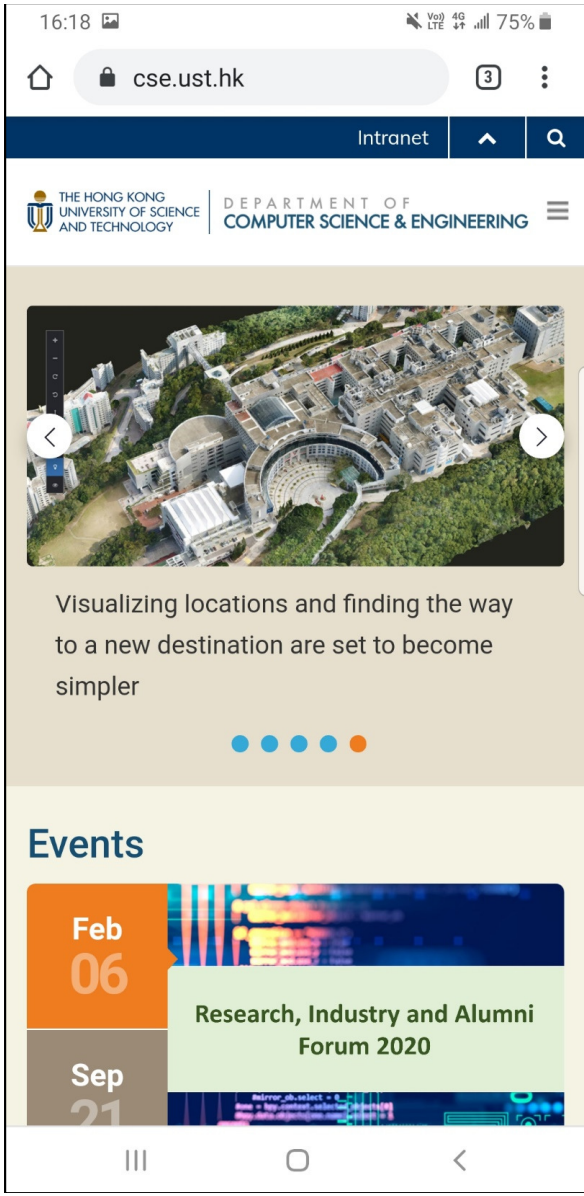
- The idea of ‘mobile-first’ is for webpages to first handle the requirements of mobile devices
- Then it progressively improves layouts and features for bigger devices



The CSE Website Uses Bootstrap



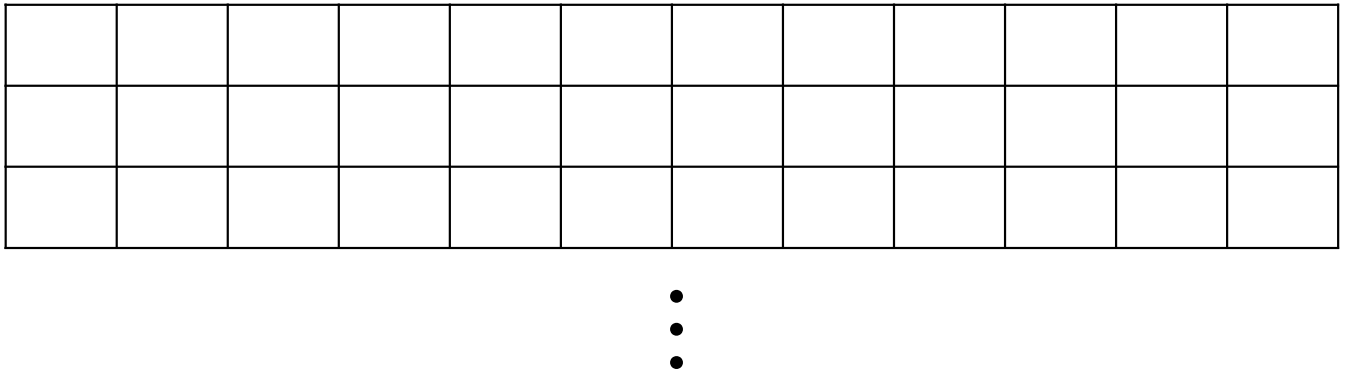
- Using Chome on a PC



- Using Chrome on a Phone

The Bootstrap Grid System

- To build layouts in Bootstrap you use its grid system
- Each row has 12 columns, like this:



Using Divs in the Bootstrap Grid System

- You use divs to build up the grid system
- You start with a container:

```
<div class="container">...</div>
```

- Inside that goes a row:

```
<div class="row">...</div>
```

- Inside the row goes the columns:

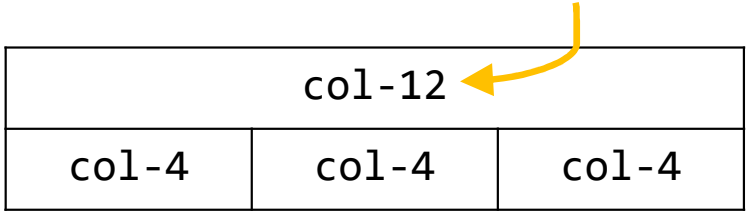
```
<div class="col-2">...</div>
```

This div will occupy two columns

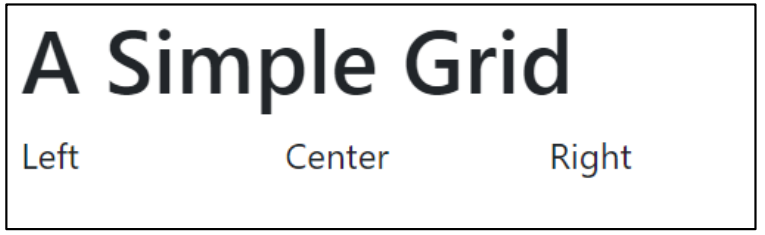
An Example

```
<div class="container">
  <div class="row">
    <div class="col-12">
      <h1>A Simple Grid</h2>
    </div>
  </div>
  <div class="row">
    <div class="col-4">Left</div>
    <div class="col-4">Center</div>
    <div class="col-4">Right</div>
  </div>
</div>
```

This div will occupy 12 columns



- This is what it looks like:



The Column Class

- The column class has a special naming system:

`col-`*breakpoint*`-`*size*

- *Breakpoint* can be either:
  `xs` , `sm` , `md` , `lg` and `xl`
  extra small, small, medium, large, extra large
- *Size* is the number of columns spanned by the class

Breakpoints

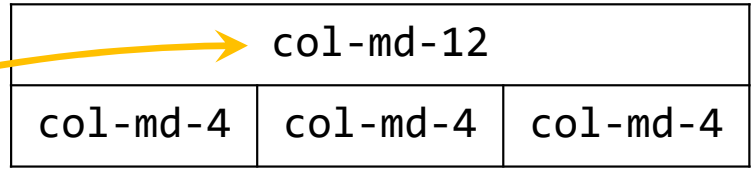
- If you want different configurations for different screen sizes then you use *breakpoints*
- The breakpoint sets the column setting for a specific device size:

`xs`	Extra small <576px
`sm`	Small >= 576px
`md`	Medium >= 768px
`lg`	Large >= 992px
`xl`	Extra large >= 1200px

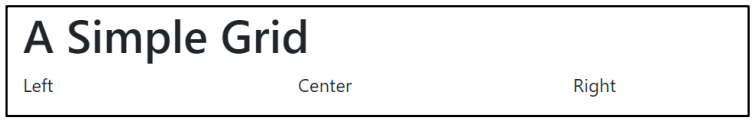
- That means you can adjust the grid structure based on the size of the device being used to look at the web page

An Example Grid, For a Medium and Bigger Size Screen

The desired structure:



The desired result:



*md=for **m**edium size **d**isplay*

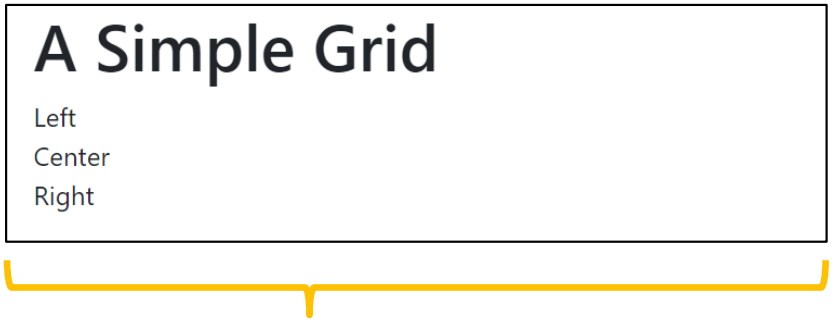
```
<div class="container">
  <div class="row">
    <div class="col-md-12"><h1>A Simple Grid</h2></div>
  </div>
  <div class="row">
    <div class="col-md-4">Left</div>
    <div class="col-md-4">Center</div>
    <div class="col-md-4">Right</div>
  </div>
</div>
```

the structure is useful for a device with at least medium display width

For devices with less than medium display width, the browser does not do any structure, just dump all elements in a linear sequence.

The Problem On Smaller Screens

- If you use a small screen device, the display will not be the desired result e.g:



Size smaller than 768px

- You can see the 3 columns which you wanted to see are ‘broken’

The structure has been ‘reduced’ by the small device to this:

col-md-12
col-md-4
col-md-4
col-md-4