

Grids, Bootstrap, & Wireframes

CS 160, Week 1: Topic B
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Please have a pen/pencil and paper at hand for a later activity.

Hi! I'm Elle



- **Pronouns:** she/her
- **Location:** Garden Grove, California
- **Major:** Industrial Engineering & Operations Research
- **Experience:** Web + App Development, Product Designer
- **Interests:** Art, music, plants, astrology

Hi! I'm Lucy



- **Pronouns:** she/her 🧑
- **Location:** Los Angeles, California ☀️
- **Major:** Computer Science (Class of 2022 🐻✌️)
- **Experience:** Android SDK 📱
- **Interests:** my animals 🐶🐱🦎, singing 🎤, board games 🐏🪨🌾🧱🪵, tennis 🎾, plants 🌱, knitting 🧶, sparkling water ✨

Introductions

**Introduce yourself to a partner
in a breakout room :)**

- Name
- Pronouns
- Location
- Interests
- What you're looking forward to in CS160!

**You will be working with them
later in an activity!**

Agenda

- 1. Bootstrap Overview**
Introduction to Bootstrap fundamentals & how to use Grids
- 2. Wireframes & Why**
Reinforce importance of wireframes in the design process and this class (especially projects!)
- 3. Bootstrap Demo**
See bootstrap in action!
- 4. Bootstrap Practice!**
Group activity creating a basic layout on Codepen

What is Bootstrap? (don't reinvent the wheel)



- **CSS Framework** for developing **responsive** mobile-first websites
- contains **HTML, CSS, & JavaScript** based templates for typography, forms, buttons, etc.

Advantages of Bootstrap



- Incredibly easy to use / thorough documentation
- Magically responsive!
- Many customizable components



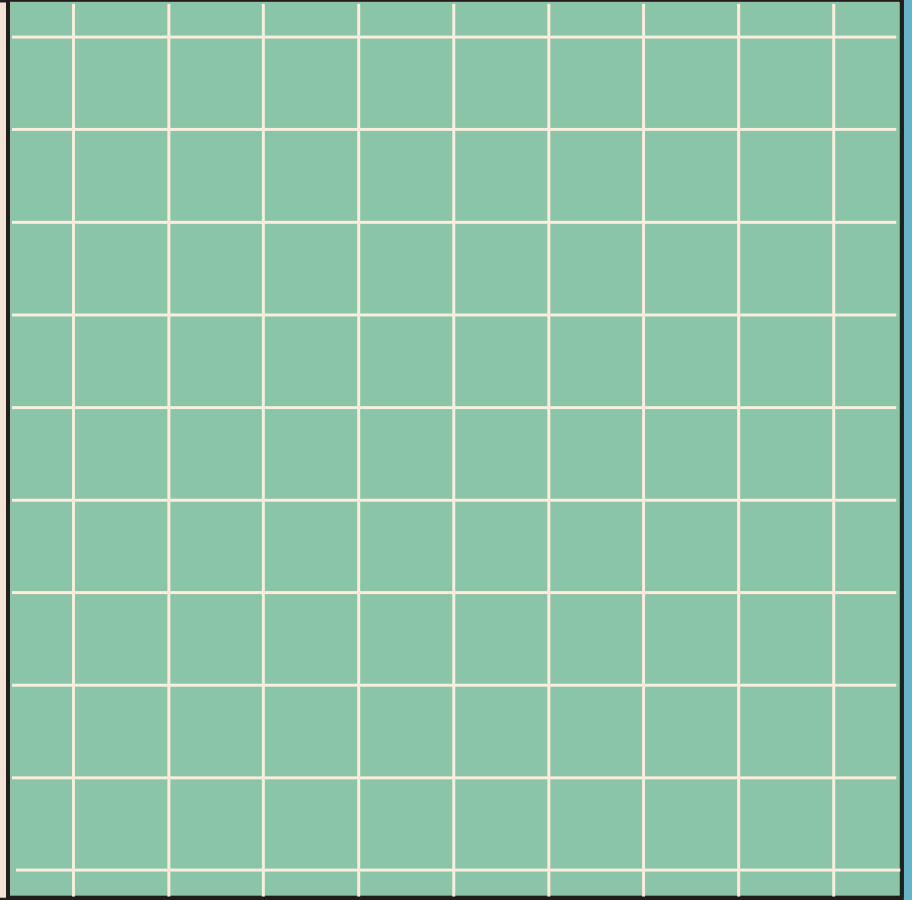
12,000,000

Websites use Bootstrap
today!



Bloomberg
Business

The Grid System



Why Grids?

Clarity/Order

Grids bring order to a layout making it easier for visitors to find and navigate through information.

Efficiency

Grids allow designers to quickly add elements to a layout

Economy

Grids make it easier for other designers to work and collaborate on the design as they provide a plan for where to place elements.

Consistency

Grids lead to consistency in the layout of pages across a single site or even several sites creating a consistency in the design.

Source Truths for Bootstrap

- <https://getbootstrap.com/docs/4.0/getting-started/introduction/>
- CSS classes are everything! `<div class="">`
- Override using CSS styles

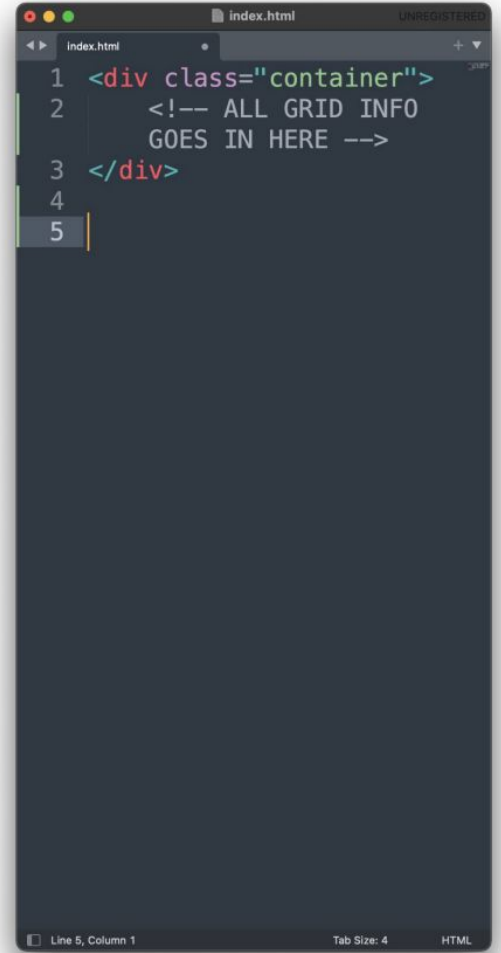
Bootstrap Grids

→ Container (fluid or fixed) `<div class="container">`

→ Rows `<div class="row">`

→ Columns (12 col system)

Container



A screenshot of a code editor window titled "index.html" with a dark theme. The editor shows five lines of HTML code. Line 1 is `<div class="container">`, line 2 is `<!-- ALL GRID INFO`, line 3 is `GOES IN HERE -->`, line 4 is `</div>`, and line 5 is empty. The cursor is at the end of line 5. The status bar at the bottom indicates "Line 5, Column 1", "Tab Size: 4", and "HTML".

```
1 <div class="container">
2   <!-- ALL GRID INFO
3   GOES IN HERE -->
4 </div>
5
```

Line 5, Column 1 Tab Size: 4 HTML

Container

Row

Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1	Col 1
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

Row



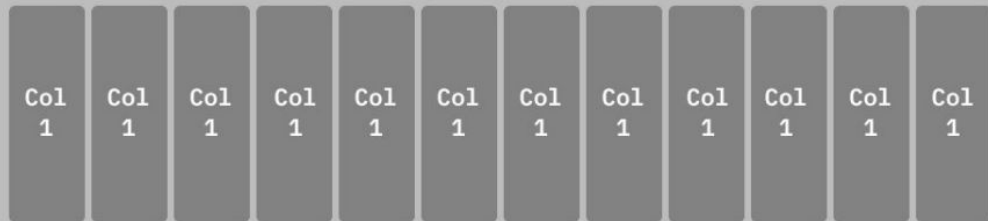
= 12

= 12

```
index.html
1 <div class="container">
2   <!-- ALL GRID INFO GOES
   IN HERE -->
3   <div class="row">
4     <div class="col-1">
5     </div>
6     <div class="col-1">
7     </div>
8     <div class="col-1">
9     </div>
10    <div class="col-1">
11    </div>
12    <div class="col-1">
13    </div>
14    <div class="col-1">
15    </div>
16    <div class="col-1">
17    </div>
18    <div class="col-1">
19    </div>
20    <div class="col-1">
21    </div>
22    <div class="col-1">
23    </div>
24    <div class="col-1">
25    </div>
26    <div class="col-1">
27    </div>
28  </div>
29
30  <div class="row">
31  </div>
32 </div>
```

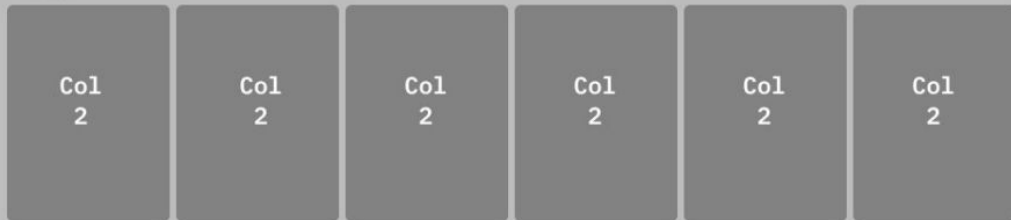
Container

Row



= 12

Row



= 12

```
index.html  UNREGISTERED
1 <div class="container">
2   <!-- ALL GRID INFO GOES IN
   HERE -->
3   <div class="row">
4     <div class="col-1" />
5     <div class="col-1" />
6     <div class="col-1" />
7     <div class="col-1" />
8     <div class="col-1" />
9     <div class="col-1" />
10    <div class="col-1" />
11    <div class="col-1" />
12    <div class="col-1" />
13    <div class="col-1" />
14    <div class="col-1" />
15    <div class="col-1" />
16  </div>
17
18  <div class="row">
19    <div class="col-2" />
20    <div class="col-2" />
21    <div class="col-2" />
22    <div class="col-2" />
23    <div class="col-2" />
24    <div class="col-2" />
25  </div>
26 </div>
27
28
```

Line 28, Column 1 Tab Size: 4 HTML

col-4

col-8

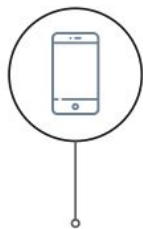
col-9

col-3

col-5

col-7

Screen Sizes



col-xs-*

col-sm-*

col-md-*

col-lg-*

0px

576px

768px

992px

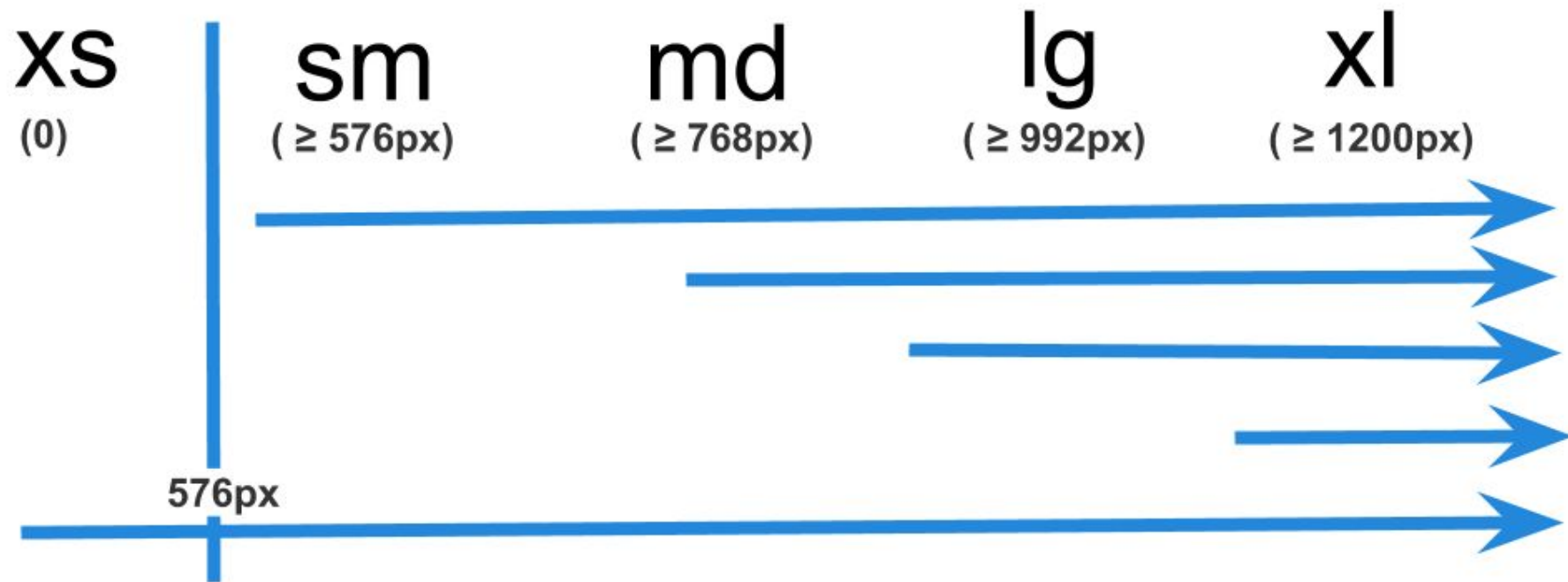
smartphones

tablets

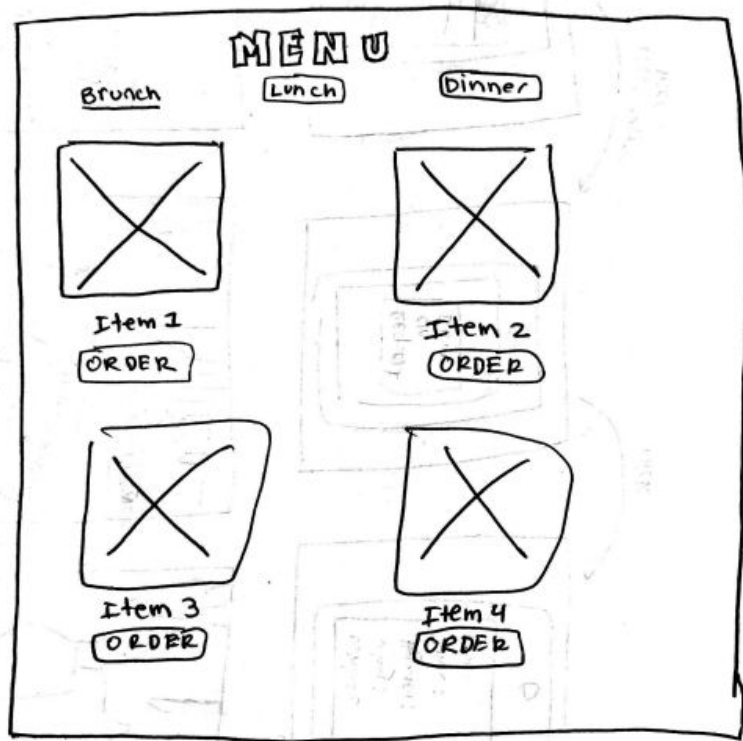
laptops

monitors

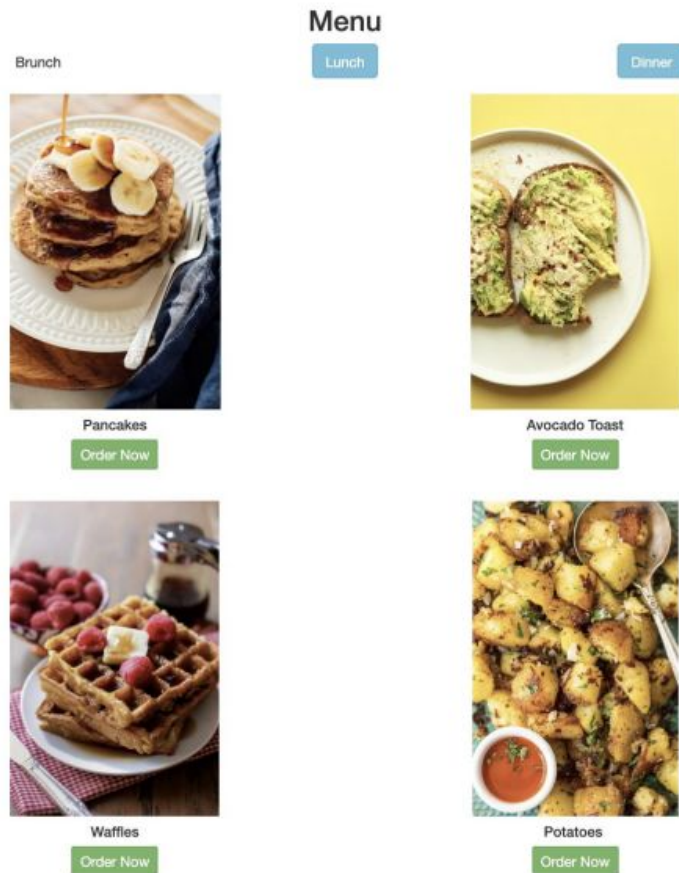
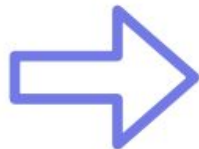
Bootstrap 4 Breakpoints



Wireframes



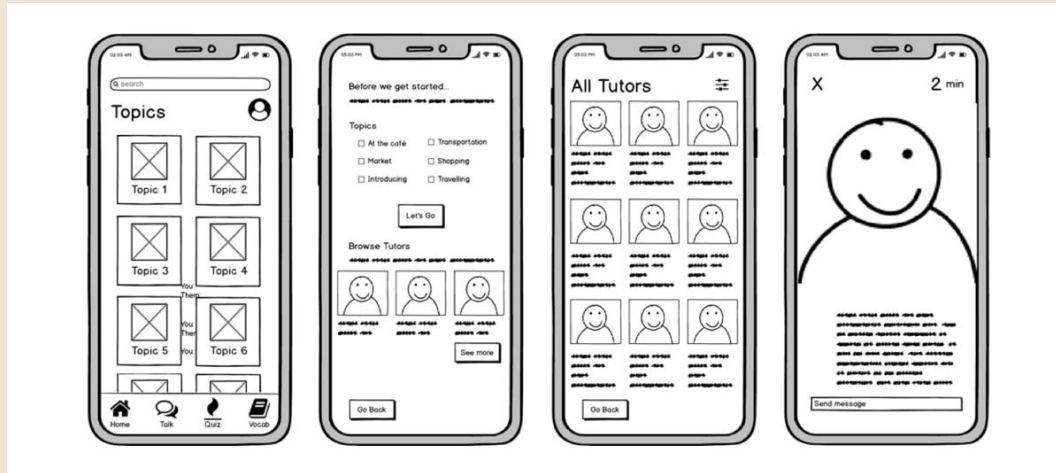
Go from this...

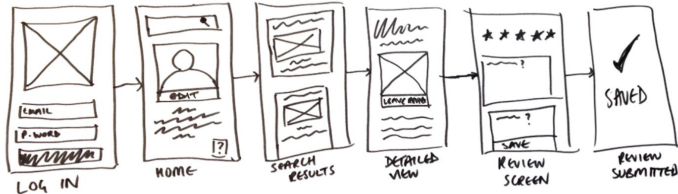


...to this!

Wireframe Features

- usually includes logos, search fields, titles & headers
- can use shading to represent selected items
- 2D depictions - avoid complex interactions like drop-downs or hover states





Low-fidelity

starting point of design, useful for mapping user flow and app navigation
(pen & paper)

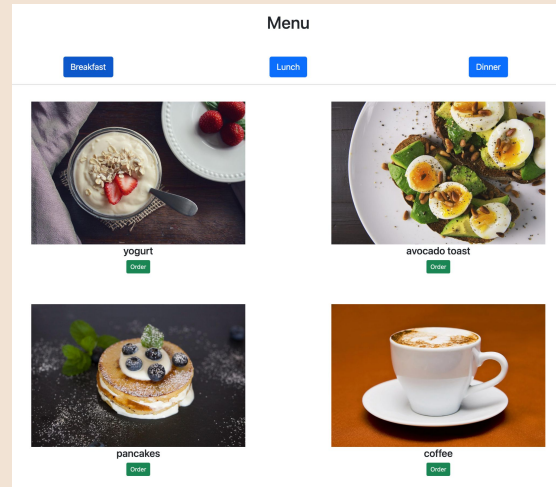
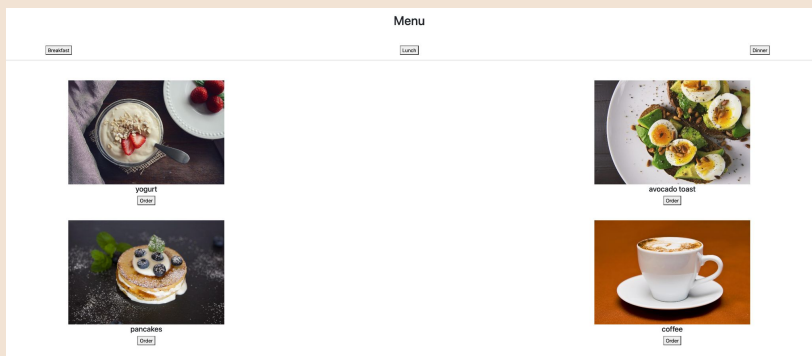


High-fidelity

includes relevant components and pixel-specific layouts
(figma, adobe illustrator, etc.)

Bootstrap Example!

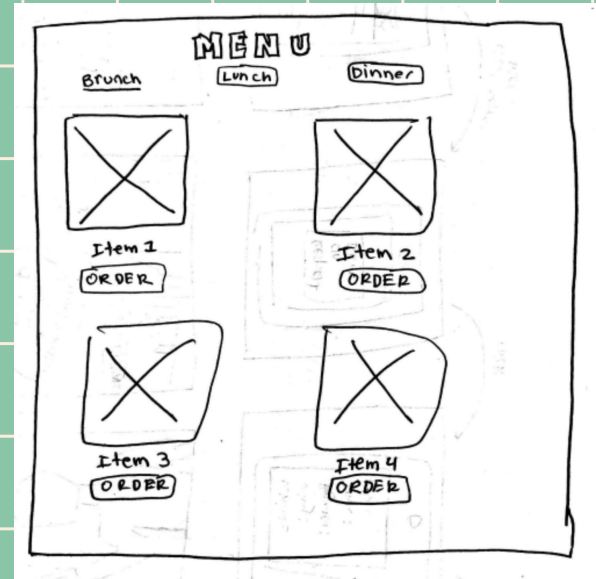
Starter Code



[Code for completed demo](#)

Wireframe Activity!

Take 5 minutes to sketch a low-fidelity wireframe for an online menu



Bootstrap Activity!

- Breakout rooms!
- Show off your wireframes
- Build each others menus on codepen!
 - Optional [Starter Code](#)
- Share the link to your menu in the zoom chat (or share your code and we can show it in codepen)

× □ _



thanks for
coming!