Responsive Design

Module 4 Week 10

Notes Repo: https://github.com/C-Shi/lhl-flex-lecture

Learning Objectives

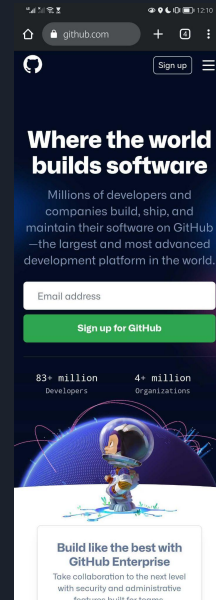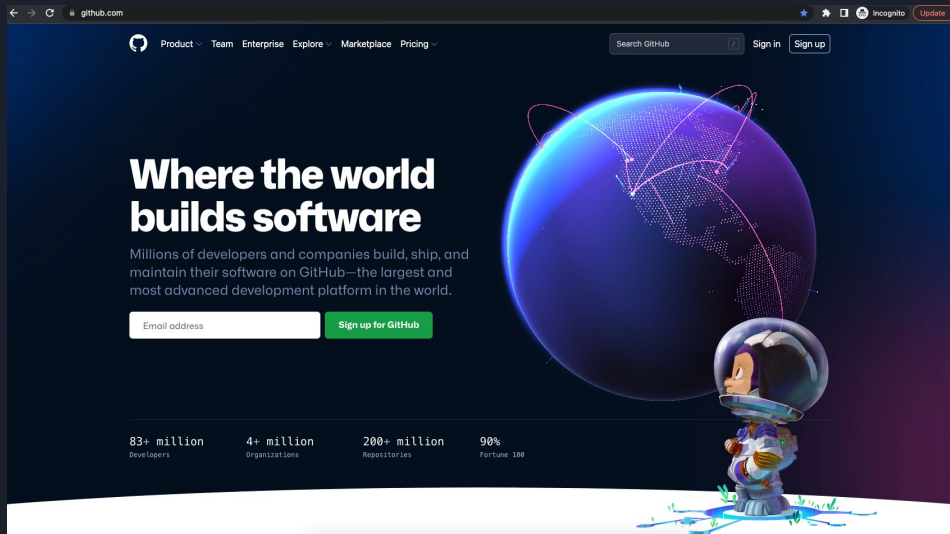Responsive Design

Relative CSS Unit

Media Query

Concept of Viewport

Pre-processor and SASS

Responsive Design

Responsive Design aims to make web page render well in all different screen size

Responsive Design use one set of rules for all different device

Relative CSS unit

Unit	Description
%	Relative to the dimension of parent
em	Relative to parent's font-size -> for font-size Relative to font-size itself -> width and height
rem	Relative to root font-size (em against <html>)
vh	1% of the viewport height
vw	1% of the viewport weight

Quiz

```html
<html>
  <body>
    <main>
      <article>This is article</article>

      <footer>This is Footer</footer>
    </main>
  </body>
</html>
```

```css
main {
  width: 1000px;
  font-size: 24px;
}

article {
  width: 50%;
  font-size: 2em;
  height: 10em;
}

footer {
  font-size: 2rem;
}
```

Knowing that the default font-size for html is 16px:

1. What is the <article> width in px

2. What is the <article> height in px

3. What is the <footer> font-size in px

Media Query

```
@media screen only and (min-width: 500px) and (orientation: landscape) {
      div {
              background-color: #FFF;
      }
}
```

	Syntax	Description
Symbol	@media	Signaling media query
Media Types	all, screen, print	Category of device
Media Features	orientation, min-width, max-width, etc	Output characteristic
Logical Operators	and, not, only	Compose complex condition

What is Viewport

From Mozilla:

What is a viewport?

A viewport represents the area in computer graphics being currently viewed. In web browser terms, it is generally the same as the browser window, excluding the UI, menu bar, etc. That is the part of the document you are viewing.

In web browser, viewport is generally the same as the browser window

Mobile browser's viewport is usually wider than the screen

```
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
```

CSS preprocessor and <u>SASS</u>

A **CSS preprocessor** is a program that lets you generate <u>CSS</u> from the preprocessor's own unique <u>syntax</u>.

There are many CSS preprocessors to choose from, however most CSS preprocessors will add some features that don't exist in pure CSS, such as mixin, nesting selector, inheritance selector, and so on. These features make the CSS structure more readable and easier to maintain.

To use a CSS preprocessor, you must install a CSS compiler on your web <u>server</u>; Or use the CSS preprocessor to compile on the development environment, and then upload compiled CSS file to the web server.

Sass is a stylesheet language that's compiled to CSS. It allows you to use variables, nested rules, mixins, functions, and more, all with a fully CSS-compatible syntax. Sass helps keep large stylesheets well-organized and makes it easy to share design within and across projects.

Take away

Use CSS relative unit to scale an element proportionally to another element

Use media query to conditionally applies rules based on device information

Use Viewport meta tag on EVERY website

SASS is based on CSS. It contains more feature but all CSS syntax accepted

Tips

1. If you use relative CSS unit, and it doesn't work:
    a. Check the element it refers to.
    b. Eg: If 100% width do not do the work as expected. Check if the parent element has a proper width

2. If your media query does not work
    a. Check if your media query has high enough specificity

3. If your responsive design work on browser resize but not on mobile simulator:
    a. Check your viewport meta tag

4. If you SASS don't work:
    a. Check if the built CSS has been included in your html
    b. Check if you have rebuilt the file since last change