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CSS Measurements

In CSS there are two main types of measurement units, there are absolute units as well as relative units. The difference between these units is the way they are calculated and their responsiveness to changes in the layout. First, absolute units are fixed measurements that do not change with the size or dimensions of the surrounding elements or the viewport. That would include pixels, inches, centimeters, millimeters, and points. Pixels are a fixed unit of measurement, and they represent the smallest unit of the screen display. They will provide a precise and consistent size regardless of the device or screen resolution. One thing to note is that one pixel equals one dot on the screen. Inches, centimeters, and millimeters are a physical unit of measurement representing a physical measurement on a page and can vary based on the screen resolution. Points are a unit of measurement commonly used in print design. One-point equals 1/72 of an inch, and their size can also vary depending on the size of the device. Absolute units also provide precise and consistent measurement across different devices and screen resolution. We also must note that they are not responsive and can result in elements appearing differently on devices with different screen sizes.

Now, relative units are dynamic measurements that are calculated based on the context or size of the elements around them. Dynamic measurements would be percentages, em, and rem. Percentages are relative to the parent element’s size or the container’s dimensions. For example, setting a width to 50% on an element makes it take up half the width of its parent container and if its set to 100% it would take up the entirety of the width of the parent container. Em and rem are relative to the font size of the element or the root font size respectively. The em unit is relative to the font size of the element itself. When setting a font size or any other property using em, it will be calculated based on the element’s computed font size. If you were to set a font size of 2em it would make the text twice as large as the parent element’s font size. The rem unit is relative to the root font size meaning it is like the em unit, but it provides a more predictable and consistent way of setting relative measurements across the entire document. This is because it does not cascade like em, and its value remains constant throughout the document. Relative units allow responsive design as they adapt to changes in the layout, making them useful for creating fluid and flexible designs. They are mainly helpful when designing for different screen sizes or when elements need to scale proportionally. It is preferably used for responsive design because they allow elements to adapt to different screen sizes and zoom levels.