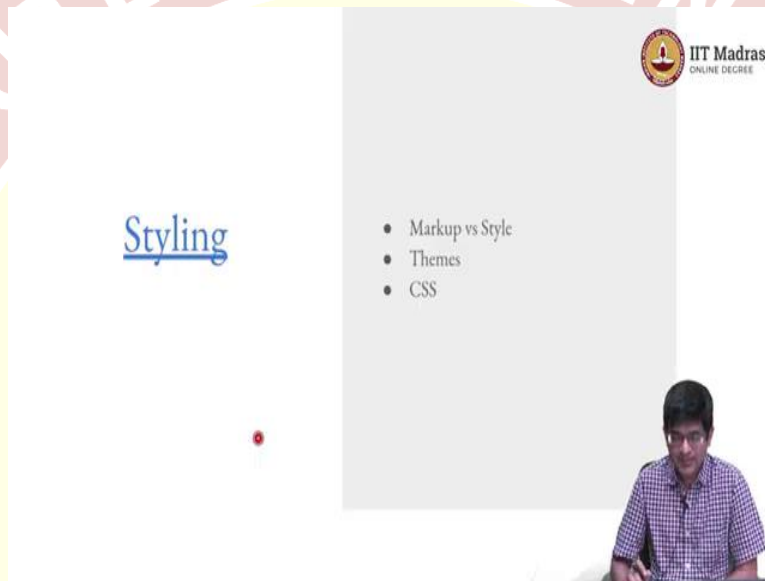# IIT Madras

ONLINE DEGREE

Modern Application Development - I
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Introduction to Styling

Hello, everyone, and welcome to this course on Modern Application Development.

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So, this brings us to styling. And what we are trying to understand over here is what do we mean by styling? What is the difference between markup and styling? What is markup? What is the style? What are these themes that you may have come across in different contexts? And finally, what is the role of CSS in all of this?

So, to illustrate the distinction between markup and style, let us take an example like this. I have marked up this word hello, as a <h1>, title, a heading. Now, it could get displayed in any number of ways. These are some possibilities I am showing. One of them is just to say, use this font, size 24, bold. So, this is, I mean, this sort of matches with what you might expect to see as <h1> heading.

This is another variant. How is it different from the above? It basically uses a different font, even larger font size, still in bold. And this third one over here is something that you hopefully do not see, because it looks quite scary. But is also a different way by which I could describe <h1> heading.

I use a different font, the font is fine. The size is also okay. It is bold, but I have also added italic to it. The font color in this case is green and the background is red. Now, this would probably be a case where somebody got carried away with what can be done with styling, and did not stop to think about how does this actually look, because if this is what a page is going to look like, in large part, then no, it is not really going to look very nice. But that is the point. You could do it if you chose to. And markup does not tell you anything about what it should look like, that is determined by styling.
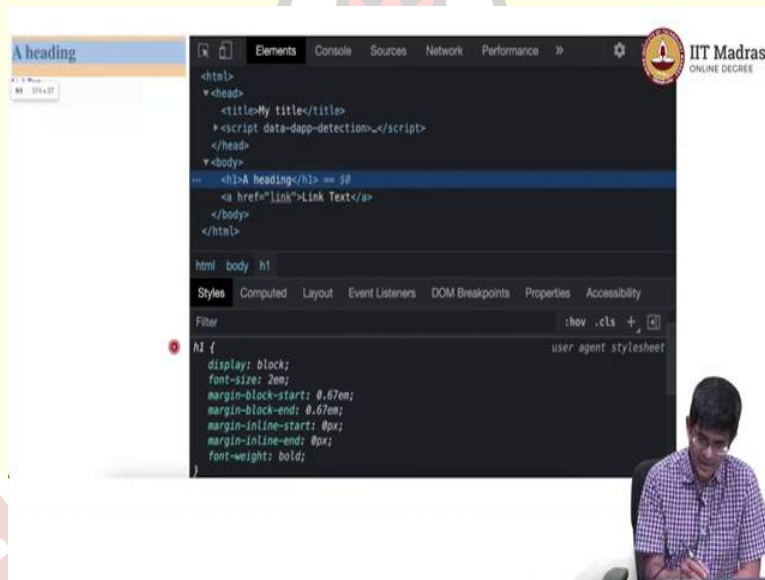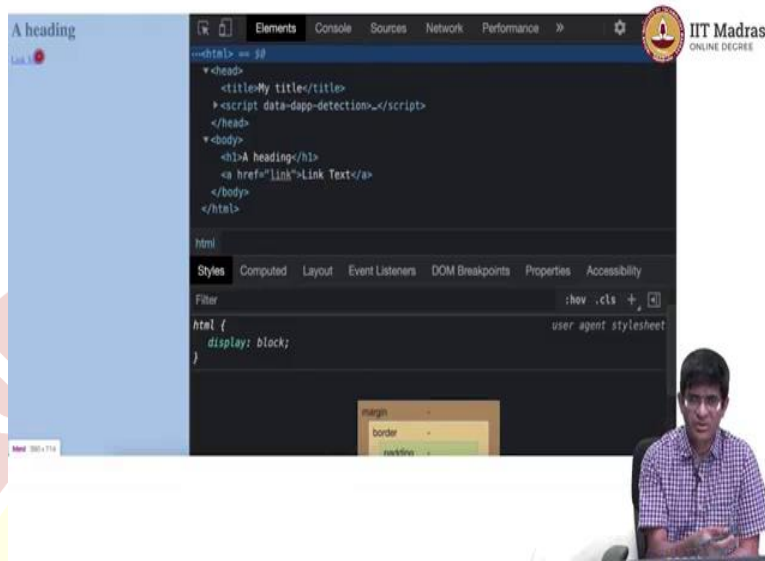
So, this separation of the styling from the markup is what allows us to create what are usually referred to as themes. So, you have probably seen themes in different places. Your operating system will say you can choose different themes. There is a light theme, a dark theme, something which uses spaceships, icons for everything. Your phone certainly has like a whole bunch of different themes. The point is that all of those are going with the same underlying concept. There is some logical meaning to all the things that are on your phone or your desktop or whatever it is. And there is a physical representation, which is chosen separately.
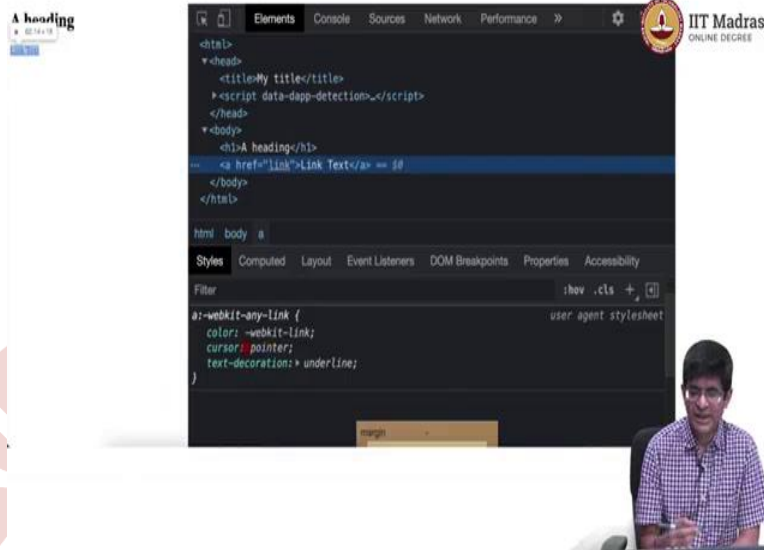
And the concept that was brought in somewhere along the line was that why not use something called a style sheet, which contains just presentation information. So, how does the style sheet work? It basically has, let us say, descriptions of different tags and says this is how each of these tags needs to get represented or displayed on a screen. And that is where cascading style sheets or CSS came into the picture.

Why cascading? Basically, what it said was, you could have multiple style sheets, each of which might have some overlap with the other. So, one of them might display what an <h1> should look like. The next one may also have something on top of it, which basically says that you have multiple such definitions and the latest one or the last one that you have over there is the one that is going to take precedence. So, cascading style sheets was basically brought in just in order to separate out the styling from the markup.

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Let us take an example try and understand this in a little bit of context. So, what I have over here, these are some screenshots of something that is, this part of it on the right side is something called the developer interface, the developer view that is usually provided by most browsers and is something that you should probably get some familiarity with if you are interested in developing more web apps.

So, what you can see over here is that this developer view has essentially shown us something which is the HTML content that I have, which is pretty much exactly the same text that I had. There was the header with this, my title over here, then there is the body which has a heading and this link text. This on the left hand side is how this whole thing got displayed. The heading basically went into this top left hand corner. Well, the corner simply because it is sort of looking at it as a page from top to bottom, left to right. And therefore, the heading automatically goes in there.

Now, because it was defined as an <h1> heading, it also automatically becomes bold and a larger font size. Similarly, because this was defined as a link, it has some extra link text, which comes up in blue and underlined. And nowadays, we have pretty much come to recognize that if it looks like this, it is most probably a link that you can click. Remember, this is also just a convention. This whole business of links being blue and underlined is something that came up from quite some time back. So, what we have over here is, what we can see is there is the heading, there is the link text.

Now, if we skip forward, we can see that this also represents a link body. And if I go and click on the part which shows heading, it sort of pinpoints around that. It shows me exactly what is the display portion corresponding to the heading. And if I look down here, it actually shows me all the styles corresponding to that. You would notice that I do not really have any styles mentioned in my HTML file. So, these are what are usually called the default styles that are built into the browser. What it says is use a block display type that is to say put the heading in a block on its own, so that whatever text comes after that will come on the next line.

Font-size 2em usually means twice the size of a regular m size character. Margin-block-start, margin-block-end these are all the margins to leave on the sides of this thing about, below and so on, and font-weight. Take the font, whatever font was chosen, that is the default font, which incidentally has not been defined over here. But take that font and make it bold and display it. So, what the browser will actually do in this case is go and pick up the default font that you have specified as in your browser settings, change the font size to be double of normal, change the font-weight to be bold, set some margins and display it in a block.

What about the link text? Here once again, it basically has this thing where it says any link, color should be defined as something called webkit link and cursor should be a pointer, text decorator underline. So, the text-decoration underline is basically telling you to draw this, that it should be drawn with this line under it. The color in this case webkit link. What is web get link? I do not know. It is something which is built into the browser. It is one of the defaults. If I chose I could have done something on top of that and changed it.

But and the other thing which it finally says is the cursor should basically be look like a pointer in this case, which means that if I hover over that, then it should change and show me that this is a clickable link. So, all of these, in other words, are styles that are built into the browser. Modern browsers have all of these styles built into them. If you do not specify any style, this is how it is going to display.