# IIT Madras

## ONLINE DEGREE

**Modern Application Development – 1**
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**Tools Part – 1**

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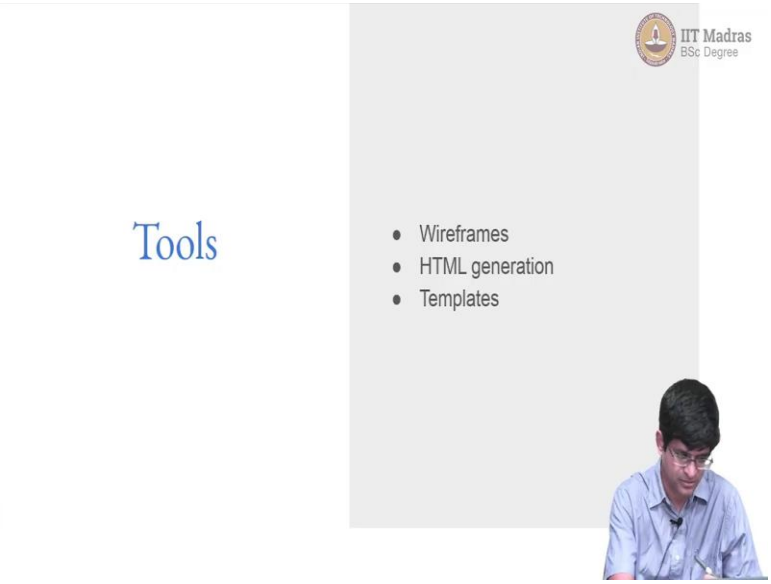


Hello, everyone, and welcome to this course on Modern Application Development. So, now we are going to look at some tools that can be used in order to do the various parts of this user interface design, the view design so, to say, primarily, what we are going to look at is the concept of wireframes. How to generate HTML, and the concept of templates again, in the context of HTML generation.

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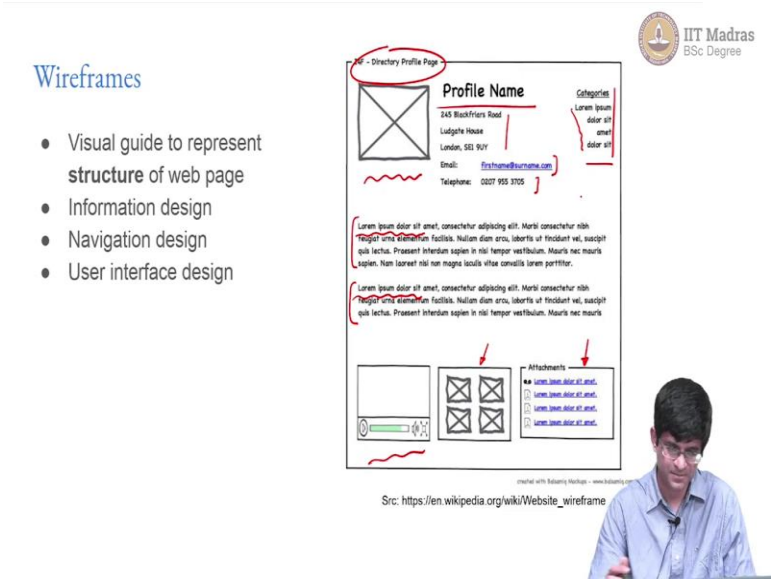


So, what is a wireframe? A wireframe is a visual guide that represents the structure of a webpage. So, what exactly does that mean? It has various components to it, it basically says, what is the information? And where is the information going to be in this page? How are you supposed to navigate around the page, or is it a single page? Or do I need to go from one page to another? What kind of navigation do I have? Is there something to go to a top level page to the next page? To a search page or anything else, all of that is part of the navigation.

And finally, the user interface design itself? What kind of interaction from the user can I expect? So, this is an example once again, I have taken this picture from the Wikipedia site for website wireframe. And essentially, this is sort of what you might imagine to be the wireframe for, let us say, a directory profile. So, what exactly do I mean by directory profile? What I am, what I have in mind over here is that I have a list of users in some kind of directory system?

And if I want, if I go and click on the information corresponding to one particular user, this is the information I would like to see. So what I might, for example, expect is that there is a photo of the person, it of course, starts out with their name, prominently displayed. The address, maybe, physical address, I do not know, but most likely, I would want to know, their email and their phone number. Now, what you see over here is, you know, it also says categories.

So, for example, this might have this person is a student, this person is a student of electrical engineering, this person is hosteller, and not a day scholar. All those kinds of things are the

categories that for example, I might be interested in, when I am looking at a directory. Now look at the text that we have over here, this Lorem Ipsum, this text that you have, you will find that you have exactly the same text out here.

This is essentially a standard trick that is used in most of these things. It is what is called a fake Latin text, it has no meaning. This is not real Latin, it does not have any particular meaning to it. It is just that it is a large chunk of text. And there are sort of standard function calls in various languages and various contexts, that will just create this text for you. Why is it useful, because very often, having to type out a lot of words, in order to fill out a paragraph.

I will find that I just sort of hammer away on the keyboard, but I do not put in the spaces at the positions, I do not get the right lengths of the words and so on. This is a standardized text that already has a lot of that built in. For wireframes, it is very useful, because I do not really want to put the information of an actual individual in here. And at the same time, it allows me to construct sort of I might have two paragraphs of text that are available over here.

And I have the categories out here, I have some attachments corresponding to the person I have, I do not know something else, some pictures thumbnails corresponding to that person. I have a short introduction video. Essentially, what this wireframe is telling me is this, for example, is what I might show the client, when they say, maybe the job that I have been given is create an app that allows me to interact with the directory.

And the interaction, one of the steps in that could be I need to be able to find all the information corresponding to a given person. Of course, the data model would be somewhere else. That would be stored on the server, all the information such as the name, the photograph, the address, all of that would be part of the data model which is stored on the server. What I need to do is to say, this is what the view is going to look like.

It will have all of this information on it, and this is how it will be presented to you. And as you can see, this amount of text is fine if I am looking at a full size computer screen, but if it was a mobile phone, and they try to show all of this, it would look messy. Because by the time I put in all of this text categories and so on side by side, I will probably find that the font size is so small, I cannot really read very much.

So, you would probably have a different wireframe that indicates what it would look like on a phone, yet another one on an iPad, in landscape mode in portrait mode all different kinds of combinations you need to think it through in order to find out what are good structures for those.

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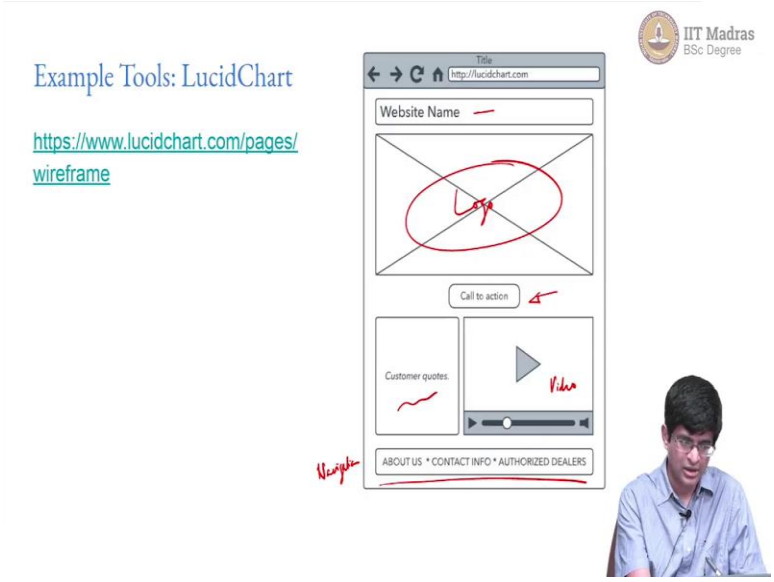


Once again, there are tools for this, lucidchart.com, for example, has a basic minimal free account that allows you to sort of at least get started with this idea. But this is by no means the only one. These are just a couple of pictures that I have taken from their website, for illustration. And as you can see, over here, this is sort of saying, this is how you might go about evolving a wireframe.

The first thing is, this is what the information that you have, you have this website name, you have some kind of a logo over here. You have a banner or some kind of a call to action, maybe a video about the company playing out here, some customer quotes, and finally, navigation. Or at least like other links to go to.

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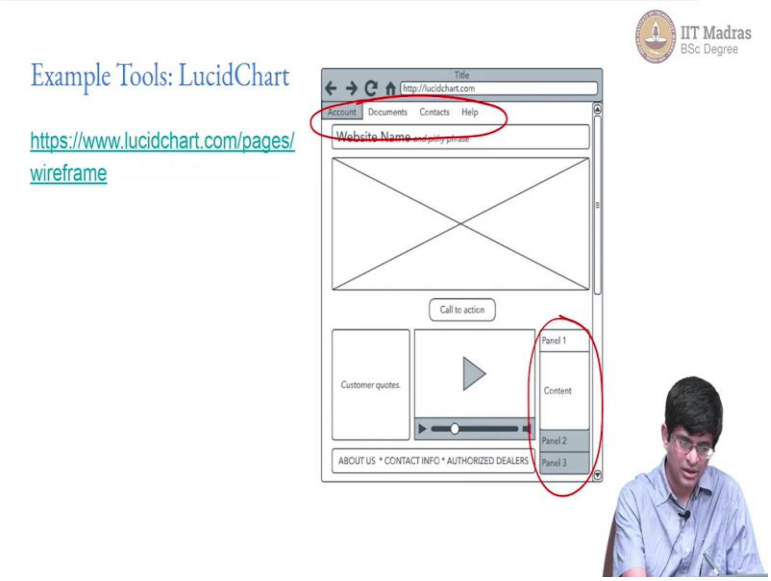


You could add further information over there make the navigation part a little bit easier by having all this information up here, documents, contacts, and so on, you have them in a standardized location right up on top. You also have another panel out there, that is points you to additional content. So, this is sort of fleshing out the wireframe giving you more detail on what could be added.

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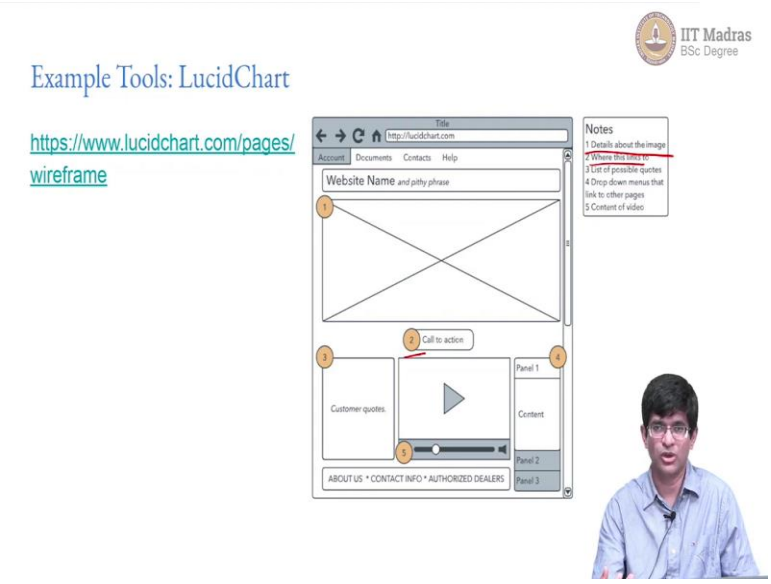


And normally, what you would want to do is you actually annotate it. You start out by saying, I put a one over here and say, this, what kind of image is this going to be? What is this call to

action? Where does this link to? All of this information, once you put that in place, you can actually present it to a client and they can then give you input saying, this looks nice. Maybe this is what I would like each of these things to link to this is how big it should be.

Can you make this smaller? Can you make this larger? And this can be done very easily without worrying about, actually going and coding anything later. Once you have the wireframe, translating that into an actual code, HTML plus CSS is a relatively trivial job. So, lucidchart.com is one example. But pretty much any drawing tool will have the basic components required in order to do something like this.

And there are a number of different tools that you can use, some are online, some are offline. And the most basic one, of course, is just use graph paper. Take a sheet of paper, sketch out on that. That is, in some ways, the easiest for a lot of people to work with. And it is good enough, not just good enough, it is actually a very convenient and easy sort of platform on which to work.