Introduction to Human Computer Interaction
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Lecture – 13
Prototyping: Low fidelity and High fidelity

Welcome back to the course Introduction to Human Computer Interaction. This is week 5 I hope you are enjoying the content of this course for the past 4 weeks, I see that some of you are asking questions on the mailing list, but it would be nice to get more and more people to talk about. What they are doing? What they are trying? What are you understanding and some questions that you may have for the students answer. It will be more useful to make the list more active.

So, what I am going to cover today is actually or this week is something along the lines of prototyping right.

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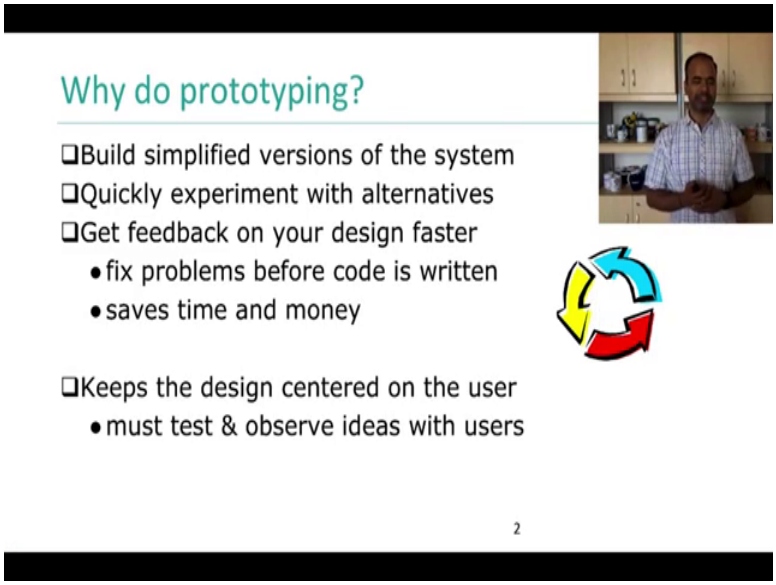

So, this is one of the important aspect of the course itself because if you remember the pillars of the course we want to understand what the users are thinking? What users want then we want to actually try and design then we want to build and then we want evaluates.

So, those are the four things that we are going to be focusing on the course it kind of done with the first part. So, we say understand users now we get on to the phases. Let us still design let us just go get some designs out get our hands dirty in terms of building a solution that users could use.

Why do prototyping? Prototyping is something that is such an essential part of actually design process why do we need to do prototyping we need prototyping because simplified versions of the system can be actually built right. So, because if you want to do a prototyping of this particular remote for the slide changer I think what you want to do is you want do not want it just to end up building the whole thing with all the functionalities and then going and taking it to the user to get some feedback.

So, that is the whole idea to get quick feedback in the design that you are making, but not actually spending a lot of time in building the prototype also quickly experiment with alternatives right. So, we can think of multiple ways of having that strength this is more like so to say rectangle type their design.

But you could actually think of a circular design you could actually think of a squared design. So, people could have come up with multiple design alternatives, the companies would have for example, this is I think the Logitech. Logitech would have come up with multiple design alternatives to decide on what is the proper design they should be actually manufacturing are there.

The other reason why you want to do prototyping is to actually get feedback as quickly as possible because I think another philosophy that you want to keep in mind is I think these are some quotes also earlier in the lecture that if you do not show anything to the users and if you ask them what do you want they would not know what they what do they want and they would not probably give you enough inputs for you to actually build on.

But when you build a prototype and show it to them probably there is going to be more and more more and more inputs that you get it is not only probably it will be that users will give you comments or at least they will scream at the designs that you made they will at least be unhappy about what you have designed they will be giving a feedback some more defects so that is one of the another big reason why you want to do prototyping.

Fix problems before or is it written right so you do not want to write a lot of code you do not want to do a lot of manufacturing of all of this putting them all together and then deciding that over this design is probably about design and it also definitely saves time and money you do not want to spend a lot of money you do not want to spend the time of the engineer designer all of them in building a prototype which is close to the near close to the final product and then getting feedback saying this is not a good design.

The other reason why you want the prototyping is actually to keep the user in the user as a centre why it is because if you start doing prototyping the users are actually getting involved in the design process as early as possible they are going give you feedback and you are going to use those feedback in terms of a designing and the product will become much better. And you do not want to just do prototyping for the heck of collecting data for the heck of collecting users feedback you want to also observe the designs that you mean to how users are using it how users are reacting to how users or playing around with it right.

So, those kind of inputs will make a lot of sense for you to actually build the prototype for you to actually use the inputs from the users to build the next level of prototypes.

Now, let us look at some basics of actually prototyping where this idea of prototyping started and how you could actually start using this prototyping.

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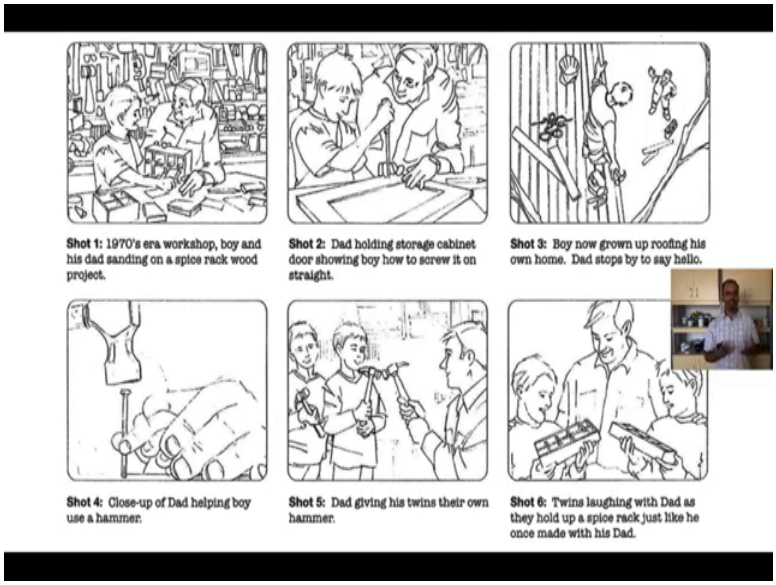

So, here is a story board what it is called right I am sure many of you have read or seen about these kind of storyboards. I am letting you to guess how and who uses this storyboard.

So, I had say short one 1970 era workshop boy and his dad standing on a a spice rack wood project shot. Number 2 dad holding storage cabin and shot number, 3 boy now grown up roofing his own home shot, 4 close up dad helping boy use a hammer, shot 5 dad giving his twins their own hammer, shot six twins laughing with dad as they hold up. A spice rack just like he once made with this dad right.

So, what is the idea about this storyboarding is that storyboarding helps to create shots and movies in may I sure you would have seen it sometimes and cartoons also where it actually explains what shot each of it is? It is the director, the actors everybody if this was a movie direction everybody would know the technician the camera man, everybody would know what shot is going to be taken and what is currently going to be done right.

So, this just helps in developing the shot very well having a very effective use of all resources available because you do not want to make a shot let us do this shot with the boy and the dad in it is workshop and then things are there and you do not know what is setup the technician does not know what like to give the produce or the director does not know which the cameraman does not know where to zoom in all of that right or the or the things that are kept in the workshop the people who are helping to do that do not know exactly what to keep in the back. So, this kind of storyboarding helps very much in creating a movie in creating a shortage shooting a movie.

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Here is another one this is one would that I liked this is a lion king and the characters are spelled out and where they are standing how they should be this is more like hand drawn characters and it also shows you the direction in which the Timon is looking at?.

And the character in which the king is looking at and things like that right. So, this kind of helps the movie direction this kind of helps the creative artists to actually clearly state their ideas to the technicians, to the director right by looking at it they can make very good judgment on what should they expect in the shot when it is finally, done. So, these kind of storyboarding helps in developing an good output.

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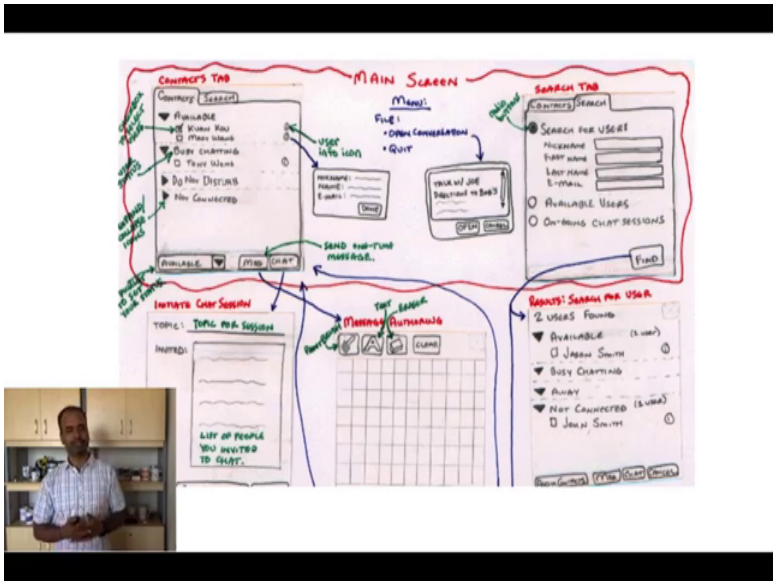

Now, here are some things that more towards the software that you may be building or a product that you may be building right this kind of shows what are the kinds of menus? What are the options that are available? Contacts a screen, name, nickname, right contents, search users spawn right all of this are the screen names that is there and of course, the colours in this slide also helps you to understand some level of information that red colour showing you the main screen the green colour showing you the buttons and then the title on the screens showing you what the screen is all part right search tab, common contacts tab, right.

All of that is helping right blue colour may just helping you to show you some flow right it is actually saying that here if you click on the button here on the top you will go to this particular state. You would have seen all of this in total data you already in the lab, but I am just giving you the background on how people prototyping via the lowest type of prototyping that we are going to do will actually end up creating the paper prototypes the work that you are going for the ideas that you are interested in.

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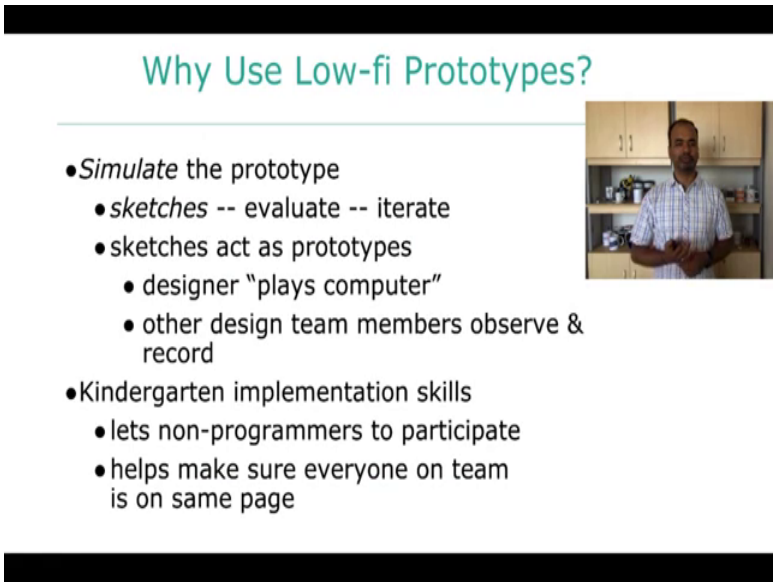

Why use low fidelity prototypes right. So, why do we have to generate? So, first we saw why prototyping is necessary? Prototyping is necessary to get inputs from the user prototyping is necessary to save some time money and all of that.

Now let us look at low fidelity prototypes what are low fidelity prototypes and why do we need to build low fidelity prototypes. So, low fidelity prototypes is basically a sketch right cable prototypes that you can go. So, this is essentially a low fidelity prototype. Just take a pen and a paper draw what you are thinking about and then you start to get inputs from users. Sketches act as prototypes designer replace computer so you can actually create as a user as a designer you created with a pen or paper the designs.

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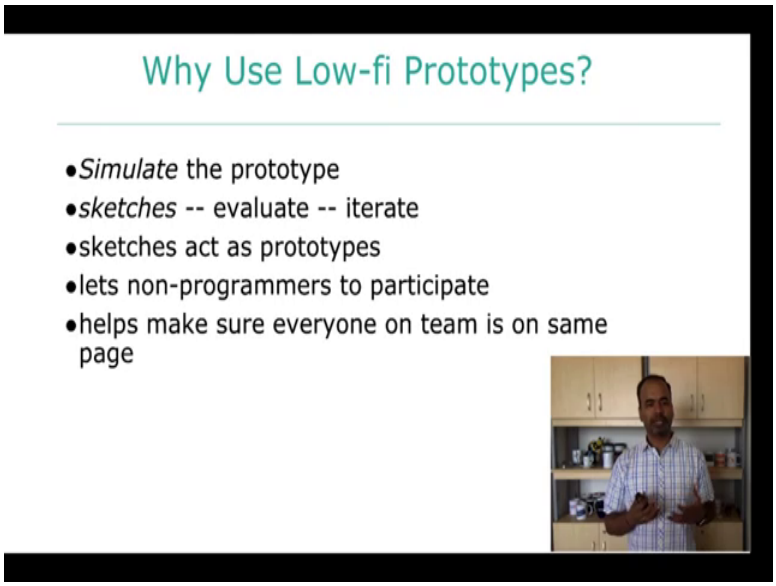

Now, let us look at the reasons why use low fidelity prototypes right. Low fidelity prototypes are the ones that we just now saw which is just a pen and a paper and the designers actually build it give it to the users get some feedback. Why use low fidelity? Low fidelity actually helps you to create a prototype first of all it sketches evaluates and iterate.

So, you can actually do multiple times and the paper prototype itself change things get feedback change things get feedback sketches act as prototypes. Let us non programmers to participate because you do not need programming skills right if you are actually designing a product. If not necessarily the person who is doing low fidelity prototype evaluation needs to know programming they can just do it in a pen or paper.

And the like the one that I said in the storyboarding there is low fidelity prototype helps everybody whoever is part of the team to understand what is the final thing that you are building? And how does it look before actually getting in to a line of code.

So, those are the reasons why low fidelity prototypes have become very very popular and it is it is super necessary to build low fidelity prototypes before you start actually building the actual talk.

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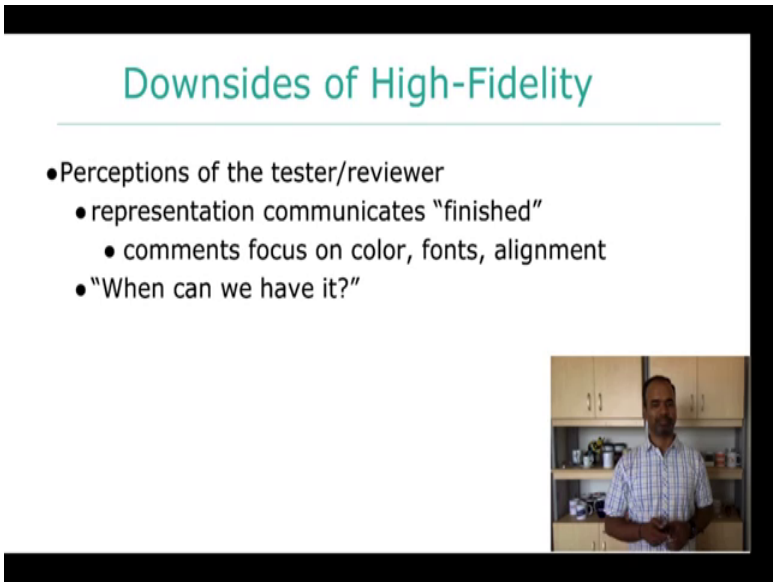

Given that I am arguing why low fidelity prototypes are necessary? Here are some downsides of high fidelity I want to bring you the downsides of high fidelity because this will help you to understand not to get into writing the code because as general students it is general so to say engineers you will end up actually starting to think that let us build this is probably a general engineering students or engineers view I guess.

Let us build a and then we will keep taking feedback as we build the toe I do not know many of you even do as we build the toe probably you build the toe put it up there and then start getting feedback from the users. So, I am trying to break that notion of let us build it and then get feedback.

So, downsides of high fidelity what is high fidelity mean? High fidelity means basically a building the whole remote a slide changes and then getting feedback right.

So, first thing is it just the designer whoever is creating it is the person who is going to think through what all features to have and that final product is as good as what that person is going to think about and when you give it to the user the users are going to think that this is a complete finished product now they do not want to give you feedback at the level of saying no this functionality is probably not good.

I am not necessary or it could have been done differently all that feedback will not come if you actually give them the final product instead if you show them a paper prototype

they are going to actually give you feedback of saying ye we could change this feature better in the in the high fidelity meaning.

If you if you try it getting feedback from users you will actually get feedbacks like these same colours you should change fonts should be different the alignment here is different we could have actually thought of a different colour there and things like that instead of actually giving you feedback at the level of how to how the interactions can be improved rather than actually how things are placed?.

And another reason another thing that you will hear when you show for high fidelity for feedback is that when can we get right because high fidelity is as close as to be done. So, can we actually get it that is what your customers that is what your end users will start thinking and asking you a lot.

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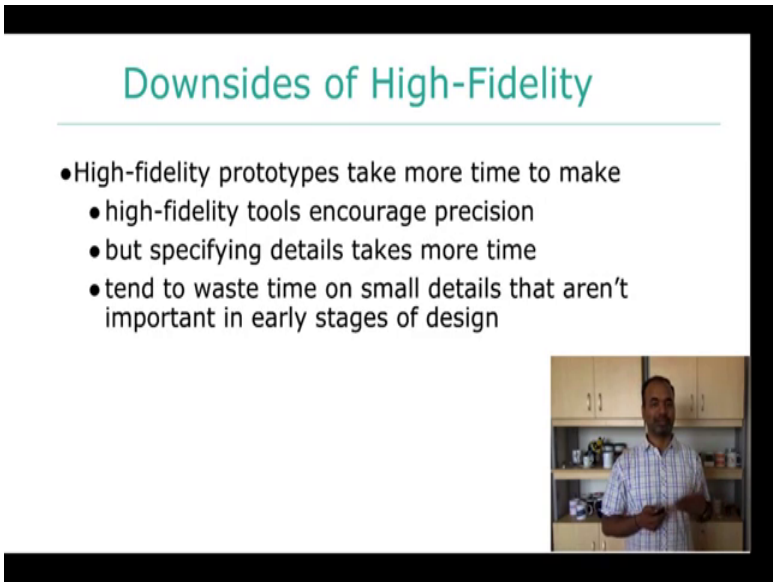

In contribute to the low fidelity which takes probably shorter time high fidelity takes a lot more time and actually building the final product right because it is going to be in it is going to involve all kinds of writing codes all kinds of interactions have to be properly seen through and everything. So, therefore, it is a high time consuming job high fidelity tools encourage precision right.

So, because if you are going to use tools which will help you to build for example, if you are going to write it in (Refer Time: 12:57) or if you are going to write it in ruby on rails

any of that that you do it is going to actually make it more and more precise for you to get the interactions properly done.

But getting the precision higher getting how things to be done is going to take a lot more time right getting a particular interaction properly down it is going to take a lot more time first of all when you do not even know how the interactions is going to be or you have a perception that this is how the interaction should be building that is straightaway is actually hard.

So, therefore, one of the downsides of high fidelity is that it is going to take time to get the interaction down wall to get the specifics so to say developed very well. And of course, down high fidelity is going to actually take a lot of time when you are actually building for small small things that you are going to build in the high fidelity alright tend to waste the time on small details that are not important in the early stages the design.

Because when you start building the high fidelity directly you really do not know whether you want to put the logo here and logo here or look at this slight change that it has actually the pointer the slide changer left and right I am going to the full screen mode and changing the full screen mode they are all compacted here instead one of the questions could have been why not keep it here.

There is switch on or off here the question could have been; why did they place it here instead of just here right. So, if you do not know all these details with good level of confidence you are going to build as you think it is and you are going to waste time in building without details.

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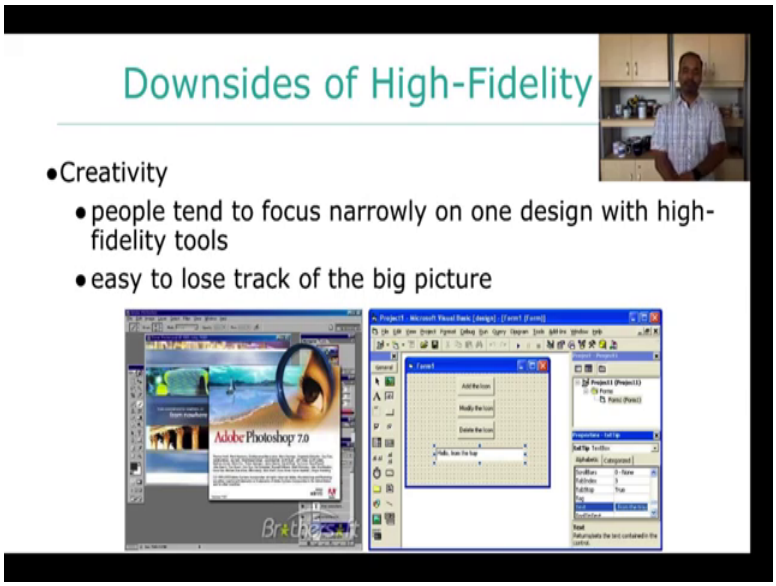

People tend to focus narrowly on one design with a high fidelity tools because that is what because it is harder to get designers will end up actually spending only building one high fidelity prototype design rather than actually many of them easy to lose track of the big picture right. So, when you start building the low high fidelity prototype you are actually getting too much into details and therefore, you will actually miss the big picture of why you are trying to build what you are looking.

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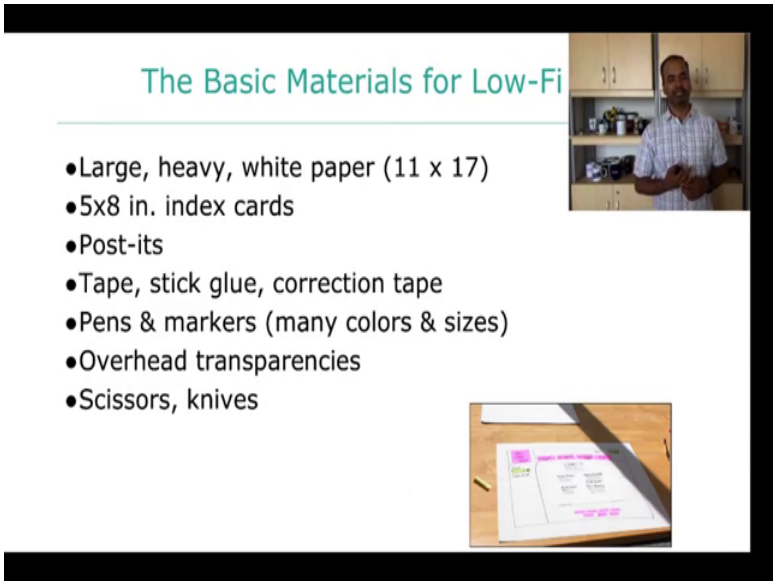

As so the basic materials for a low fidelity prototype this is not a comprehensive list time I am sure you can develop you can have other things that you find in them around your home to actually start building a low fidelity prototype of the product that you are thinking.

Whiteboards index cards posters a table glue pen and marker over a transparency scissors and knives right. So, these are the common things that you will end up actually wanting while you are building a low fidelity prototype.