**Introduction to Human Computer Interaction**
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Lecture – 03
Door handle, Elevators, Contextual Inquiry, Affinity Diagrams

Welcome back to this introduction to Human Computer Interaction course on NPTEL. This is week – 2, content. Let us continue on the topic of what is human computer interaction and why it is so exciting. I am hoping that you would have seen the lecture content from week – 1, which gave me some introduction about what this course is all about and we also talked a little bit about what HCI is, what is the context in which HCI is placed and what should you keep looking for when you are doing this course. I hope you are also starting to look at the devices that you are using from a HCI point of view.

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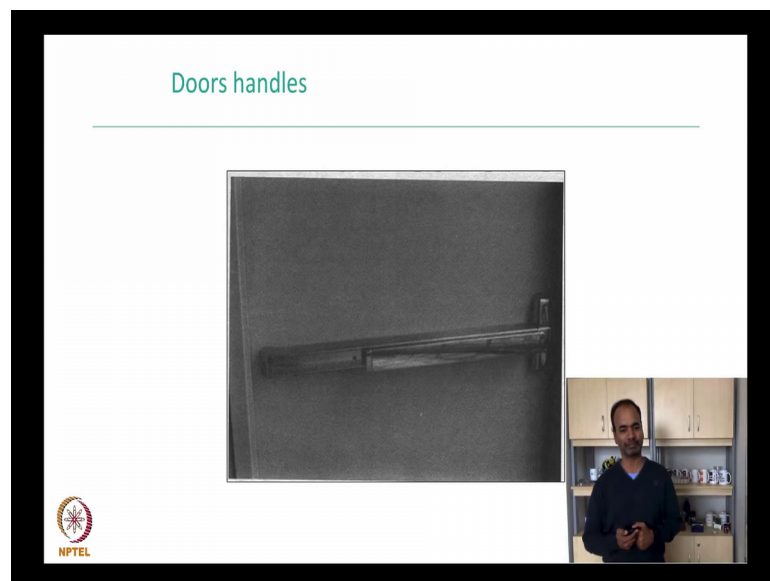
So, let us look at this is concept of door handles. I am sure we use door handles every day. There is multiple door type of multiple types of door handles that we end up actually seeing, using every day. So, what I want to walk you through is just to tell you about different design decisions and design paradigms that people have thought through while coming up with these kind of door handles. These door handles are actually interesting design; for example, let us look at this one I am sure you would have seen this type of a door handle where it is kind of a push mode and the reason why I said push mode is that

looking at this and it is also placed at your height of your head or around that and the natural tendency for looking at when you see such a door handle is only to push.

And, it was also designed in a way that one hand of the door is actually locked and when you push it the lock actually opens through and the door opens alright. So, meaning this is one type of final I am going to actually walk you through multiple types of door handles where thing to keep in mind is what are the design decisions that people are using design positions that designers of thought through while coming up with these kind of different door handles.

Here is another one very similar to the other one, but in this door handle half of it is only is actually projected or it is projecting outside when you push the first half which is on this side right hand side of the slide and you push back, there is a lock at the right hand side slide end and that lock actually you gets pushed a little bit and the door opens and another thing to go to keep in mind with this.

And the earlier one design also is that in this design you can keep the hand on any corner of the handle and push it and you need more force to push and open the door when you far away from the direction in which the door is going to open, on a edge in which the door is going to open. It is the same thing here. So, the thing to keep in mind is in both of this it is more like a push action.

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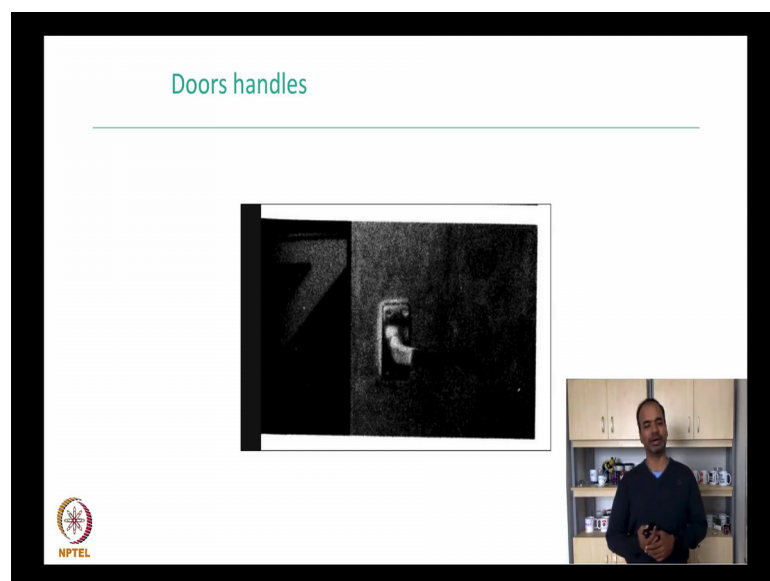
Let us see seem a little bit more. It is another one, ok. In this it is more like the door handle where most frequently used I guess, it is just a little bit of a knob you hold it you turn it down and then the question is whether you have to push it or pull it and depending on meaning I am sure many times you would have realized that you would push the door handle down and then you are like pushing it away or pulling it and then the door is designed actually in the opposite direction, ok.

You pull it when it does push you push it when it is was actually pull, alright. It happens to me very often because you really do not know what is the natural process in which this kind of design, decisions are made the way I should be using.

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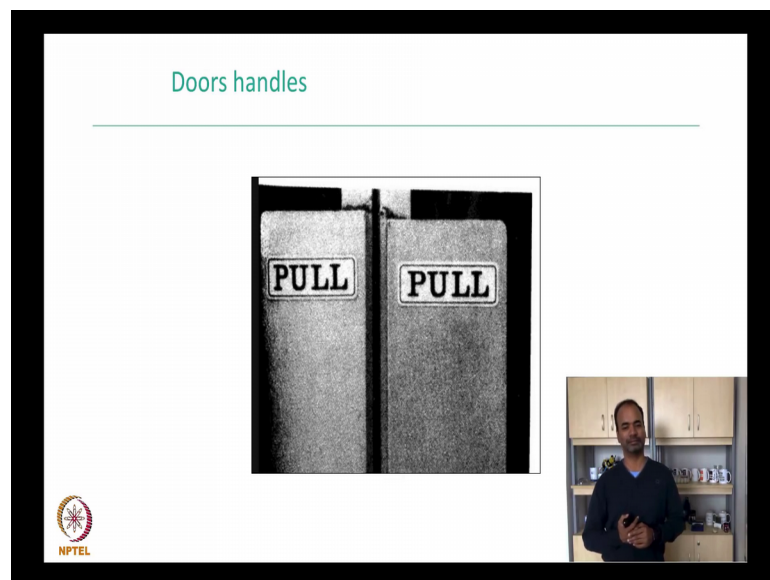
Here is another one and this probably is the worst is and I am sure if you watched movies where when they show a small office it has the half of the office have the door on the on the top these kind of doors are used in those situations alright. And, majority of the times it is like the pull or the push mode that is kept there. And, interestingly concept to take away from this door design is that it is a bad idea to actually have the action to be done to be written on the door itself.

I think as a designer itself one of the big takeaways from knowing these kind of designs is that you should not have the action to be done on top of the design interface that you are making for the user to do. It should be intuitive, it should it should be natural for the user to do and that is when the interface will become popular and that is when people

like the interface that is when users would actually want to come back to use the interface that you developed. I hope that else you to get a sense of some design thinking through the door handles itself.

Let me just quickly tell you door handles come in different form and different forms I actually have different ways of using it also and one big take away from this is that it is also going to keep like for example, last time also we discussed a little bit about different sets between different types of devices kettle, a car and a cockpit all that right.

So, it is going to be in a particular context in which you are actually designing all this right and that is where you want to keep in mind and as a designer you really do not want a put what action to be take it. Just imagine if Uber does the same thing when you using the Uber interface, it is saying press it here and click here for a booking the cab alright. If you are going into all that the design is going to become very cluttered and design is not going to be very appreciated.

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Why is bad design important? I think bad design is important because a lot of money gets lost and people make a lot of mistakes while looking at these kind of bad designs by using this bad designs people make mistakes also. So, money, reputation, time is getting wasted, all of that happens because of bad design.
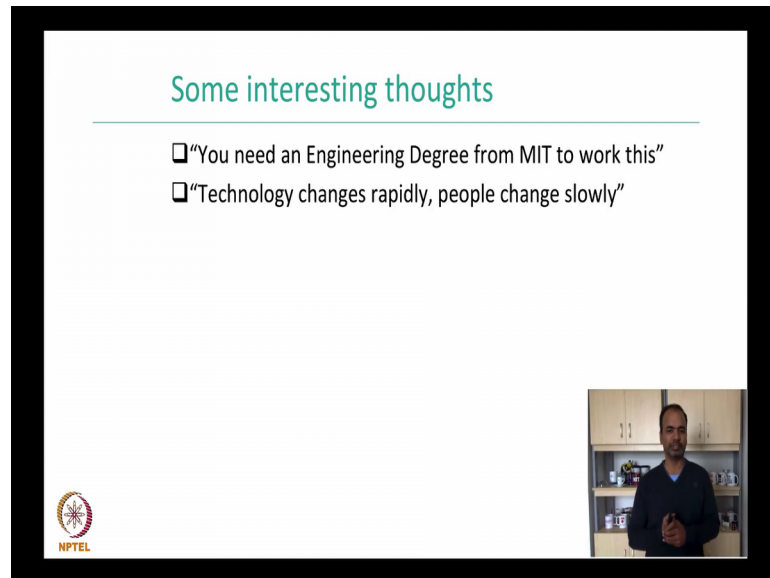
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And, today if you really think about if the if the question about hardware, the question about the storage space, this question about computation is all gone I mean nobody really cares about the computation that is needed to do a job nobody really cares about while storage we really need to actually store the amount of data that you collected right. Because, storage is become cheaper computing is become cheaper.

So, the more and more successes going to happen to systems which think more carefully about concepts or content like reliability, security, usability which is what this course is all about and if you really think about computing is everywhere, so, I think computing has become more and more common to everybody who is using any sort of device, any sort of instrument.

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You know some interesting thoughts to keep in mind while thinking about design also, some quotes. A, you need an engineering degree from MIT to work this; technology changes rapidly people change slowly. The first one is mostly referring to a microwave oven and projector remote control.

As you can clearly understand we change actually very slowly, the technology is just imagine just 5 years before the Ubers and Ola's were not popular technologies is also rapidly, but people we take time in adapting these technologies. I remember actually even getting on to Uber I was visiting Bangalore one of my friend who hosted me just flipped a few buttons here and there and I got a cab I got dropped off the airport and I had to not even pay him and my friend who was sitting somewhere else actually paid for the whole trip, alright.

So, when I saw this for the first time it was actually interesting experience and given that I also used technology, it took me some time in even in even getting to know such services are available. So, I am sure there are people who changed much more slowly than people like you and me who use technology regularly.

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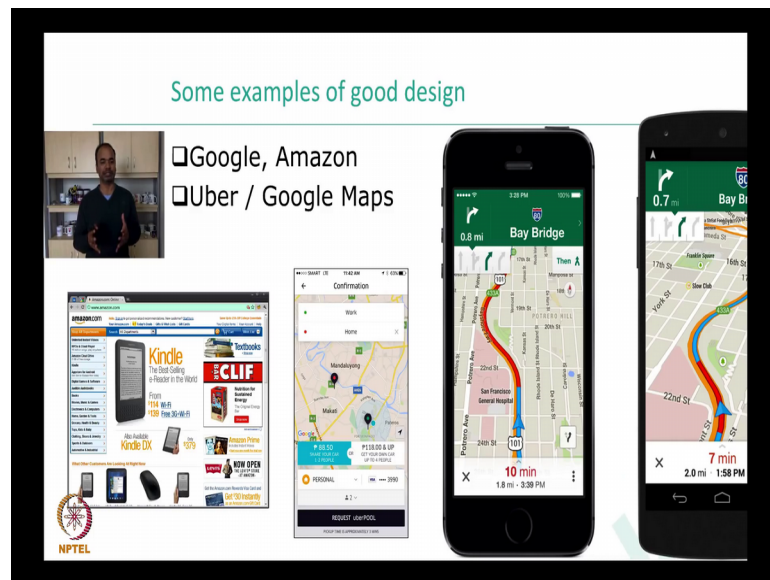
You know some good designs that you can actually keep in mind. And, these are some services that you use actually very regular Google is something everybody uses. The interface of Google has been very simple and later in the lecture we will actually later in the course.

We will actually look at (Refer Time: 09:09) and eBay's and Microsoft services, how their website services is involved or over a period of time and the services like Uber and Google maps which are very decent also have very good interfaces and these interfaces have been also here only depending on the feedback depending on the way that the users are using the system.

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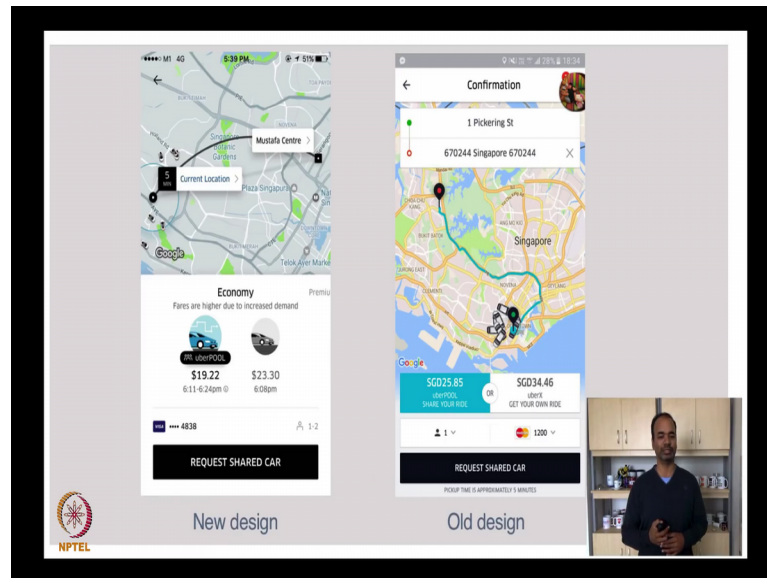
Here is one example of Uber itself. The old design is on the right hand side, the new design is on the left hand side. Again, let me I trade this thought that these companies collect a lot of data about what we do using these interfaces because a large set of users using these statistics about how users are behaving the behaving why using these systems actually help them to make a lot of decisions alright. So, when you go to Google dot com the kind of search that you do the kind of websites that you click on is actually getting tracked and that can be used for making some decisions.

In the same way in the Uber the kind of clicks that you are making I want to book a cab, I am looking at the time which is in this case on the left hand side you can see it is about 5 minutes, knowing the information that the cab is actually 5 minutes away from where I am is actually useful information which can be very useful in making a decision, whether I want to book it now or I want to book it later.

And, I am sure Uber and Ola is have taken these kind of information from the users and used it for making design decisions. So, ultimately what I am trying to tell you is that there is whole set of parameters and matrix that you will use while making these design decisions and each of us build technologies, each of build applications for different context and our design decisions are going to be dependent on the context dependent on the constraints that you have depend on the limitations that you also have.

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Here is another question that I will pose to you. I am sure all of you taken elevators. I am sure some of you have taken elevators in the last couple of days, you would invariably see a little a that outside the elevator where you are waiting for the elevator or a mirror inside the elevator sometimes all three sides of the elevators are actually mirror. And, if you go to a 5 star hotel sometimes the floor where you are waiting on every floor where you are waiting actually has a lot of mirrors in front of the elevator and even inside the elevator.

Any guess on why you think elevators you have mirrors outside and inside I am sure many of you have taken elevators in the last couple of days and I am sure you take an elevator, but there is a litter outside the elevator and sometimes there is mirrors inside the elevator also. Any talks on why do you think the elevators have mirrors?
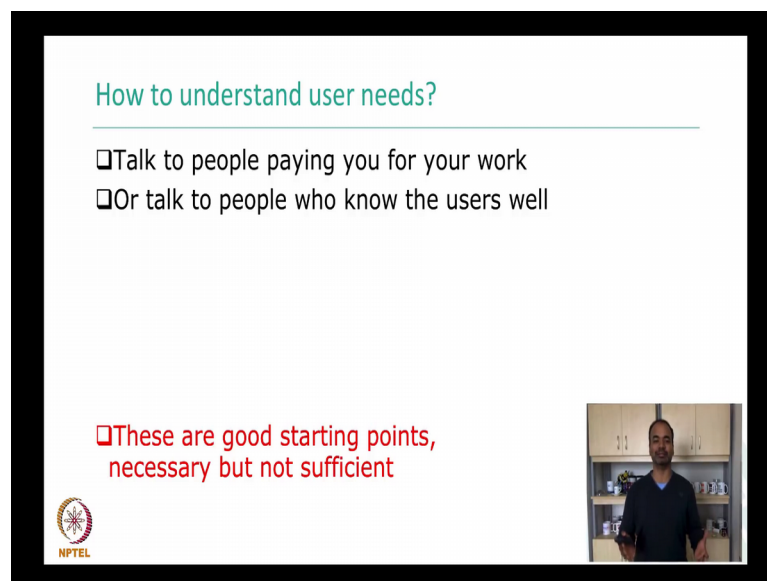
It is one of the, it is probably one of the very good decisions that somebody made at some point in time why mirrors have to be placed inside or outside the elevator. The reason is when you see an elevator, when you want to get on elevator when you even let us take the elevator is in the seventh floor or eighth floor, when we on the ground floor and when you when you call the elevator.

If you have a mirror around the elevator what you are going do is you are going probably check your hair, you are probably going to check your face, you are distracted by looking at the mirrors around the elevators and this allows the company which is working on the

elevator to even if the elevators takes few seconds little later you are not really concerned about it. So, that the basic idea is that keeping the mirrors outside the elevator they are actually got to you destructed into your own self. So, even if the elevator is a little late you are not going to be concerned even if the elevator is a little dirty or outside or inside you do not really look at it.

That is one of the reasons and another reason why mirrors inside the elevator helps is that people actually feel for people who are claustrophobic, people who are worried about closed doors they are actually going to feel a little better because mirrors around probably have people like for example, in this case you see multiple images of the same person it is kind of a little bit soothing having a mirror inside the elevator and sometimes even sometimes you also think that because of this mirror it also it also looks like it is very spacious. That is the reason why elevators have mirrors.
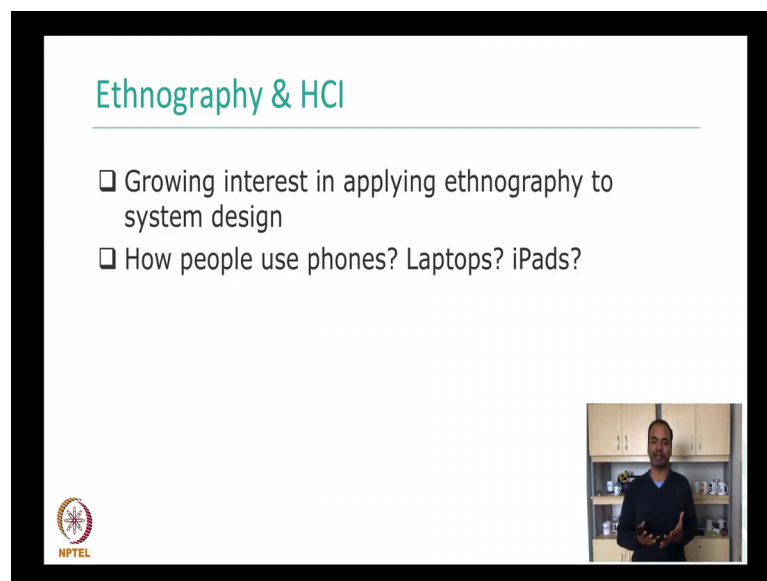
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So, one of the important next important question that we are going to look at is how to understand users needs. I am sure by now you convinced yourself that users needs are very important which I think is in the process of designing I tried to design. Designing any products there is, even now I was explaining about Uber collecting data and using that for making decisions what are they doing. They are actually taking users your input and my input on how we use the interface as inputs to redesigning their system.

So, two things that you can think about understanding user needs will actually go through this process of user needs understanding user needs more detail as we progress in this week and later parts of the course. But, for now, talk to people who are paying your work because they are the people who want more they are the people who were looking for something from what you are doing or talk to people who know the users well.

Because, many a times it is going to be hard to get the users themselves, for example, if you are talking to let us take if you are building a technology which is for senior citizens or for building a technology which is for pilots, it is not necessarily easy for you to get users access to users very easily.

So, therefore, you should talk to people who are actually who know these users well. Proxy users are not that not the best users that you can collect data from, but if you cannot get the real users proxy users are the only way to collect the data the these are only good starting points that these are not going to be sufficient which is said these are not what we just help you to actually build good interface, build usable systems alright. So, we are going to look at this understanding collecting data from users more and more as we go progress in this lecture.
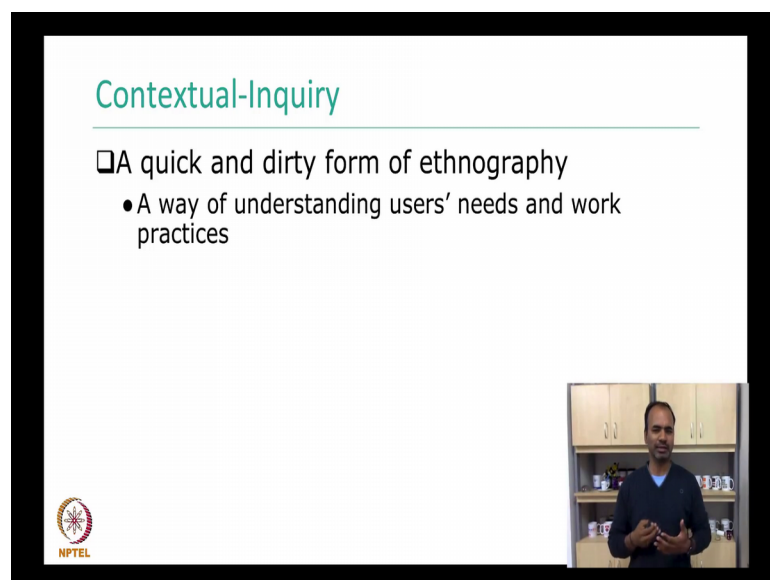
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Ethnography is the area in which people actually study how researchers study how people use a design, a technology, a process alright. Ethnography is the study in which

researchers or companies are interested in studying how end users use a technology a platform and interface a design all of that and I know researchers and engineers were part of this ethnographic team in large companies like Intel, Google, Microsoft, right, all of them have ethnographers who actually study people and study people in a different context, in a given context.

In a context that the companies are interested in how people use phones, how people use laptops, how people use iPads, how people use a phones when they are traveling in the metro, how people use phones when they are in actually aero plane, how people use when they are actually in bike in India.
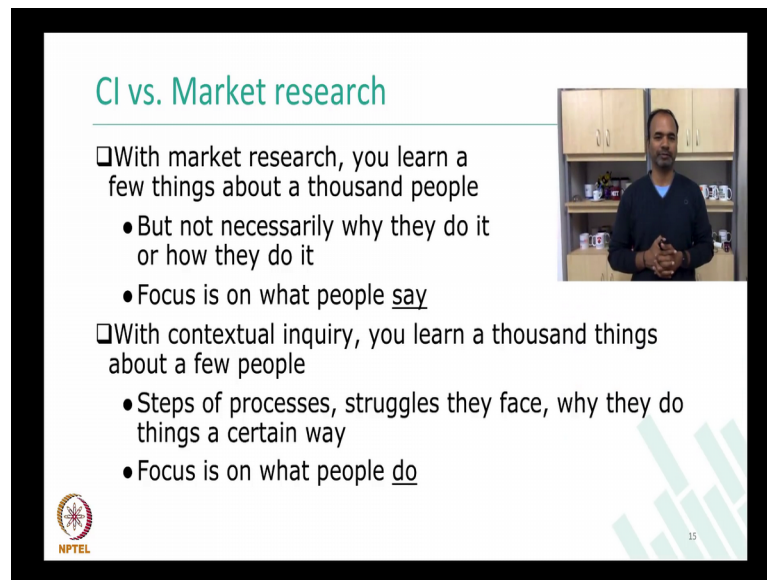
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Now, let us look at a concept called contextual-inquiry. It is a quick and dirty form of ethnography. There are many ways to actually find what uses think right you could think of actually asking a questionnaire in a survey, you could think of doing a lab study where you get users into your office and collect data you could actually do other forms of data collection to know what users are thinking.

So, one of the method is called contextual-inquiry. So, will we look at this concept of contextual inquiry in detail to understand what this method is what kind of data can you collect how this data will be useful and what are the other parameters to keep in mind while you are actually doing context enquire.

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Let us think about this concept of market research. Some of you may have heard this word market research it is a very common word that is used to say that oh let us do market research to collect some data about what users think. That is one way that you divert this statement. So, I want to compare this contextual inquiry and market research. So, in market research what happens is you learn a few things about a thousand people, that is, you going on to collect data to understand what people think about let us take this remote for slide changer alright.
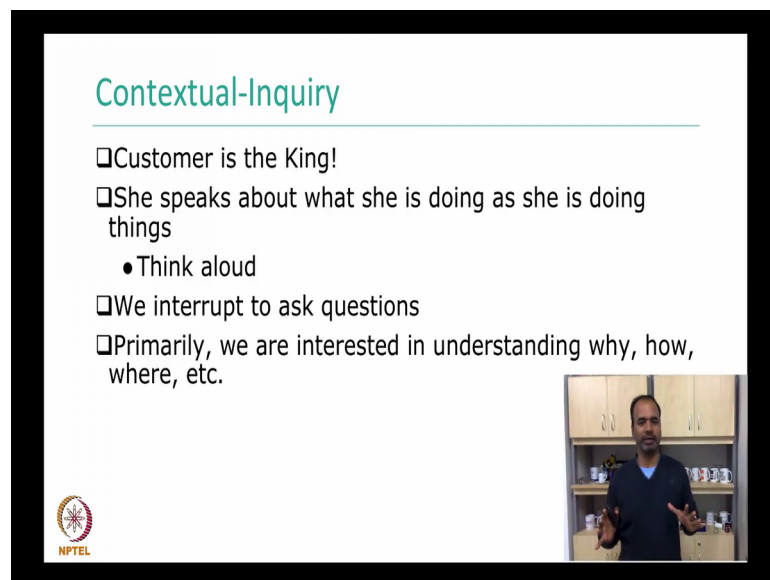
So, you collecting large amount of data to understand let us take some questions about is it is it convenient to hold, is it working properly in a distance, is it does it have what kind of problems is it have all these kind of questions that would ask from a thousand people to understand what users thing. But, what it focuses on is what people say that is by giving my responses to these questions, but it does not focus on why I actually do what I do or how I do what I do, alright.

So, therefore, market researchers are all about understanding a few things about a thousand people whereas, in contrary if you really look at it the contextual inquiry is a concept where you learn thousand things about a few people. Another way of saying it is that you get some people into the lab, you get them to do something, refer everything, see what they are doing, how they are doing, why they are doing ask them questions about it record it and then actually understand how users behave in the given context. So,

therefore, in the contextual inquiry the focus that we are going to have is on what people do then what than or in compared to what is what people say. It is basically the difference of perception in reality. So, to say I say something about a particular topic, but I actually do differently.

For example, I say that oh I would not actually click on link when the email is coming from an account which I do not know about whereas, when I get an email like that I will probably click the link and see what this link is all about. So, I hope that gives you a sense of what the difference is between contextual inquiry and market research we spend more time on this idea of contextual inquiry in this lecture.

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So, one thing that you have to keep in mind the in throughout this process and many of you I can see that are taking this course who are already working in a company or even if your students one thing that we want to keep in mind is that customer is the king that is the user in this case. Whoever is going to use your apps works will actually download your system and use it is going to be the king, because they are going to decide whether your app is going to get popular, they going to decide how many users are into many whether they want to talk about this app to others and promote their app.

So, one other idea that you want to know in terms of contextual-inquiry is that the idea of think aloud. Let me just explain how think aloud should work or how you should actually trying get think aloud from users. A think aloud is a study in which you collect

data when it uses to speak about what they are thinking. For example, if let us say if I were to actually ask user to do a think aloud in terms of using this remote, so, as a user this is how I would actually come to the study in do it ok, thank you for giving me the remote I will trying and think about I will try and say what I am actually thinking about while using this mode.

There is a button here in the middle which is which is in purpose I am able to see the lighter, I am able to see the red light on the pointer, wherever I want to keep it and there is a right side and a left side button which I can I when I clicked I am able to move from right and left and there is also screen or button which for it to make it blank screen or a hide everything on the slide and make it black and there is an on off button on the left hand side.

That is one type of a think aloud here is another thing aloud that you could think about. Let us take if I get emails like steak if I am looking at my email inbox. I look at my email inbox and then you as an administrator of the study you ask me to say do a think a lot on this email inbox.

First email it is an email from a student who is asking me for working with me I open the email, I read the email I move on to my next email, next email is actually saying in Microsoft is asking me to update password on Skype., third email is about another inquiry about whether you can actually give a talk in this particular time in this particular location. I would actually let us reply to this email and say whether I am available or not.

So, that is the kind of think aloud that you want to do. You want to collect data or let the user speak what they are thinking and looking at the remote I want to go to the left slides and I am clicking on the link I want to go to the right side and moving on the right I want to actually point at a particular slide and say this is what I was speaking I am clicking the circular button in the middle, that is a short think aloud. So, you should do you should get the users to do this think aloud.

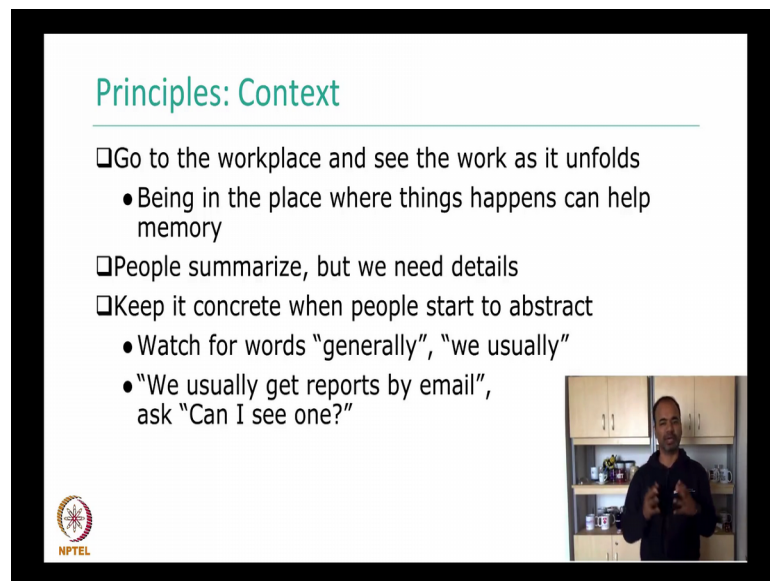So, one thing you want to keep in mind again also in contextual-inquiry is you want to interacted ask questions also at some point in time to the users, you will also get this questions minimal because you do not want to influence the user you know want if there is another idea called priming. You do not want to prime the user by asking more and more questions or suggesting what you were thinking while the user is doing this time.

There is a lot of literature to show that when the administrator is inside the room or in the administrators with the user, the way that they behave versus when you collect the data with the user when that administrators not inside the room or with the user is actually very different. So, these kinds of research questions have been asked for quite some time and saying what is the influence of the administrator who is actually collecting this data. So, you do not prime the user that is my bottom line point.

So, what you are interested in contextual-inquiry as I said before is understanding, why, how and where it is., I am going to talk about this more as we move forward now that is a brief introduction about contextual-inquiry.

Now, let us look at other aspects of contextual-inquiry.

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Some principles that you want to keep in mind is that once the context right, in context inquiry the main idea is that you as a administrator for the study should go to the place where you are collecting the data let us take for example, if you are collecting data from riskshaw [FL] or you are collecting data from the auto drivers or people who serve food in the hotels, so, you have to go to the place where they work and collect data from them contextual is referring to the context where the users are and collect data accordingly from the users.

So, that is what is says; a go to the workplace and see the work as it unfolds right and being in the place where things happen can help memory right. So, you better you see people what they do when you see how professors are actually handling their projector remote or when you see how gardener is handling a particular instrument that helps you to build the understanding better.

When we ask people, people generally we will actually speak less and most of the people who only summarize what they are want to say, but for doing the contribution very well what we need is actually details. So, we should go to one of the other reason why I want to go to the location of the workplace location of where people are your end users ours because if you just speak to them they are just going to summarize it to you what they are doing, but what you need is as an administrator, as a researcher, as a person who is designing the system you need more and more details.

Now, the thing that you want to keep in mind while collecting data for the contextual inquiry is actually watch out for these kind of words generally we usually typically we do this. So, when users say all this I think it is a better idea to just probe them on what do they mean, probe them on asking say can I see an email that you are referring to, can I see how you do this, can I see how you do that. What does this help? This helps you in actually finding out what they are actually saying they may be saying something, but they actually are meeting something else.

So, by probing more what you get end up getting data from the end uses even the getting data which is more detail, which is something that you can use for making decisions instead of just saying, oh I do it this way, I go to the class, click on the switch on the projector, click on the remote for the input and I start my lecture that is just summary. I mean I think what you need in the contextual inquiry is more detail than what I just now said. So, keep a watch for these kind of words and these kind of users who are giving you such level of details.

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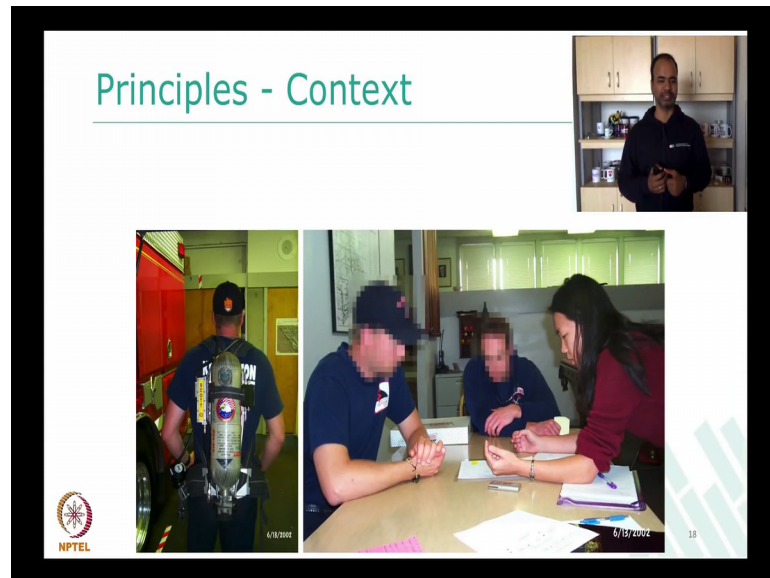
Here is an example so if these are just screenshots or images from contextual inquiry done with fire extinguishers, right. The administrator is talking to the users and trying to get inputs and see how they actually do things while they are actually getting out to solve a problem.

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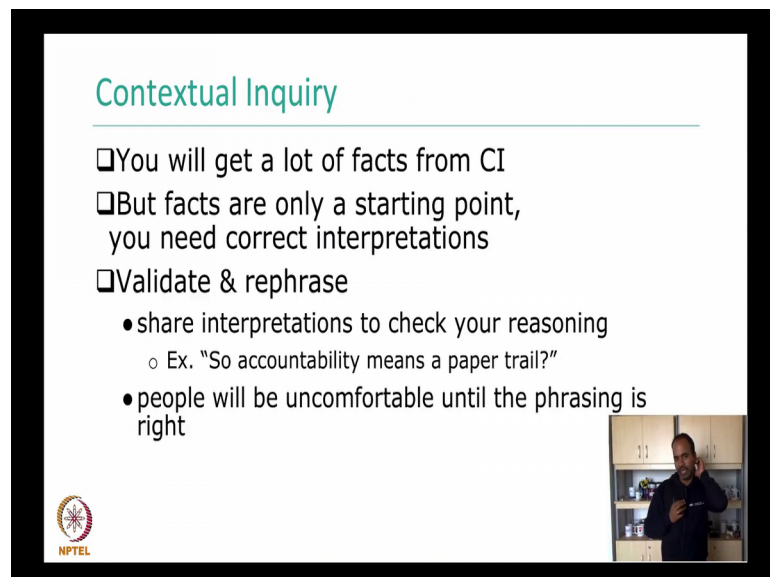
So, one thing that you have to keep in mind is in contextual inquiry you are going to get a lot of data, when you collect these kind of details, when you collect these kind of information from contextual inquiry when you collect information from the users, but
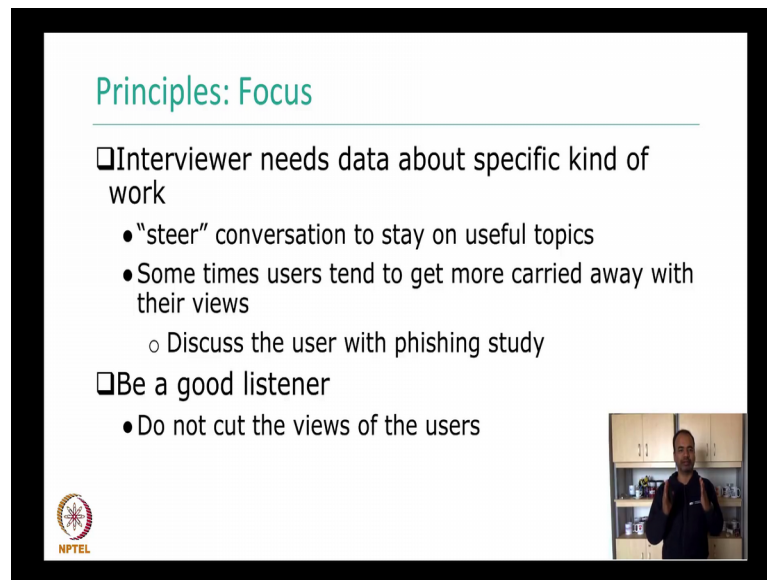
you cannot use all the data right. So, that the point is you cannot use all the data that you collected you have to somehow figure out the way which is important which is not important. And, you also need a good interpretation on the data that you are collecting. You cannot have interpretations you cannot have conclusions from the data that is not very useful to you or you cannot make point interpretations also.

So, make sure that you collect data in which you are able to actually find the connection to the user when you are making inferences that is when you collect data make sure that you have so one another solution that I generally have for people collecting these kind of data is, make sure that you do not name the user in the excel sheet or place where you are keeping the data. It is better to keep it as user – 1, user – 2, user – 3 for protecting the anonymity of the users.

You can keep the connection of the users and the actual names or the or the pseudonymous names that you were given and the actual name somewhere in a table, but the data that you are keeping and the data that you are going to used for analysis and the data that you may be sharing with others, try and avoid having the names of the users, but the point here is that you want to make sure that you have the connection between who said what and at any point in time you should be able to go connect with the user who set that people are statement.

This just helps you in figuring out the right kind of interpretations because demographics of these users also matters, right. You do not want to make connections, you do not want to make interpretations, that are not the right interpretations and not connecting to the right user who said it and you also want to make sure that people who are comfortable while talking to you and while giving you information about the facts about the actions that they do, while collecting their information for the connection recorded. So, the first principle is the context.

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Now, let us look at another principle that you want to keep in mind you want to keep in mind the concept of focus and this is something that you will see again and again in this course, which is focused on what information that you are trying to get out of the user. You are looking for a specific type of questions you are looking for specific kind of information from the user. The user may be doing hundred other things while the professor may be doing hundred other things while teaching in the class, but you are not interested in all of them you just interested in how they use the remote while interacting with the projector.

So, you have to actually find a way to steer the conversation to useful topics that is relevant to you and you want to actually make sure that the users are not getting carried away right carried away is the in their own thoughts, in their own think aloud that they are telling you. For example, I mean if you go back to some of the studies that I have done there were a lot of studies on these users with users in the context of phishing and other admin.

In the user studies that I have done where users get involved and in one of the study where I showed them x number of emails and I asked them to react to it and then users actually start one of the email, that user was shown was an email coming from a bank asking them they the passport and the user got actually carried away by telling me exam experiences of that day. Apart in giving away this password and their account getting
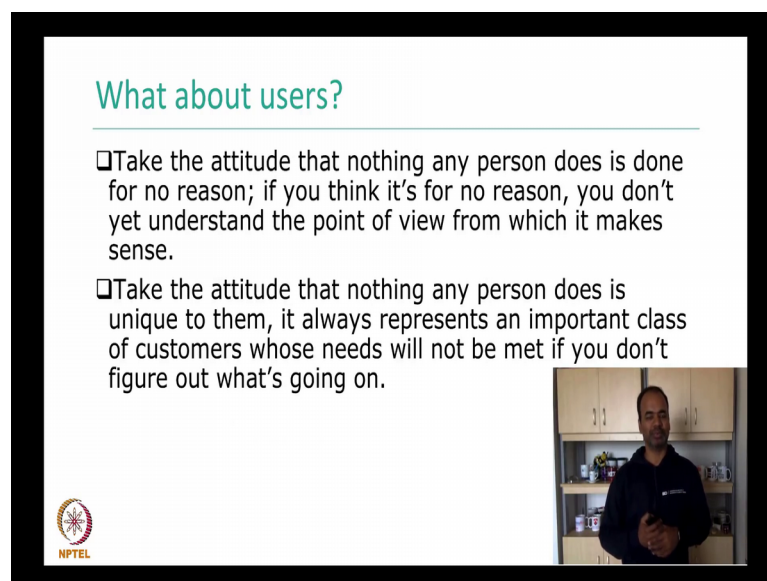
compromised and not that which is to some extent because which is group which is a good data point for the user study, but I think it needs to be focused, it needs to be user needs to be brought back to the context in which the data is getting collected.

And, another concept that you want to keep in mind in this principle of focus is be a good listener because I think that we end up as a administrator of the studies, you just always curious about finding out what you want from the user and if pushing for users here and there to get inputs asking them questions, clarifying and everything while collecting the data.

I think that is not a very good idea I think what do you want to be is you want to listen to what the user is saying and then probably from when they are finished with their line of thought when they are finished with their conversation with you. At least to the question that you have asked not the entire study then probe them and ask them some questions.

Do not cut the views of the users; do not cut short the users when they are speaking. In the study this is not just for contextual inquiry this is generally the data that you may be collecting for any of the user studies such a good. So, what do you want to keep in mind this is the context, in contextual inquiry in focus which is collecting mirror. So, these two are just the statements that you want to keep in mind.
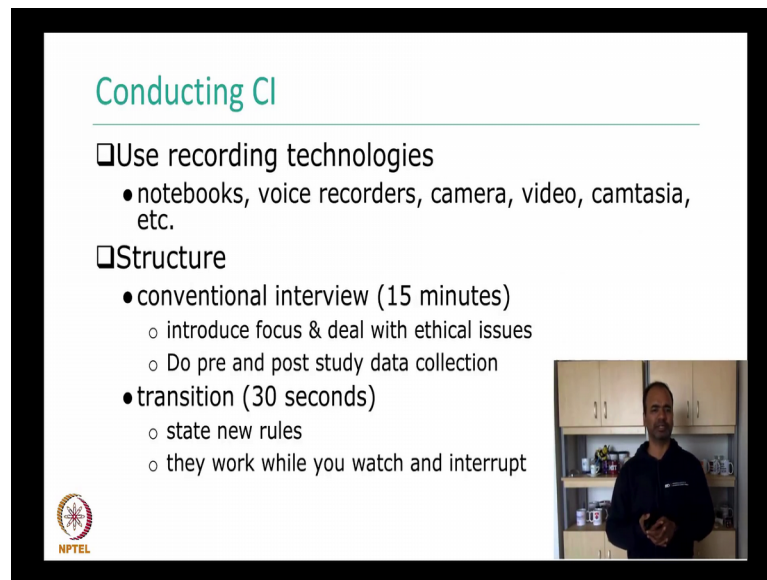
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This is these are more like philosophical statements. Take the attitude that nothing anyone any person does is done for no reason. If you think that it is for no reason you do not even understand the point of view from which it makes sense. Right, many of the times people do a lot of things around you and then you feel like why this is so weird, but insist that you want to keep in mind that it is it is not weird for them it is probably weird for you, but they are doing it for some particular reason.

Take the attitude that nothing any person does is unique to them it always represent an important class of customers whose means will not be met, if you do not figure out what is going on all right, that is a second so to say philosophy that you want to keep in mind is the, take the attitude that nothing any person does is unique to them.

Because, anybody any user the way that they behave is actually representing a class of people, nobody is so unique even though there is a philosophy also to say that everybody is unique by themselves, but you can put all the unique people together in a particular way you will probably see a cluster of people who are looking very similar, right.

These are general philosophies that you want to keep it in your back of your mind while doing the user studies, while talking to users, while doing this design and interacting with users. This will just help you to be more so that another keyword that is very relevant in a course like HCI even concept of interacting with users is actually empathy to users right you want to make sure that you understand what the users are trying to tell you rather than pushing them hard on trying to get what you want them to say.

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Here are some quick ways of thinking about how to conduct a contextual inquiry. Now, that many of you will have or all of you will have phones which are voice recorders and video recorders also. So, probably a technology that you want is only your phone. Generally, what do you want to do is you want to have a questionnaire which has some set of questions where you focus that you are trying to collect data from the users and what you are interested in and make sure that you deal with the ethical issues which I will actually come back in few minutes about what are the different things that you want to keep in mind while doing user studies, while talking to users, while collecting data.
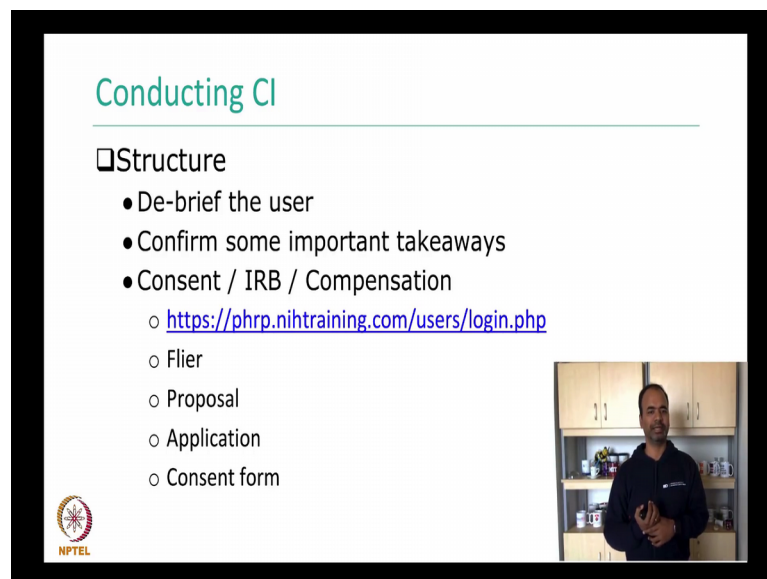
And, another thing that you also keep in mind is generally good way of collecting data would be there is the study that you want to look this is data that you want to collect you can do a pre study which is where you collect data about demographics of the user, probably some swinging questions that you can keep which will decide whether the user is going to be part of the study or not and then there is also a post array.

So, for example, a many of this user studies that I have done where what I do is what I have done is the pre study would be more like demographics gender, age, occupation it is give them some questions about how they would react in a particular situation when a particular email comes, depending on the answer to the question that they gave I actually decide whether to keep the participant in my study or not right, because you do not want all this participants in the study are very similar or very different.

And, of the post study you want to I also collect information about the users, from the users about some questions like in the poster you could actually talk about in the phishing context, you could talk about asking so, did you what did you think about the study was the interventions that we showed make sense and how do you make the interventions better, right. These are the kind of questions that you could actually ask in the poster. When you move from one set of questions to another set of questions just tell the user that this is what you are trying to do.

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Ok, here is an important one, I think this slide even though it just shows you bullet points there are some important things that you want to take away. Structure, after the study is done or while doing the convention or a in generally getting into the convention inquiry itself de-brief the user, when the study is done make sure that you are actually telling the use of what you are trying to study, what kind of information are you looking for.

Even if it is possible quickly summarize what you got from the user while collecting the data. This would be very helpful for the user to go back with something that you did in the study. You do not want to do a study where you have got the user, the user did the study, he said thank you and the user left, right. So, that may not be the best way of actually collecting data from users.

So, in terms of actually ethical issues in the last slide I had this one thing called as ethical issues just take a look at the content under consent IRB and compensation. So, there is a
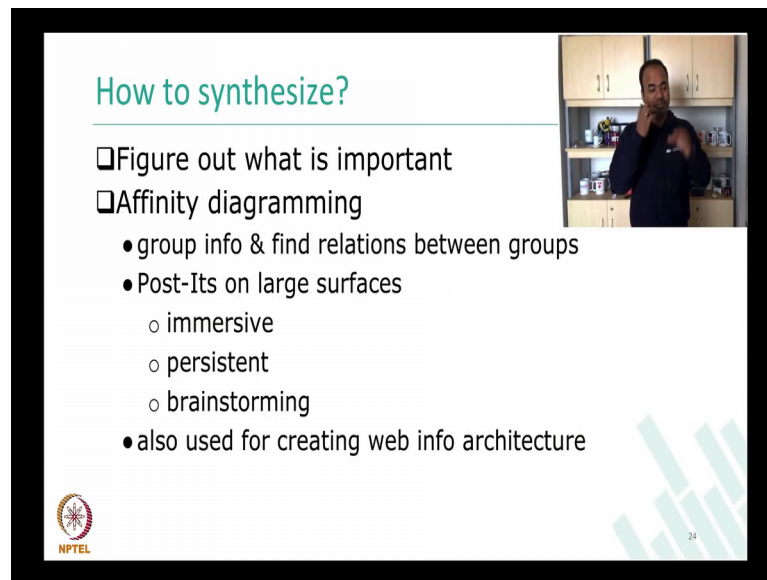
online small short training program which is necessary for doing these studies. There is a flyer that you may use to get users to your study there is a proposal, there is an application for getting new study approved, there is a consent form right. So, the idea for need to tell you that these things about doing a contextual inquiry actually about anyway interacting with the user is to actually make it more concrete, make it more to a standard and make also meaning there is also an expectation that you will treat the users well, you will not abuse the data that you are collecting and things like that.

There is this IRB which is institutional review board where you have to get your studies approved for any studies where human beings are involved where you are collecting data IRB is necessary and many institute's now in India many research organizations now in India are also trying to make sure that they have this ethical board ethics committee all of these small committees of being created in organizations where you want to get these approvals.

Even if you are working for a company, even if you are doing research on this topic, even if they are not student it is better to get some approval for collecting this data because you do not want to be you probably do not want to have after effects of a user study which is affecting every university or your research labs or your company.

I will show you examples of each one of them walk you through slowly about what they are how you should build one in the next week not now, I am just going to tell you more of context you embody and lead into how some conclusions can be derived from con contextual inquiry.

Now, where are we. So, now, what has happened is you did the contextual inquiry, went to the workplace, got some data, you come back with these large set of notes, the recordings and everything. Now, what is the next thing we should do? We should actually find some inferences from those, right and the end of the day we are not interested in just the process of collecting data. The end of the day we are interested in actually taking these notes and converting them into some kind of inferences which we which you can probably use. So, the goal is figuring out what is important.

So, one of the main ways by which you can actually figure out what is important from a context inquiry; generally, from a user study where you are collected qualitative data is something called affinity diagram how does this affinity diagram works I here in this in this week we also have a short the lab kind of a thing where TS to tell you how affinity diagrams are created for entire course what we have done is we have getting some hands on experience for you also when were TS will behave as though their users behave as though their administrators of the study.

And, do the data collection and we are going to put that recording on some line, so, you can actually see how it is done. One of the things that that we will upload for this week is about affinity diagramming. How do you create an affinity diagram from the data that you have collected and I am hoping that the students in the class are actually going to do some exercises and go out, talk to users, collect data, create the affinity diagram and

actually post it to us. So, that is something that that we will actually get you to do as part of the scope.

So, what you want to do is, ok, so, you spoke to ten, ten people let us take you speaking to people who are trying to book cab for going from point A to point B that is the let us take a project that you are doing you want to actually redesign the interface of an app like Uber or create a new solution which is actually talking about going from point A to point B cab service. You spoke to like many users; you got some information, now what you do? You want to find relationships between users, you want a relationship between groups that you spoke to.
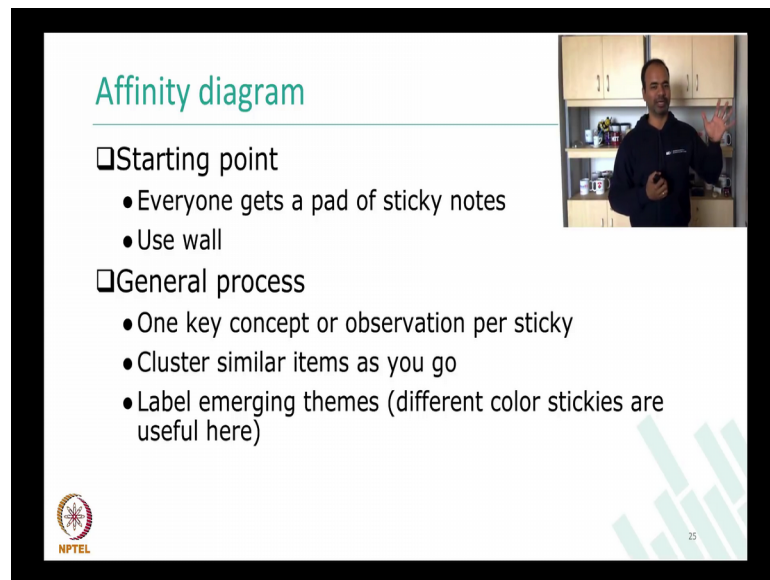
So, one of the things that you want to make sure you do is actually write down the transcription of the interviews that you did, recordings that you have; not necessarily all the words and (Refer Time: 41:04) and ask and everything what do you want to make sure that you want to at least capture the important feedback that you got from the users.

And there is going to be large set up a wall that you may need for doing this where you have multiple colored posters, you write the concept that is coming out of the interview that you are listening on the notes that you took, one concept for posted and stick it onto the wall, ask the concepts are coming out of the interview data that you have collected just keep writing them and put them on the wall.

Now, once these concepts are on the wall now, what you want to do is you want to actually do some kind of clustering so to say, bring the concepts that are very clear very nearby, close to each other into one cluster server say. Like for example, there could be a feedback and the user starter they saying that, oh, I am actually looking for booking a cab from point A to point B and I would like see what how many cabs are available, number of that the ratings of the cabs with the cab itself that is available to me on my interface. So, that is and that is an input.

So, this is multiple inputs was there one is number of cabs available, then the ratings of the drivers. So, these are all in information that you can actually capture it in an interface level or probably let us take it is a cab level. So, you put all of that together. Again, the example that we will show you there will be concrete information, but now I am giving you the idea for how to collect, how to infer, how to create the affinity diagrams which can be also in making some inferences yeah.

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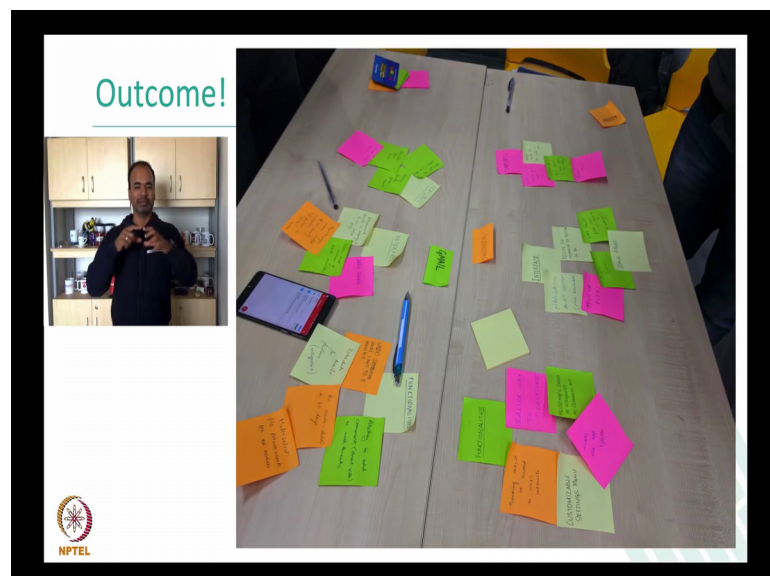So, this is just walking through the process everyone gets a pad of sticky notes if you are working in a group. Use the wall. General process; one key concept or observations per sticky, a cluster similar items as you go, label the emerging themes, right.

So, you kind of put them all together and then when you see that all of them are talking about just the interfaces and all of them are talking about drivers, all of them are talking about errors in the system, so, you can just create the themes out of the data that you have collected itself.

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So, when you are done with the affinity diagram this these are the ways I have some examples, few images here which will tell you how an affinity diagram will look when you are done. Here is one affinity diagram where you will see that different colors will be used and different concepts of being written on top of it.

Here is another example where they were actually highlighted of saying that the social relevant feedback from the users are kept in one place, the other set of feedback or the inputs that they got from users are kept in a different parts of the wall or the desk or wherever you putting these posters. Here is another one, the partition in between shows that the two types of the left one and the right are different clusters that has been created and you can see different colors together to create the theme and there is themes written on top of every cluster right.

So, these are the outcomes that you are going to generally end up having while finishing up an affinity diagram. So, with that what I will do is I will actually wrap up this idea of contextual inquiry, collecting the error from the users, collecting how to collect this data, what do you need while collecting this data, how to actually synthesize this data and create this affinity diagram which will be helpful in making suggestions, making interpretations of the data that you have collected.

So, in this week we are also going to do a few other things in the side. So, one another set of video is going to be for creating, how do you do contextual inquiry is TS is going to interactively a contextual inquiry, interactions itself and there will be output, how to create an affinity diagram and we will also have a little bit of Photoshop to, how to actually use Photoshop, what kind of features do you need in terms of interface level, inputs for you to create it right.

So, that will help you to get a sense of start thinking about interfaces also in parallel because I think as an HCI course you want to also get your hands to me because it is not going to be something by just by listening my lectures you are not going to get all the important aspects of becoming an interesting or a person who can solve problems by designing useful and usable interfaces.