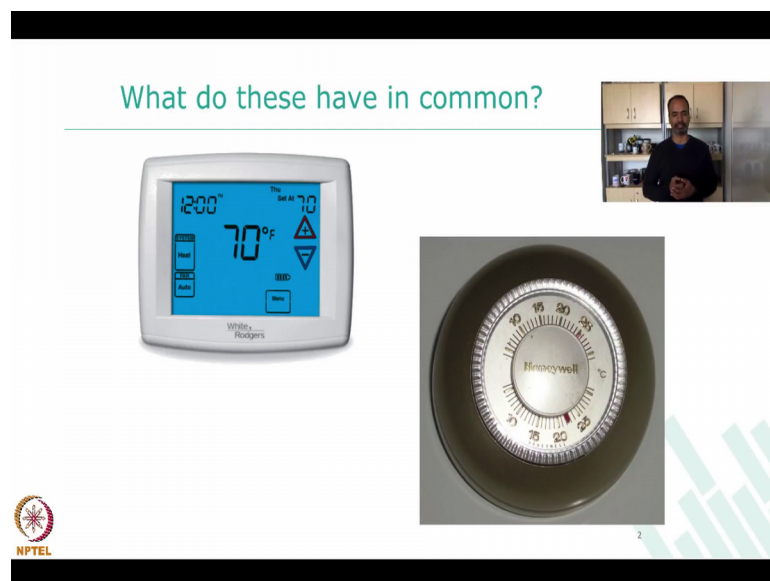


Introduction to Human Computer Interaction
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Lecture – 02
What is HCI? Commonalities & Differences in Interfaces

Welcome back to the content of this course. Let me continue with topics that I described before.

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First let us look at ah these 2 images on the screen and tell me what is the or think about what do you think that is common and things that are different to these two. For example, the one on the right you can argue that it is actually analog, you have actually rotated one on the left there is more information that is available which as it says what is the time, what is the temperature and the interface for it to be for you to increase and decrease is actually on the screen itself it is not the (Refer Time: 00:50) alright. There could be other differences that you could think about in these two things.

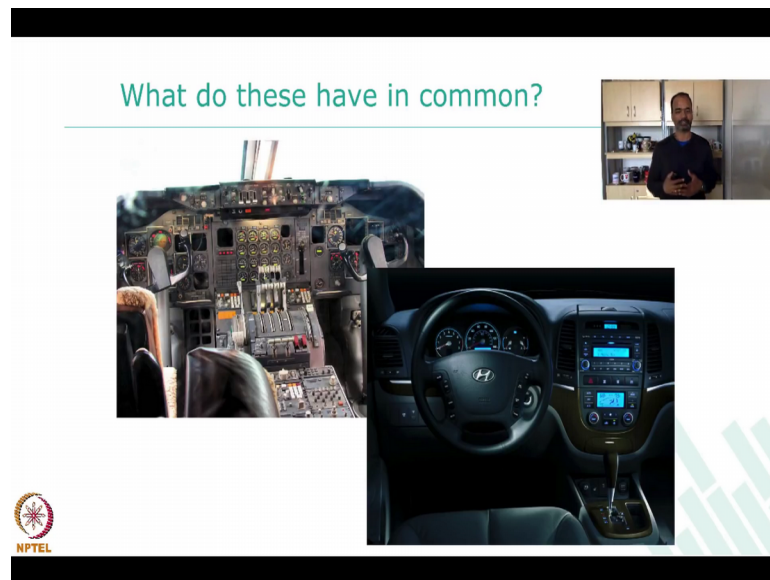
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Look at these two. What do you think of the differences? What do you think of the common? The common thing about this is both is actually storing liquid probably water for your tea, hot water for you tea and it also has tea leaves in it. So, the way to think about it is that there is ah some things in common right there is a handle, there is a nozzle for water to come out and in the in the one on the right bottom you are also able to actually see how much of whatever is in the ah kettle.

Well, it is one on the left you are not able to do it probably depending on how it is made the kettle probably can store the water for longer for it to be hot whereas, in the glass it may be actually lesser time that it will store it for it to be hot, right. So, these are some similarities and differences of these two for here in the kettle and the earlier one is the thermo stat.

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Let us look a few more I will actually walk you through a few more interesting ah designs, interesting devices, interesting instruments that we use in our daily day life daily life, when we may have not thought about ah these commonalities and differences right .

So, here is two things the left top is actually the aero plane cockpit and the right bottom is a car. I do not know how many of you have tried or used the device on the left top, but it is actually extremely hard to use there is so many ah buttons, there is so many things to be used their whereas, on the right hand side there is only few. And, I am sure if you talk to a pilot they may probably give you a sense that the left one is actually easy to use for them, but I think it takes a lot of training, it takes a lot of mental load cognitive load for using the one on the left probably even for people the right hand bottom is also gives you cognitive load and it also had needs some training.

At the point I am trying to get across is there is different parameters different metrics you have to actually think about while designing these things right. For example, the first one you could design what kind of people are actually using it, is there any reason for having analog now or is there any reason to have only the digital wave. Here, again it depends on what is the situation that people are using the device, it clearly there is a lot of training and there is also a lot of rules and regulations that you need to know on both of these right. For example, in the aero plane just because it is the air you can take it and fly it anywhere you want and for the right one of the car you cannot drive it on any lanes, you

have to drive it on a particular side of the road, given in different country it is probably also different at the different side of the road.

So, you have to keep all these rules regulations that are outside the device also in some cases it is inside the device with a lot of these buttons and knobs that you have to use sometimes it is also outside the device that you are using you to actually keep in mind.

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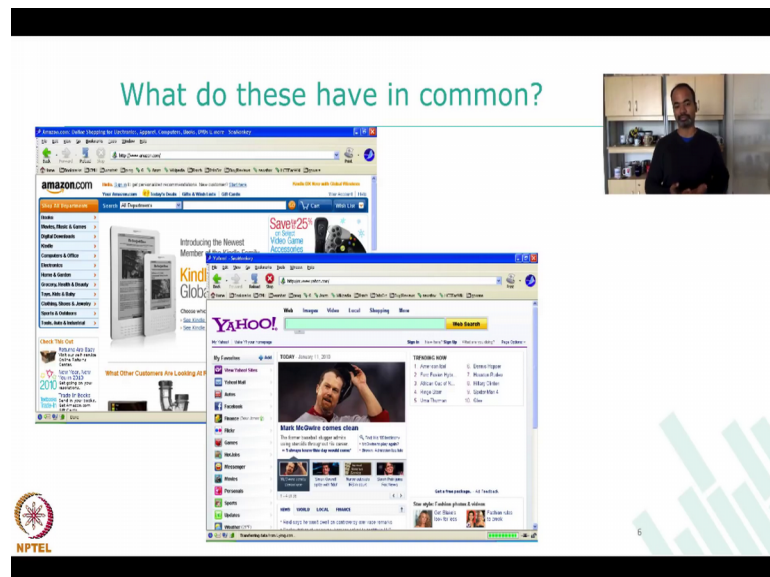
Look at this one, I am sure many of you may not have even seen the cameras like the one on the left top corner and the one right bottom is actually the most commonly used kind of digital camera now and now, that we have the cap we have the phones which has actually these kind of cameras and very good quality pictures that are taken on phones, we probably do not do not use a lot of these kind of cameras also.

Again, if you look at the similarities and differences, the common things is so, you can zoom in a little bit, you can actually take pictures and the one on the left you have to put the film, in the one on the right you have actually put it is just the digital pictures get stored in probably the memory of the phone or on the flash card and you can actually get a close up. Right, again not a lot of training is needed, but I guess one should be more aware of the different buttons because I you would see when you actually give away your camera to somebody else, because they are actually figuring out which button is actually for taking the picture, how do you actually zoom in, zoom out right. So, these

are the kinds of things that one looks at when designing or when probably using these kind of devices for now.

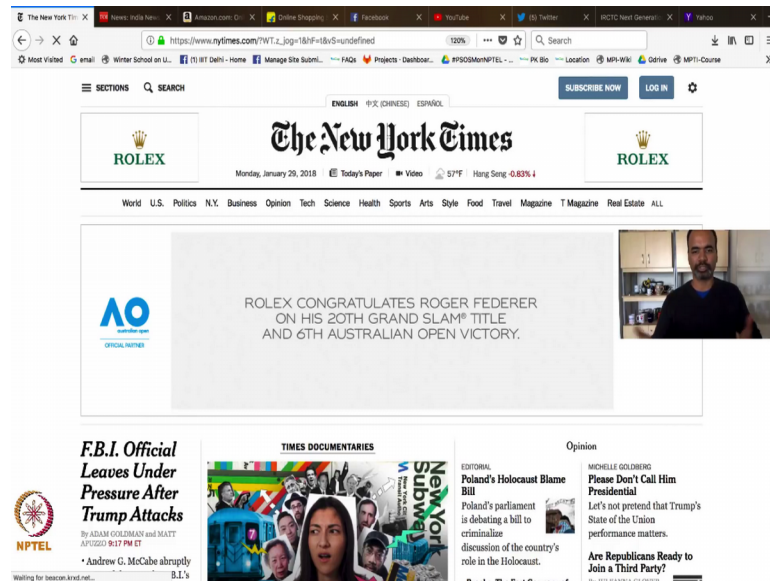
We will start looking at how do you get into the design of these things as we progress in the course, but for now I wanted you to think about the devices that you are using at home in in day to day life to think about how design is playing a big role, design positions have played a big role in designing these equipments instruments that you use. Now, let us look at other to instruments and services that you use actually very often these days ah at your workplace or at your home.

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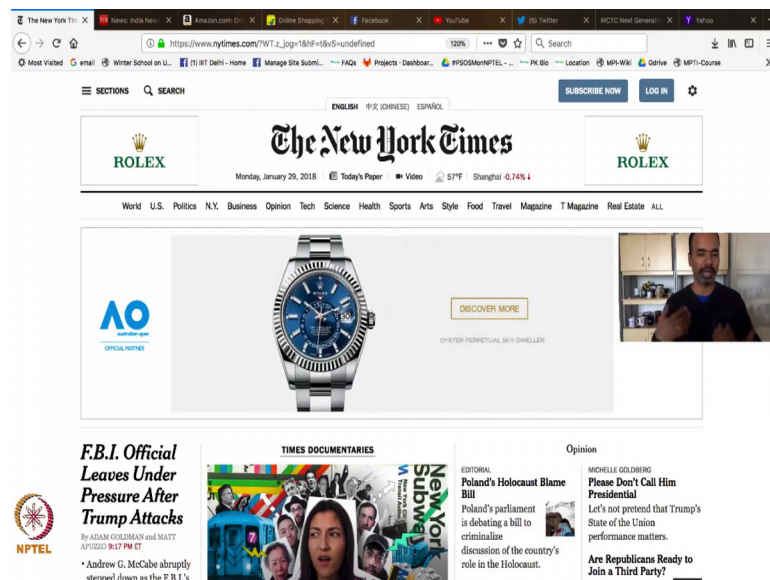
So, these two websites that I have, but I will I am going to actually walk you through the different services that I think is actually interesting and that I I assume you probably you are using it right now too.

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So, here is one service that I am sure some of you are using it, but I am going to actually show you many of the services that are available.

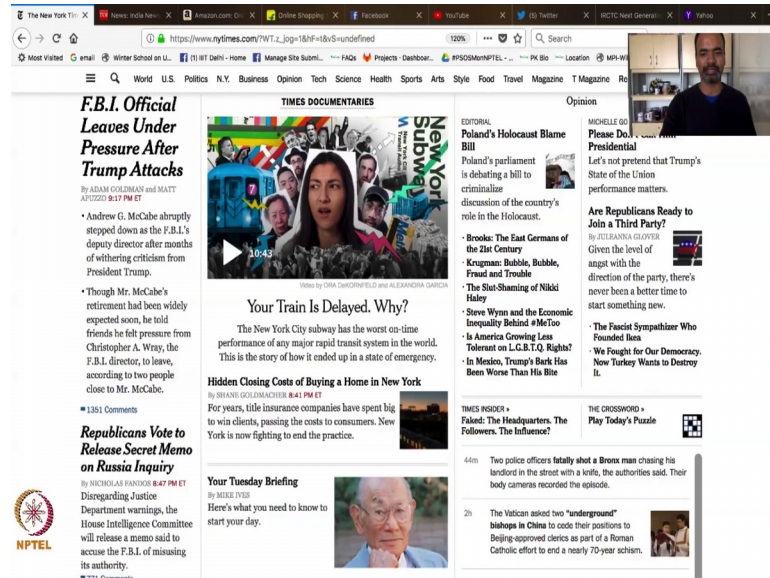
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So, you could actually see how these design patterns have been used in these kind of services. As the first one is New York Times that I am showing where you can clearly see there is topics here on the horizontal bar which is World, U.S., Politics, N.Y., Business, Opinion, Tech, Science, Health, Sports. So, they basically have all the different

categories that they think that are important there and in there is this date, time, language, subscribe now and there is a huge ad of Rolex in between and then the topics.

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Again, the topics you can clearly see that they have different size of fonts that they have used, different size of images that they have used in terms of getting attention of their readers ok, that is one type of an and they have these kind of. So, the more the recently there these kind of things have been added which is like the total number of comments that they that the articles have and connecting all these comments and showing it to the user alright.

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Now, let us look at another service which is a popular in India which is times of India the newspaper ok. So, this website also is very similar to New York Times in many ways and is very different from New York Times also. So, in this case you will see the logo of times of India is popularly ah is prominently placed on the top and the different categories of the news of place next to that, the category is also very similar to what was there in New York time city, India, world, business and then the most popular news article that the edit has think is being kept with an image, top stories, latest news, entertainment on the right hand side other news that they think is interesting, right.

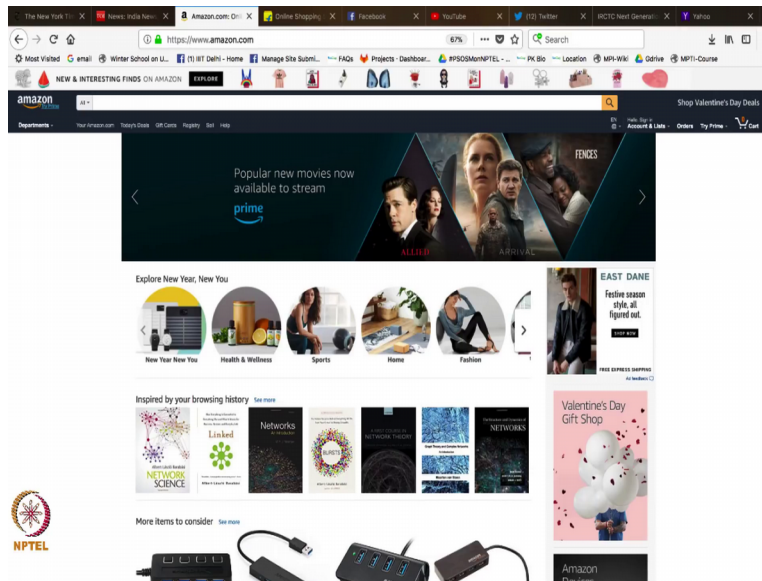
So, if you look at the times of India times of India has ah used very similar fonts not a lot of change in the font size or in the color whereas, in New York Times you could clearly see the font size is very different and the fonts are also very different in different ah parts of the webpage. Again my intent here is not to actually keep this very complete my intent here is to get you to think about these services from a design point of view alright.

You are you may be also using other applications very frequently like, for example, Google maps, Uber, Ola and Zomato and Instagram these kind of services are also very popular. So, I would recommend what I am showing you here is from the desktop I would highly recommend you to look at these popular services that they use that you are using from a from a design point of view and we can have a please post any interesting

observations, questions that you have from these services will be happy to actually have a discussion around it in the mailing list.

So, now that we have seen the New York Times and the Times of India, let me take you to a few other types of services.

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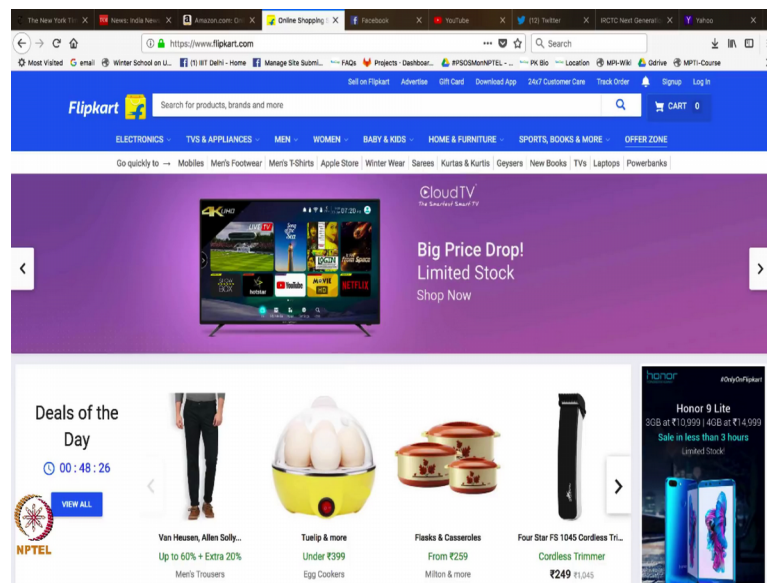
One is Amazon, which is also extremely popular for buying and selling things. So, look at the website that Amazon has. The most prominent thing that they have in the website is a search bar. What they want you to do is they want you to come to the website and get to what you are looking for very quickly and again there is a lot of design patterns that are being used in the services. I am not going to get into the design patterns right now, but later in the course we will actually look at the concept of design patterns which is that you can see some patterns that you can yourself think about between the New York Times and The Times of India also, right. Prominent articles, being given more space, probably bold letters with an image and all that.

Now, in the Amazons case they presented all the information that they want to present to images about the products. New Year, health and wellness, sports, home and then ah depending on the recommendations, depending on the searches that I have done and products that have looked at they are providing the recommendations. And, you can see the categories that they have on the top are different departments which is different parts of their websites website books and articles movie, music's and games, then they talk

about today then they have a link to today's deals, gift cards, registry and another right hand side they have their ah shop valentine day deals, card, try prime, order and all of this right.

So, this is primarily designed around selling products, selling books, selling articles. So, therefore, they are presented all the information in terms of images.

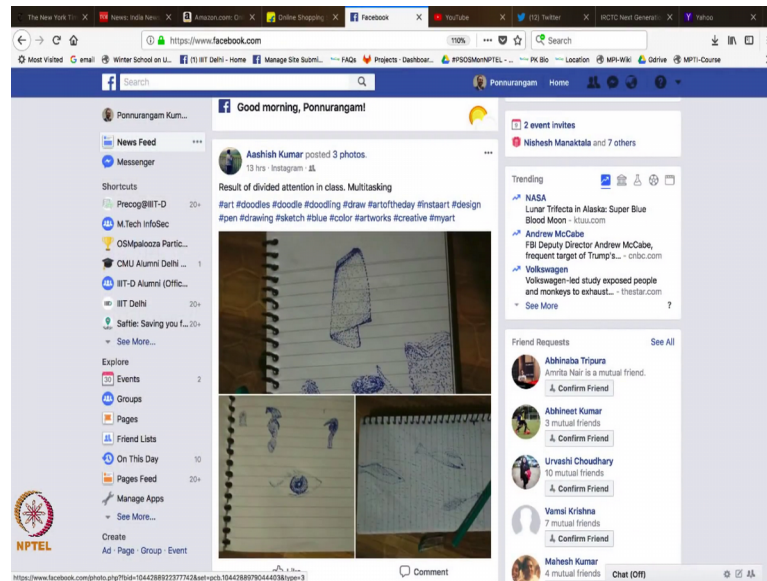
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So, now, let us look at the one that is popular within India which is Flipkart. So, in terms of Flipkart if you see their, what they are doing is they are they have the scroll with the popular deals that they have or the products that they have they are and then they have again similar tools that is why I meant about a design pattern. Similar to Flipkart they also have a search bar which is prominently on top and sell on Flipkart, advertise, gift card. So, on the top right and then the different categories of products is presented here and then there is this again a design pattern which is go cookie to or a shortcut so to say its mobiles, men's footwear, men's t shirt and categories like that.

Also, they have these deals of the day that is going to be for the next 47 minutes and the products are presented with the images and then the cost and again other products super top selling mobile, super savers, discounts for you and information like that. So, what I am trying to show you here, this is very similar to Amazon, but there are also differences between Amazon and Flipkart right. So, these are the two services that we use for buying and selling products, books and other things that we use.

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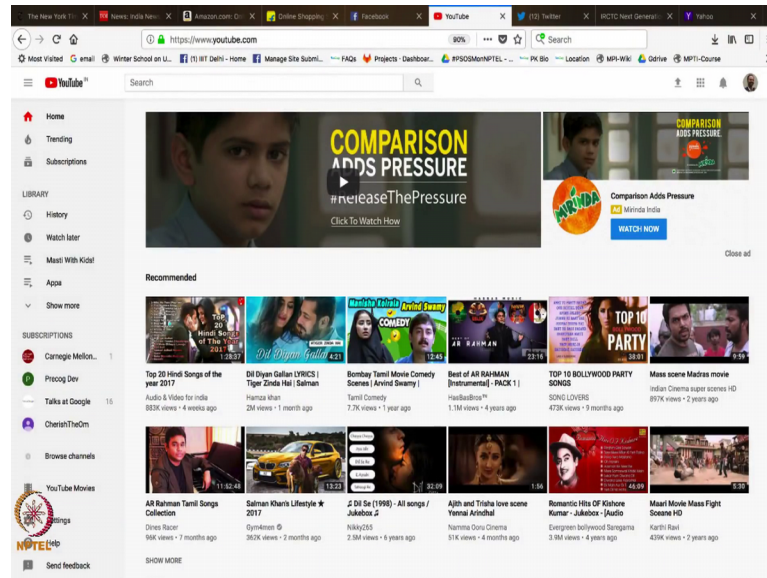
Now, let us get into the social networking space right. The social networking space is also interesting because the way that we end users you see systems are very different at least the goals of these systems are very different compared to the ones that we have seen until now, which is the New York Times, The Times Of India, Amazon and Flipkart.

So, here are I think the goal for face book is to get you to do the user website as much as possible by actually sharing what you are doing right ah. So, therefore, the prominent information that they present is what is on your mind, share what you are actually doing right now or what you may have done or what you want to do and the website is broken down into three parts which is on the left hand side they are presenting news feed, messenger, short cuts you can clearly see the shortcut from Flipkart also here which is also a design pattern explorer and on the right hand side they have stories, some trending topics and a friend requests .

So, they basically have this design of three parts in the website left, middle and the right. The middle one that they have used it for just newsfeed which is what is happening in my friend circle. The right one primarily for trending providing me recommendations, left one is most like mostly static which is from the shortcuts and services parts of this Facebook services that I have actually used right and if you see the font the in Facebook is very very consistent which is black color very ah small font and the name presented in blue the links are basically presented in blue and there is not a lot of font difference in

Facebook's homepage. They have a lot of these icons that they are used for different shortcuts and different pages that are created and those icons are actually presented here. So, that is Facebook.

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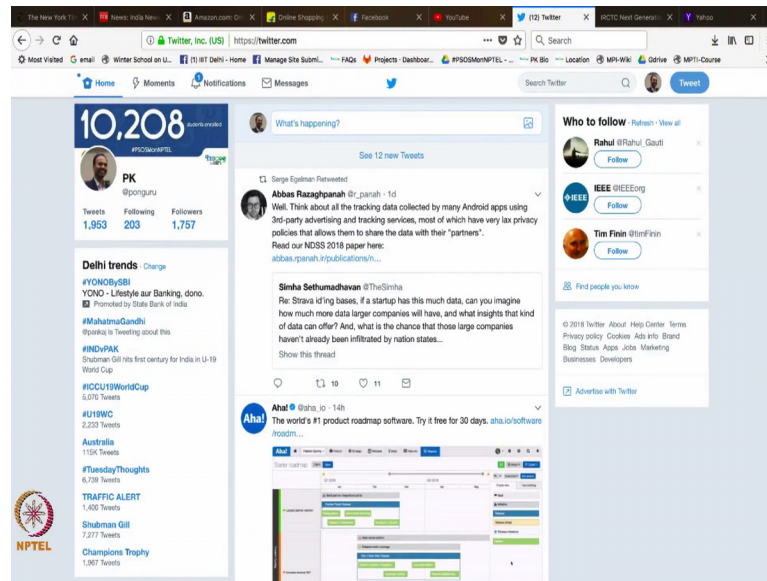


So, now, let us go look at another popular service that most of you must be using which is YouTube. YouTube is a video sharing website and the goal here for the website is to share as much as videos as possible and view has much as we do as much as videos as possible all right ah. So, in that case I think or reached the videos as quickly as possible.

So, sitting there for that is also a search bar here and there is also a search bar in Facebook also for you to get to different pages, different profiles all right. And, the way that the content is organized in YouTube is home, trending, subscriptions, library, YouTube movies and everything and these are all recommendations that, thumbnails are presented for these videos they are all mostly prevent by the recommendations that are presented recommendations that are available depending on the searches and depending on the videos that I have seen before alright.

So, that is YouTube. Again, you could you could clearly find some similarities and differences between Facebook and YouTube also but they are they are slightly different services ah fundamentally.

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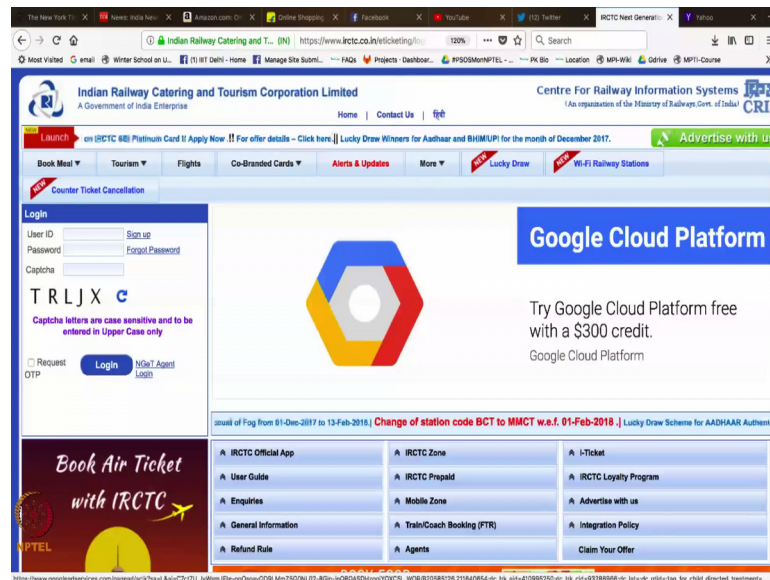
Now, let us look at a service that is very close to or similar to Facebook design which is twitter ah. So, twitter was also broken the page into three halves which is on the left they have a Delhi trends which is trending topics, on the right they have whom to follow and the middle that they have which is more like the news feed and Facebook what is happening in my network all right.

And, if you clearly see the differences between them Facebook and twitter you can say that in twitter the trends are on the left hand side and Facebook the trends are on the right hand side and the who to follow here is most likely the most similar to the friend request, the recommendation that Facebook is making and here on the left or top corner they have my profile details right.

So, what I am giving you again is a sense of these kind of services from a design point of view, because when you go to these websites meaning I think this is a question that I will ask all of you to try and think about or even answer is when you go to these services very rarely all of us actually look at these services from a design point of view. We do not go to twitter to see ok; so, what kind of font are they using, what kind of colors are they using, why are they keeping the newsfeed or timeline and the middle, why is it not on the right hand side, why is it not on the left hand side, those are not the questions that we are asking most of the times.

When you want to book cab to go from point A to point B you are primarily looking at only ah where the cab is how much time it is going to take and can I get it as quickly as possible all right. You are not looking at the design, decisions that the you know thinking about design decisions I do, but our role as made while making ah these web services.

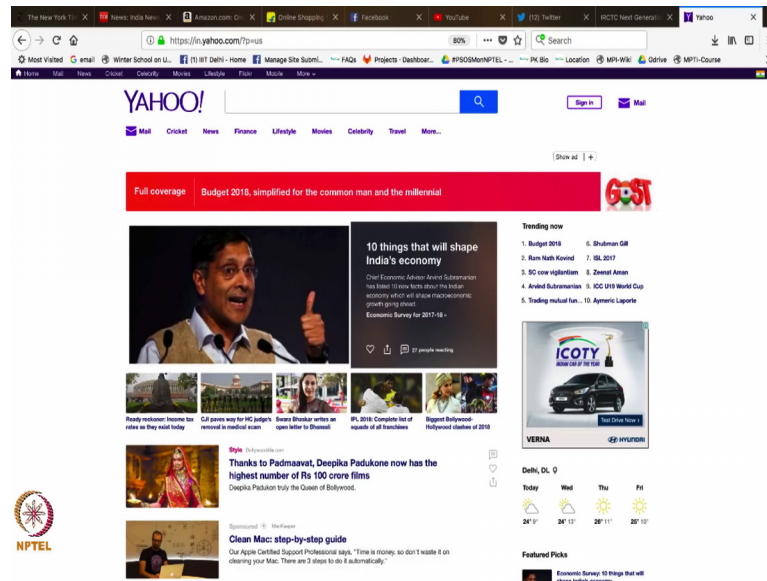
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Here, is the next one the next one I am going to leave it for you to comment I am going to wait and see what kind of comments that you make and I will also let you to talk about some of the services that you are using more frequently.

So, here is IRCTC website always ah website. I would like you to actually look at this website and me comments about their design patterns or design decisions that you think they may have made. Why do they have the way that the design website that they have why did they design it the way it is currently right; think through it and make some observations about the design, how usable is it right ah. So, the goal of this course is also primarily as you know it is looking at useful and usability alright the services that you want to analyze the services that we are going to look at.

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I am sure many of you may have used many of you would have used yahoo at some point and time you who used to be very popular and yahoo primarily presents the information which are news articles and they are so, if you look at this classification of the news you can see mail, cricket news, finance, lifestyle, movies, celebrity; they are probably are used to very different words compared to New York Times and Times of India. But still the classification is there and like the Facebook's and Twitters they are the thing called as trending now and they have weather and they have thumbnails of different news articles that they want to showcase to the user, again I am sure they are doing ah.

So, another thing that we will not be looking at in this course is this whole idea of how these services are actually making these decisions right. So, they are they must be crunching a lot of data at the back to see what user what kind of user behavior what kind of cohorts of users are actually looking at what kind of content and designing their information present presentation accordingly and design decisions also I am sure Facebook is making a design position of what the present were after looking at what users do.

That is more like the data analytics data analysis that one could do at the back end and make decisions on. Our primary focus will be on the design and particularly my focus will be on usability and usefulness of the services that we are looking at. So, what I recommend now, so, these are some as I as I said earlier these are only some indicator of

services that I think will ah trigger your thought process on looking at a design when you are looking at these services but I am sure there are many many services that you use where you can actually make think about look at these services and just go through the process of how they must have made a decision and why are they making the ah search bar on top, while why do you think the trending is on the right, why cannot the trending the be that at the e bottom again think about it.

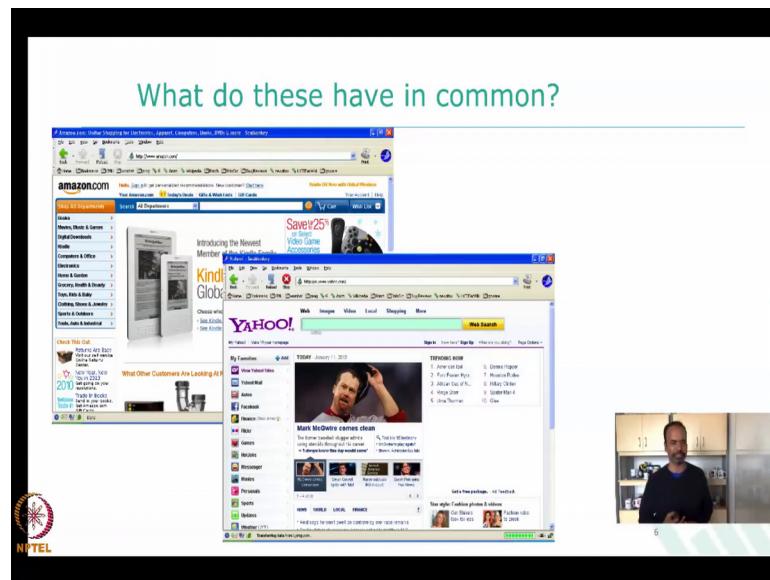
Some of the some of the things is design as users for arts for us it is so trivial now, right. So, because everybody for example, one thing I ah I feel now is that the concept of notification right the concept of notification where you get a notification for every tweet where you are mentioned or your tweets are getting re tweeted or your Instagram post is getting a like picture is getting a like right. So, these notifications are so natural now, but think about the design decisions that somebody would have made at some point in time.

Because, today if you see any app without notifications the apps do not seem to be getting attention right because I am I am sure many of you were watching this lecture in the morning when you get up you were going to log into these services open up your phone and looking for notifications right. Notifications are one thing that end users have started looking for from the post from the tagging from the pictures from the videos right. Even, now you can clearly see my words on my screen there is notifications for one notification which is in my twitter and there is some two notifications which is on my YouTube all right ah.

So, these notifications generally, are when the point I am trying to get across is that in terms of design it may be very trivial now oh, let us just put a notification for a project that you are going on, but I think through the process of how notifications, why notifications has become actually more important right. A quick answer to that there is generally information used to be in the pull mode which is you have to go look for the information and get it when it is a notification it is kind of pushed mode right push mode that is information is getting pushed you given a notification to you saying you know you know what there is a like in your tweet there is a retweet in your tweet.

So, if you are interested go take a look at it right. So, that is the set of services that I wanted to show you to get a sense of ah to give you a sense of how these services were designed.

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Now, let us back to let us get back to the slides where I will show you us why did we look at these kind of services, these kind of design, these kind of products, these kind of services.

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So, here are some reasons why you want to actually keep good keep in mind design so, everything right everything that we talked about right now has some kind of criteria and I want you to think about this criteria because when you are designing when you are working on, these criteria's make a lot of difference in the design decisions that you are

going to make, these criteria's are actually are the designing factors in which the final outcome that you will produce.

Attractive, cost effective to manufacture, it is durable, it is watertight, can hold out water effectively, separate the leaves from the rest and these would be the design criteria that you may end up actually using while ah making your design decisions, but is it useful and usable I am going to repeat this usefulness and usable ah usability again and again in this course.

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Design and Goals of this class

- Everything designed is done so within a specific context
 - Training required
 - Conventions
 - Laws and regulation
 - Competing products
 - Human abilities and limitations

The slide includes three images: a cockpit, a car interior, and a person. The Intel logo is visible in the bottom left corner.

Here is another one. So, we looked at the cockpit and the car before ah. So, there is training required, there is conventions, there is laws and regulations, there is competing products and also human abilities and limitations. I am sure there are set of people who could be easily sit on the pathway and maneuver of the ah knobs that are provided there or the controls that are provided there, but I am sure there are many people who would not even cannot even take the cars maneuvering and the parts of the cars, right. So, therefore, there is this whole cognitive load training, conventions, laws and regulations and I am sure there is competing products which will also make just make influence on the decisions that you would make right.

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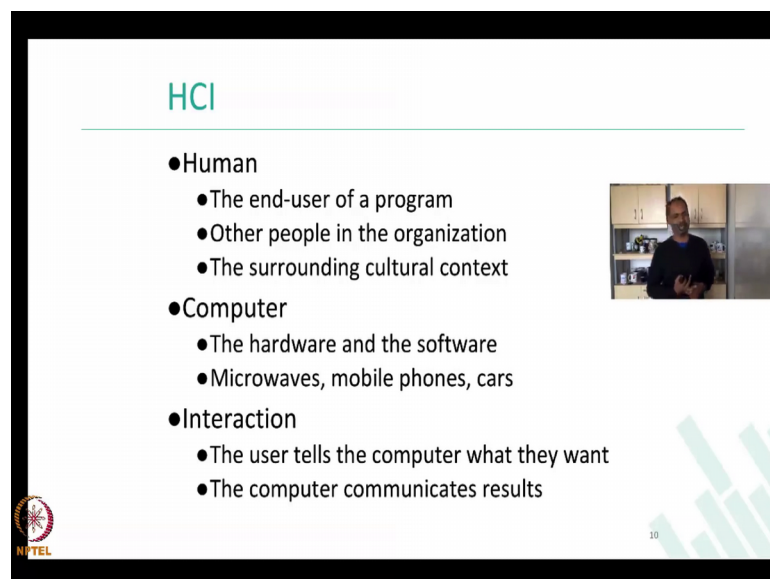
Design and Goals of this class

- Everything designed is done so within a specific context
 - Training required
 - Conventions
 - Laws and regulation
 - Competing products
 - Human abilities and limitations
- Understanding these influencing factors also a key part of this course

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Understanding these influential factors is part of this course also.

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HCI

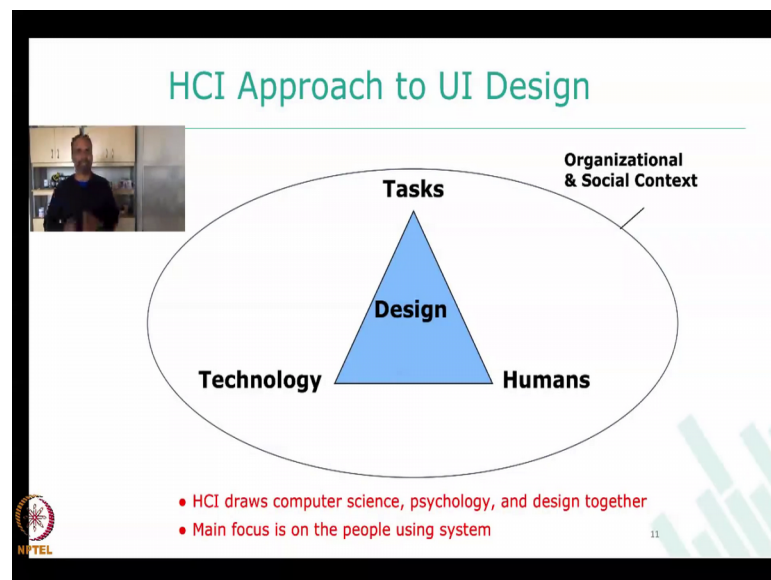
- Human
 - The end-user of a program
 - Other people in the organization
 - The surrounding cultural context
- Computer
 - The hardware and the software
 - Microwaves, mobile phones, cars
- Interaction
 - The user tells the computer what they want
 - The computer communicates results

10

So, let me now, get into what an HCI, right? HCI is generally is going to be a combination of different areas particularly Human Computer Interaction; human being the end user who is using which is you and me computer being the hardware and the software, the microwaves, the mobile phones, the cars, the airplanes, the Ubers and the Olas apps that we use today and the interaction the user tells the computer what they want and the computer communicates the results right I am I am saying that I want to go

from point A to point B Ankola and it is providing me the first it is going to look for the cabs that are available and then it is going to provide me what cab does going to come and pick. So, all that was visually presented to you in an interface which makes these kind of apps more powerful.

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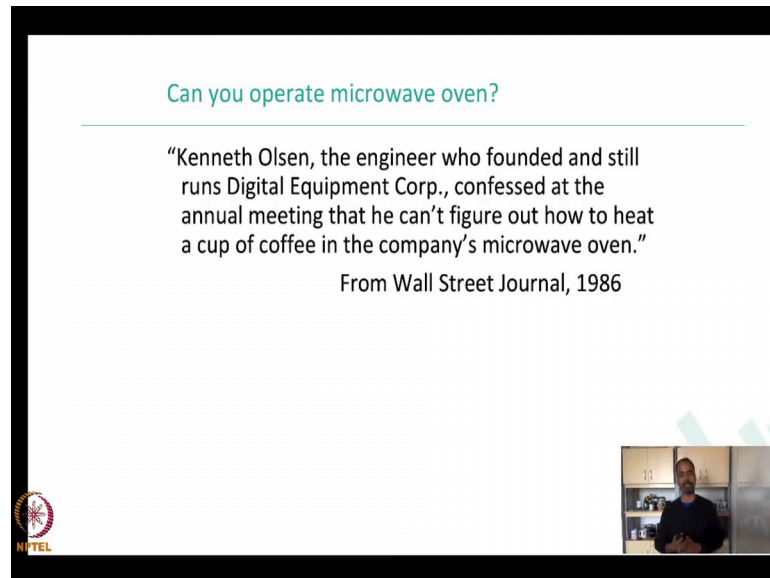
So, some more theoretically if you look at it, so, the HCI approach to UI design there is technology, there is ah humans and then there is task. Design generally is going to be the one that is going to bring these three things together. Technology being the app of the Uber, tasks being the booking a cab from point A to point B and he was being to me as a user making the choice of going from point A to point B and the design is actually bringing all of these things together to present this interface for the user to make a decision.

And, and I think the bigger context of where this decision is being made how the decision is being made is also very very important right for me to book a cab using Ola versus for me to book a cab to go to go from point A to point B which is actually far away where I am which I cannot get the Uber or Ola now which is multi city multi state ah cars is the context that I won and Ubers and Ola's are also primarily design when I want it right now right.

So, there are features they are which could say you I can look at 3 days now, a 3 days from now, but the context in which the decision is being made is also important to take

for example, me making a design decision for urban users versus me making a decision of rural users me making a decision for all senior citizens versus ah teenagers right. So, these kind of design decisions these kind of context becomes very very important and I see I of course, draws ah content of the topics from computer science psychology and design.

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Can you operate microwave oven?

“Kenneth Olsen, the engineer who founded and still runs Digital Equipment Corp., confessed at the annual meeting that he can’t figure out how to heat a cup of coffee in the company’s microwave oven.”

From Wall Street Journal, 1986

NPTEL

A few other interesting questions or a topics that I will throw for would be given that this is the first week of class, I wanted to get the perspective of the design and the perspective of the course that the that will be continuing to look at. I am sure many of you may operate the microwave regularly or when the operate the microwave regularly; here is my question, how easy it is difficult to go operate a microwave in your friends place or in an relatives place?

It is not that trivial right it is not that trivial because the conventions are very different in different microwaves and the buttons are placed differently, the timing that is given is very different and you will actually find it harder to use the microwave in different places.

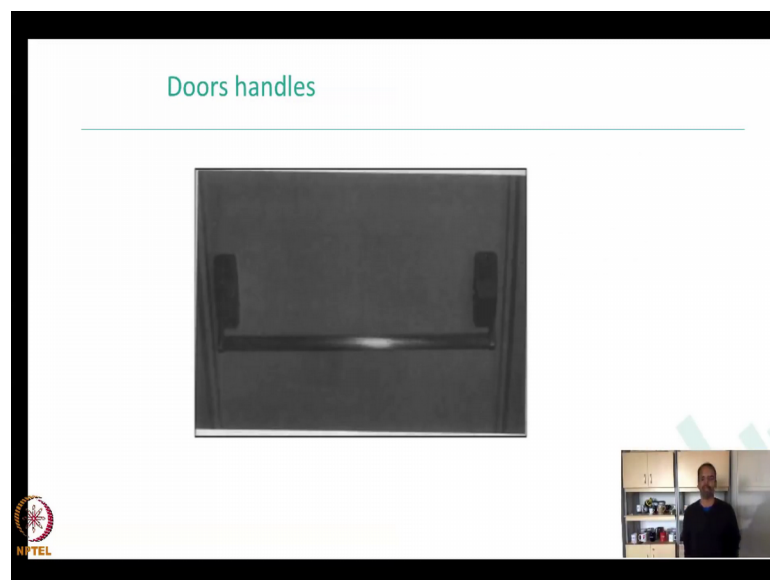
It is not just the microwave, there are many many examples that I would actually go on this for example, I am sure for the students at least or even for others who were who were used to see people giving lectures or talks using a my projector you will you will again and again find people struggling to get the projector ok, right. TV remote, TV

remote is another interesting example that the you would find I am sure most of your TV at home, you can look at here TV remote go look at your TV go look at a TV remote in your neighbor who has a different TV and a different brand you will find the TV remotes are very different.

The conventions are very different, even though the conventions may be same which is volume, channel, power off, mute and all that, but the way the position where it is kept and the and even sometimes the shape of the buttons are also very different .

So, here is a quote about the microwave when in 1986.

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Door handles; so, door handles this is another interesting ah design that you can look at.

So, with that I will stop the content for week one. If you have any questions or there is clarifications from the content that we covered or in size that you getting while looking at these kinds of solution surround, please you feel free to post it on the mailing list. We will be happy to actually look at them, answer them, participate in our discussion and the I will remind you again this is a course where you also have to do something's ah not just listening to the lectures, but I am going to get you to go look at some of these devices that you use otherwise, come back to the mailing list, come back to probably even the homework's and do as part of the course, critiquing these kind of designs or thinking through this design and telling us what you think about it.