Visual Communication Design for Digital Media
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Lecture - 14
Technology Advancements in Digital Media

Welcome students to the online NPTEL course Visual Communication Design for Digital Media. So, in the previous lecture we were talking about the contemporary designed movements and how the visual style of the design, after industrial revolution supposed to industrial revolution have change. So, we also discussed the modernist and post modernist movement in the tangible media of print media, and art and then we moved on towards the digital media and we are discussed what kind of styles were there in the digital display system. So, in the in this lecture we will discuss more about the technology advancement of digital media, because right now digital media is not just display system on tab mobile and desktop.

So, it is going of further and it is a very (Refer Time: 01:09) platform and it is evolving in each and every day. So, we will discuss about the new technology advancements and how you can incorporate your visual skills into different paradigm, and different mode of digital media platform.

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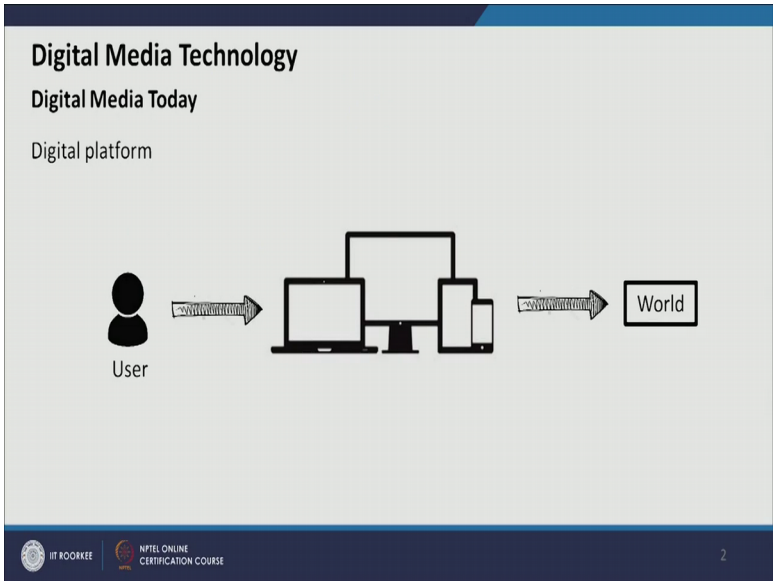

Today if you look at. So, we this is the paradigm the paradigm works in this way. So, user is there and digital media we can perceive digital media through our laptop we desk desktop tab and mobile phones and we can connect with the world. So, here we are designing for these platforms, we are designing games, we are designing animation to be viewed in tabs mobile apps android I mean in it can be in android can be in IOS platforms, but the display system is the system which the digital screen which appears in laptop or in desk desktop or in tab or in phone.

But the digital media paradigm is the shifting and it is changing towards this tangible digital display system. So, these digital spaces systems are tangible we can touch the screen and we can interact with the screen by clicking on if it is touch screen we can click on the screen, and if it is in case of keypads. So, we can type on the keypads, but here we are the new emerging technologies are evolved where the paradigm is absolutely different. So, the design style u I information architecture the way it has been has to be designed, the visuals and the typography the images has to be re looked at relooked because the paradigm is becoming very different.

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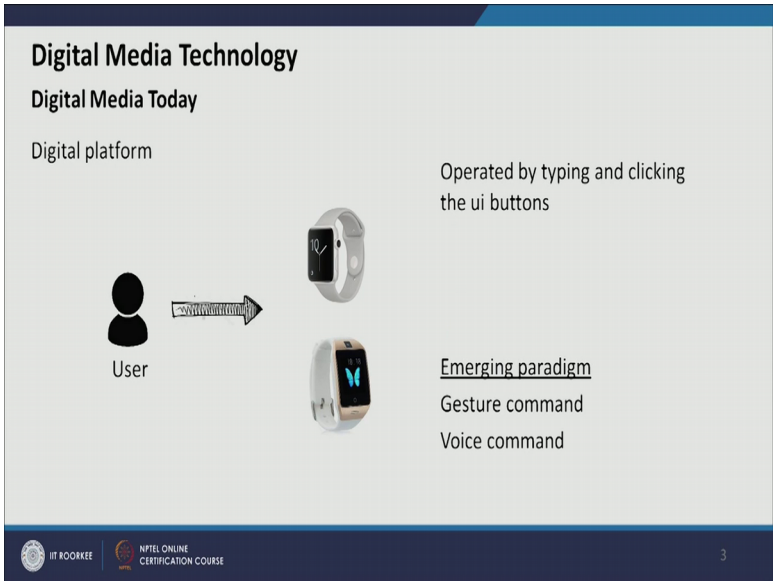

And today also we have different medias like a here initially you it was if we are talking communicating with the world with one mobile or one tablet and one laptop.

They were not initially interconnected. So, right now we have interconnected things. So, our mobile phone can be connected with our laptops, and it can be even connected by

some more variable more tangible things like watches and. So, which can take our voice command and gesture commands. So, we need to know these things because initially the command system was typing and clicking. So, while designing for that we need to a design in a different way, but while designing for voice command and gesture commands we have to design in a different way. So, for IOS app for example, we have the apple watch and even the CD the application CD takes our voice command.

So, this design of CD has to be absolutely a different from a keypad. So, keypad initially the command was taken only from the keypad. So, in a in terms of visual design things are also changing. Here we also have a Samsung watch which gives the similar opportunity.

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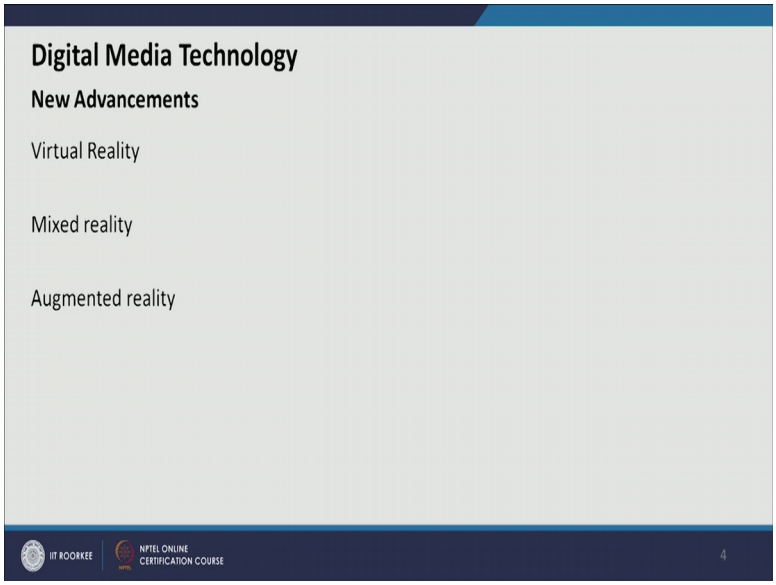

But right now the new advancements are happening in terms of a virtual reality, mixed reality and augmented reality we will discuss what they are, and there the display system the typography use of typography, and use of images, use of everything will be relooked, but definitely the principles and everything the everything has to be the same. The principles will eventually be followed the principles of color principles of elements of design and principles, and the typography every principles has will be followed even the gesture principle and everything because these those are eternal.

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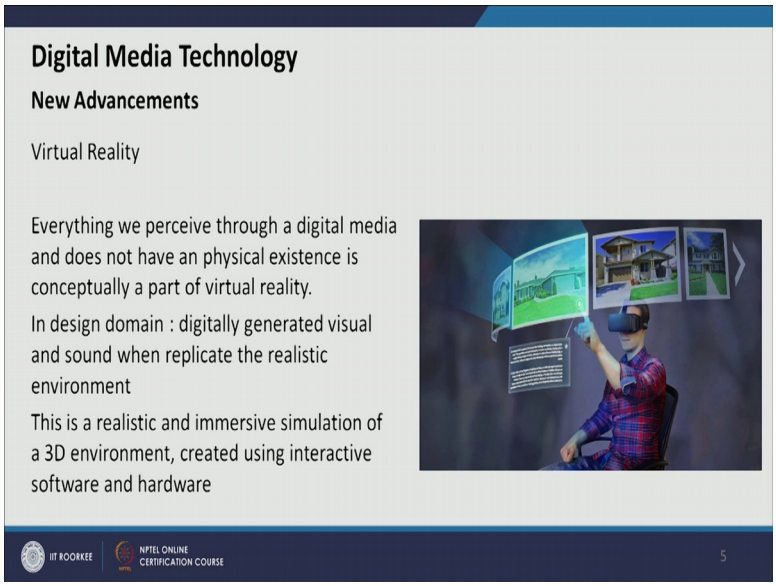

But the moved in the platform the paradigm is just the different. So, we discuss about virtual reality what is it? Everything we perceive through digital media is actually virtual. So, in terms of phone, if you are listening to some voices, which were not there in the real world, but they are virtual; but in terms of design the term virtual reality is a little different. So, we do not consider the displays in mobile and displays in laptops as a virtual though they have virtual, but they are not they do not come within the term virtual reality or we are is defined in u i, u x domain. So, we are and virtual reality will be will call it virtual reality when the sound, when the visual we will completely take the user into a complete different worlds.

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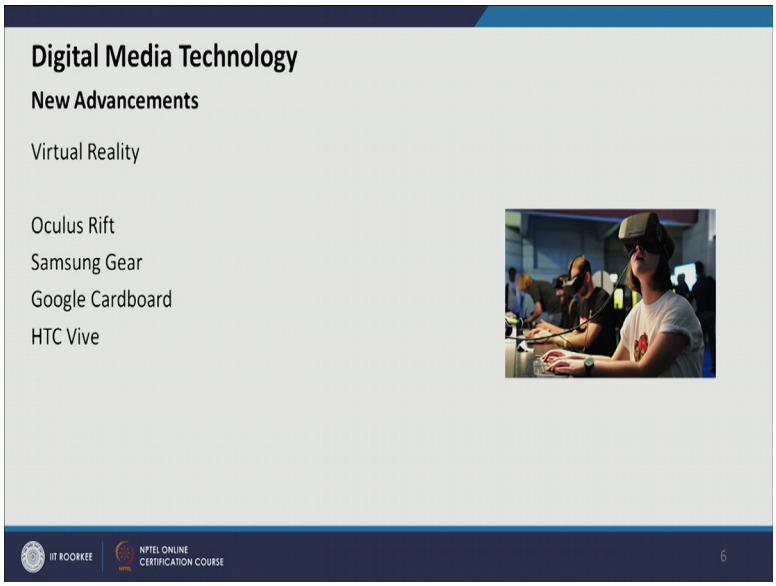

So, it will have to mimic the realistic I have three dimensional environment in a very realistic way. So, that the people feel that they are in the completely different world. So, for example, we have some virtual reality headset like (Refer Time: 06:26) rift Google gear, Google Samsung gear, Google cardboard and HTC Vive.

So, if we wear this headset we will not perceive any sound and any will not see any visual from the real world will only look at the projection of three dimensional world in the visual projection and the sound will be also given in the complete different sound will be also given. So, we will completely move from will be completely cut off from the real world, to the virtual world in terms of only visual and sound.

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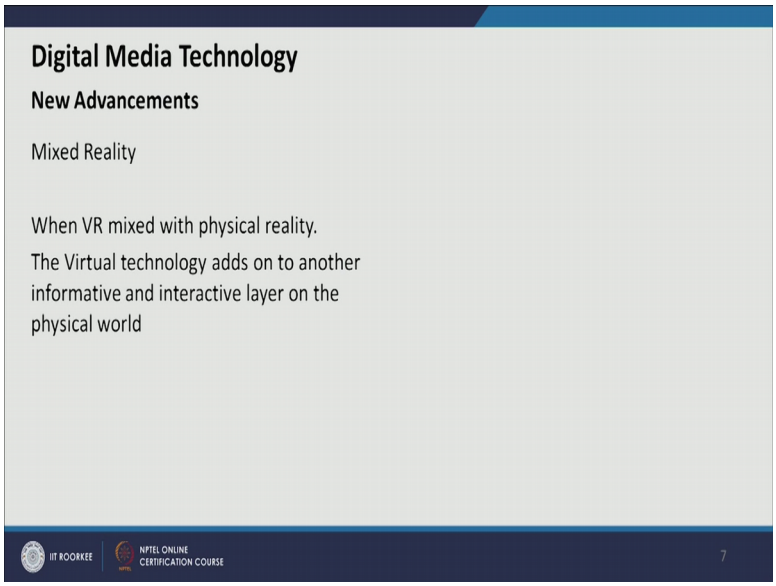

So, and then there is also mixed reality, because virtual reality is just for it is more dominantly there in game and animation, when we want to invoked the user more into the application. So, game and animation which requires higher involvement of user, high interaction with the user will be more towards the full virtual reality, but in terms of u I applications and doing or day today life, we need to have a connection with the physical world as well, because we are not playing game and we are not in our completely different world like a three animations in virtual world.

So, the term mixed reality combines the physical latest perceive the physical reality world in terms of sound hap tics or touch and in terms of visual, but also adds a layer of information real a layer of another it can be of visual information it can be a sound information on top of physical reality. So, it blames physical reality with virtual reality that is why it is called mixed reality.

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So, they are some technologies which I will which are available there and which we are on the pro process of launching. So, one is Google glass, which Google was researching on Google glass. So, Google glass late us perceive the physical world, but he talks about it gives added information in terms of visual and it terms of sound. So, if you look at the Google glass conceptual drawing.

So, here the person looks at perceive the physical world or also their lot of informations it can be information about the flight, in can be information about time temperature and everything he can they can perceive a user can perceive through a projection on in the glass. So, some videos can be played on top of the world. So, the way it is written. So, here we can we have to play with the figure ground relationship.

And we again have to select the typography a very clearly and what will be the four rounds opacity and the backgrounds opacity, and how much you want to show the background or the physical reality in how much the virtual reality projections will be there and where the projections will be there, and where the where our main I is there and what kind information we have to take from the physical world is very important. And here we have also have to use the eye trackers and we need to understand where people look at.

So, a demonstration of I tracker will be given in a methodology section of visual design. So, how we track peoples eye and how you understand where people are looking at,

where are the and interpret the heat map of a eye tracker and how the what are the areas in the three dimensional frame where user focus. So, these things has to be more incorporate in the design of this mixed reality platform. Even the Microsoft Hololens is this have the similar concept, they also has a head mounted variable mixed reality system and here you can see in the concept their concept image. So, on top of the environmental of physical layer, they are virtual informations added on top of its.

So, you have to play with the opacity and you have to play with the position of where the projection will happen and all this informations are added on top of that. So, enhance our day to day activity and the work and at to perform as better.

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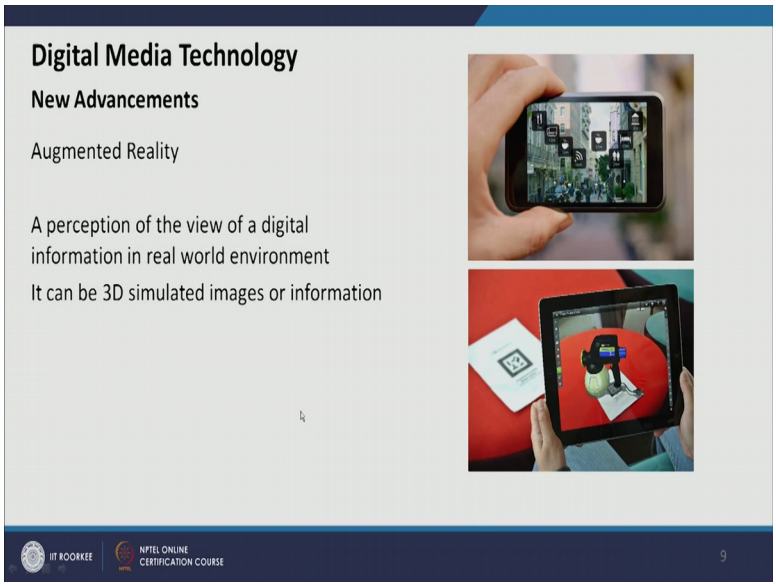

So, augmented reality has a similar concept let us also similar, but the term is different based on their weight has evolved. So, augmented reality in terms of augmented reality there can be a q r code, and if we scan through our digital devices for example, mobile camera or the tablet camera the q r code will generate a kind of three dimensional form which will be super imposed on the physical reality platform.

So, here it can be a 3 dimensional form, it can be just some information. So, it is not very different from a mixed reality, but it is the name is different because it is augmented reality is only in the domain of visual, and it is limit it has a lot of limitation it is not as broad as mixed reality. So, here we have some informations available on the physical reality world. So, what happens here is the camera scans the image and it generate some

kind of digital image in the display system. Then we talk about the future the weight it is evolving where we are leading in the domain of digital media, in the next few decades why we will be.

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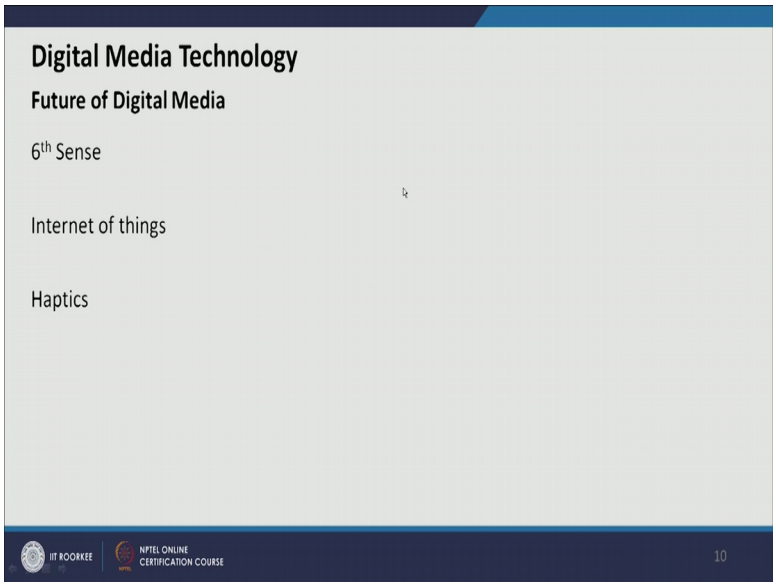

So, we can discuss about the sixth sense and the internet of things and the Haptic technology.

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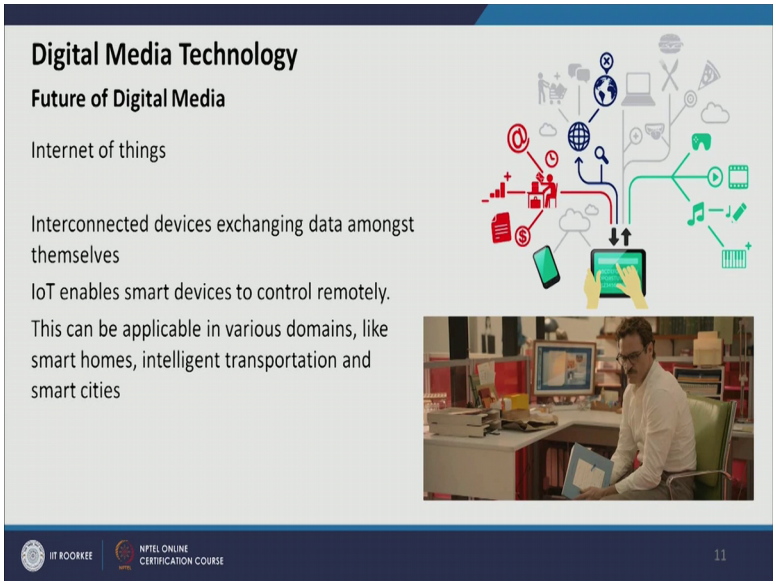

So, first we discuss the internet of things how it is. It is also it is connecting our day to day object and it is not just connecting some digital devices together, it is connecting all

the appliances and it perceives that all the appliances will be smart appliances and they will communicate with each other in terms of exchanging data, and reading their data and there will be a kind of a machine learning happening in terms of processing the data and acting accordingly. So, we can control we can take data from all the devices all the smart devices ranging from smart refrigerator smart t v to smart illumination system, smart air conditioning system even we automobiles and we can control through a centralized control system.

So, that was the future domain and the way internets of things are perceived. And if you watch the movie hard which talks about the similar concept, where a person communicates with the mobile with his laptop and through voice command and does his work.

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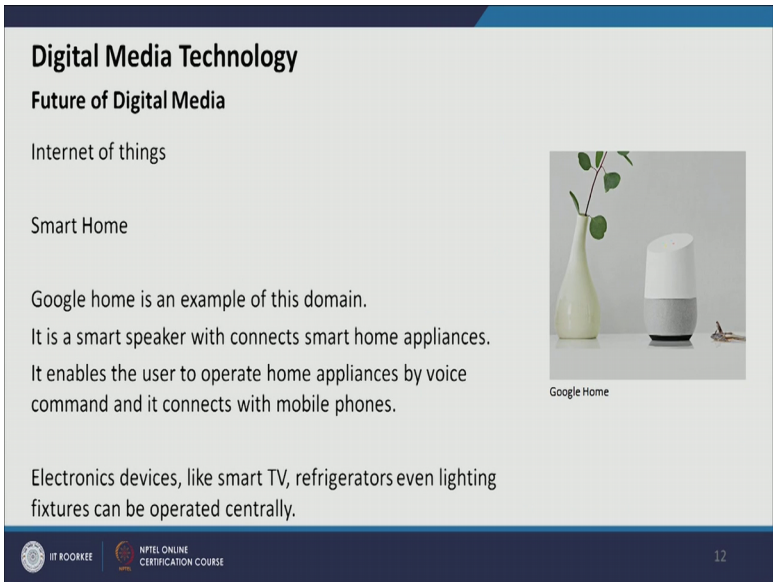

So, this was definitely a futuristic movie, but it is talks about the internet of things and there are some already available appliances which is which is done in the domain of internet of things for example, Google home. So, Google home is a device which connects all the home smart home appliances in the all the applicant has to be electronics and will be able to send the data to the Google home and should be should be able to connect with the Google home.

So, in through the Google home it can be connected it can the appliances can be connected, and you can give command to the appliances and you can control the

appliances for example, refrigerator smart TVS and other home appliances through this Google home.

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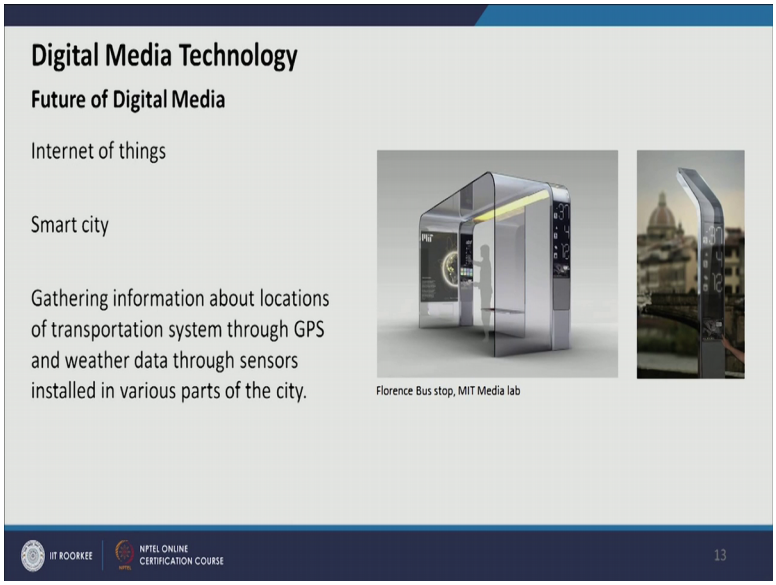

Internet of things can range from home appliances to micro level home appliances towards the macro level city, it can also transform in translating the city level. For example, it can create a some concepts of smart city, and it can also be in transportation design automobile and in a in many other domains.

So, in terms of smart city we can have a look at the Florence bus stop design by MIT media lab. So, they design the bus stop with all the informations of the location of the buses and the other vehicles will be given on the digitals display system of the bus. So, here the digital display system is not confined within our laptop within our mobile it is, on the (Refer Time: 15:48) of the bus stop. So, in the bus stop bus stop (Refer Time: 15:52) bus stops transparent material, the system will be embed the display system will be embedded. And this yes the location about the busses and all this informations will be tracked by GPS system and the information will be given. And even the map of the city and the sensors the climatological sensors will collect the climatic data for example, humidity temperature and everything and time and all these things will be displayed on this digital system.

So, this display system is connected with the GPS system of the bus. So, it is location as well as the sensors which is which can be there in the throughout the city and city can be

transformed in a living laboratory, and all the sensors will collect the pollution level temperature and humidity data and feed that to this bus stop. So, this is a actually a concept of internet of things which connects all the sensors throughout the city, and all the GPS systems and gives exchange the information among themselves.

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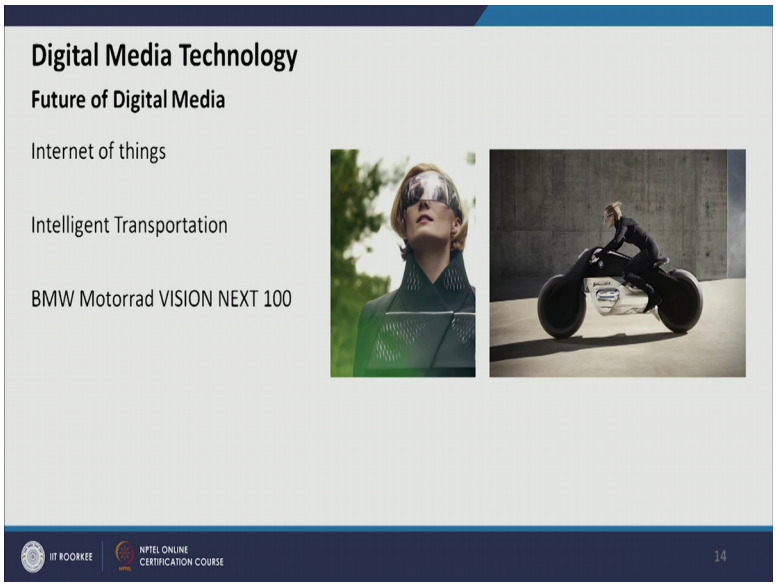

So, another example can be the BMW new vision next 100 concept motorcycle is not launch, but this is there.

So, this motor this automobile this is two wheeler. So, this is not just a two wheeler it connects with your I hit gear. So, what hit gear and as well as your jacket, you have to wear a particular jacket. So, this is the jacket you have to wear while driving and in the hand there has to be a sensor. So, it connects the vehicle in the two wheeler with the jacket your and with the head mounted visual system and as well as the sensors, which we are wearing on your finger.

So, it is connects all the three things and what is the facility it gives? It what you see and it perceives that and it tells where are the different positions of different objects, so it perceives; what is the distance between different objects and it avoids clashes; and even your body and the jacket has sensors and which transforms which takes the information about your body movement and gives the feeds that to the vehicle and even there is a possibility to tilt and possibility to crash.

So, the vehicle will automatically adjust itself and through the sensors which you are wearing on your finger you can give gesture command. So, there will be some gesture command which they will add with the two wheeler. So, though your finger you can navigate and drive the two this two wheeler.

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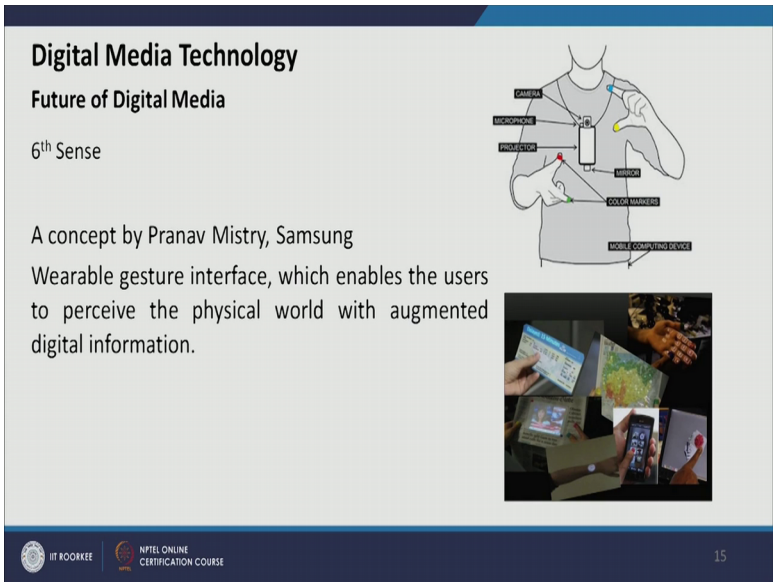

Then we have future of digital media we can discuss about the sixth sense the concept was given by Pranav Mistry of Samsung. So, in six senses which it is also a similar concept. So, all the sensors what we you wear on here you can look at the figure you are on your fingers of both the hands, the mirrors and cameras and the microphones and all the mobile or computing devices will be connected together.

So, you this is also a mixed reality system of visualizing thing. So, on everything it will scan through your camera and it will take the informations by scanning through your camera and give you informations, and through an augmented digital reality plat platform.

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So, the next level also if we think about the future, we are there are lot of research on the haptics because we are talking about visual and we are talking about sound. These are already there are and we are and the designers and developers have progressed a lot in terms of blending, the physical reality within the virtual in terms of sound and visual, but there Haptic which I means in the touch sensation is yet to be it is a little farfetched. And write on the next process a lot of our scientists or researching on the Haptic sensation how the touch sensation or the tactile sensation of a real material can be translated, and the how you can interact with the physical reality in terms of touching and in terms of holding.

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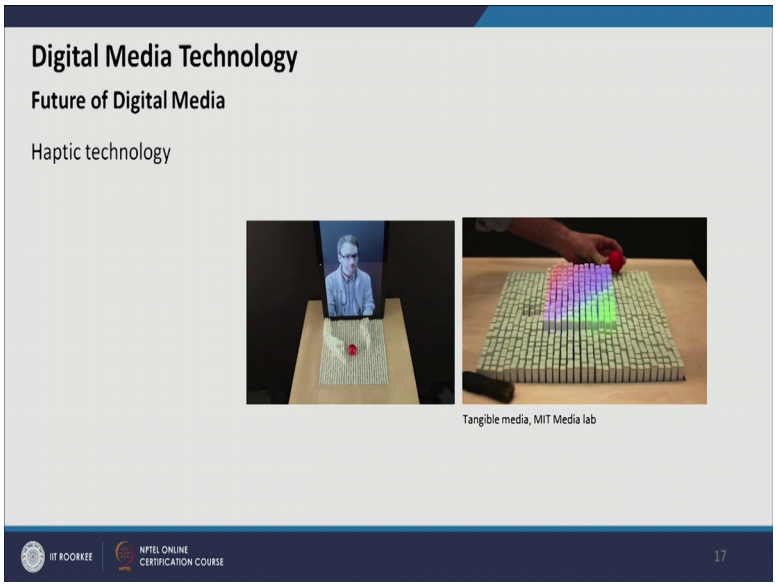

So, here there can be we can discuss again MIT media labs tangible medias the way they are progressing, here you can see there are lot of pixels again the concept of pixels are transform into a three d tangible volume. So, there will be lot of you can perceive that as the voxel, but tangible voxel. So, these small voxels on 3 d pixels will be can be hold can be touched and they will interact according to your command. So, here it will interact with the ball and here there is a person sitting somewhere else, and he is he is just display the images displayed over here, but he is with some sensors his position of the hand is tracked and the position of the hand the form of the hand is mimic with this boxes, and his playing with the ball which is far away, but he can hold the ball and he can move the ball with the with this technology.

So, these are some emerging technologies and it is need of the hour to know about these technologies, because the designers and the u x designers and the developers and moving into which direction we need to know, and we need to apply our visual design skills accordingly.

So, after discussing all the varied advancement in a techno in technology of digital media, in the next module onwards we will discuss; what are the different methodology. We will start discussing the methodology in our first we will discuss the generic design methodology in visual design domain, and then as it is a very with different domains are there within our visual communication for example, animation, game and then we have

web application and then we also have the graphic design, there very different the methodology of designing in each and every domain is also different.

So, after discussing the general design methodology we will discuss in each and every different segment and discuss their methodology. And we will also talk about the eye tracking system and how you can incorporate uses feedback into your methodology part.

Thank you.