Remote Sensing and GIS for Rural Development
Professor Pennan Chinnasamy
Centre for Technology Alternatives for Rural Areas
Indian Institute of Technology, Bombay
Week 7
Lecture 02
Google Earth Pro introduction for extracting data

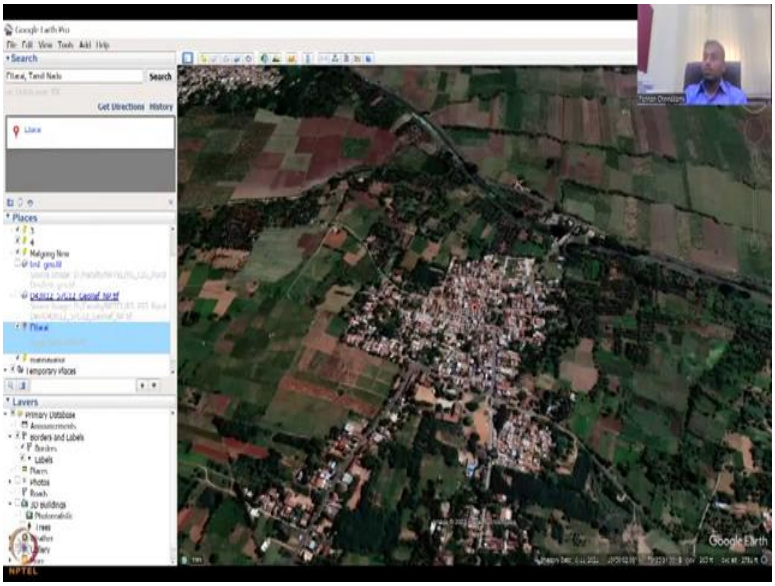
Hello everyone. Welcome to the NPTEL course on Remote Sensing and GIS for Rural Development. This is week 7, lecture 02. In the first two lectures of this week we are looking at Google Earth Pro, an introduction, so that you can use it for extracting data points and ground control points, GCPs for your georeferencing.

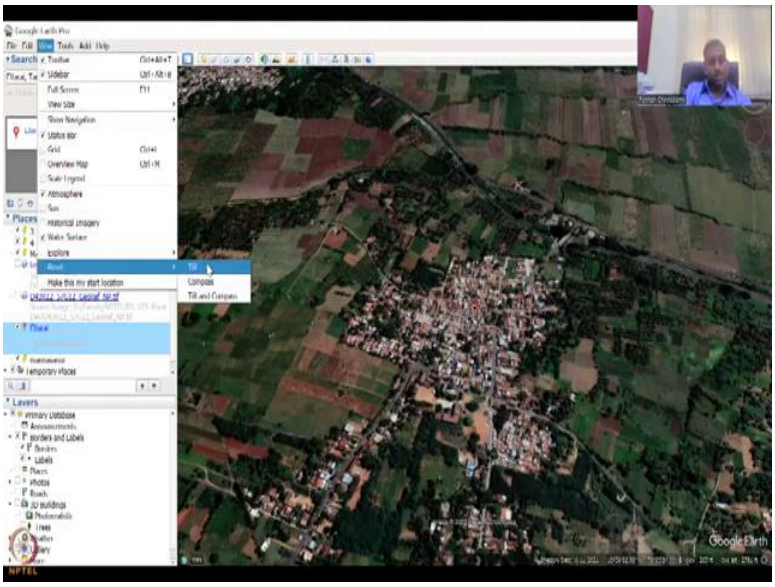
In the last class we looked at the left side of Google Earth panel, wherein we added some layers, removed some default layers which can consume memory and internet, and then we looked at how zooming in, zooming out can change the date of the imagery. Now would be looking more focusly on the top of the toolbar, which gives us more access and power for analysis.

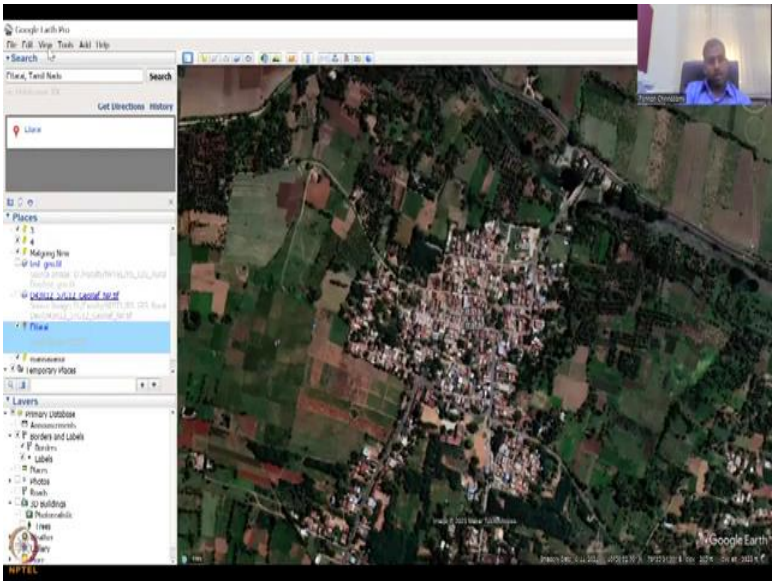
(Refer Slide Time: 1:34)

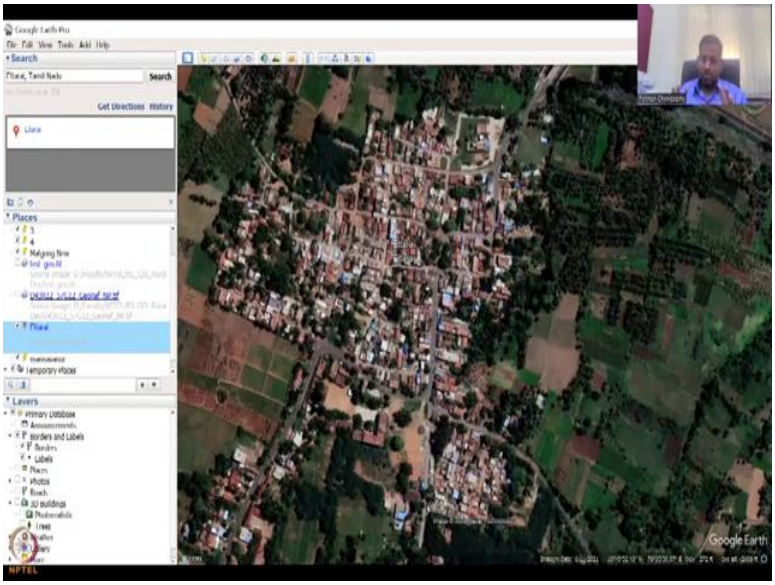
I hope you had time to download the version and install it. If there is any questions on the installation and could not be done, please, put it in the forum. However, it is very simple to do and a lot of support is there from Google itself. So now we will go back to the tools in Google Earth Pro. Let me share my screen. I will reopen it again, my Google Earth Pro. Yes, it is open now.

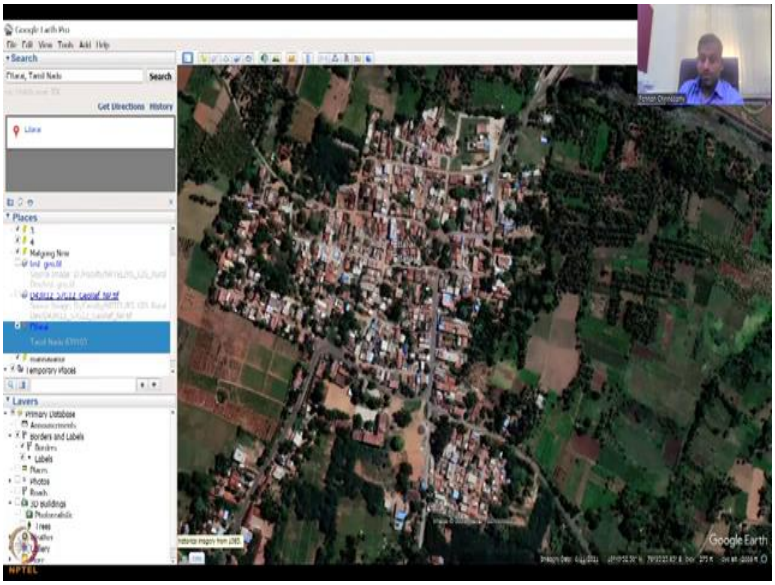
(Refer Slide Time: 2:34)









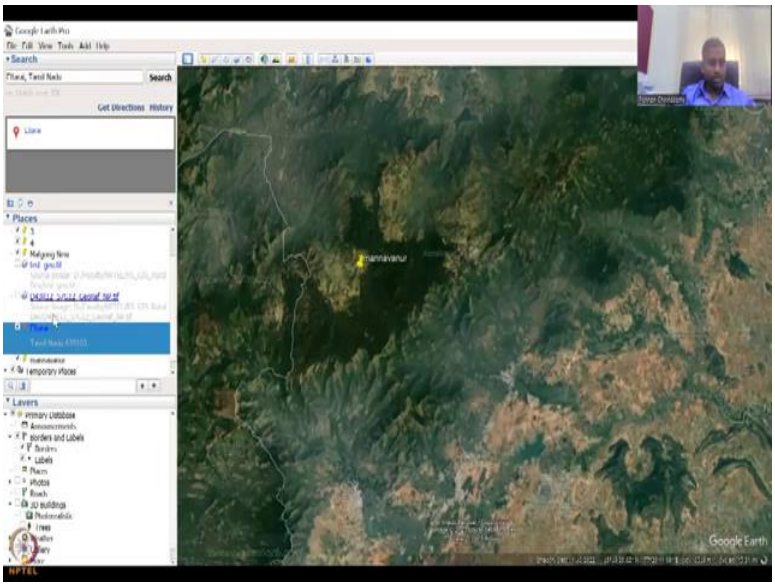


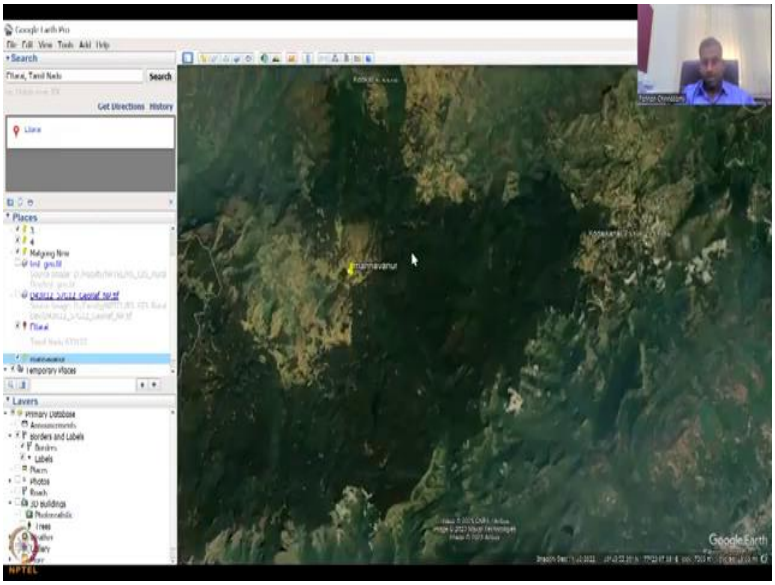
Now you could see that the Google Earth Pro screen has come up and we start from where we stopped last time, Ettarai the village. We will go to view, reset, tilt. Let us start from the top now, so left hand side I hope we covered most of it, most of the basics have been covered and the bottom part. Well, it says Google Earth, the trademark and then this circle thing you see is saying that now it is loaded.

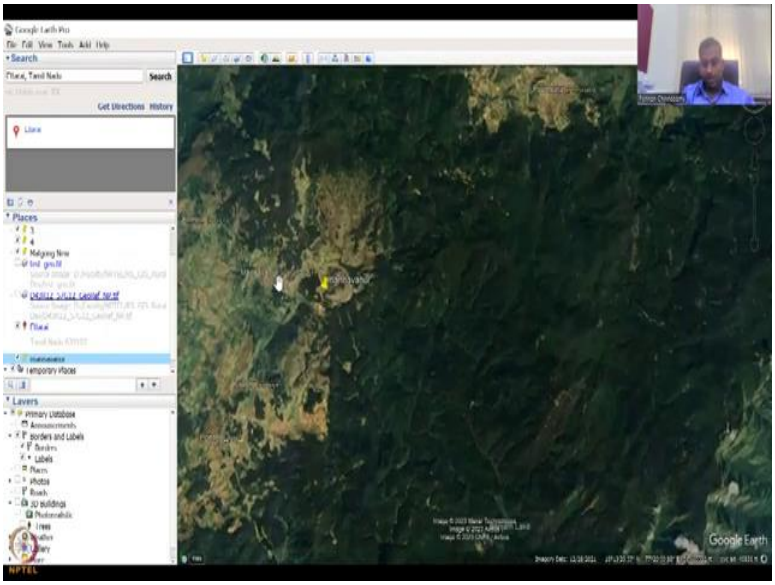
But when you zoom in and zoom out, now you could see it change, which means it is updating the layers, so you have to wait for it. So it is kind of like buffering and then it tells you is, is it still getting the data or where is it located at. Imagery date is given and then you can also click add, it says like from where the data is available for this particular location, historical imagery from 1985, which is pretty good.

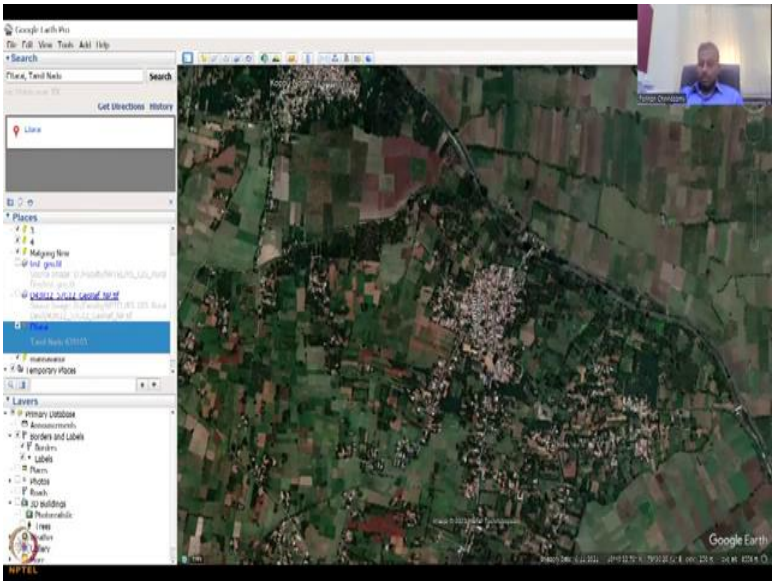
And then you have your imagery date, this current imagery, what is the date and then you have the lat longs and then the elevation profile. So you could see that the elevation does not change much across the village.

(Refer Slide Time: 3:56)



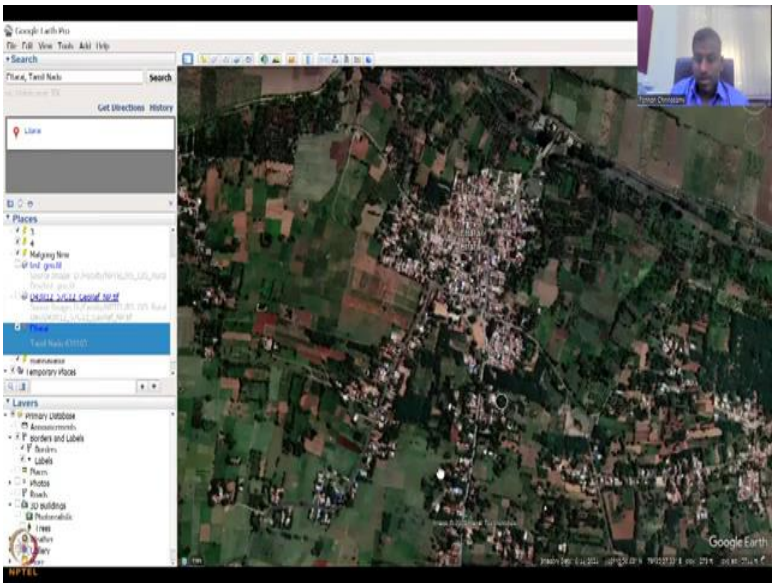


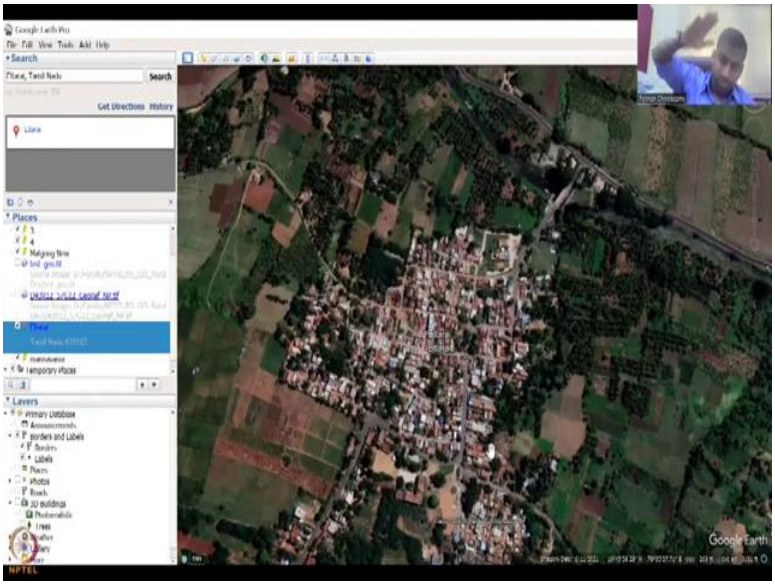


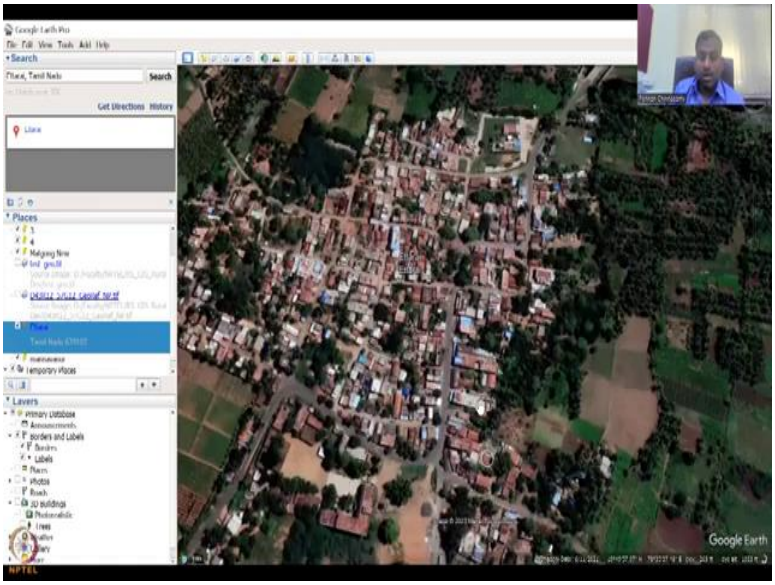


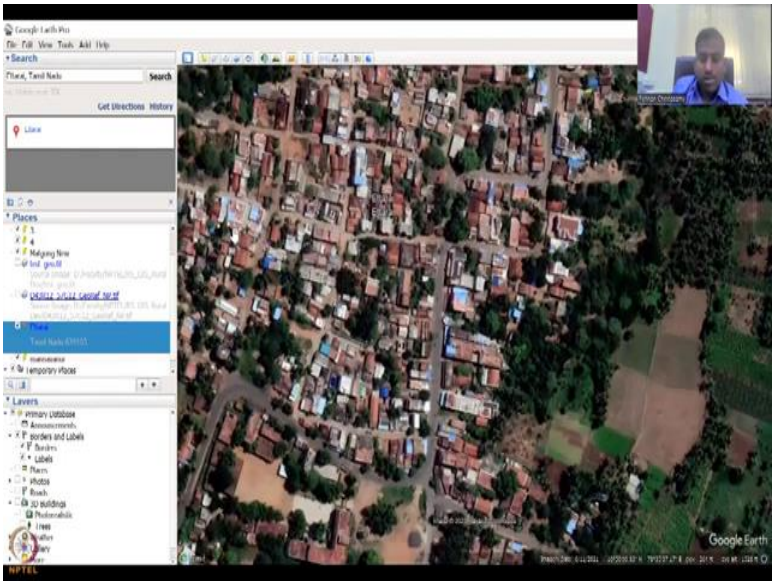
But if you go to Western Ghats, for example, yes, we have this Mannavanur, you could see how the elevation changes drastically. So you have 6000 feet and then here it is 5000 feet and then it can go up to 6500. So there is a big thousand feet down, whereas in Ettarai it was only 216 and it did not change much, maybe 1 feet, 2 feet, up down, etcetera.

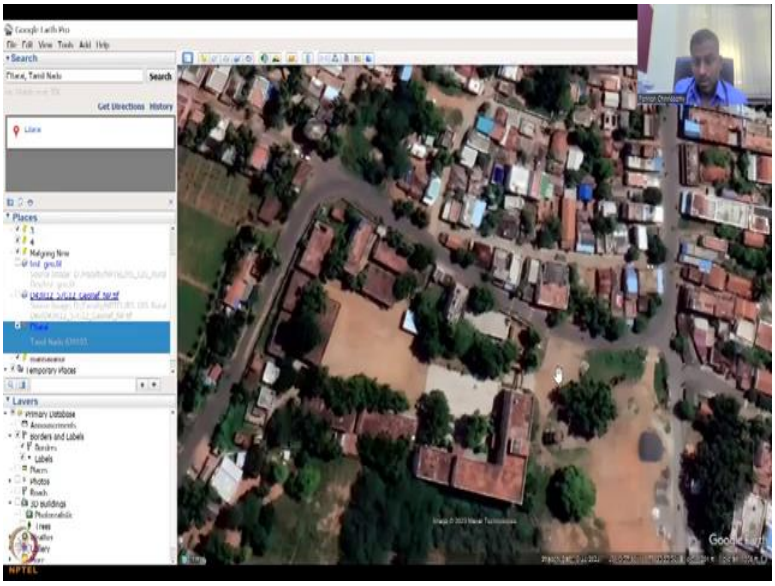
(Refer Slide Time: 4:52)

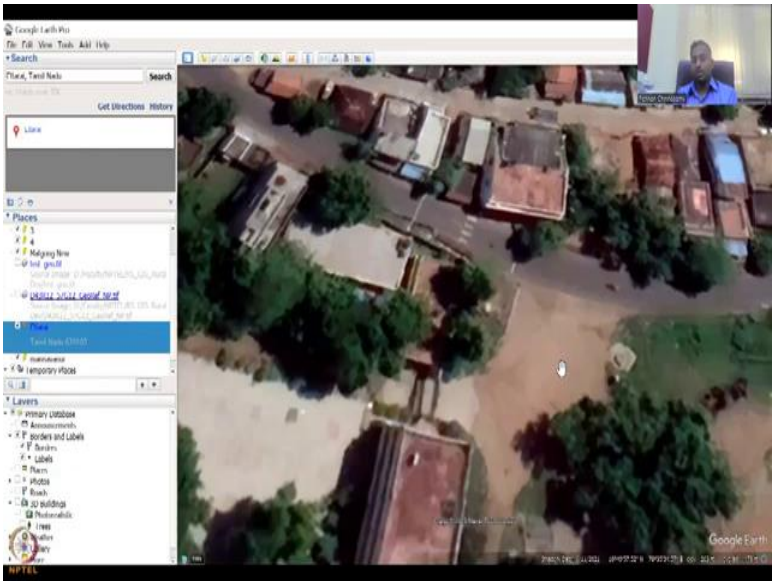


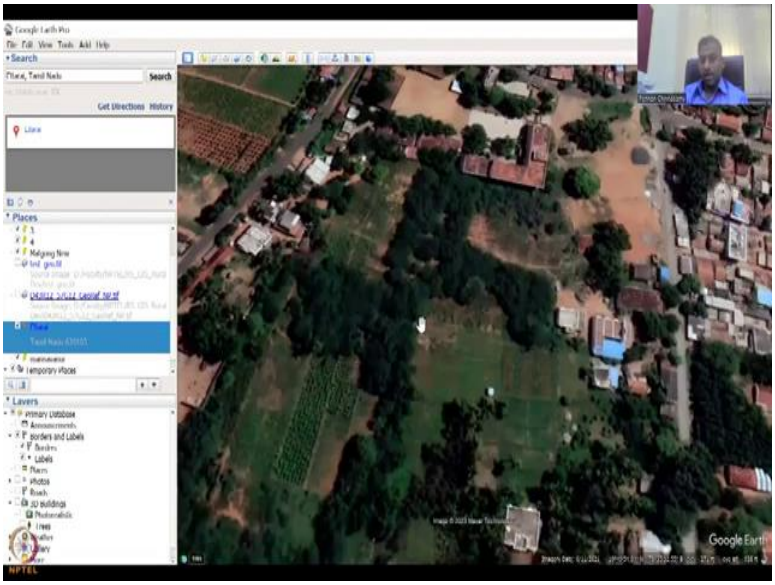



Search
Get Directions
History
Places
Temporary Places
Layers
Google Earth


Search
Get Directions
History
Places
Temporary Places
Layers
Google Earth


Search
Get Directions
History
Places
Temporary Places
Layers





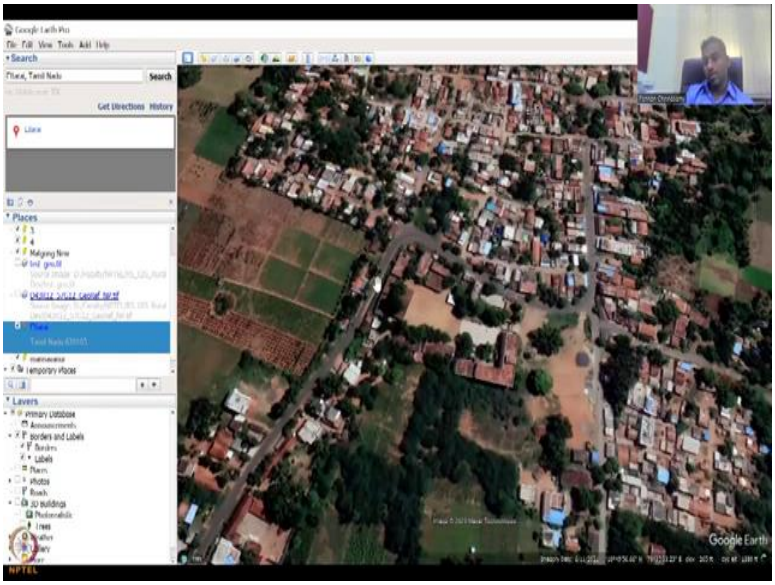
So the bottom part, again it is now, you can see this downloading the data, now it is installed and then the last one is i altitude. So from at what altitude am I looking at the image? So if you are flying on a flight, you would expect the same vision at 9000 feet or 8500 feet as experiential, so when you fly they will say 30,000 feet we are flying, 10,000 feet we are flying, so that is the altitude from ground 0.

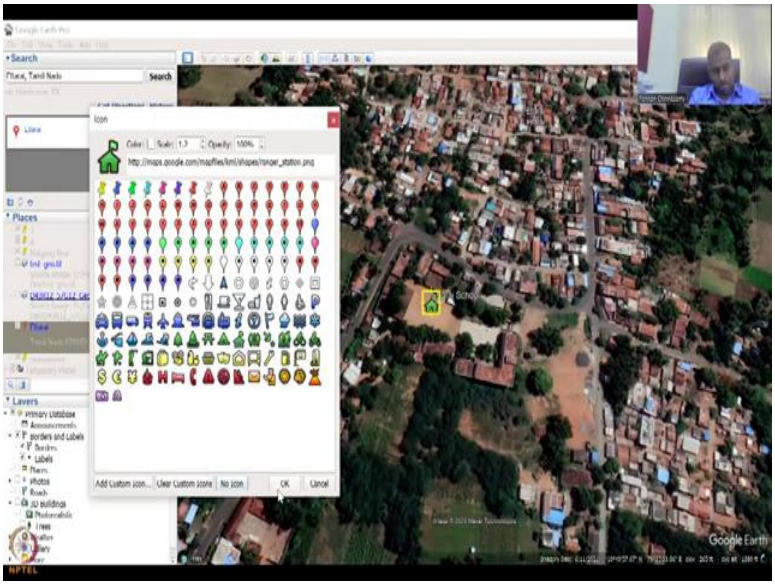
And, so that, from, if 9000 feet if you look at down and on this Ettarai village, you will see this image, the size of the parcels and imagery, the pixels and the image data changes drastically, when you go up and down. So for example, when you go come down and view you will see bigger particles and that is what you can see here now. So it was initially 8500, I zoomed in, now it is 3000 feet.

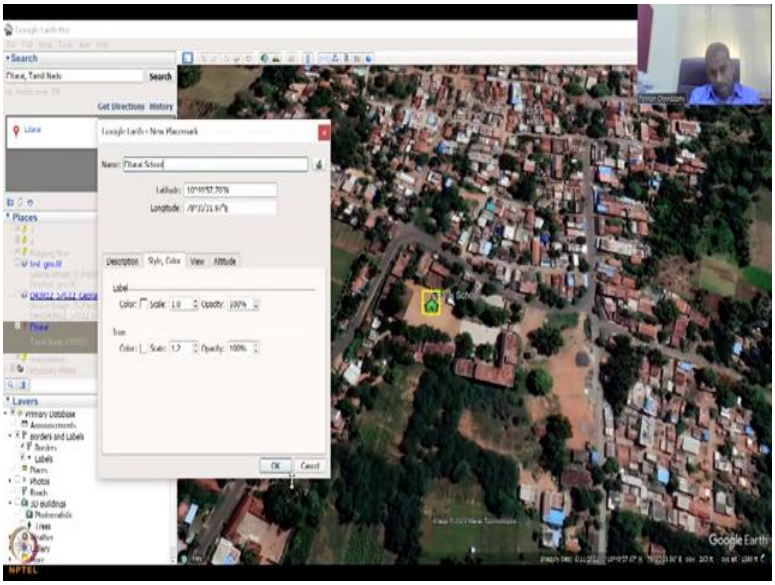
I can zoom in more, you have to again, this thing I do not understand, but you have to tilt a lot, so bear with me, and then you can zoom in, zoom in, zoom in, you can see it is 958 feet and then 500 feet and then you can zoom in as much. So this is pretty interesting in terms of where you have the location and data available. And it gives you tremendous knowledge about what is happening in a course of time.

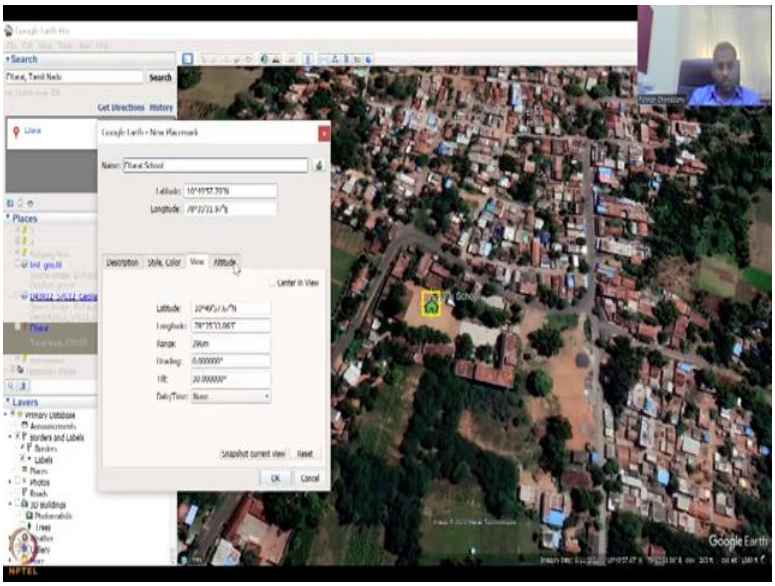
So let us say this is the village and this is a lot of houses being built, urbanization we can call, but it is not urban urban, but building, concrete roads, cement roads, etcetera. What we will look at it is in this section the attitude and how it changes, and then how you can add points. So these are points that you could add on the layer and then export it to QGIS as a shapefile or a KMZ or KMZ.

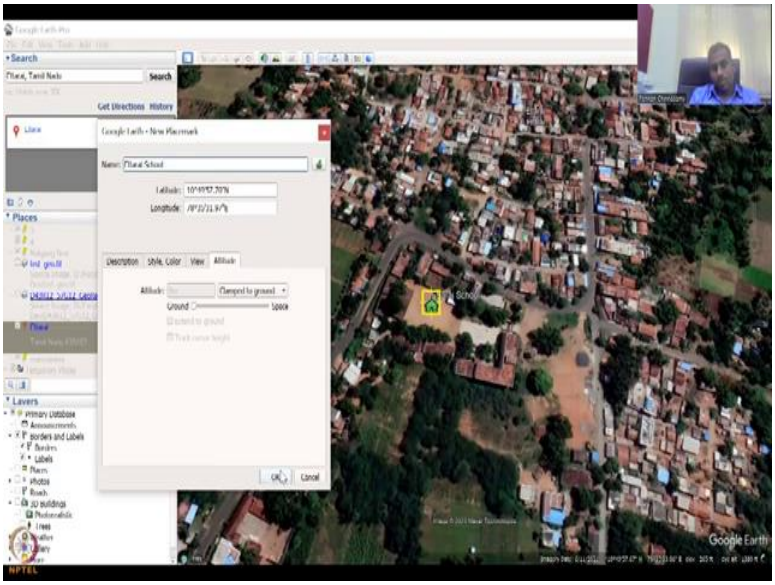
(Refer Slide Time: 7:10)

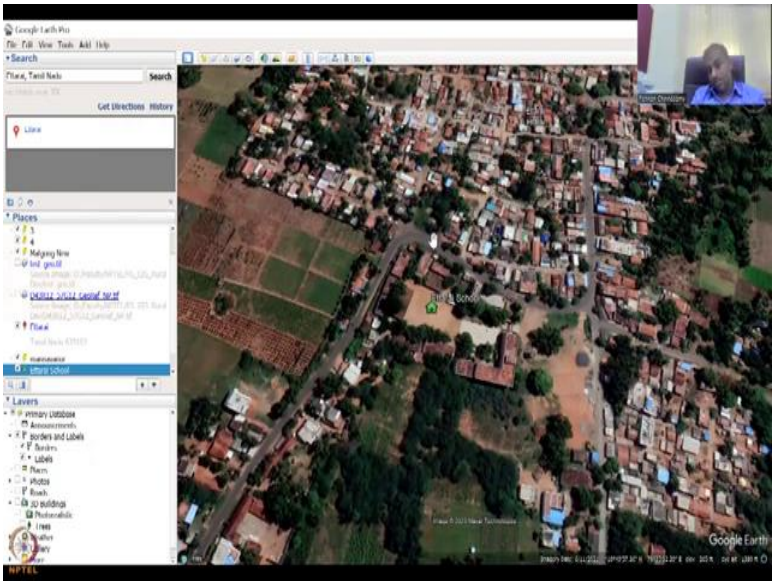



Search
Icon
Places
Layers
Google Earth


Search
Get Directions
History
Google Earth - New Placemark
Name:
Description
Style, Color
View
Altitude
OK
Cancel
Places
Layers
Google Earth


Search
Get Directions
History
Google Earth - New Placemark
Name:
Description
Style, Color
View
Altitude
Center in View
Latitude:
Range:
Heading:
Tilt:
Snapshot current view
Reset
OK
Cancel
Places
Layers
Google Earth



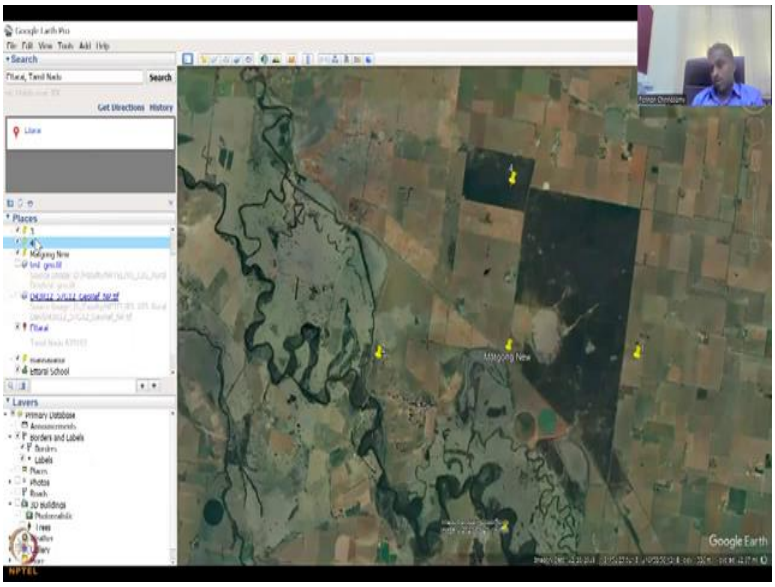


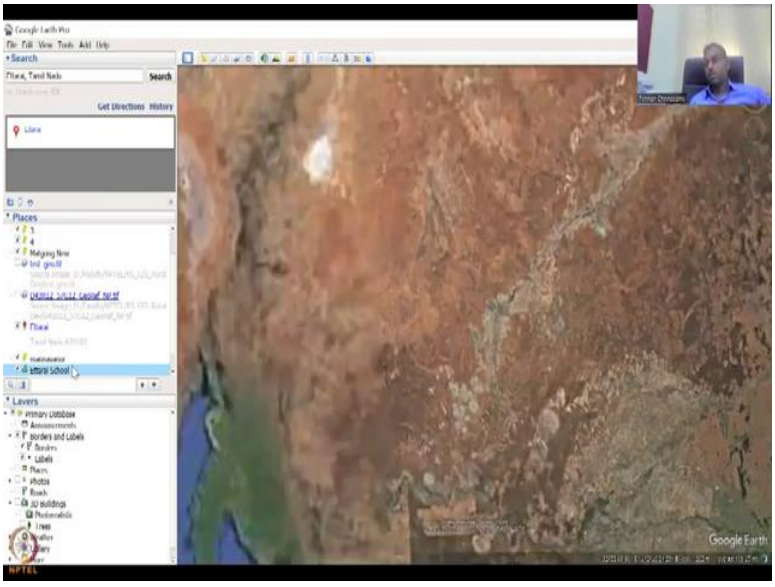
The KML and KMZ files are kind of default file types from Google Earth key whole map L and then MZ, so you can have, for example, I am going to mark the school and then this is a school location, so I could say that, I can take a point. When you click the point, it will just randomly place it in the centre of the screen. Initially I was also very, difficult finding it to change the location.

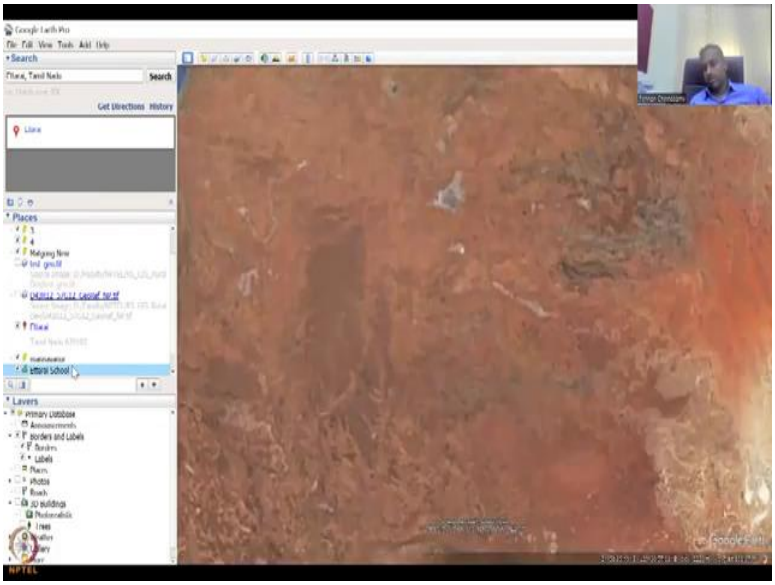
But it was as easy as, so if you can move this box, you can move this box also. So let us say this is Ettarai School. So I am going to type Ett, then you have to click here, Ettari school, the lat long is given, style color, you could choose for the label and the icon, the icon is this one, it is already taken as yellow, which is okay and you could also select different types.

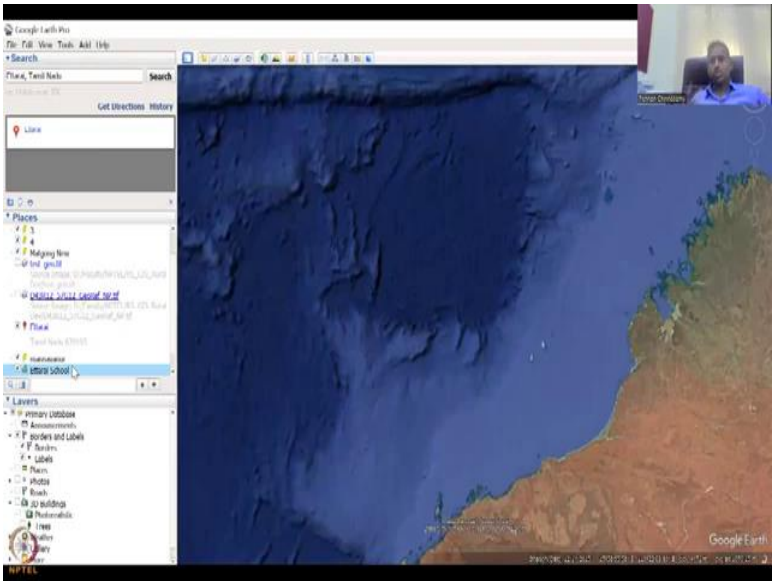
For example, this could be a school, you can import your own styles, add custom icon which is your images that you can take, like a water droplet I have used in the past, but let me do this school here. And when I say okay and I say color, label size, so Ettarai school label size is given, view is where do you need to view it, centre view or altitude, time to the ground is a kind of advanced, do not need to push it in. So now you can see that the places has been stored in my places.

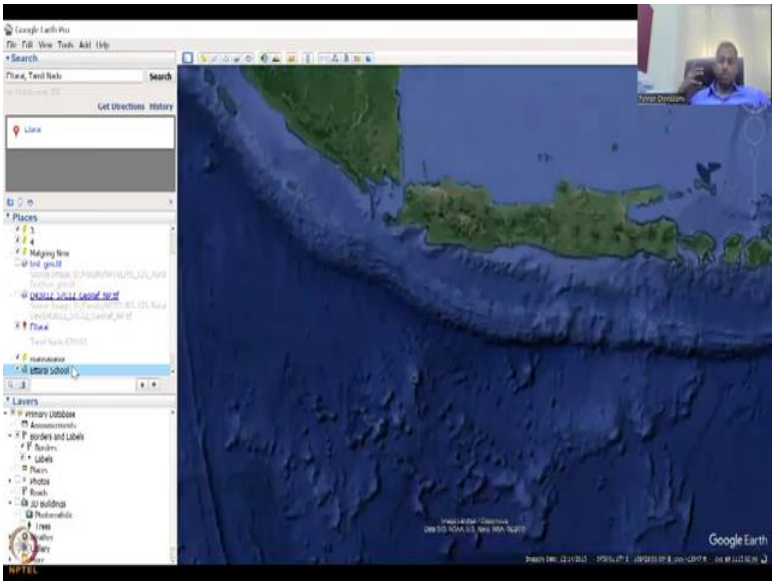
(Refer Slide Time: 8:57)

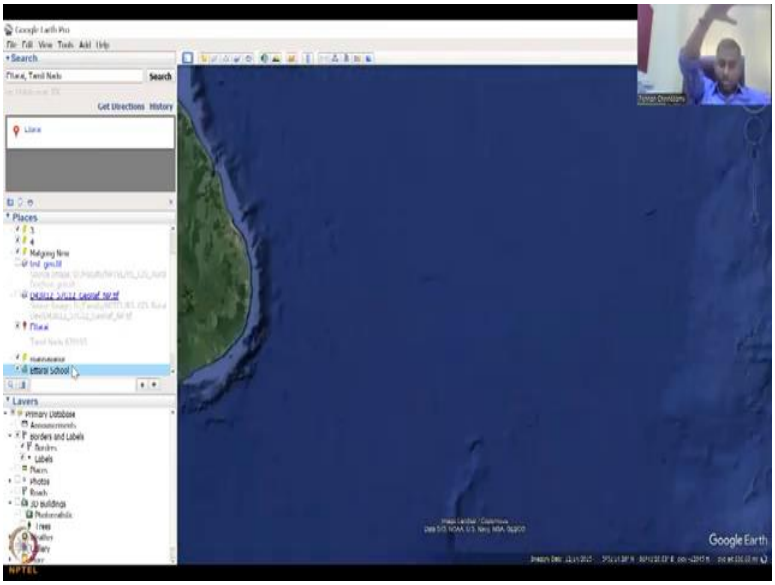


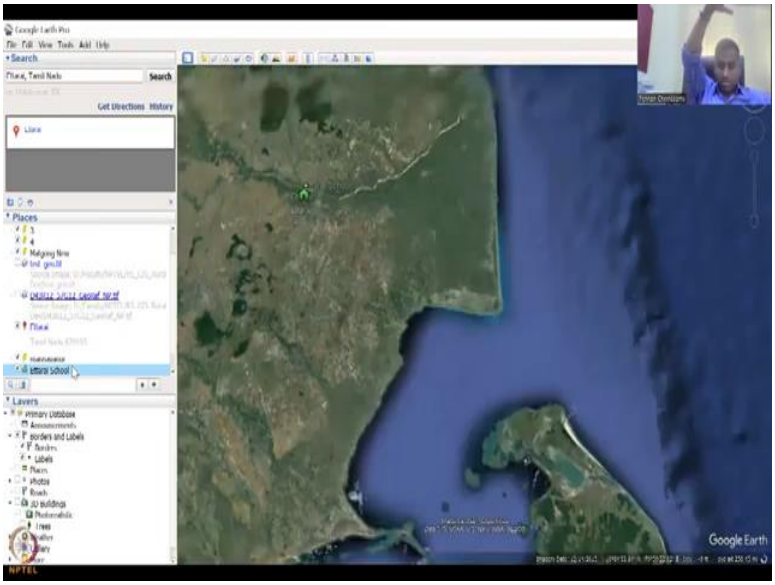


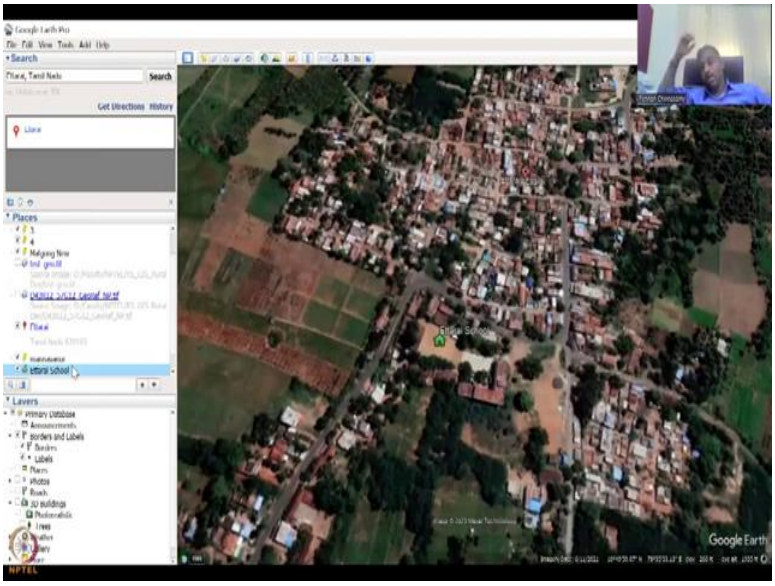

Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

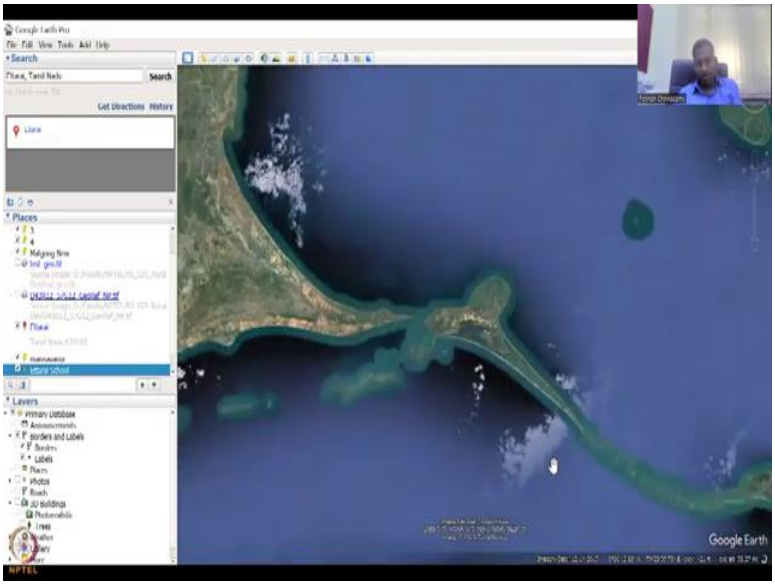

Google Earth
NPTEL

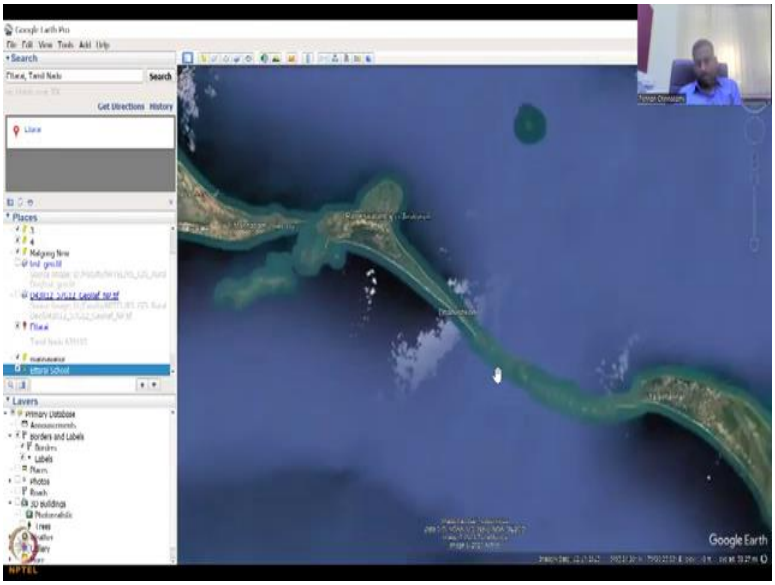
So for example, I am here, I am just going to a location in out of the world in Australia, so I have four location points, I have clicked, it comes to this Murray Darling Basin, but now I want to go back to Ettarai or some, but each time zooming in zooming out instead of that you can have these points, so the points can directly take you to, just double click, it zooms out, it goes to that location flies in and zooms in.

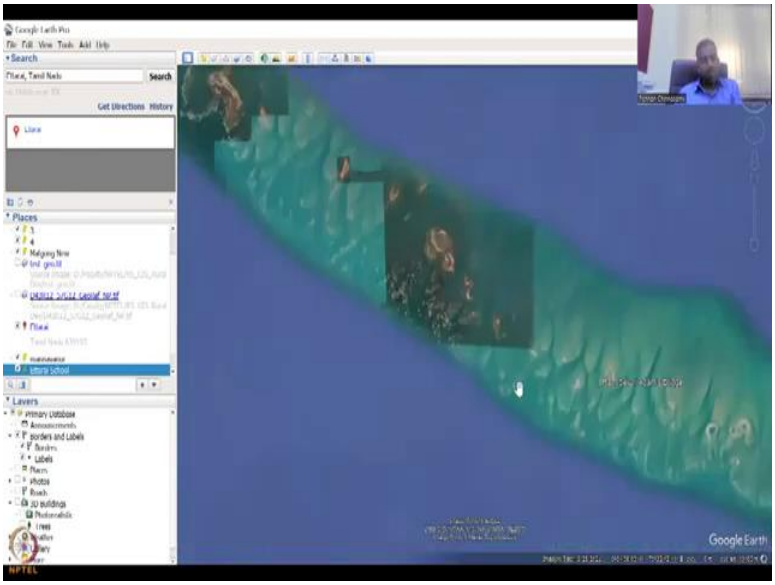
The beauty here is it looks as if you are flying, because the visualization is done like that. It is not like just cut and then you enter in Ettarai, so it zooms out like take off and then it flies you can see through how it flies and then it goes in. The other beauty of this is it is not only in the land but also the data is available on the oceans and seas.

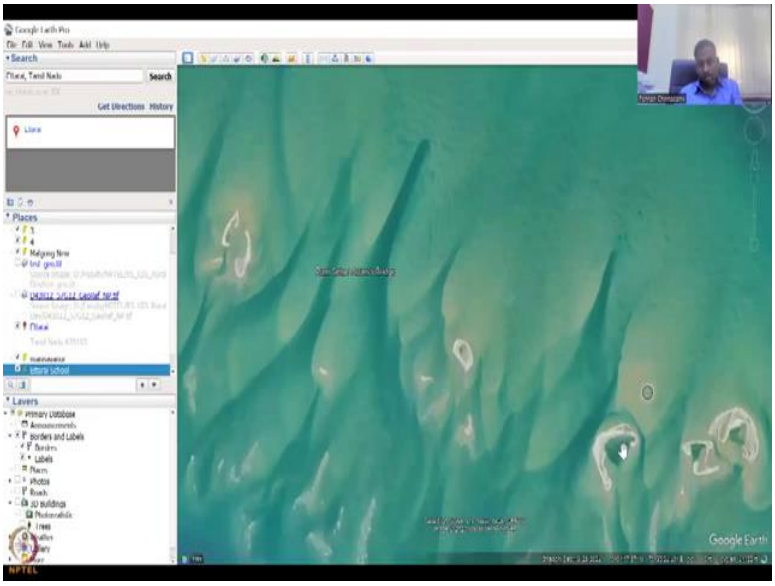
So all the water bodies are being mapped, not only the inland water bodies, but all the water bodies. Because again the satellite is covering the global part, what it can do is when you go into the oceans and seas the best data for that part will come up.

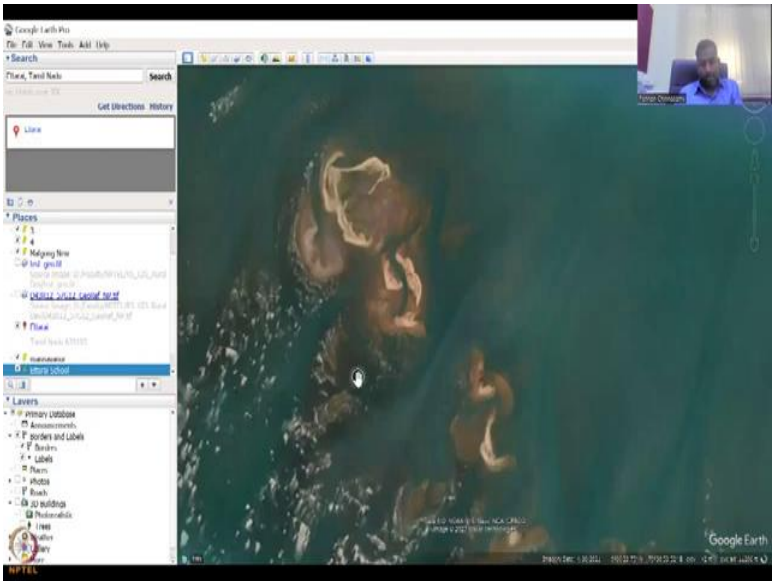
(Refer Slide Time: 10:09)

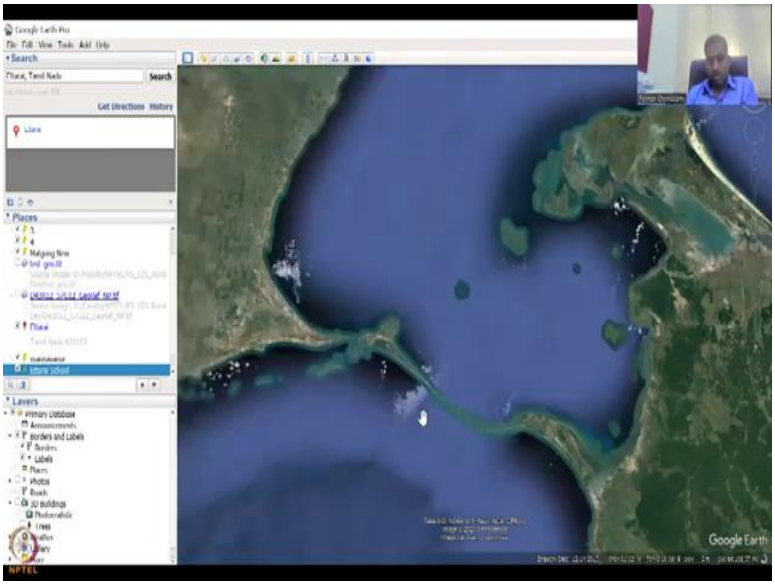



Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

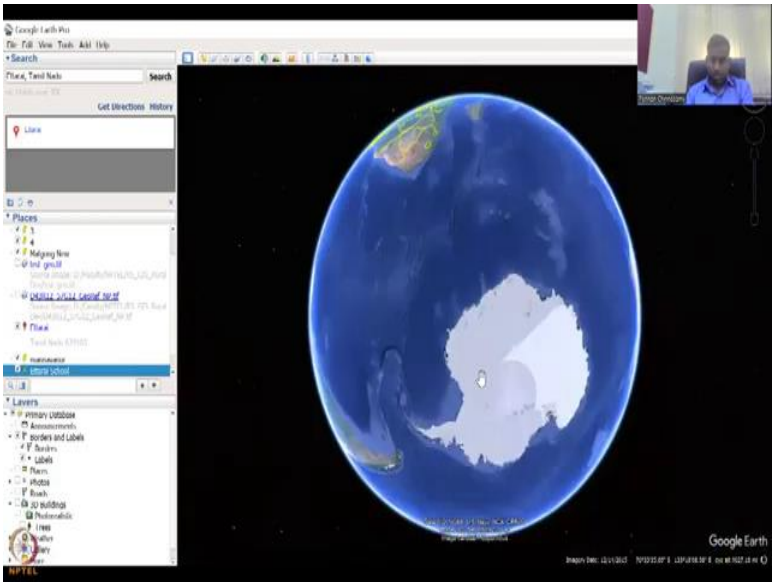


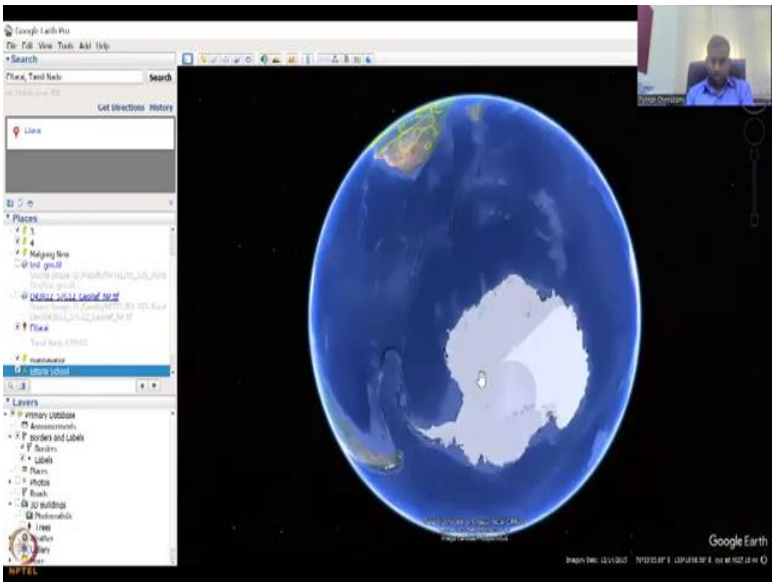


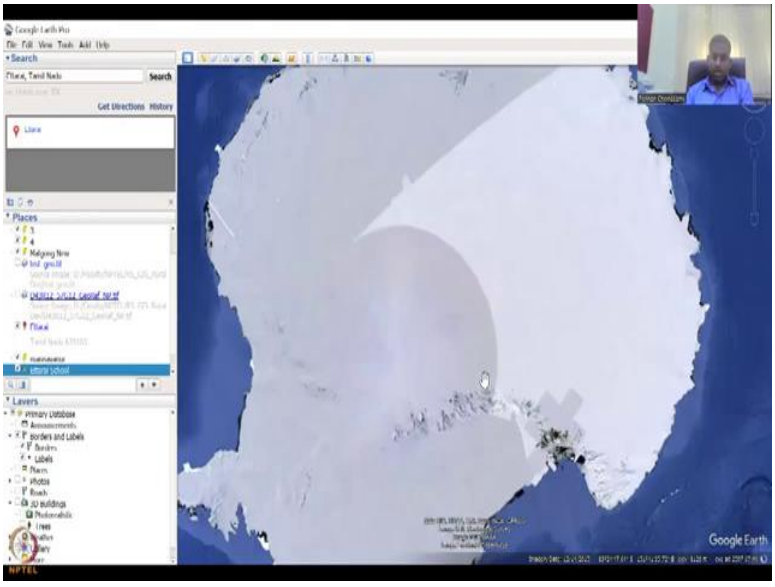
For example this is the coral reef between India and Sri Lanka. And there is a lot of damage to this because of pollution, a lot of fishing and then activities, global warming also. So Ram Sethu, this is the one and then you could see that how this has been populated over time, some imagery is not as close, you can see that it does not go as much in detail as in this one, and then it is like a bridge they say, because it goes ups and down.

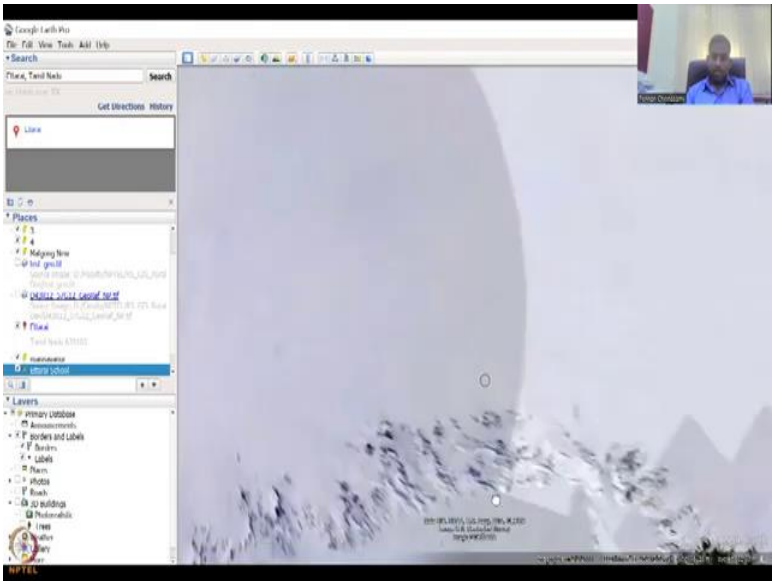
And then there is a sand dune, so people used to get stuck in those when they try to swim across during tension times, but yeah, so this is Dhanushkodi, and then this is the Sri Lankan part, where they were connected initially, kind of if you look at their coral reefs and stuff. So as I said, both in land and in water there is data available. So you will have a full global picture of the planet and you have also the arctic zones.

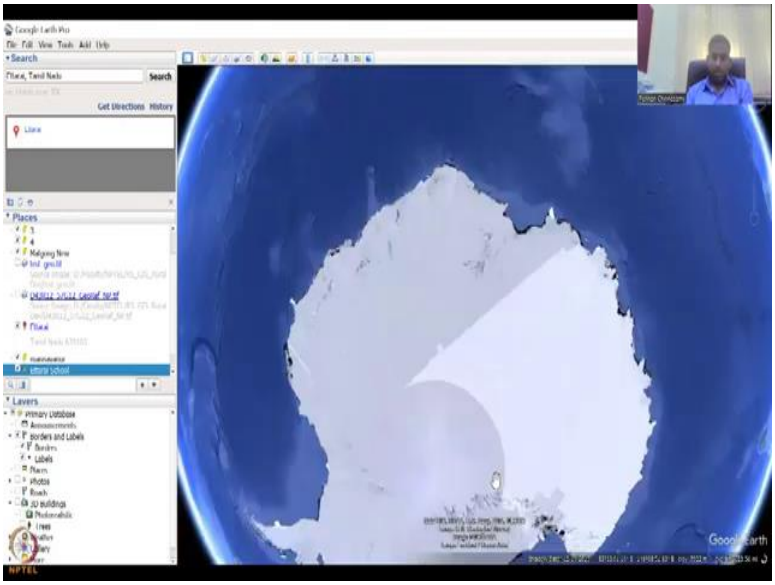
(Refer Slide Time: 11:25)

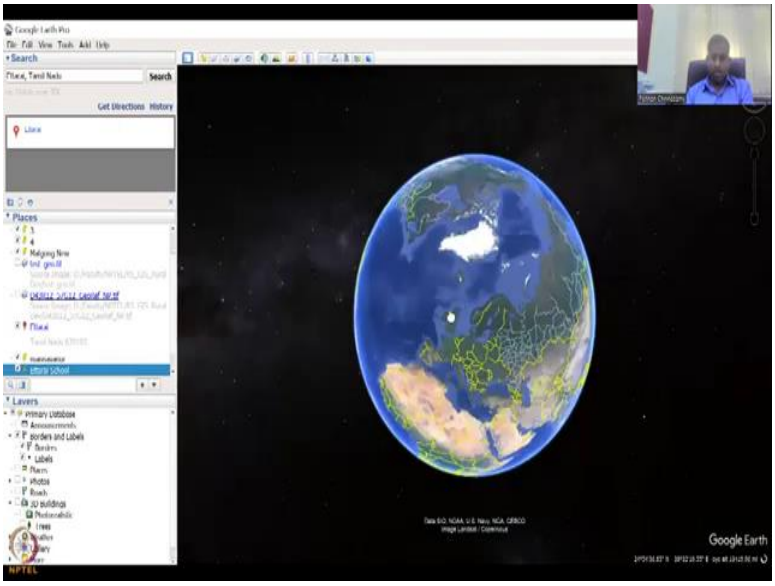


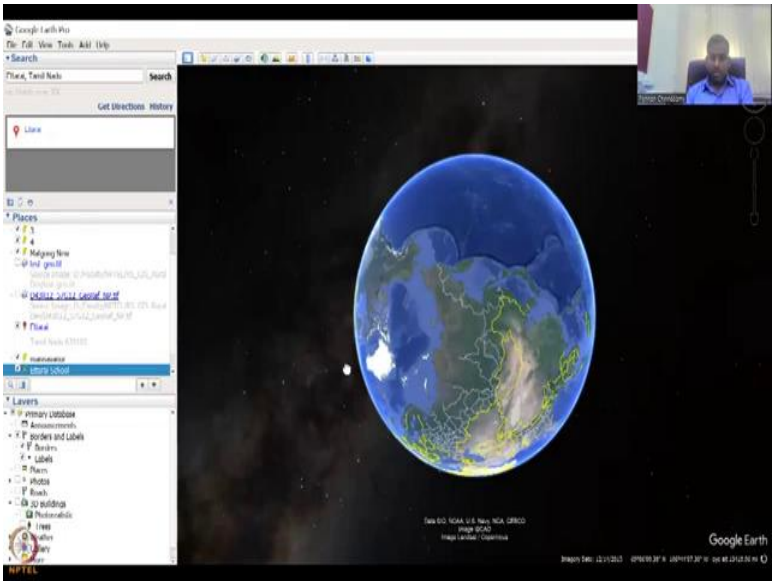


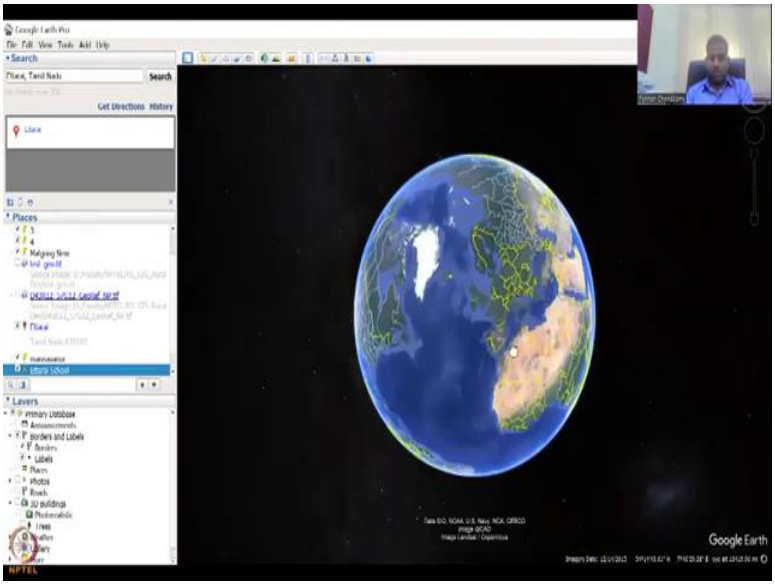


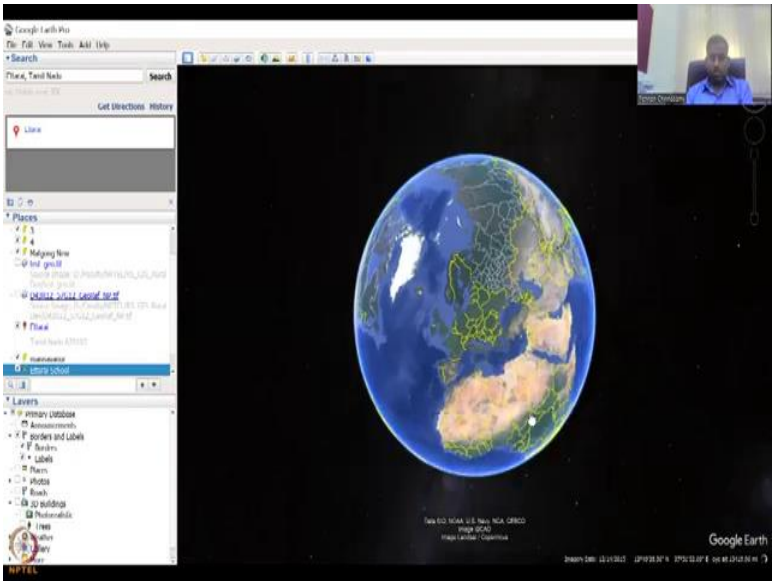


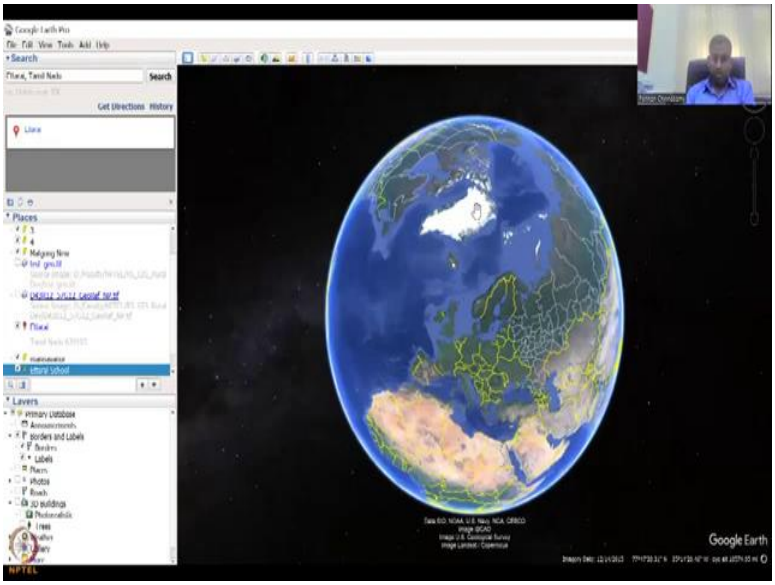

Google Earth

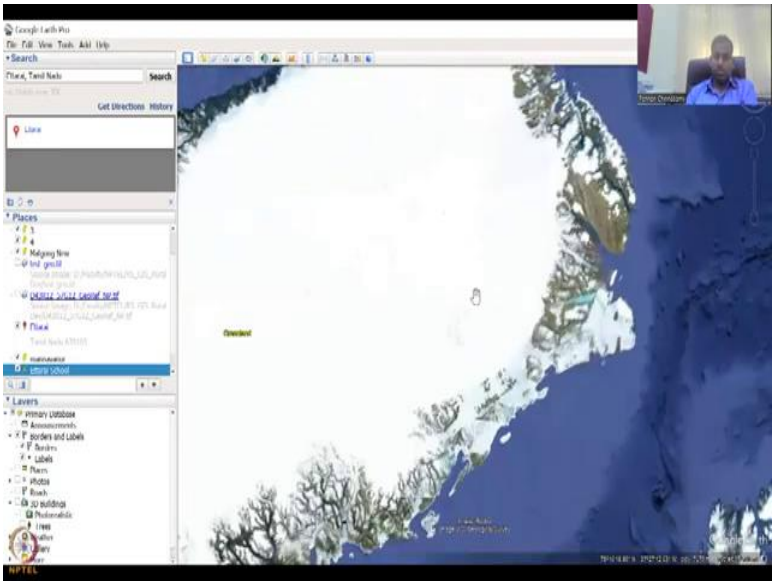

Google Earth


Google Earth
NPTEL


Google Earth
NPTEL

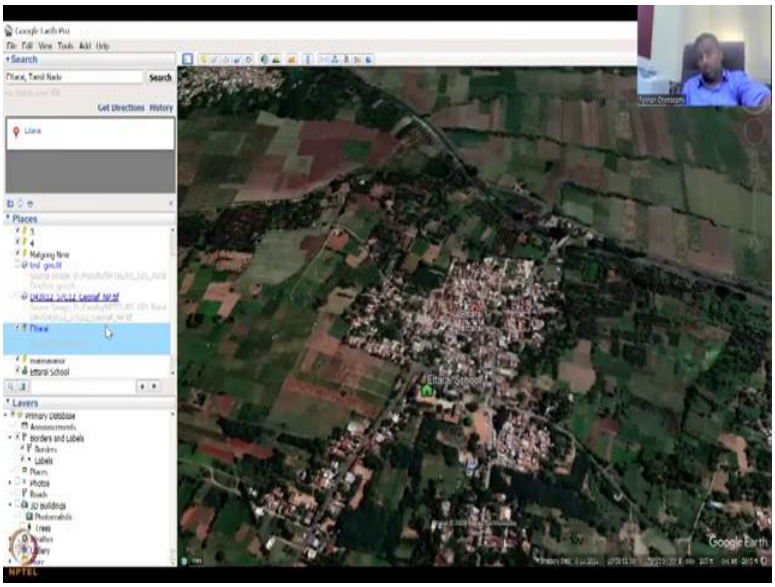

Google Earth
NPTEL

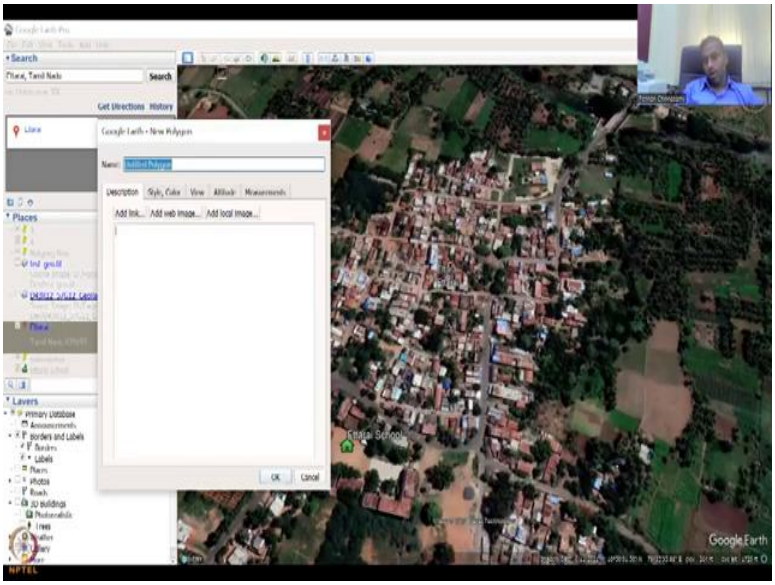


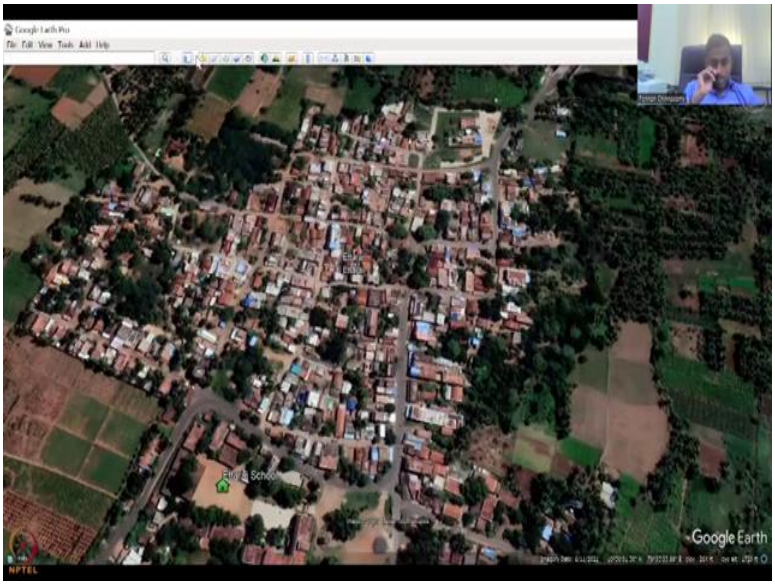


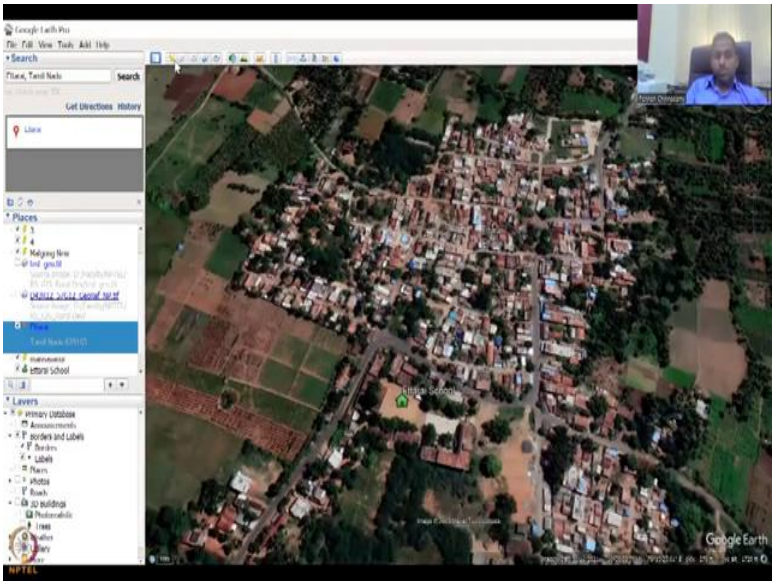
Arctic and Antarctic, so north and south poles are also taken very clearly and you can see like the green land and other aspects are also taken. So if you do too much of spinning and do not know how to re-centre it back, do not worry you can just double click on either of it, it goes to the centre and then you can have more access to the data. So green land is shown, let us go back to the village.

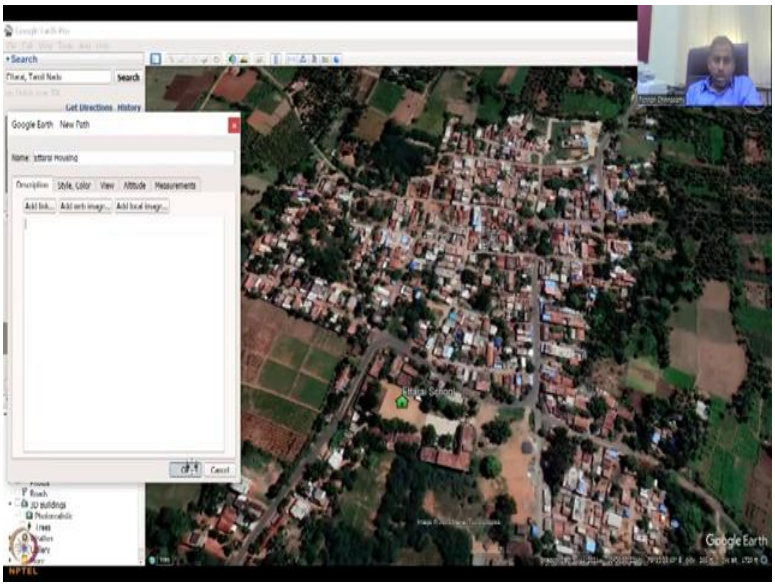
(Refer Slide Time: 12:01)

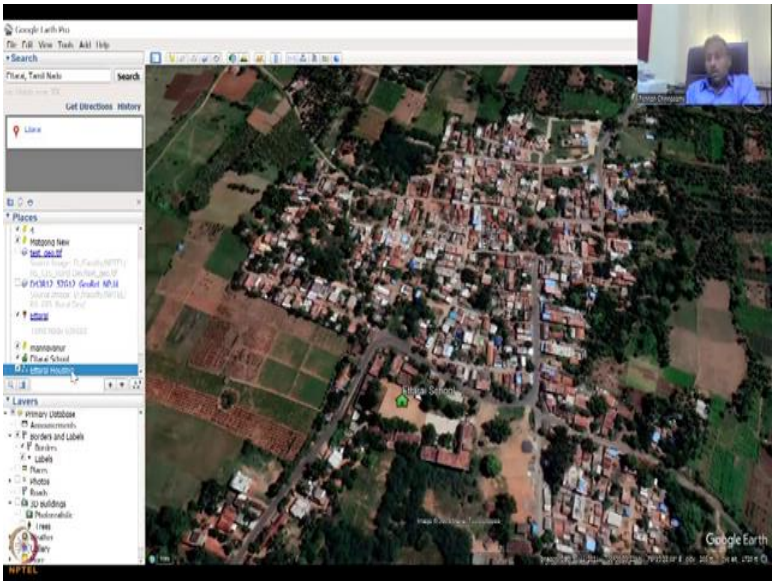


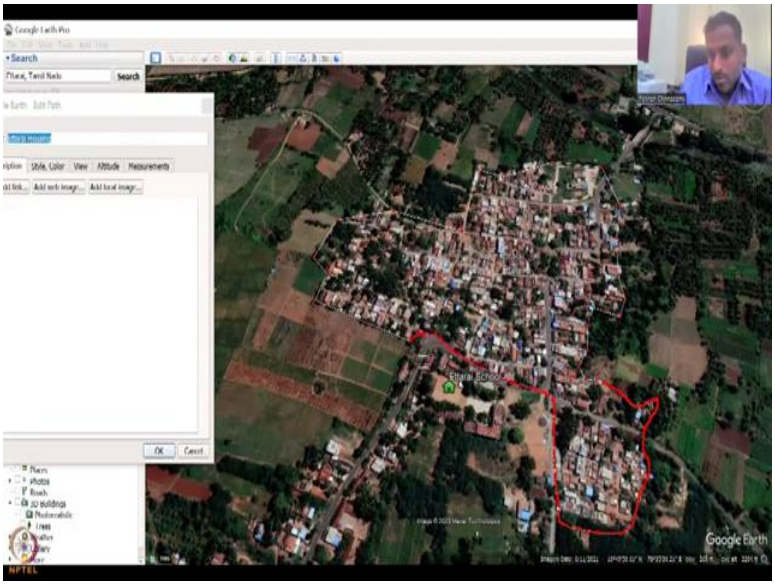


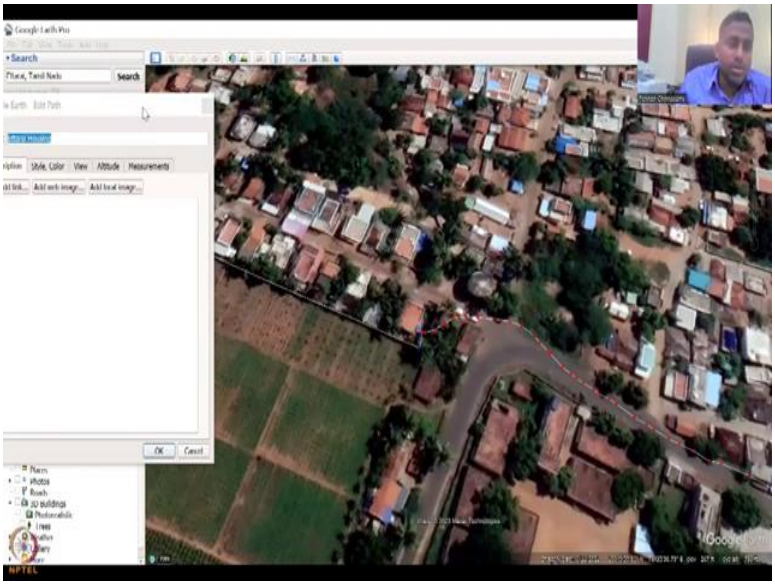

Google Earth Pro
File Edit View Tools Add Help
Google Earth
NPTEL

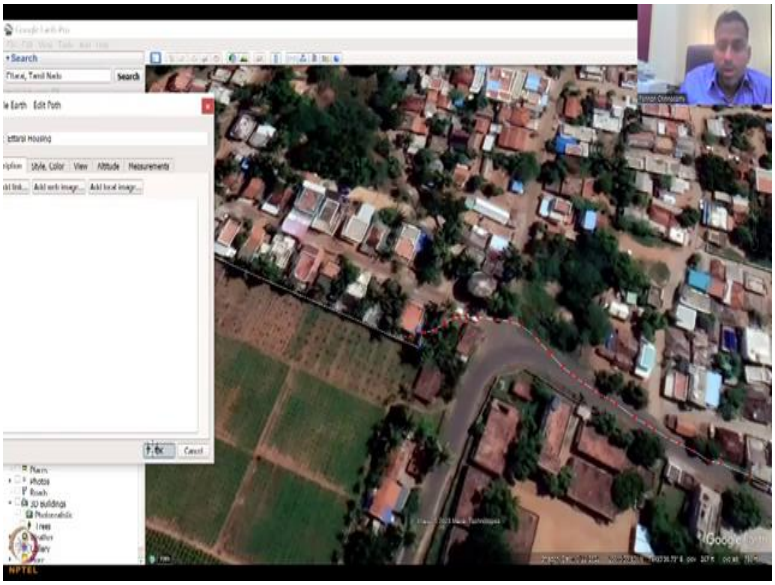

Google Earth Pro
File Edit View Tools Add Help
Search
Get Directions History
Places
Layers
Google Earth
NPTEL

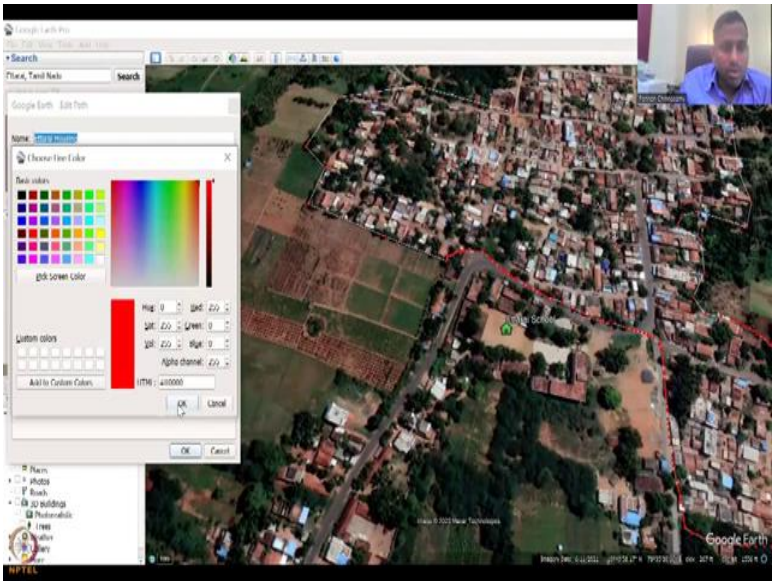

Google Earth Pro
Search
Get Directions History
Google Earth New Path
Name: Ettaral Housing
Description Style, Color View Altitude Measurements
Add link... Add web image... Add local image...
Cancel
Google Earth
NPTEL

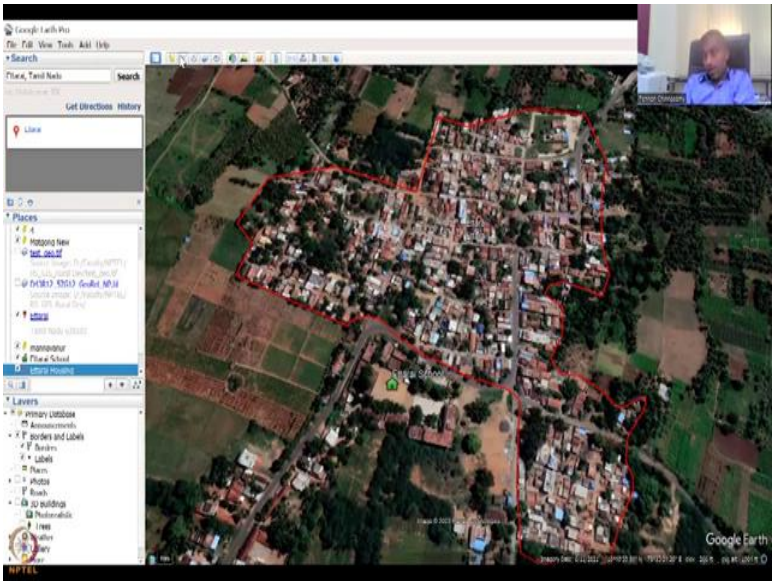

Google Earth
NPTEL

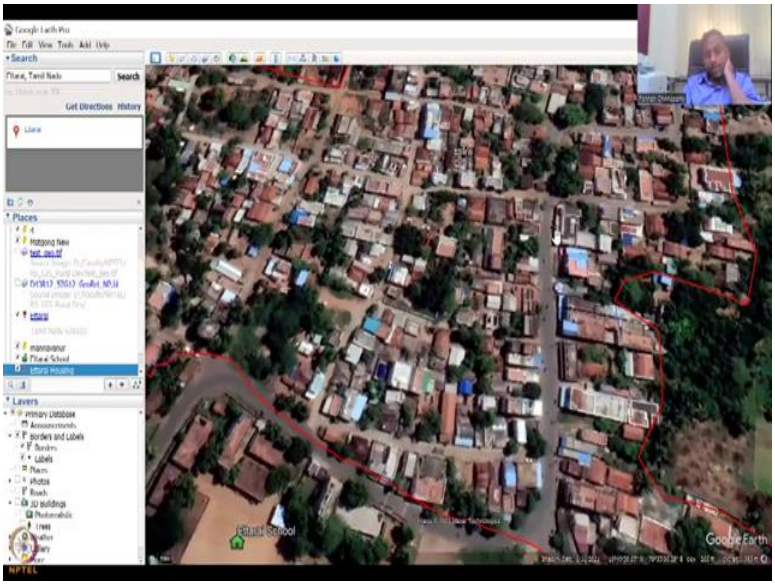

Google Earth
NPTEL


NPTEL









The boundaries are being input by a source, we do not know which source it is, not all metadata is shared, only the satellite imagery is shared for now that is important. And the labels and names as I said the, the sources are not given, however, they are more accurate, more or less accurate. So if we created a point and then let us say we want to create a polygon for Ettarai, the village.

So I am going to create a polygon for the housings points of the village, so what I did is I clicked on the new polygon, so the first template is, if you do not want to see the panels because it is taking some space, real estate, we call them in viewing the image, you can click this or click it back, thumbs up, the first point is we did the point file where we picked a location, let us say the school and then map the school, which is good.

Now we are going to map the urban development or the housing development in the village, which is a polygon, it is an area and then the last will be the roads. So let us say I am going to click the polygon and call it Ettarai Housing, says okay and when we start clicking. Suppose I click without saving it, you can, it is okay, just right click on the shapefile kind of thing on Google Earth, go to properties, it starts to edit by itself.

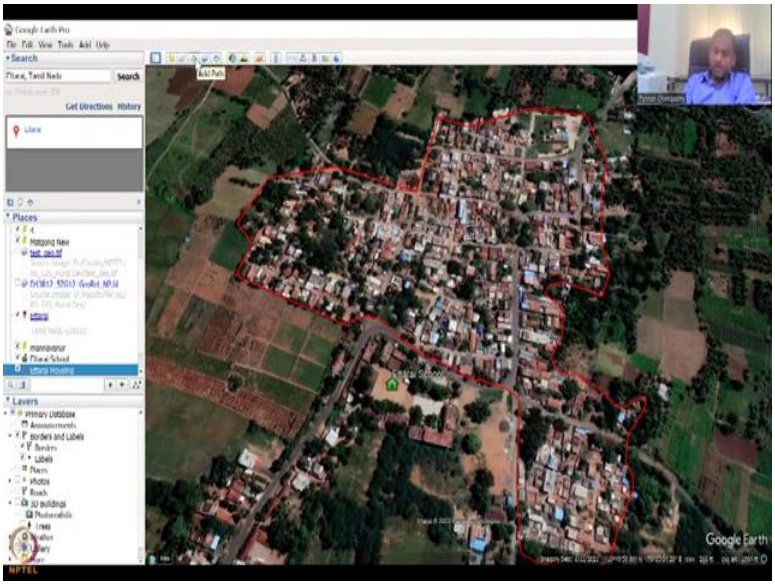
So now as soon as you open it and then say properties, it edits. So now I am going to make the file, I hope you understand that there is a lot of regulations in even land using in villages, because not all land can be converted to urban settlements or any type of settlements. Because they still need to preserve the villages in India.

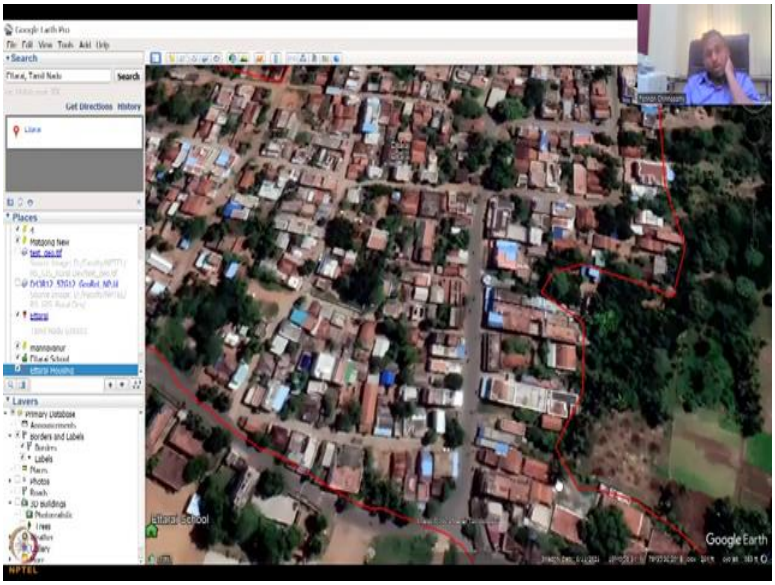
If ever everything gets overdeveloped, then there is a big strain on the food producers and water accessibility, etcetera, etcetera. Suppose you did it wrong, it is okay, just press the backspace, you can see that if I am pressing the backspace it goes out, and then you could also do a, just draw, keep on drawing like this hold on to the left key, the pointer and then click on doing it.

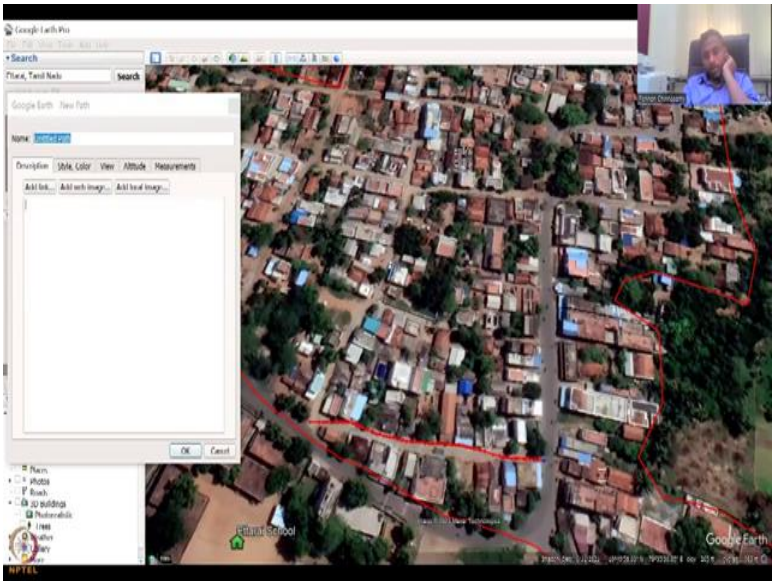
Now we have connected it, the polygon is done, you say okay and see it is closed. As I said if you want to edit it again go to properties, style and color, width is let us say red, okay and then custom is 3, now you see the boundary, much more visible. So this is how you make a polygon out of the location. In certain aspects you also note that the lengths and breadths are same, which you can use for georeferencing.

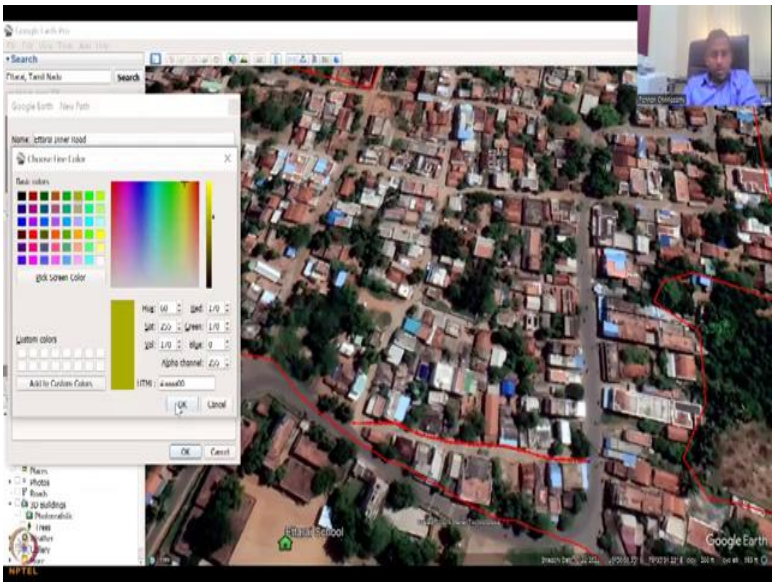
For example, if you know there is a cricket field, let us say, you know that exactly the pitch is 22 yards. Same if you go to a stadium and you know the running track, the running track has same dimensions, you cannot change it, you know it is like 100 meters, 500 meters, etcetera. It is a constant track because it is done for noting the time and speed and accuracy. So those can also be used to understand the distortion of the image if the image has been distorted.

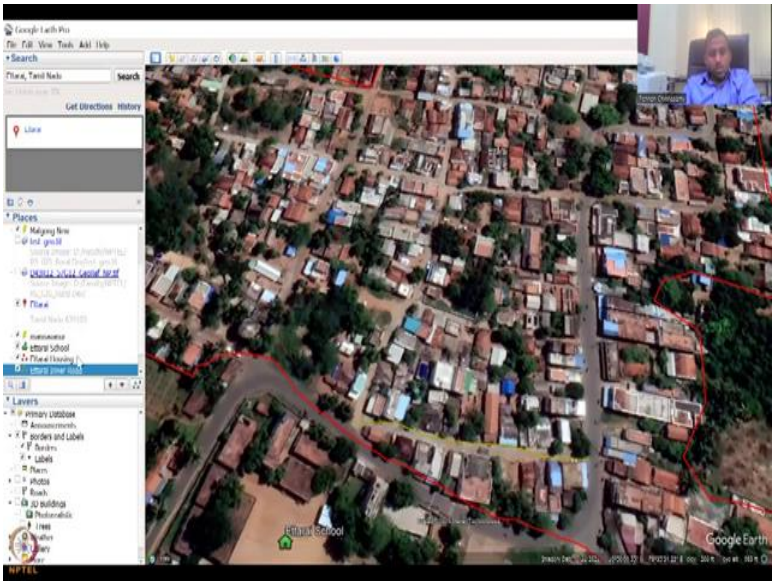
(Refer Slide Time: 16:27)

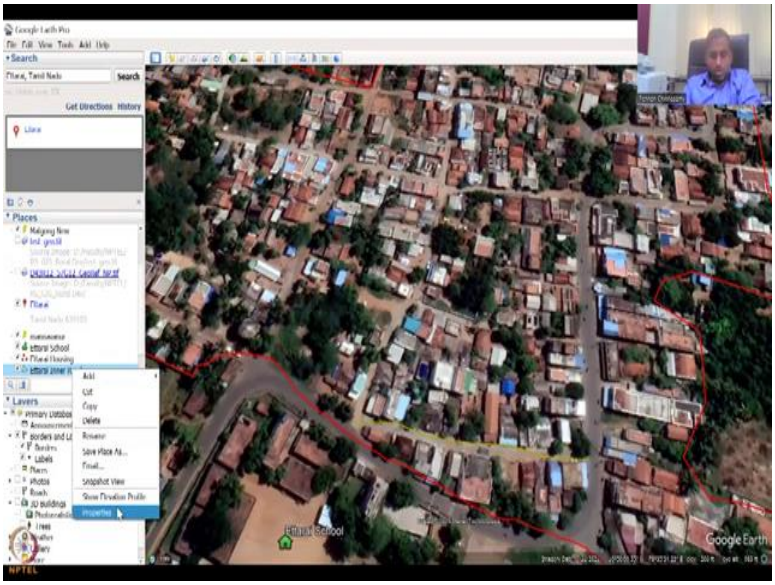


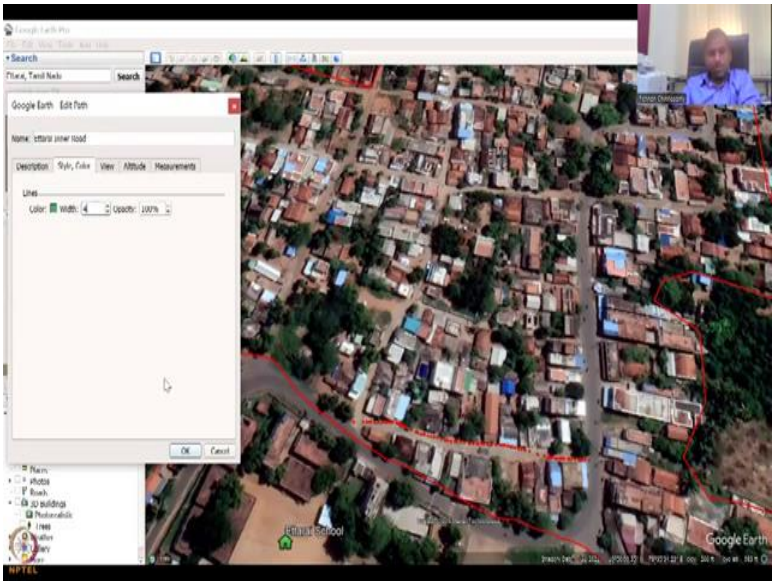

Google Earth Pro
Search
Places
Layers
Google Earth
NPTEL

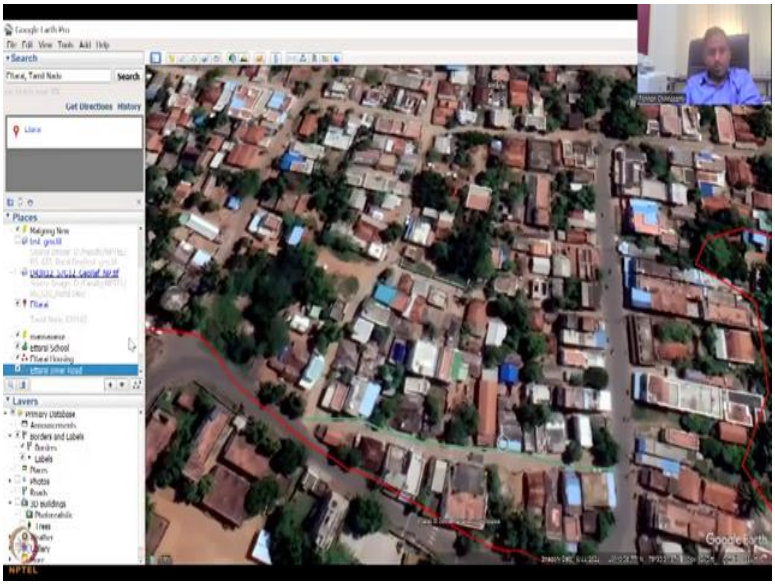

Google Earth Pro
Search
Google Earth - New Path
Name: Untitled Path
Description
Style, Color
View
Altitude
Measurements
OK
Cancel
Google Earth
NPTEL

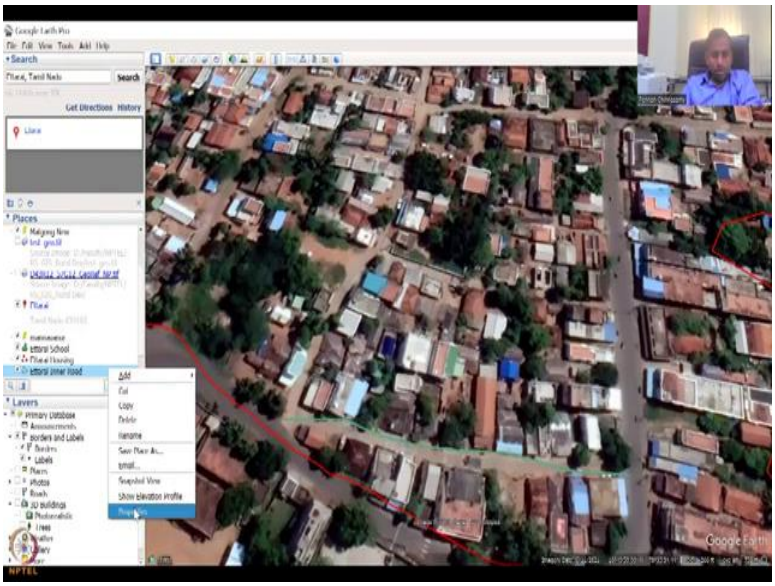

Google Earth Pro
Search
Google Earth - New Path
Name: Lettoral inner road
Choose Line Color
Basic colors
Pick Screen Color
Custom colors
Add to Custom Colors
OK
Cancel
Google Earth
NPTEL

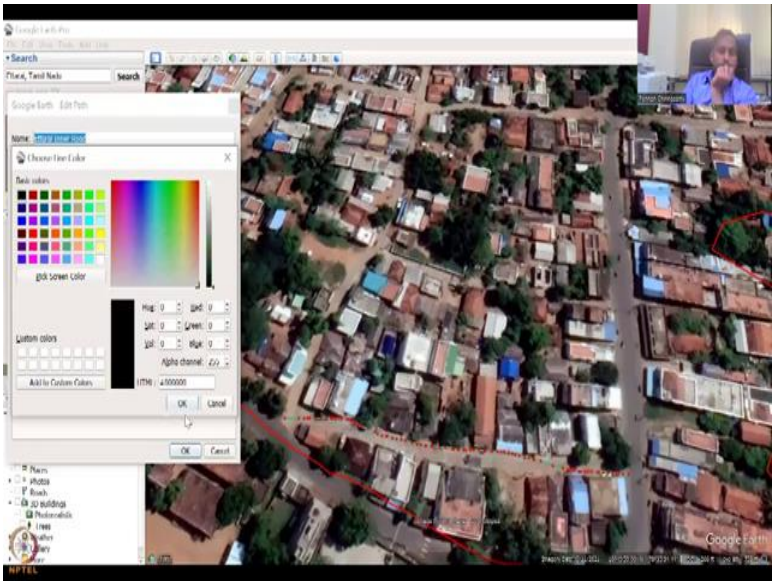


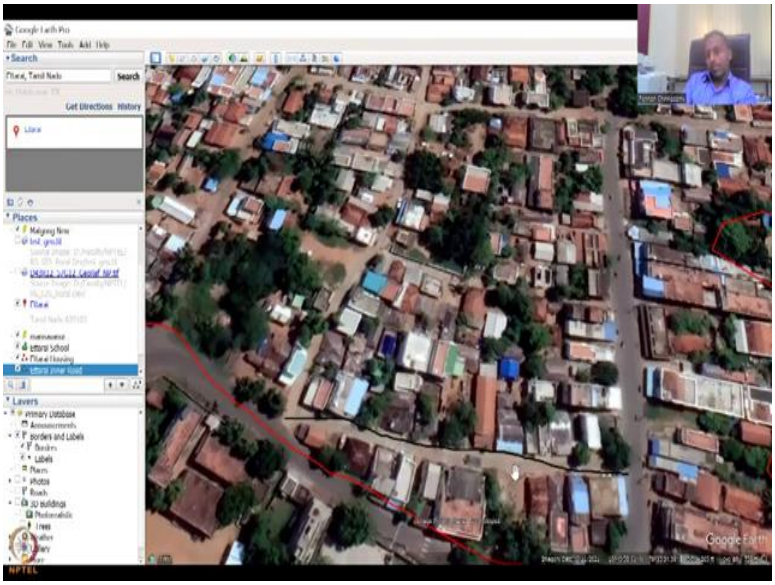


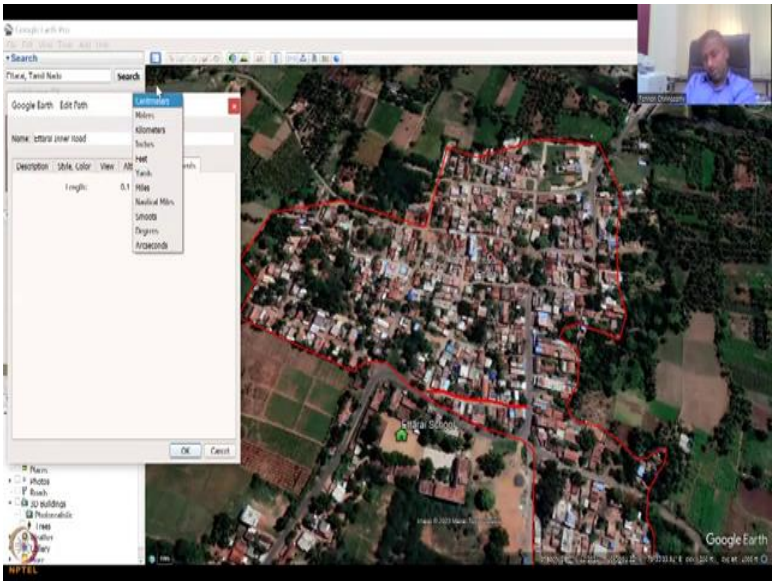

Google Earth Edit Path
Name: ettarai inner road
Description
Style, Color
View
Altitude
Measurements
Lines
Color:
Width:
Opacity:
OK
Cancel
Search
Places
3D buildings
Ettarai School
Google Earth
NPTEL


Search
Get Directions
History
Places
Layers
ettarai inner road
ettarai School
3D buildings
Google Earth
NPTEL


Search
Get Directions
History
Places
Layers
ettarai inner road
ettarai School
3D buildings
Add
Cut
Copy
Delete
Rename
Save Place As...
Email...
Snapshot View
Show Elevation Profile
Properties...
Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

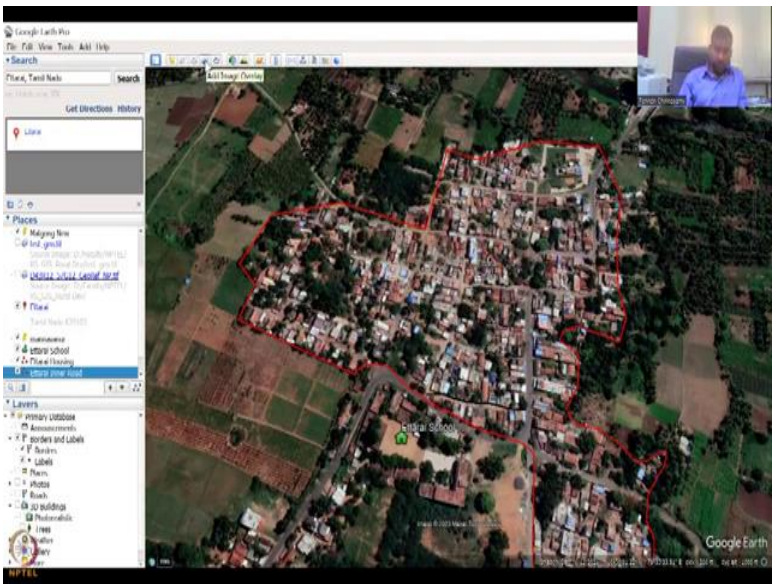
Good, so we have created a polygon. The next is lines, add paths, which is a line or a polyline. So I am going to mark the roads, especially the inner roads of the basin, of the parcel we have because, the outer roads are more for the buses and stuff, whereas the inner roads were done for the people. For example, these are tar roads, however, these are cement roads. So now you could see that we can mark one cement road is enough.

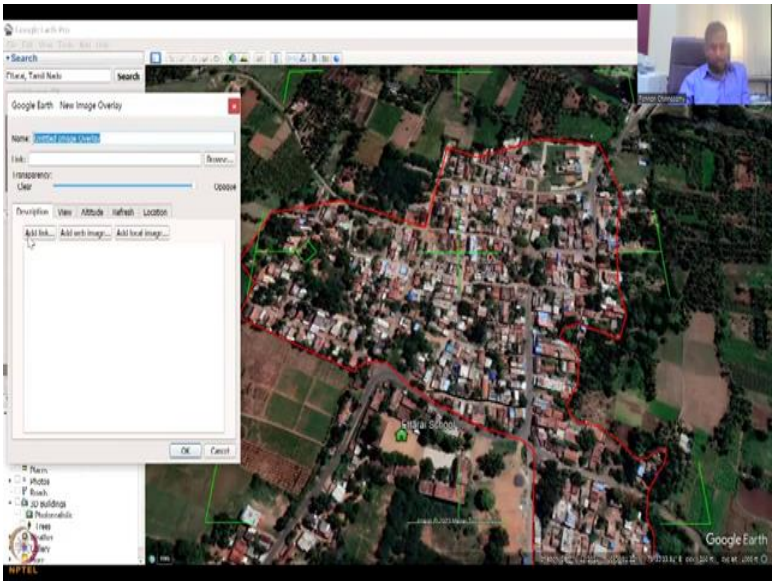
So I am going to add, let us say and then as I said, as we did for the other part, we can also drag and then do. Let us say Ettarai, inner a road, style color, brown, says okay and we said okay. So as I said anytime you want to change you can easily change, for the property, style color needs to be thicker, I think the red one, you can see, but the green one I am not able to see at least, so let us make it 5, say okay.

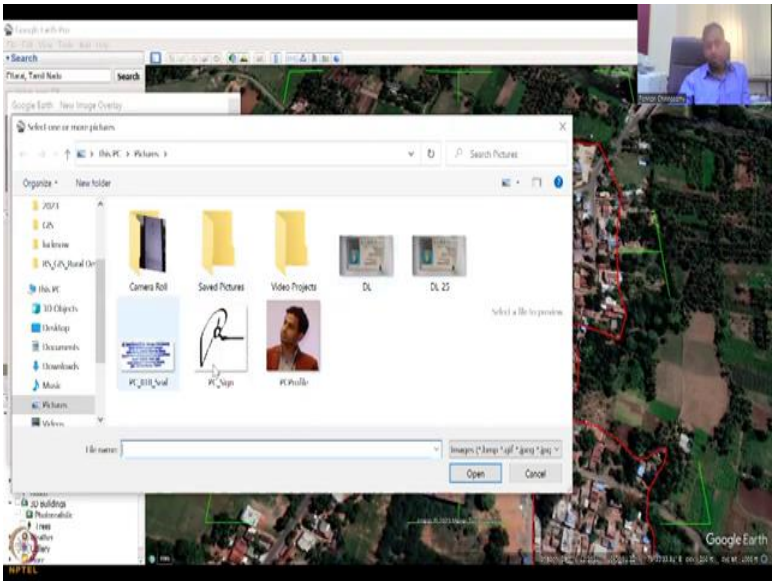
So now you could see it better. I would double check with the color also, let us say, let us do black or something. Now you could see it. So you have added a shapefile kind of version in Google Earth Pro, which is your boundaries and a location and a road path. If you want to edit you can go here to the left panel and edit it and always you can re-edit and put what you want in terms of view, style, color, measurements, etcetera.

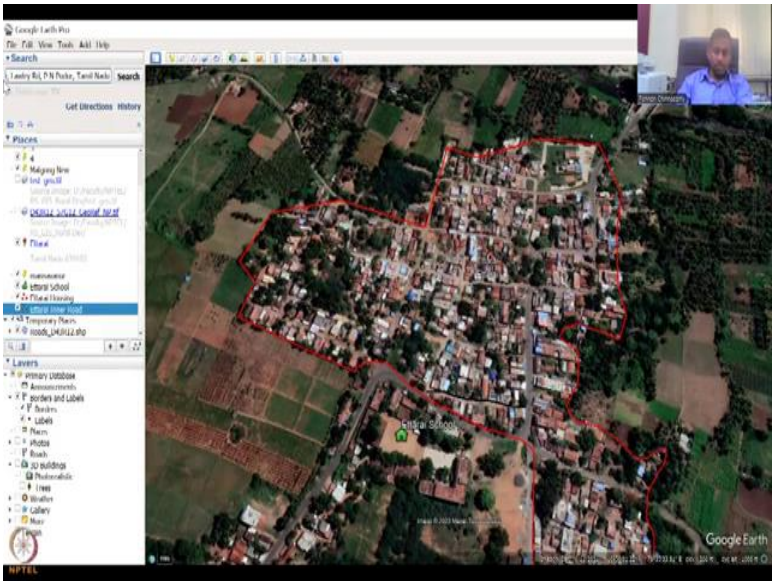
You can convert the units also here if you want to measure the units. All probable measuring schema has been done. So you can use anything. So these are the dominant left hand tools that you could see on the top of the Google Earth Pro.

(Refer Slide Time: 18:51)




Google Earth New Image Overlay
Google Earth

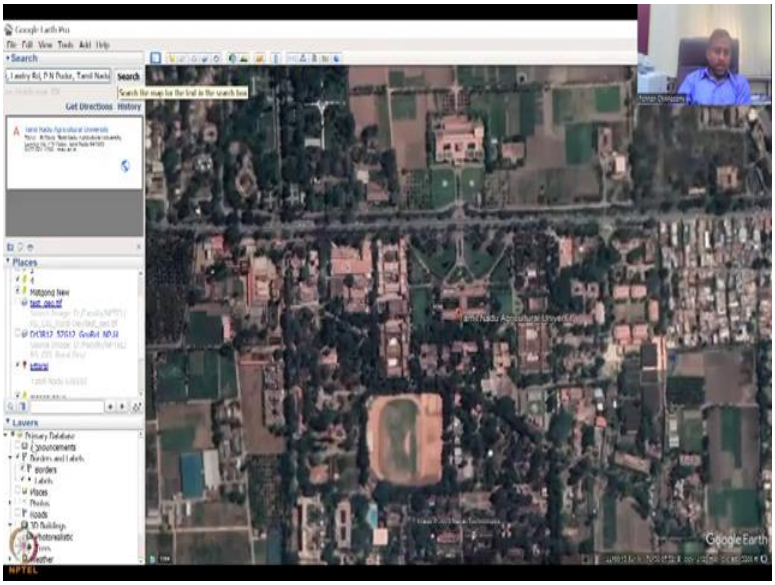

Camera Roll
Saved Pictures
Video Projects
DL
DL 25
Open
Cancel
Google Earth

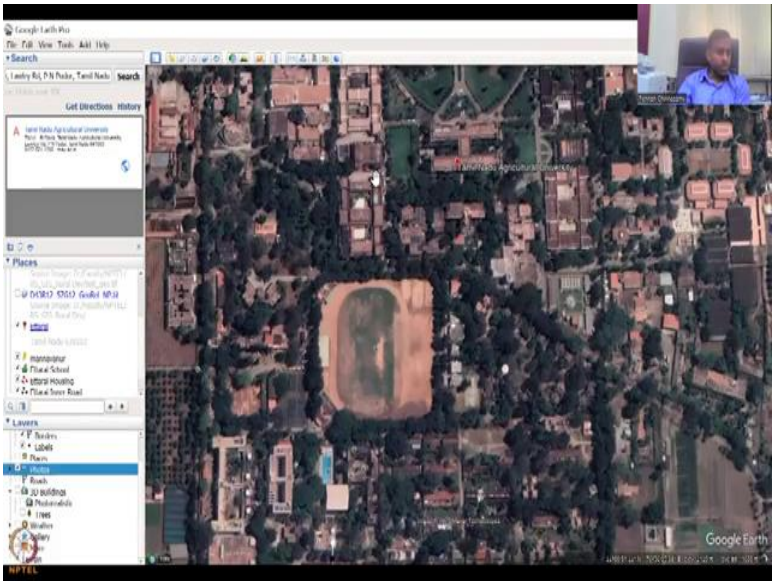

Google Earth

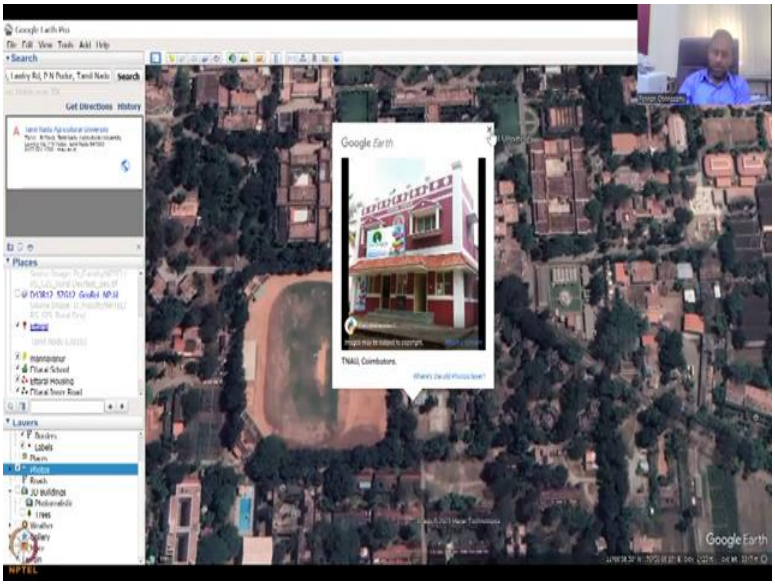
Now we are going to jump some advanced, which is may not be needed. So now this is Add Image Overlay. As we had done in the past, when we did the image, some people have taken a photograph and then added it, this is where they added. So you can say click image and then where do you want to click, you can click a point and then upload it from your data image, add a link, add web image or add local image.

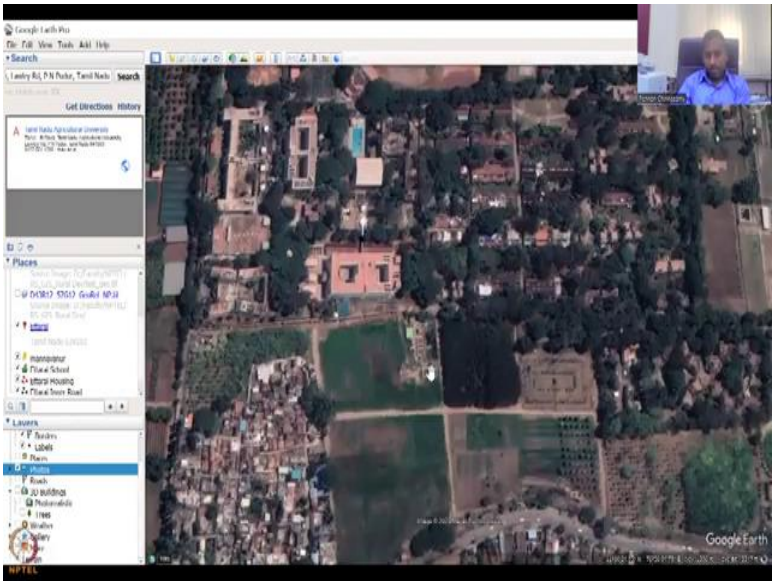
Add local image will go to your folders and then you can pick an image and put it in. View, altitude, refresh, location, all are same as different, but again we are not going to do that, but it does come handy. When does an image handy is when you take an image of a crop, for example, and then you want to show that how the crop is growing we can do it. Let us say, for example, TNAU agricultural field, Agriculture University, Tamil Nadu Agri.

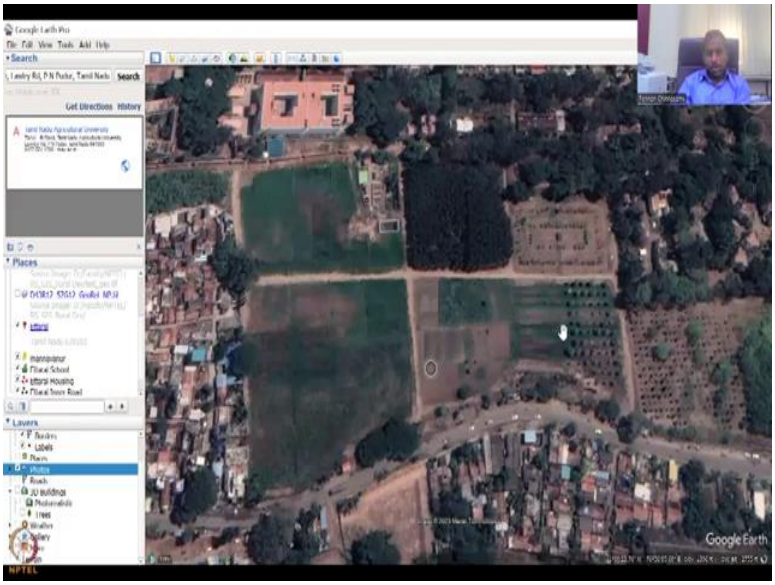
(Refer Slide Time: 19:57)

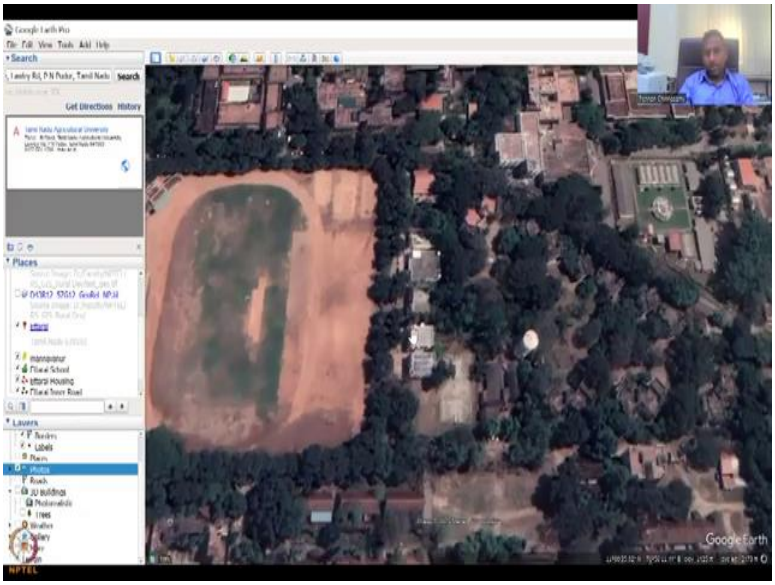


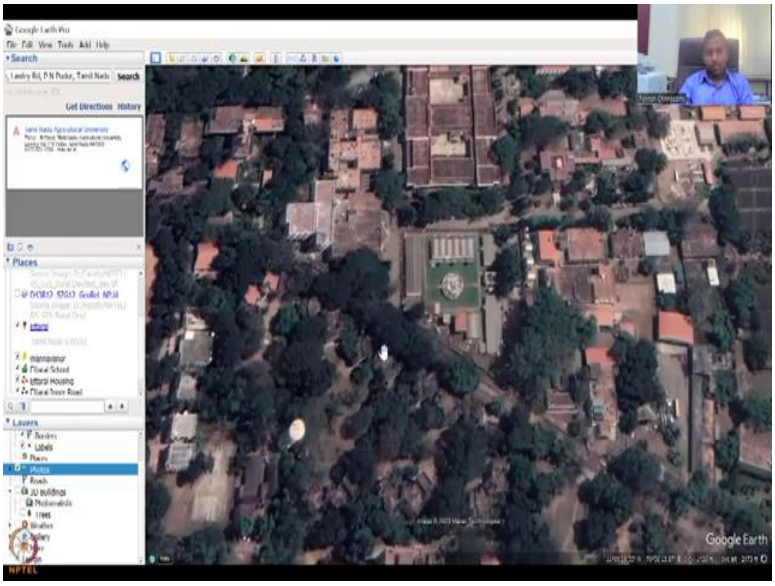

Google Earth
NPTEL

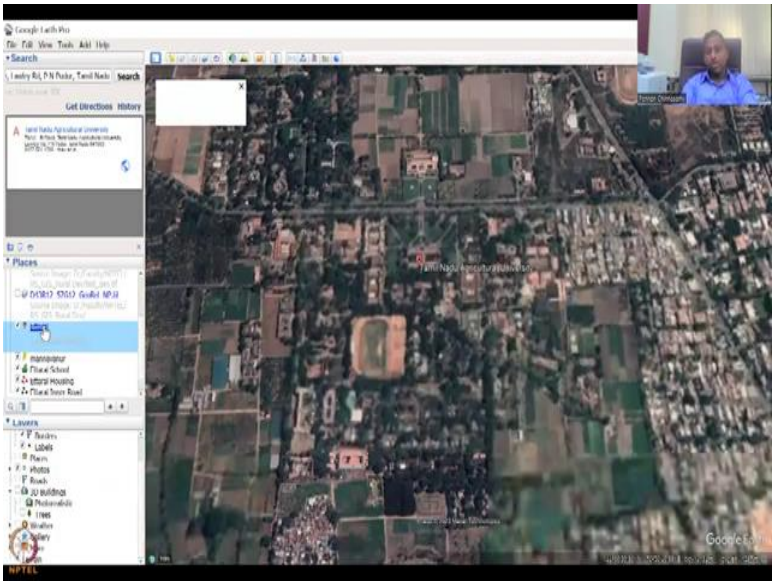

Google Earth
TNAU, Coimbatore.
Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

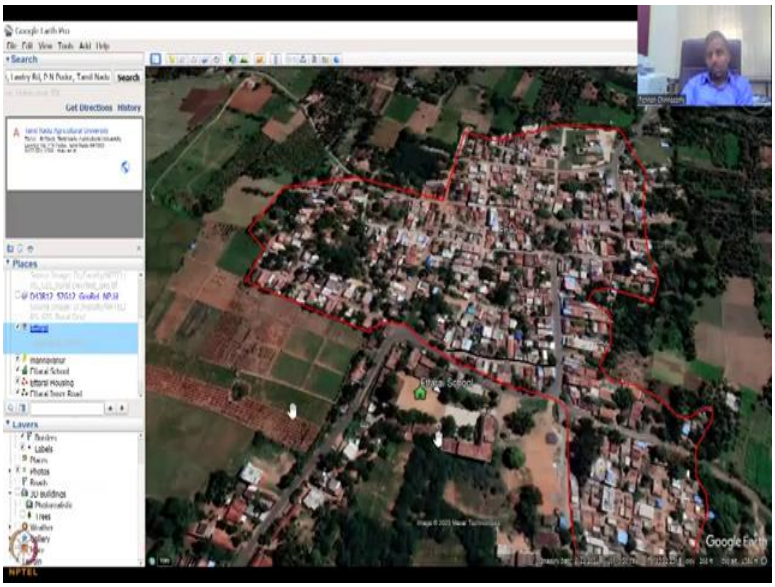

Google Earth
NPTEL

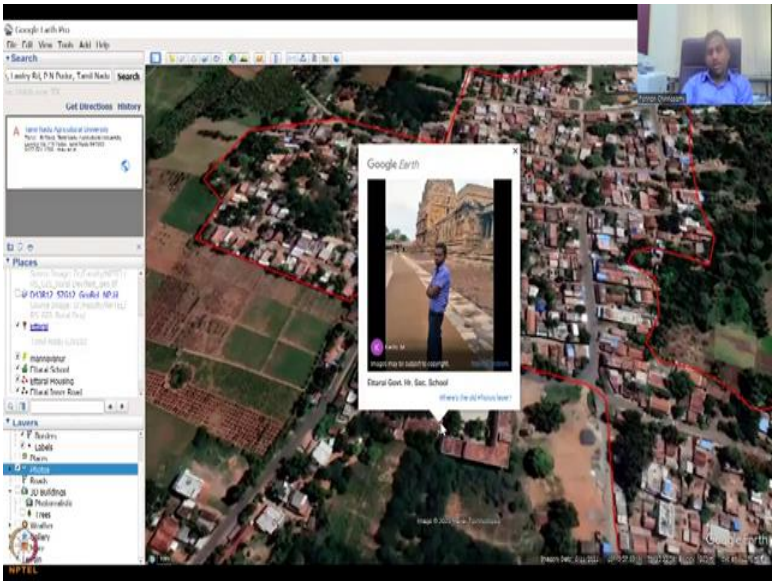


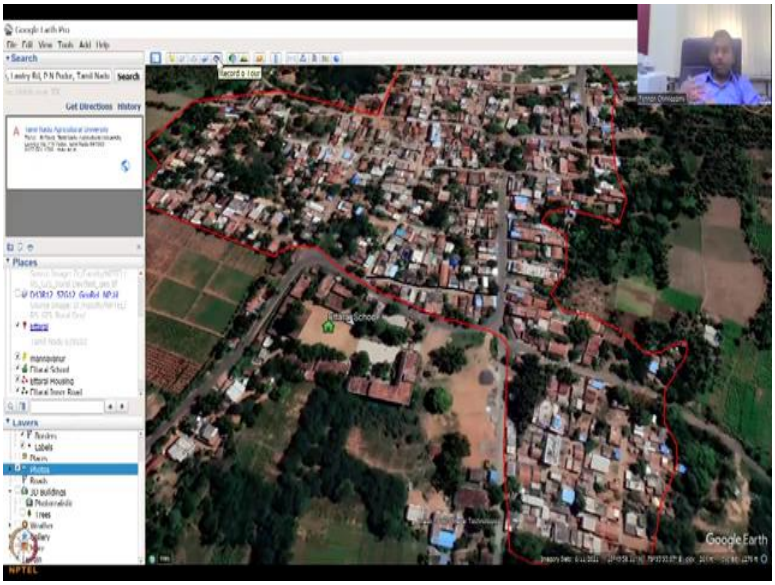
And let us try to see how much of imagery has been put, so let it load, see now it is loading, you can see it is loading and there it is. So you can see a lot of images popping up and these images are very, very important in Tamil Nadu Agri, because they give an understanding of what the crops they are growing, those kind of things. So this is Tamil Nadu Agri University, so you can see that if I click here you can see a department's image, department where it is.

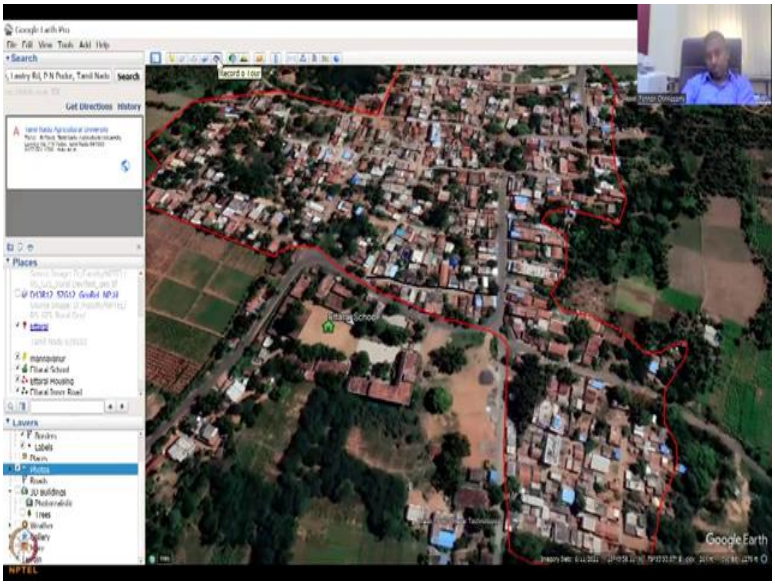
So this is where you could also add your part of imagery. So these are the growing fields, agricultural fields that they grow for plot level assessments and those kind of things. Then you have your hostels, etcetera, etcetera. So these are very helpful, if you want to add, for example, an image of a crop we will be doing that very focusly when we do the NABARD website. But for now you could know that you could go and pick a location and then see if there is imagery on the fields and stuff.

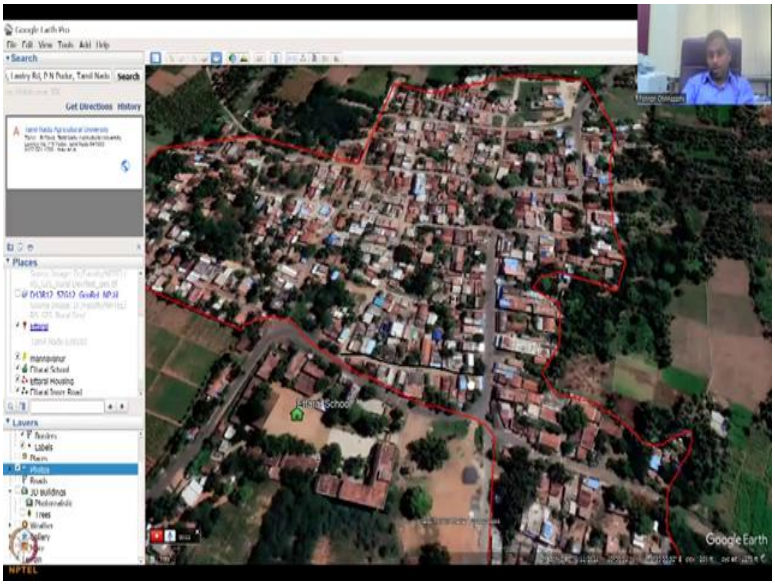
(Refer Slide Time: 21:28)

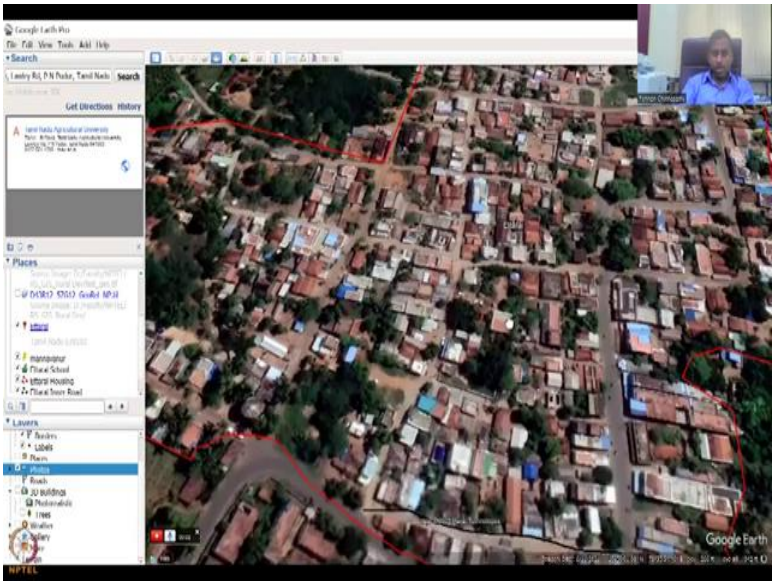


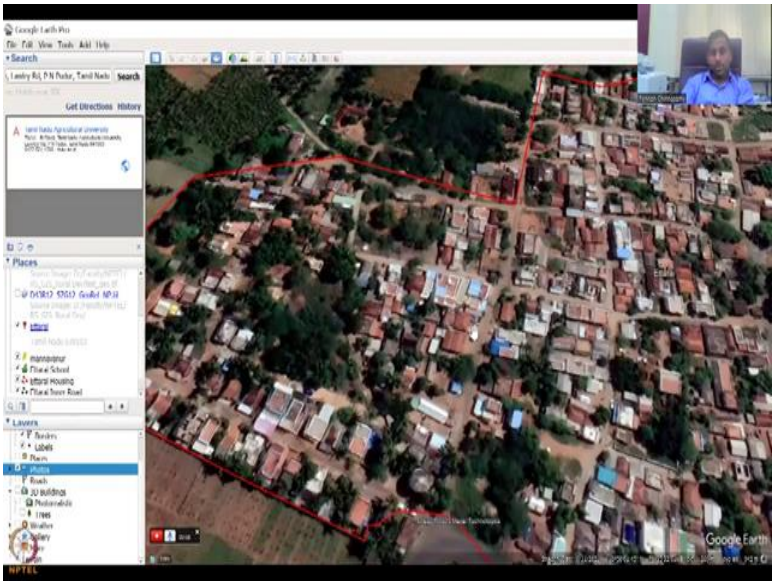


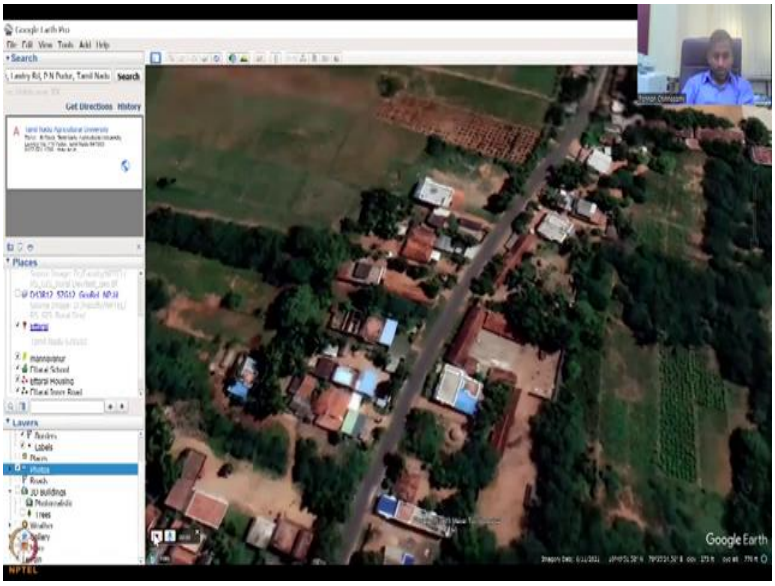

Google Earth

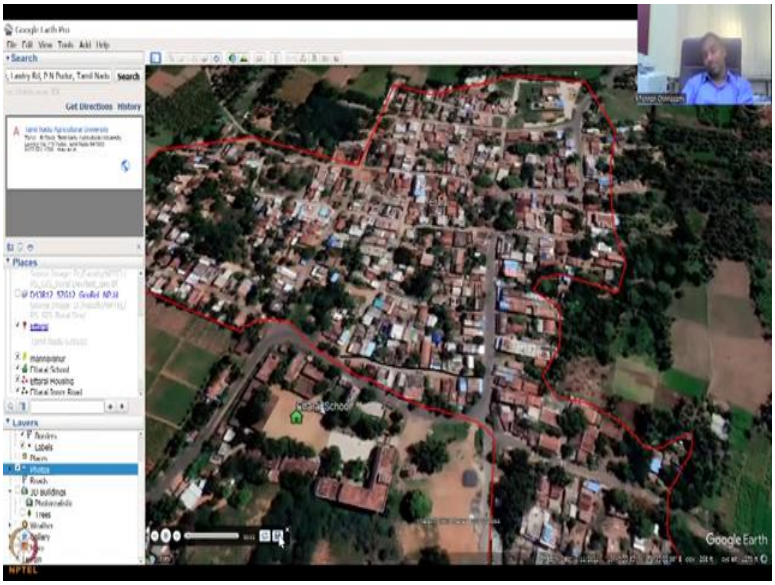

Google Earth


Google Earth


Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

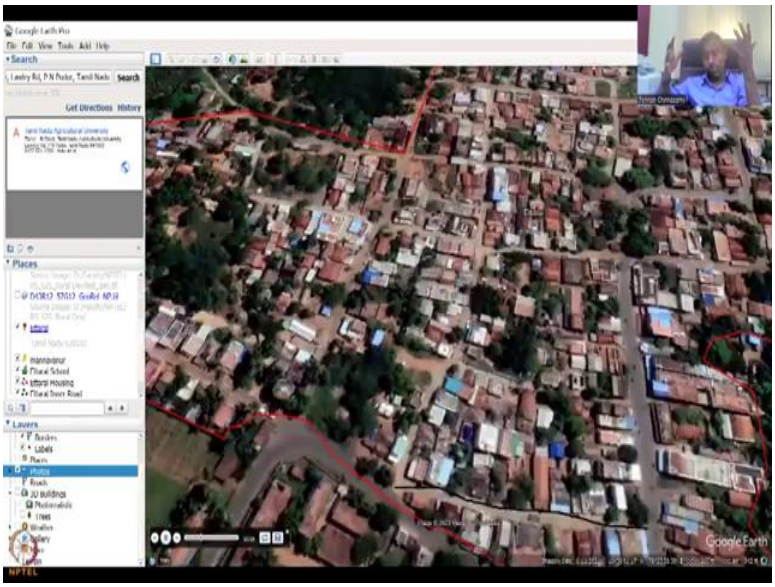


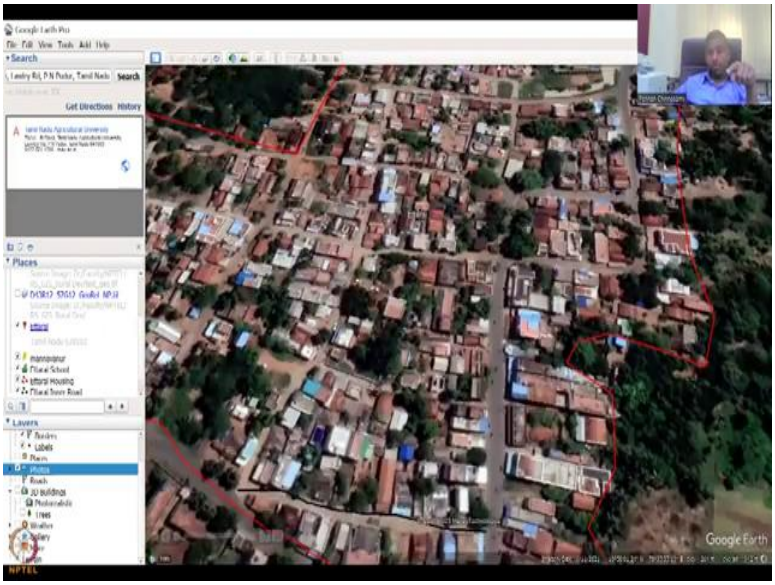
So these are fields, these are agricultural fields that you can take, so for example, there is an imagery someone has added. The government school, but it is their personal image taken from somewhere else. This is not Ettarai, but he says that, I am from Ettarai Government School, which is good, but again as I said these images can be misleading. He has taken an image from Thanjavur, but put it in Krishnapalli which is two different districts.

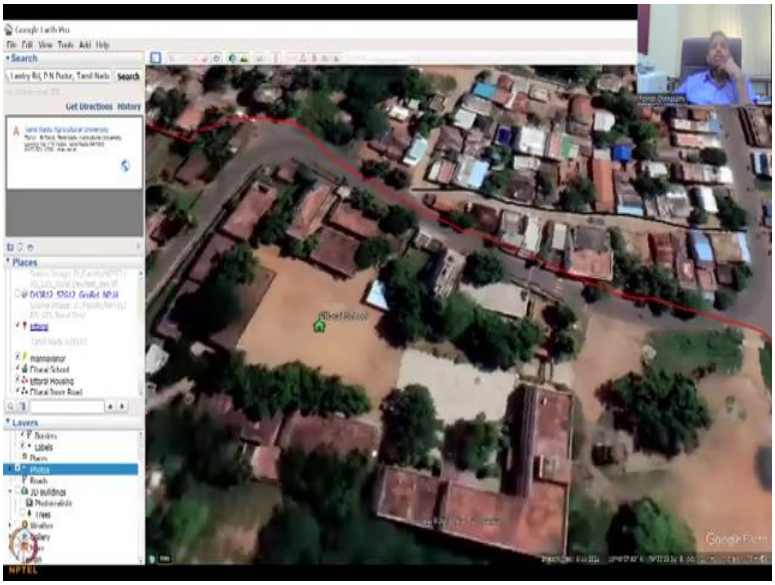
So you cannot have that as an authentic image. So that is where this one comes. And then the last one is to if you want to make recorder tool. For example, you are zooming in zooming out and you want people to see it as a presentation, so now it is recording. You can say stop recording, what I am talking can also be recorded and then you zoom in and say, for example, let us do it.

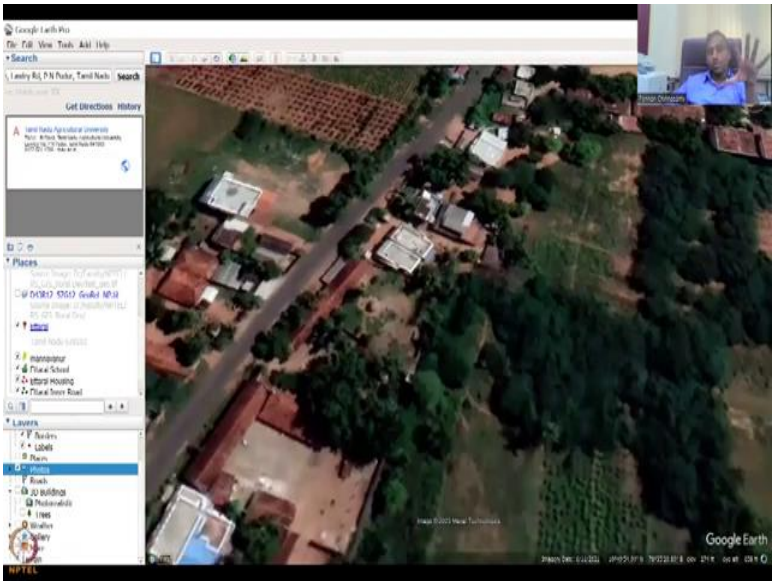
And it is recording now, so now you can see the timer going on. Let us okay this is the Ettarai the village of my ancestral home, my father went here all, these things you can say and then you can say that I am zooming in to the transportation area, the school, grandfather's house, all these things. So now I could stop and it has been recorded, you can save it. You can save it. Now I am going to play.

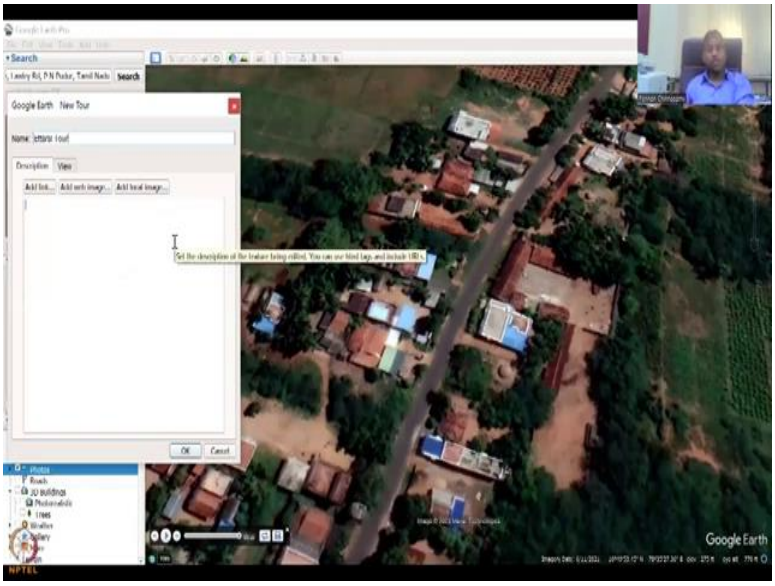
(Refer Slide Time: 22:49)

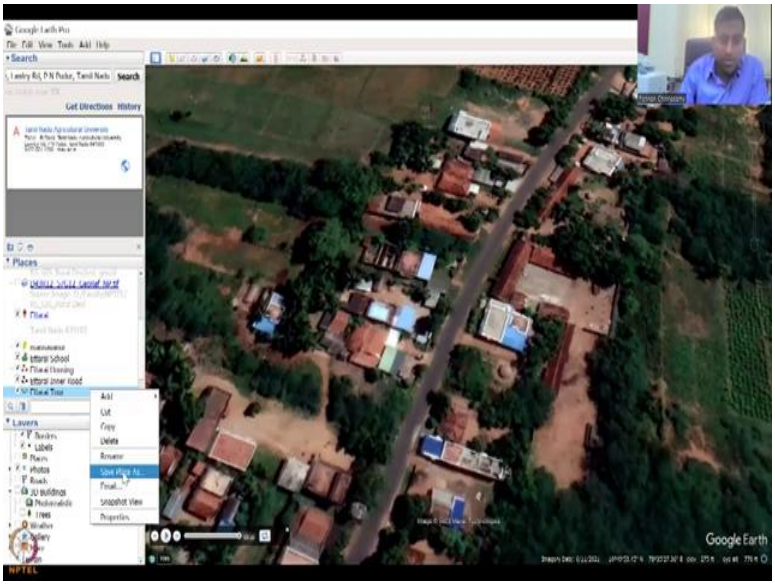


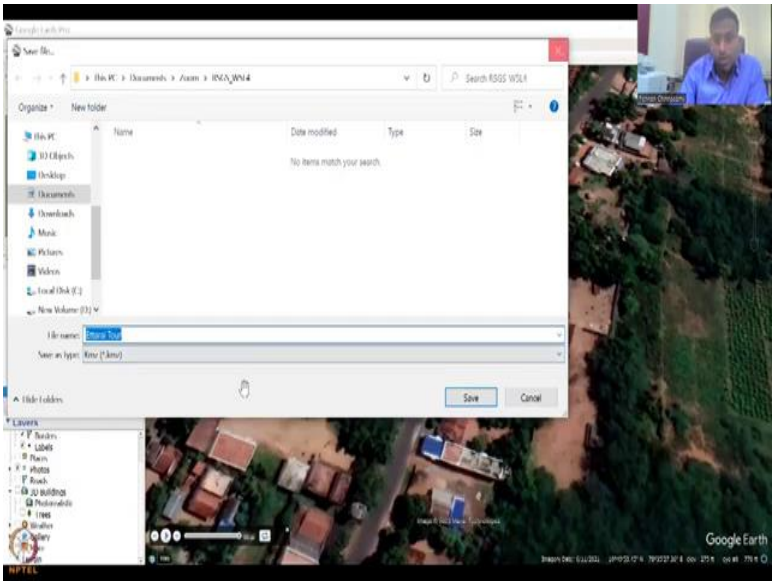



Google Earth Pro
Search
Get Directions
History
Places
Layers
NPTEL


Google Earth Pro
Search
Get Directions
History
Places
Layers
Google Earth
NPTEL


Google Earth Pro
Search
Google Earth New Tour
Name
Description
View
OK
Cancel
Places
Layers
Google Earth
NPTEL

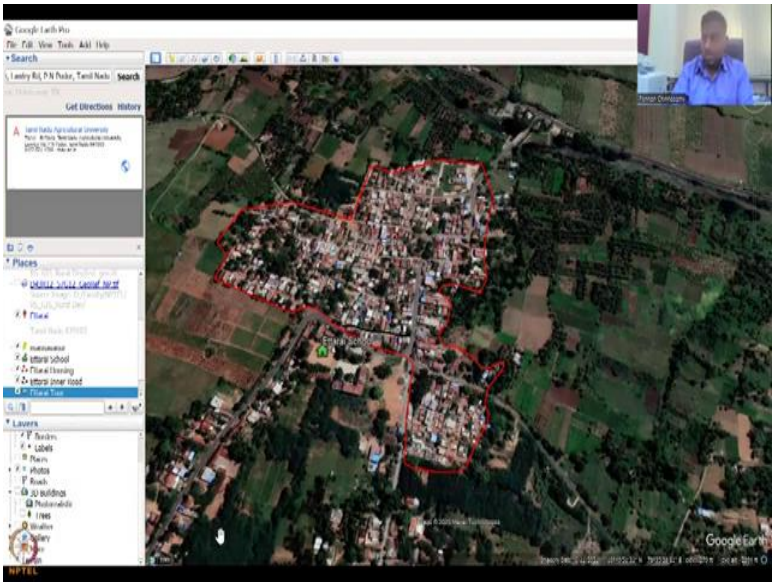


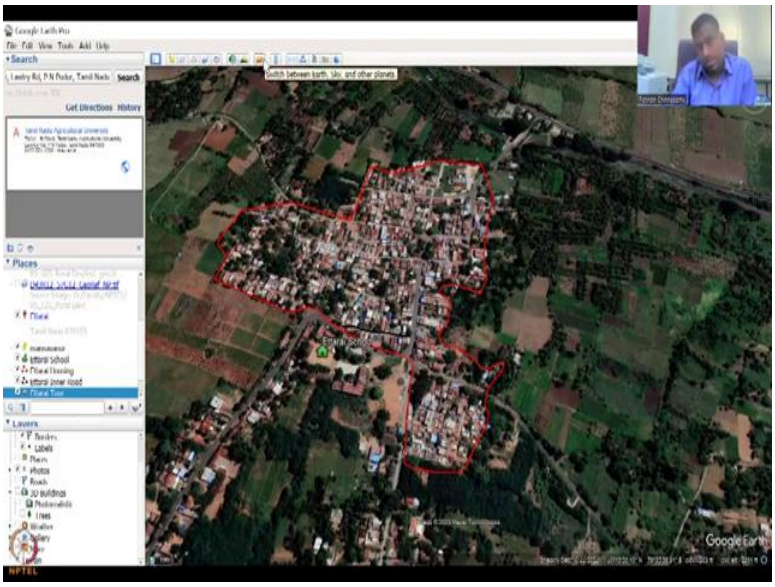


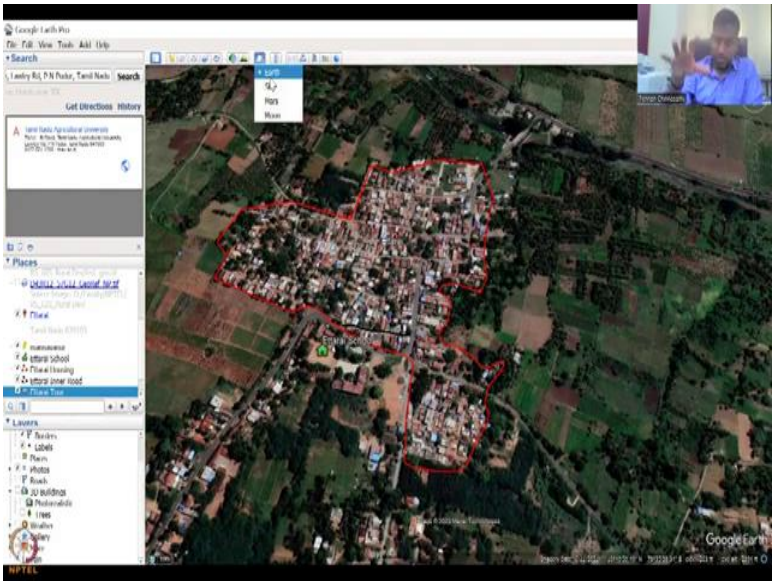
See I am not moving the mouse, but it is moving by itself, because I recorded it and remember that I went down and said this is my road, so that is where it is going, and then it is going down to the grandfather's place. You can trash it, you can save it if you want, let us for say safety we can say this tour is being saved, so Ettarai Tour. So for example, you want to show the village profile to any collector.

You can quickly take a tour like this, download it, and then send them as a video, which is self-explanatory and to any government official. So I am just going to click ok, it get stored here in your my places, when you open it you can do it. If you want to restore it again in your folders, you can save place as and then a tour, you can do it, the locations everything. So it goes back to your folder. Good.

(Refer Slide Time: 23:49)



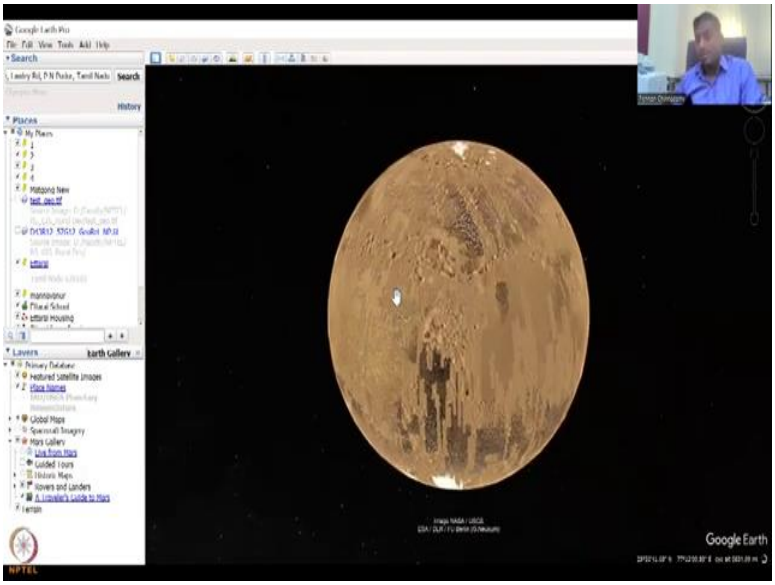


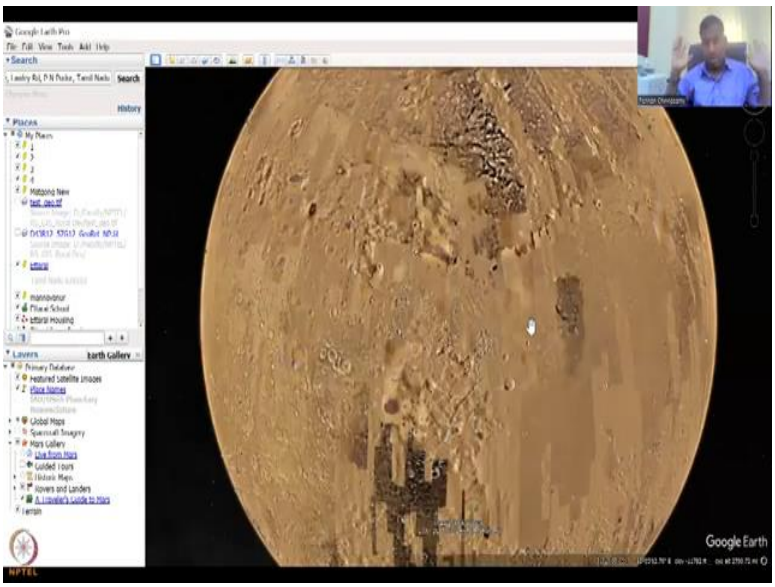


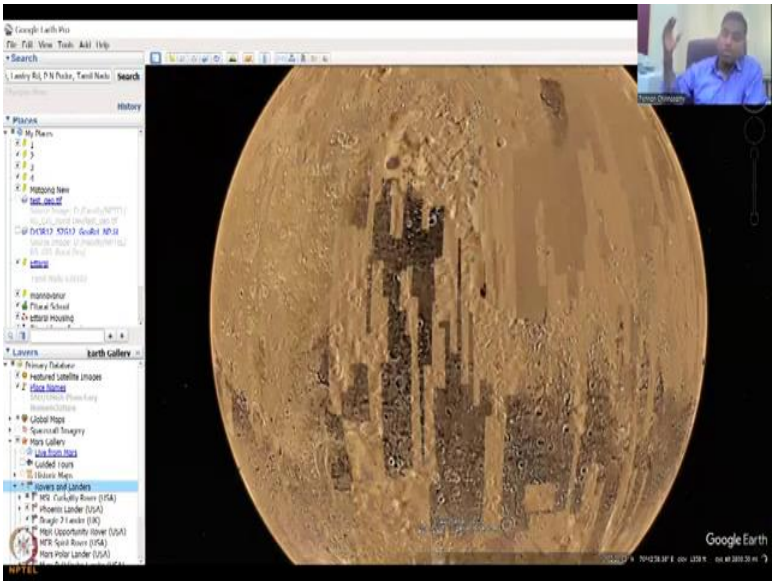
So now we have looked into these profiles. Now this is the part where I said, you have to close this, so the other tools open up. So now other tools have opened up. I have closed the video tool. Now most important is where as I said students may lose their time, this is one of them. So you see the planet, now if I click it, be amused that I can go to Earth.

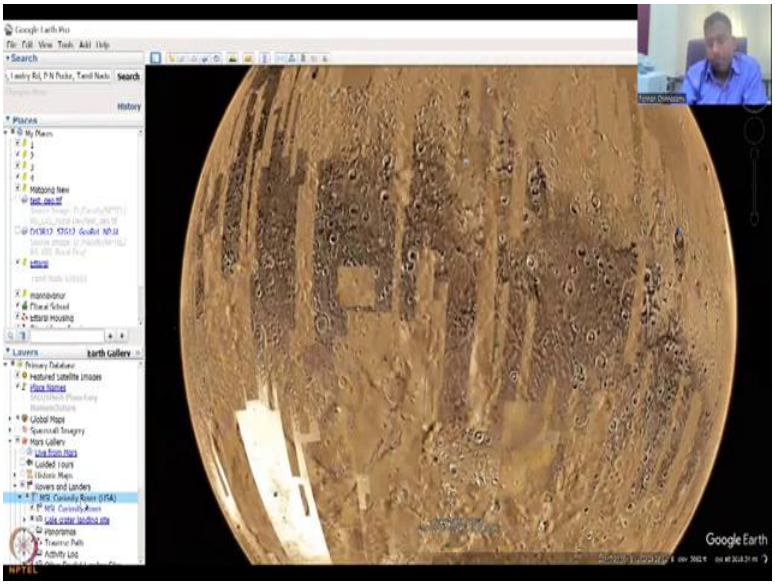
So this is Earth, from Earth I can go to the sky, Mars or Moon. So one planet is there Mars, one satellite is there which is the moon, and the sky. So you can just spend a lot of time just looking at the sky and Mars. So now the mass is loading. Let us go to our planet first.

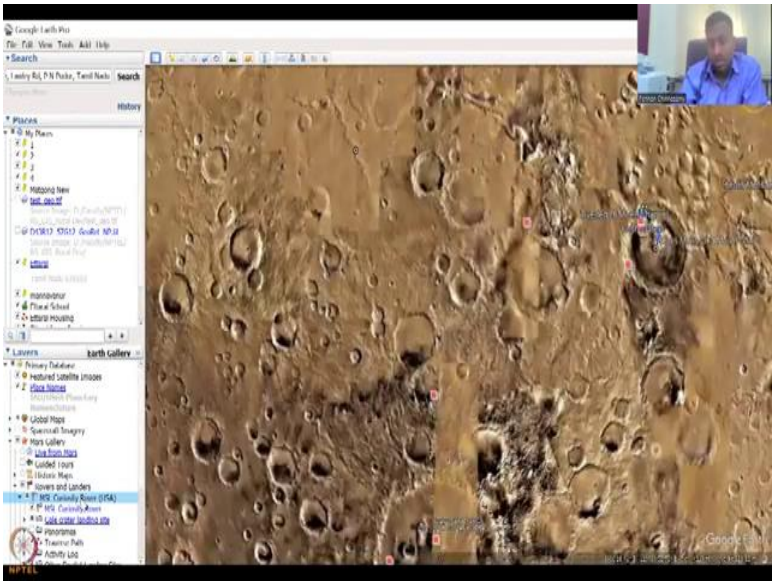
(Refer Slide Time: 24:35)

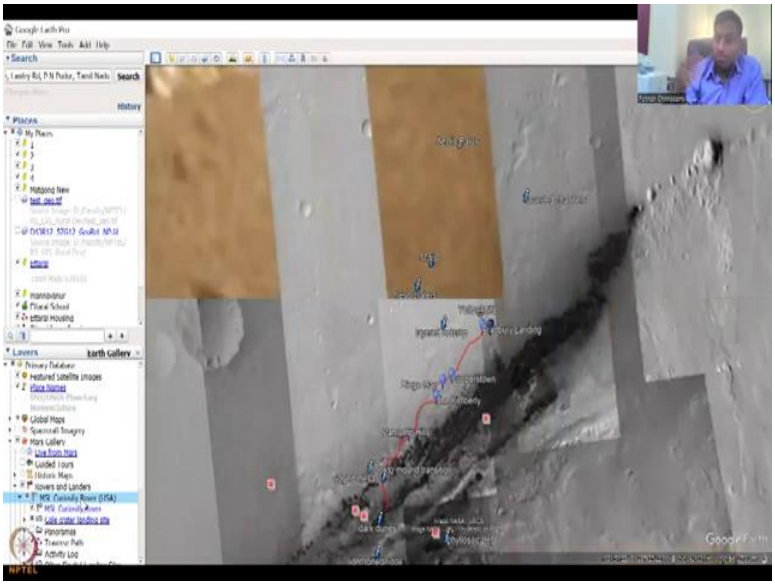


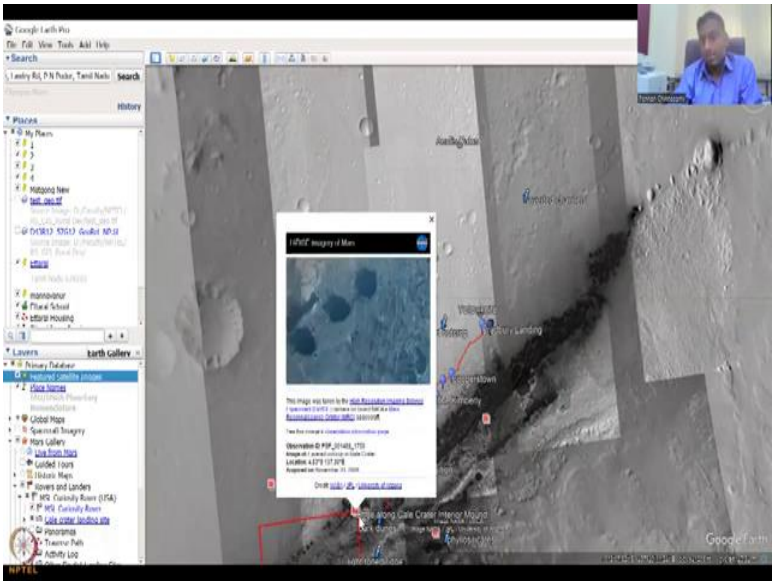


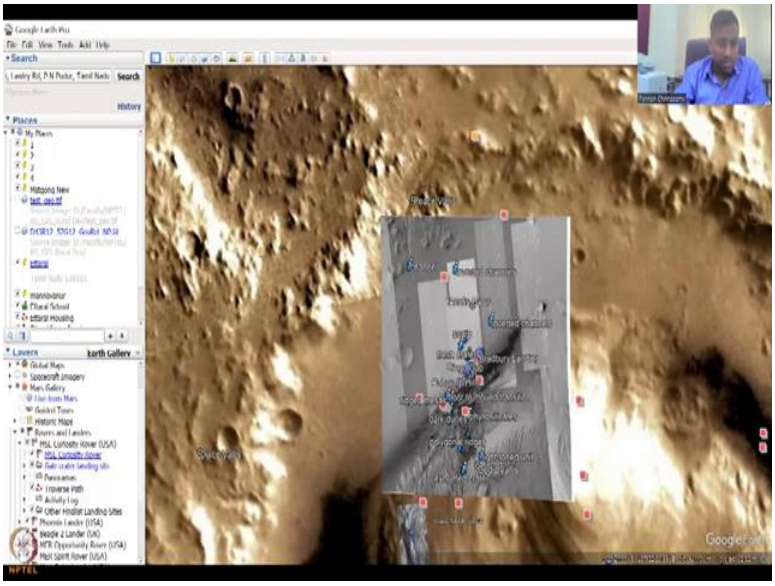

Google Earth

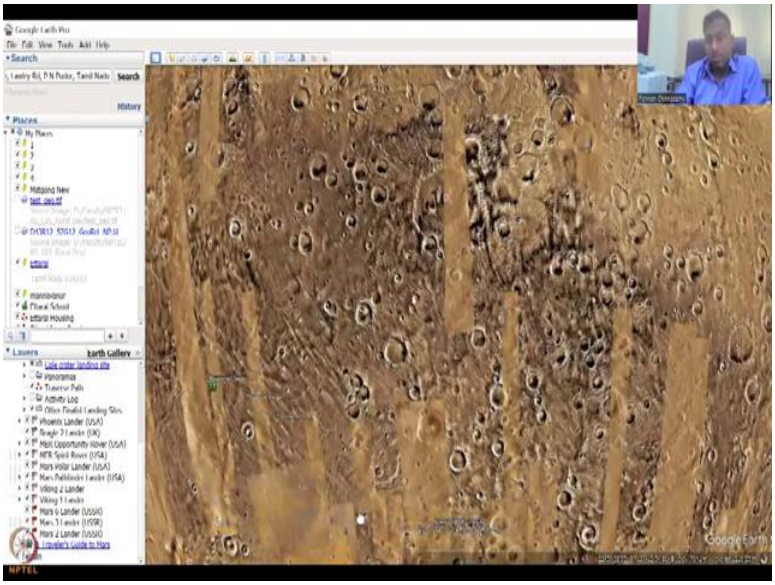

Google Earth

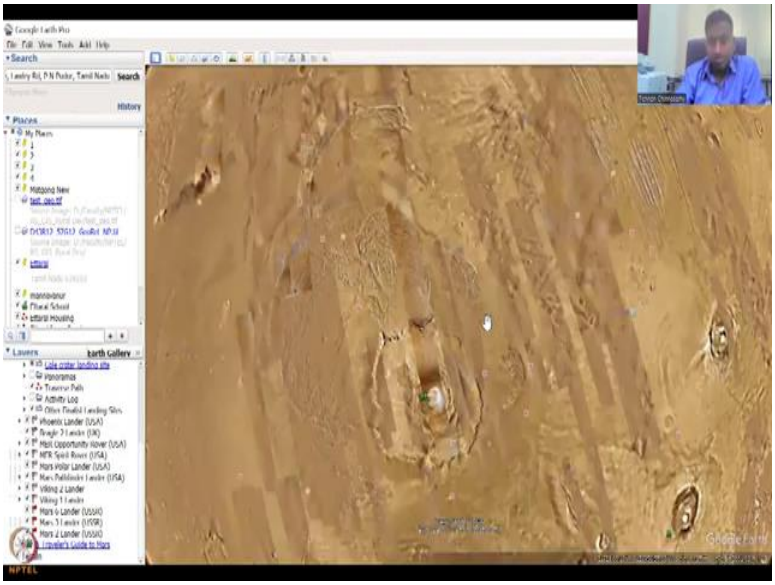


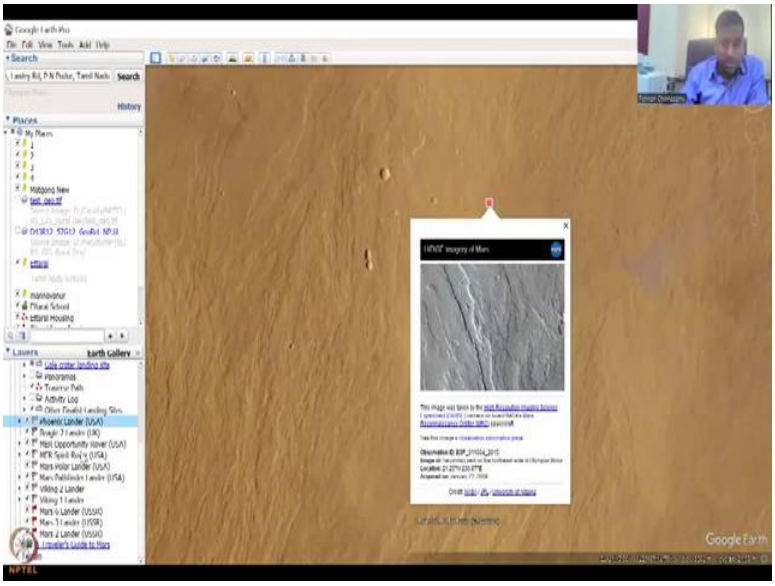


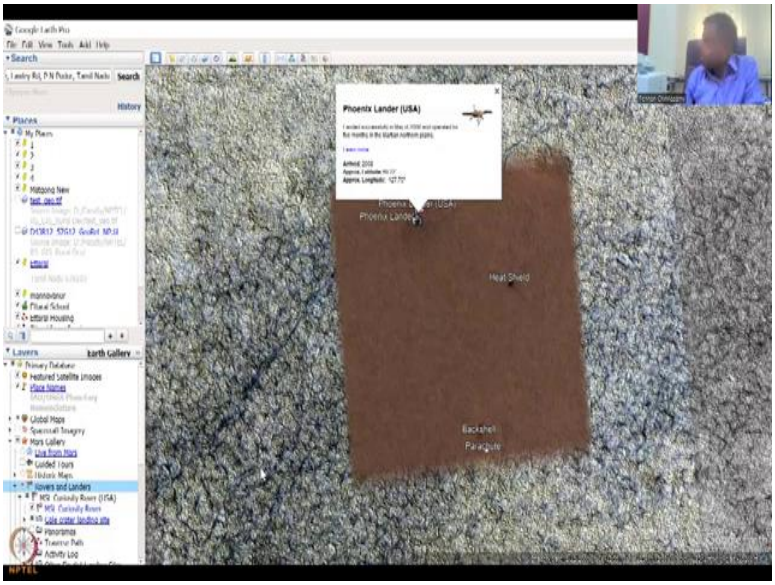












So this is built on the imagery taken by satellites and the rovers. Like for example, so this is the same thing like in Earth, but now you are in Mars, you can go in, let me turn on the, so here you could see that different layers have come up. These are the rovers, the rovers which mean where the US sent the robotics vehicles and then it went in and searched for life on Mars. Again they are searching mostly for life form, plants, water, everything.

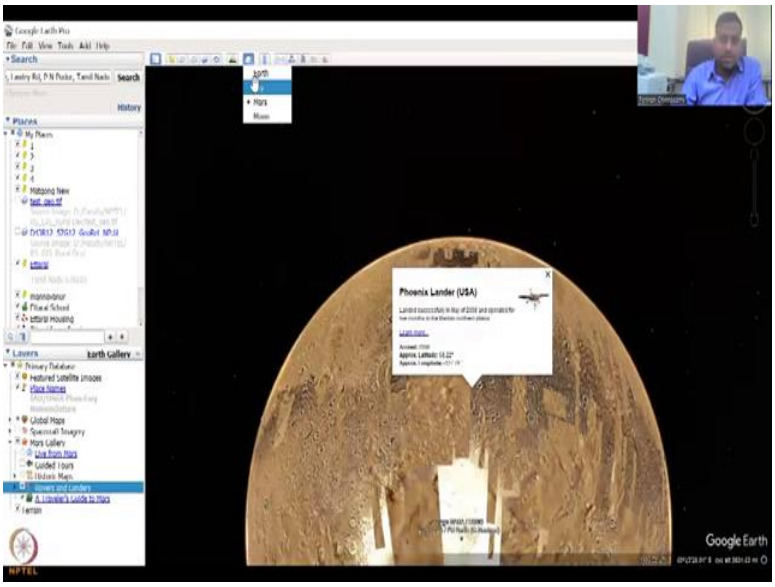
So that they can do agriculture in Mars and then try to build a house in Mars. I am always going to be saying that for that funds and money we can still save the planet Earth, which definitely needs a lot of money and stuff, funds to make sure that everyone gets sustainable development, rural development, etcetera. So here you could see high resolution images of NASA and other parts.

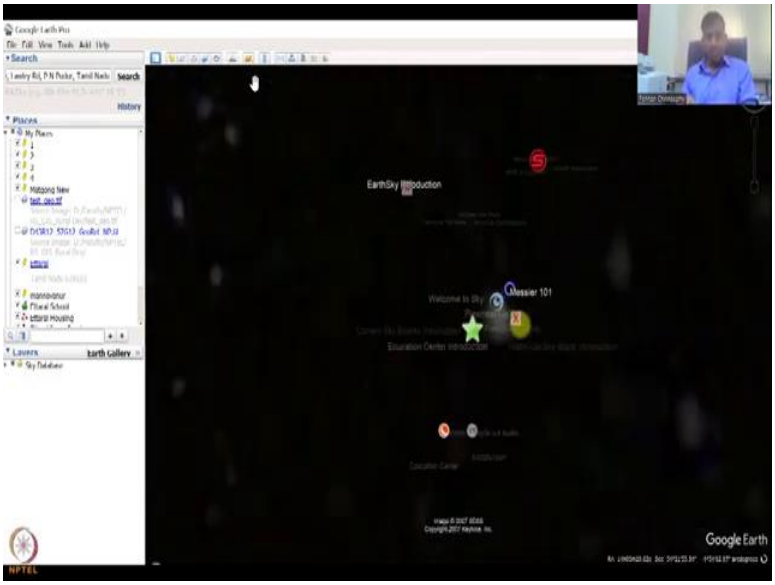
So these are very very high resolution images, it is getting loaded, still you can see it is spinning and you have a lot of galleries and images, etcetera. You can also do a terrain analysis of how it jumps and shifts, but let us not waste too much time on this because this is not part of the course. But as I said, people these are craters on the Mars. So people may get, students may get intrigued on how this is done.

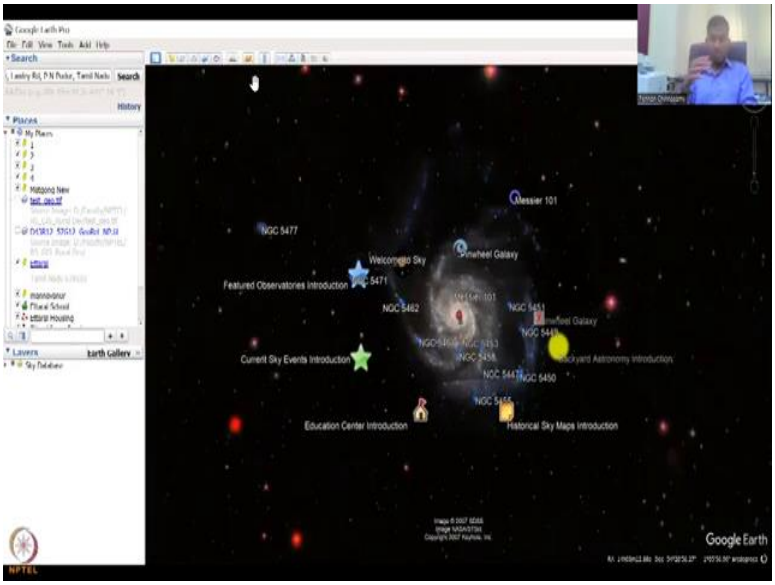
And why we have so much images and paths. So the rovers, the satellites are always monitoring this, so these are the high resolutions, maybe they thought this was like a dried up river and so they wanted to study more and these kind of things are there. So you have the Phoenix Lander, the Phoenix Lander landed here, so and then you have the rovers, the rovers landed here, you can see that how it is picking up.

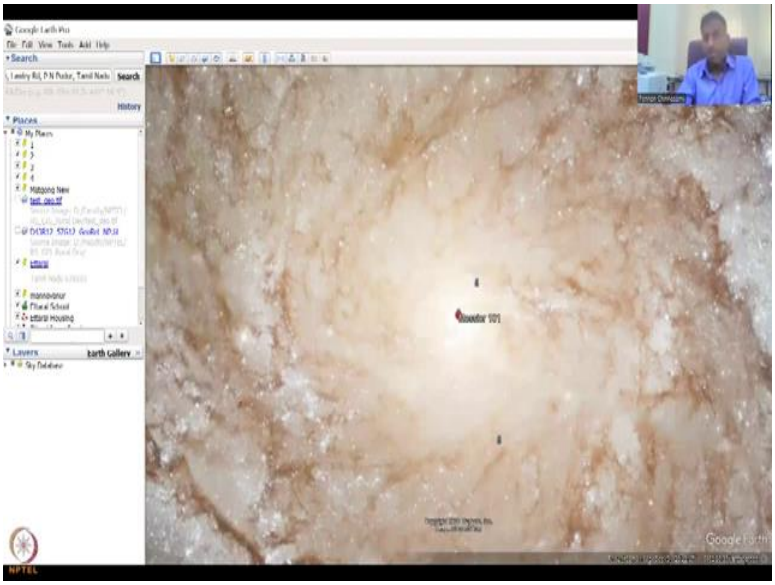
And you can also do a live Mars, look at the left hand side what, you can see, because satellites are always monitoring and so you can see it. Enough of mass. Now let us go back to the sky.

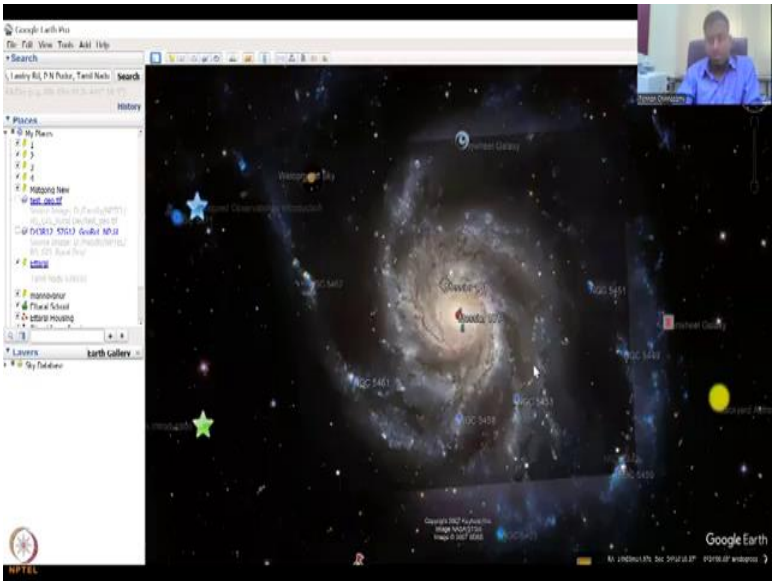
(Refer Slide Time: 26:53)

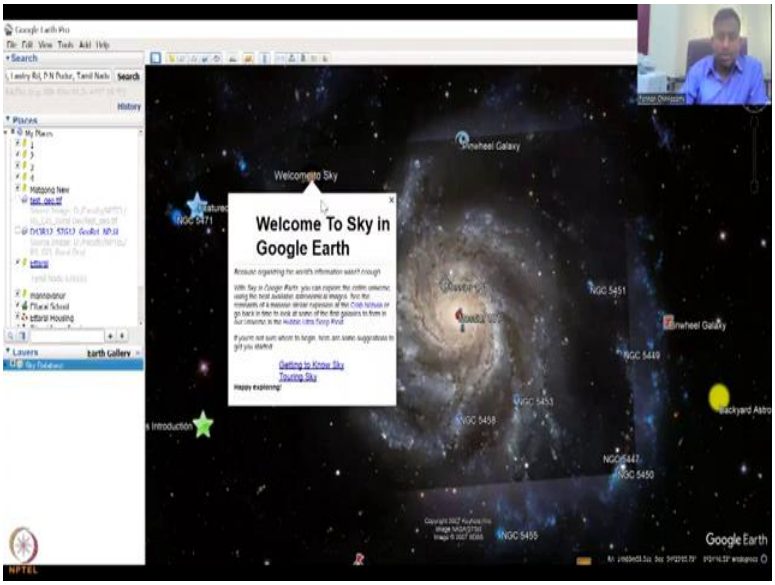


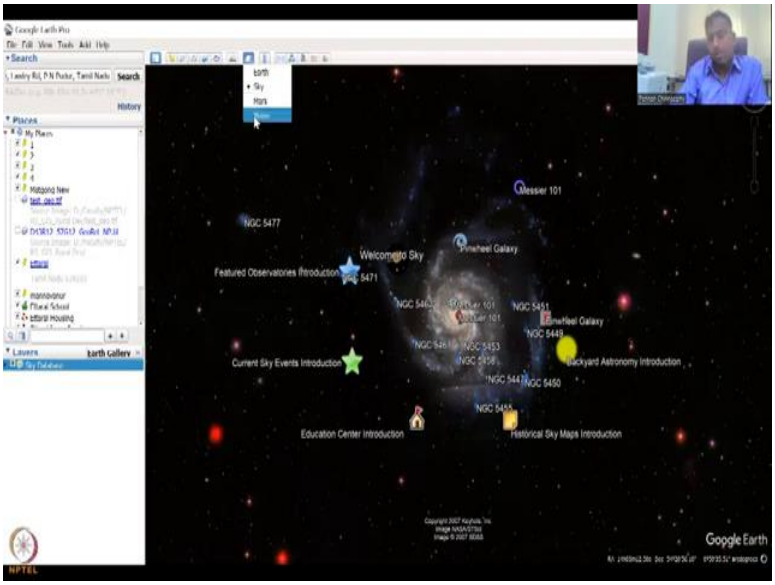



Messier 101
NGC 5477
Pinwheel Galaxy
Welcome to Sky
Featured Observatories Introduction
NGC 5462
NGC 5451
Current Sky Events Introduction
Backyard Astronomy Introduction
NGC 5450
Education Center Introduction
Historical Sky Maps Introduction
Google Earth
NPTEL


Google Earth
NPTEL


Google Earth
NPTEL

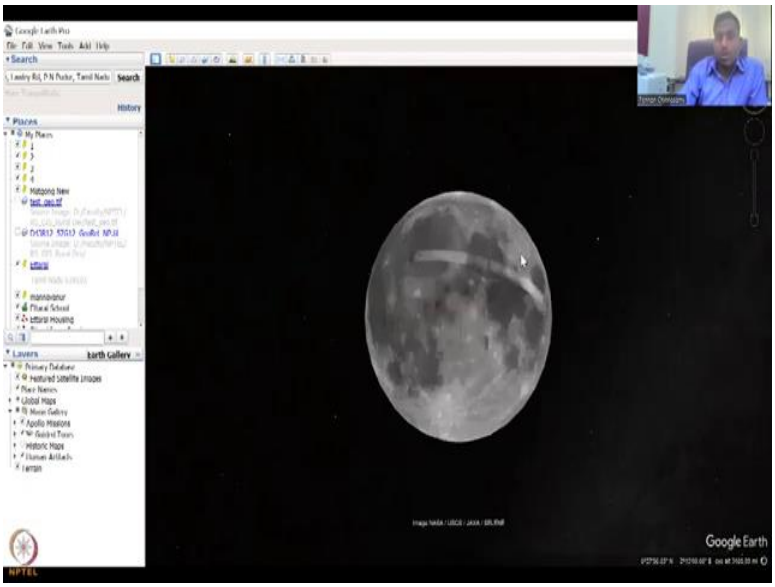


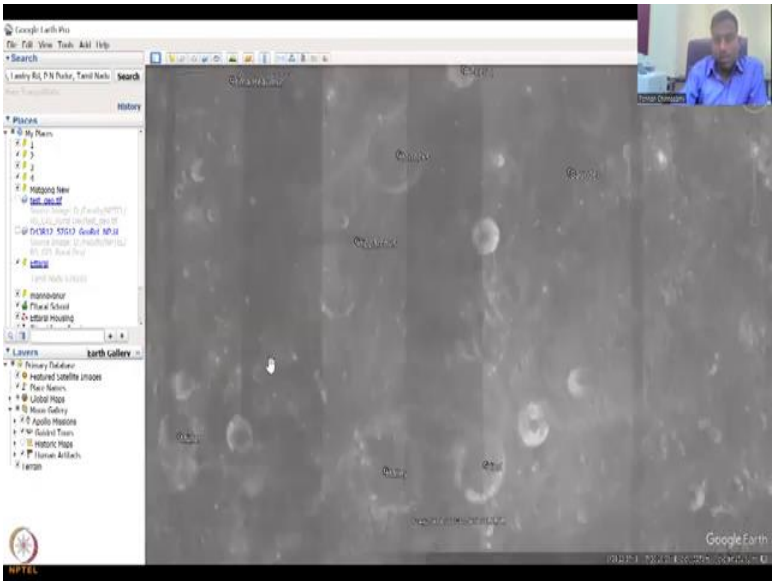


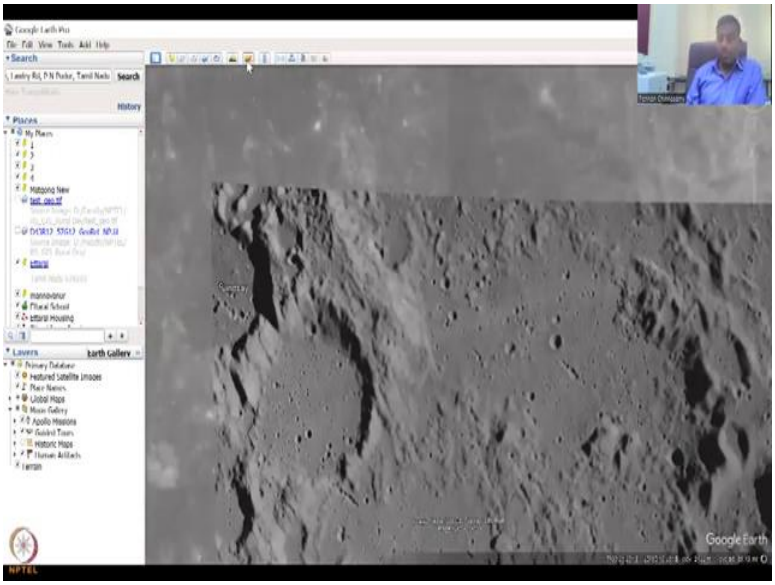
So this is the sky about the Earth, where you can see the stars, constellations, the galaxies from a faraway angle. So if you see how observatories sky, all these terminologies can be seen. So these are the galaxies that if you want to see you can go in and see in detail. It takes a lot of memory and Internet, so just make sure that you have a good bandwidth when you do this, again.

So just how beautiful, these are these satellite telescopes that are taking image of the sky and the much, much bigger planets and Suns than ours, so it is just taking the other galaxies, etcetera. So there is also a tour that has been done, for example, that like we did the tour for Ettarai, you can do a tour for the sky. Good.

(Refer Slide Time: 27:53)

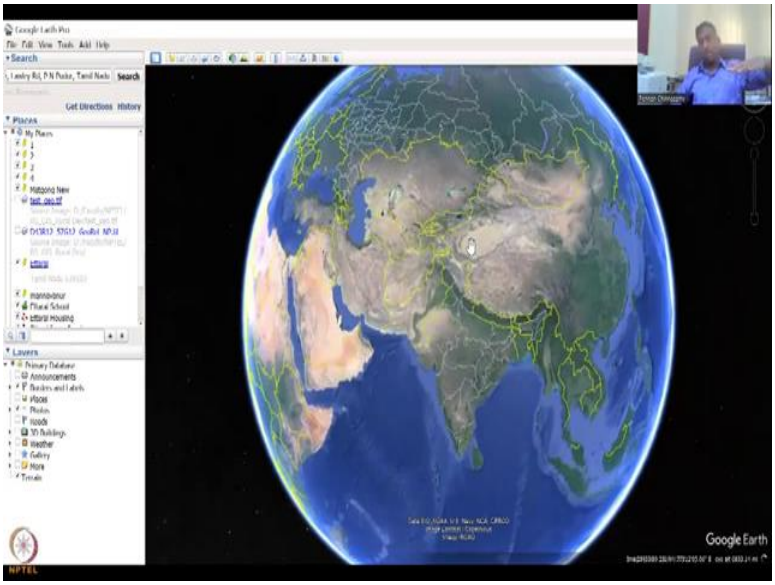


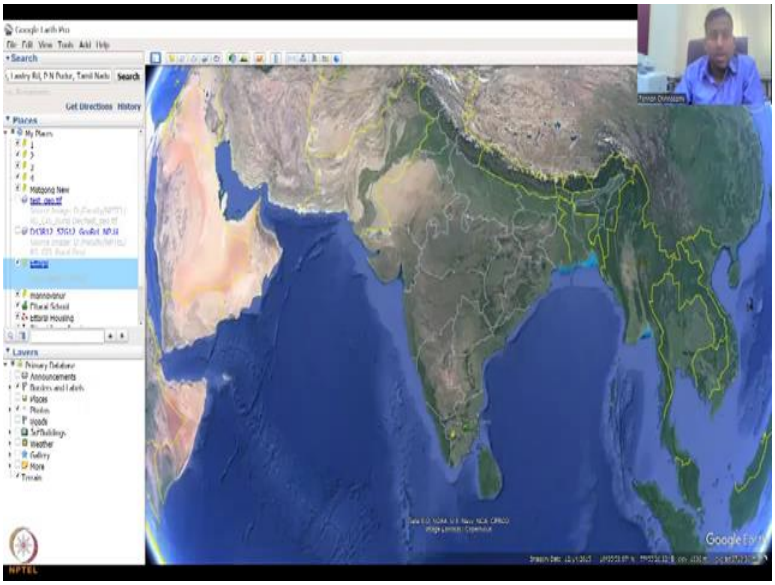


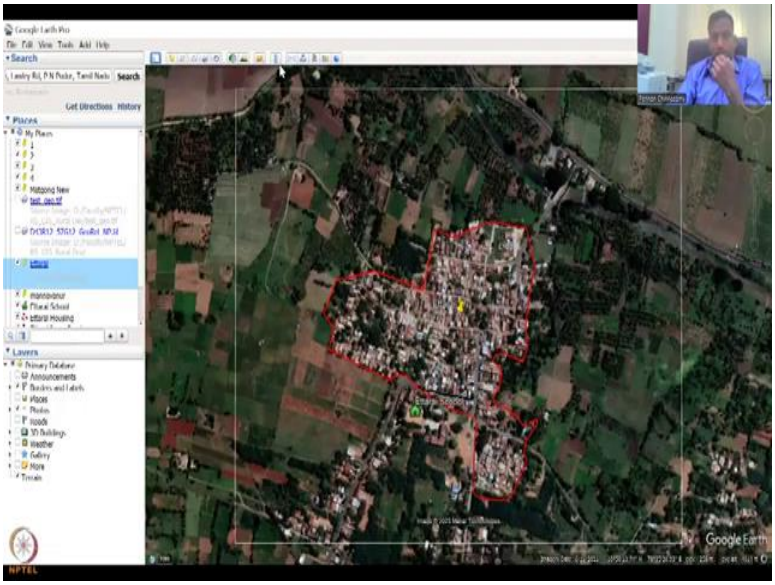


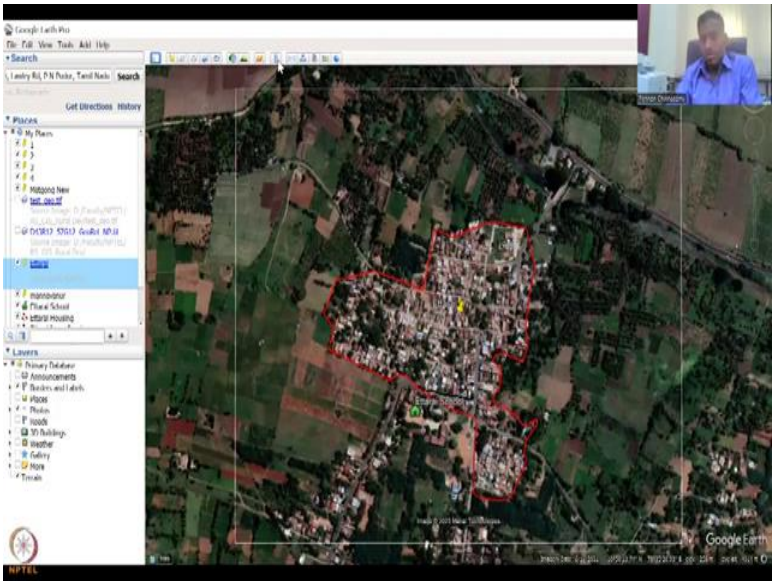
Now the last part is the moon, so I am going to click the moon and you could see that it is zooming into the moon and then you could see, similarly like where the moon rovers landed and the research was going on, the creators, etcetera. So this tool be very careful, do not use it unless and otherwise you need it. I just had to give a two minute spiel on it, so that people do not know what it is and click in and say, 'Oh, why is my Earth turning red or why is the planet turning brown or black like here?'

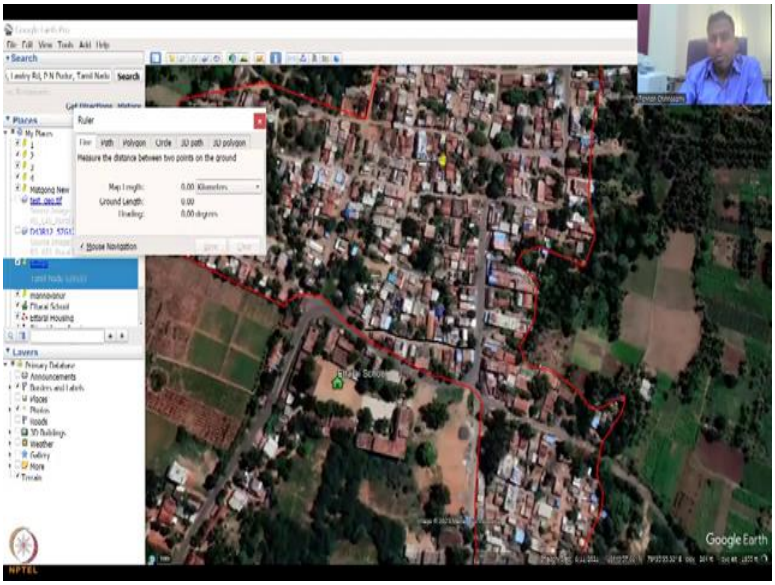
(Refer Slide Time: 28:27)

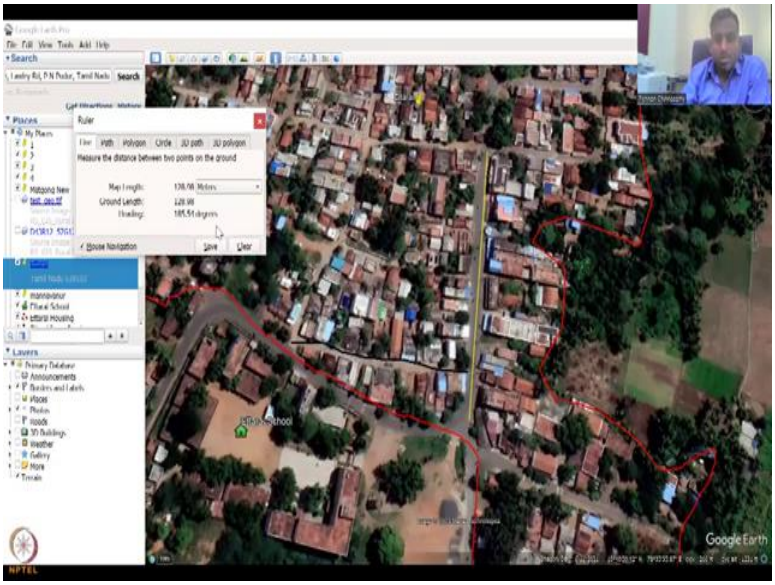


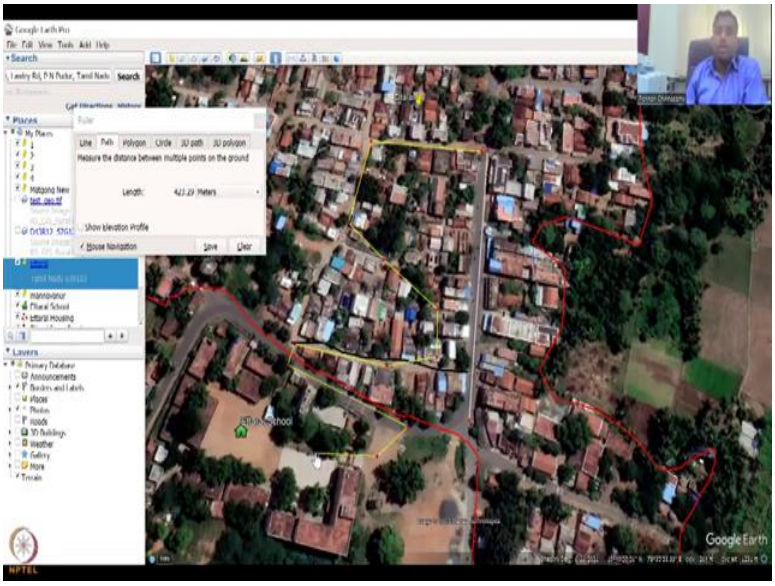

Google Earth
NPTEL

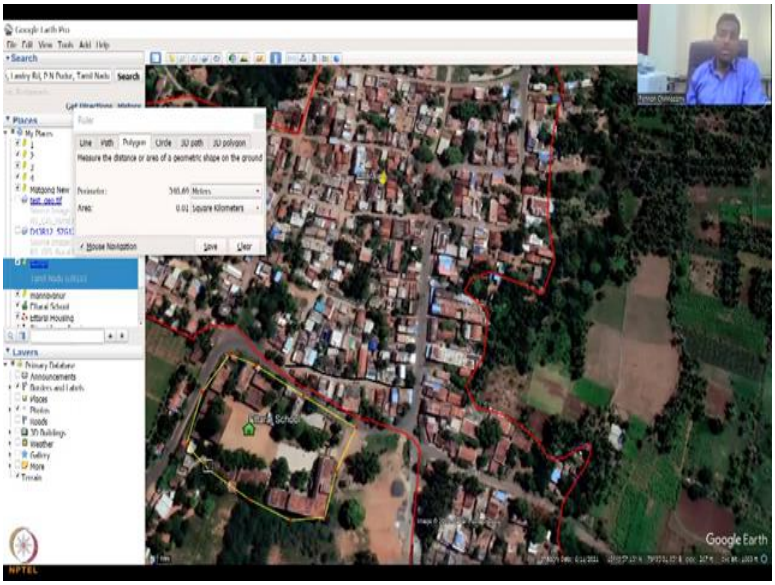

Google Earth
NPTEL

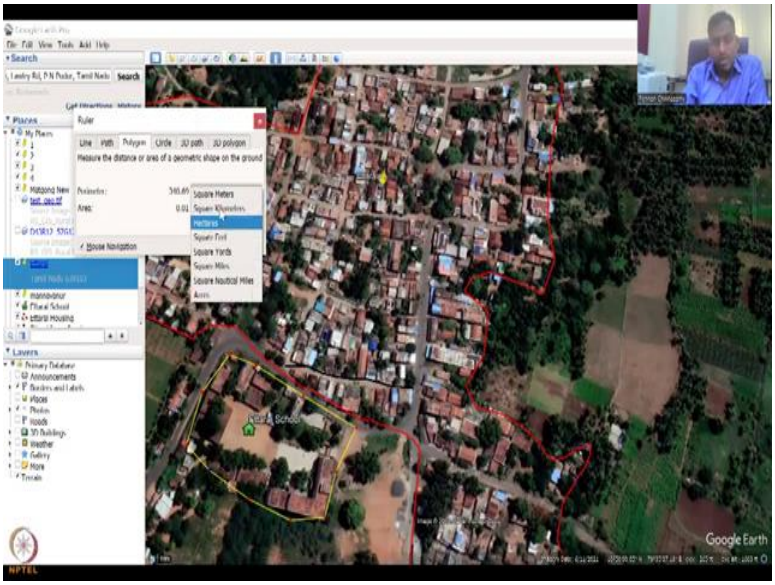

Google Earth
NPTEL

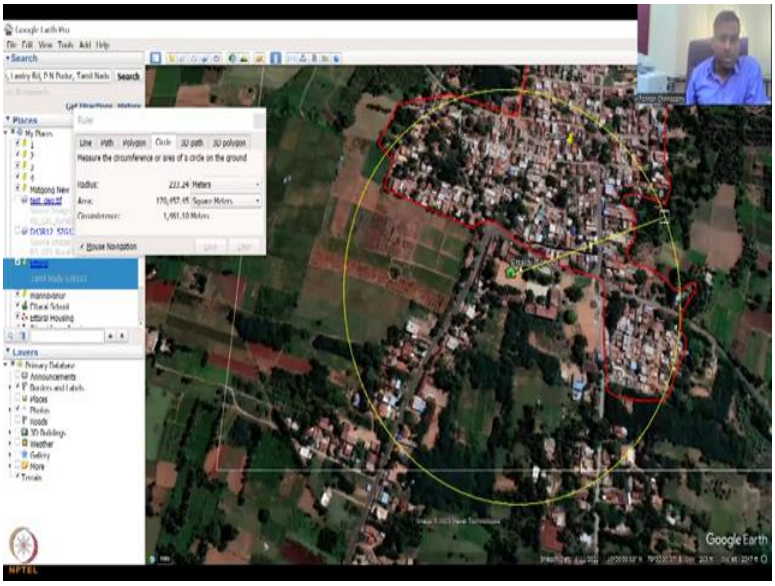

Google Earth
NPTEL

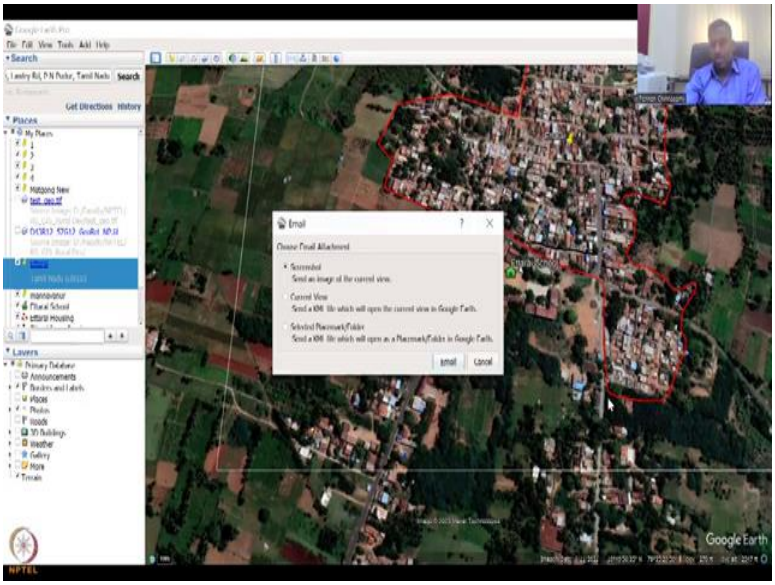

Google Earth
NPTEL

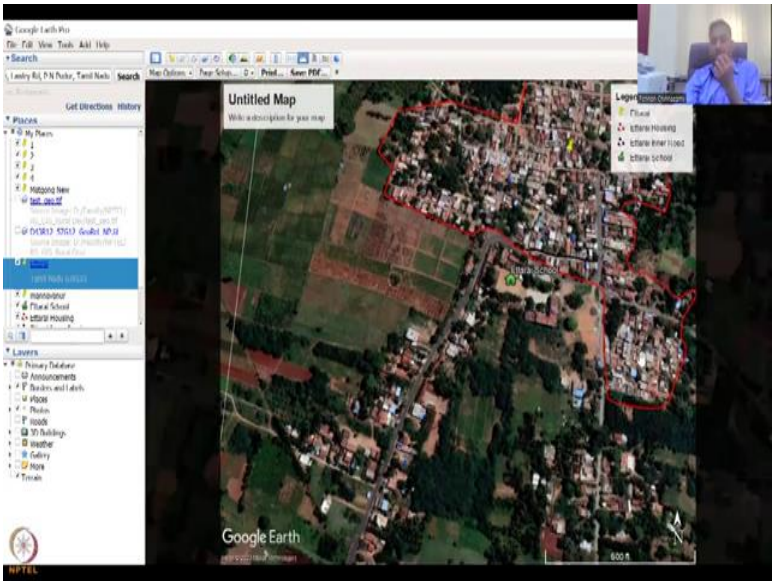

Google Earth
NPTEL

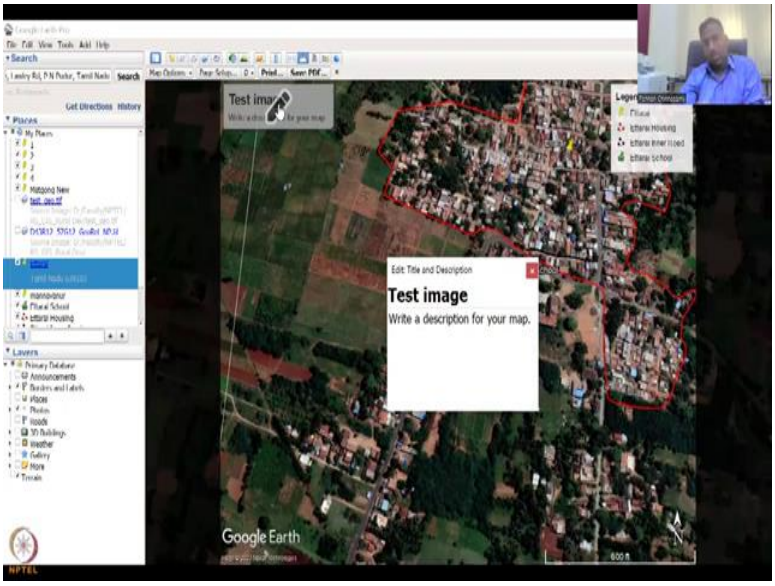

Google Earth
NPTEL

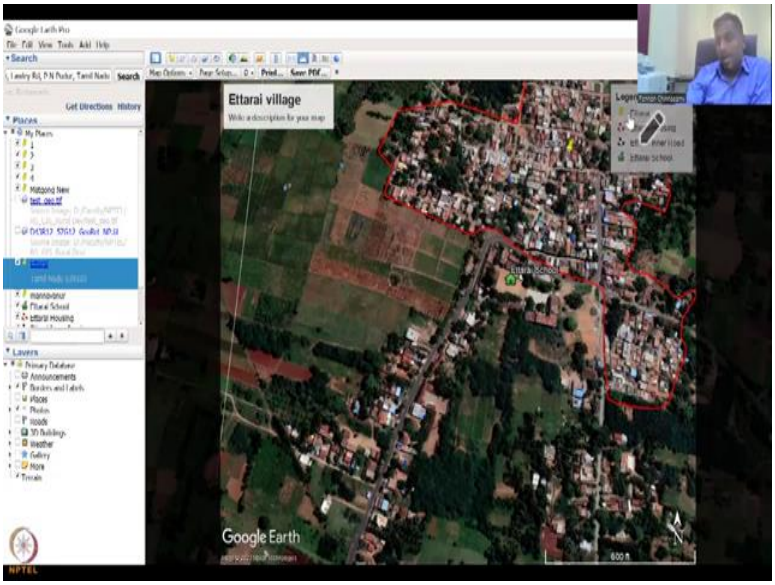

Square Meters
Square Kilometers
Hectares
Square Feet
Square Yards
Square Miles
Square Nautical Miles
Acres
Google Earth
NPTEL

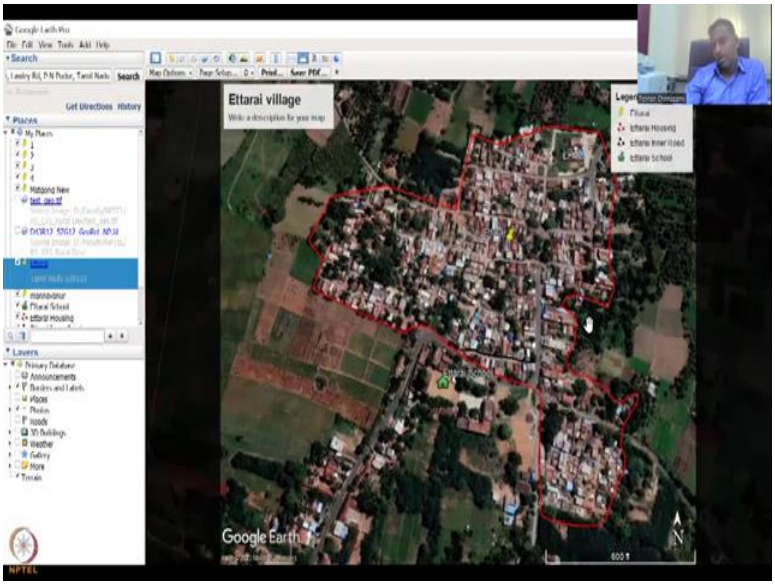

Google Earth
NPTEL

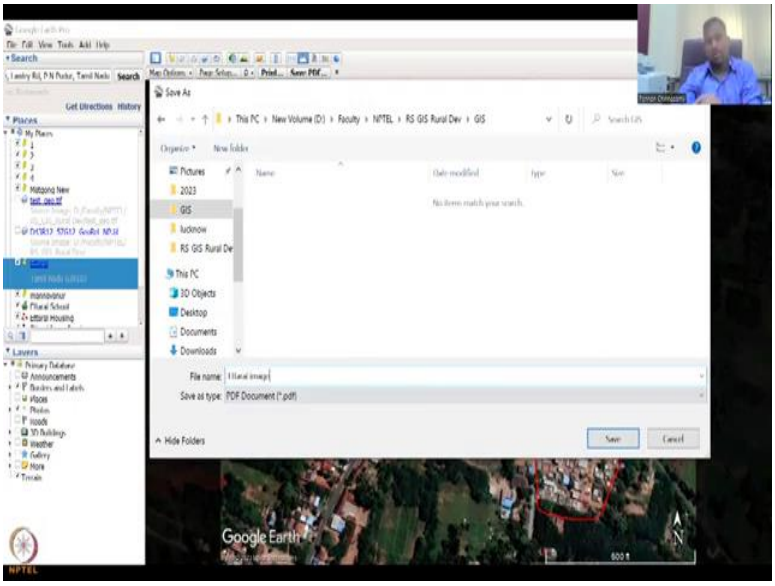

Email
Choose Email Attachment
Screenshot
Send an image of the current view.
Current View
Send a KML file which will open the current view in Google Earth.
Selected Placemark/Folder
Send a KML file which will open as a Placemark/Folder in Google Earth.
email
cancel
Google Earth
NPTEL

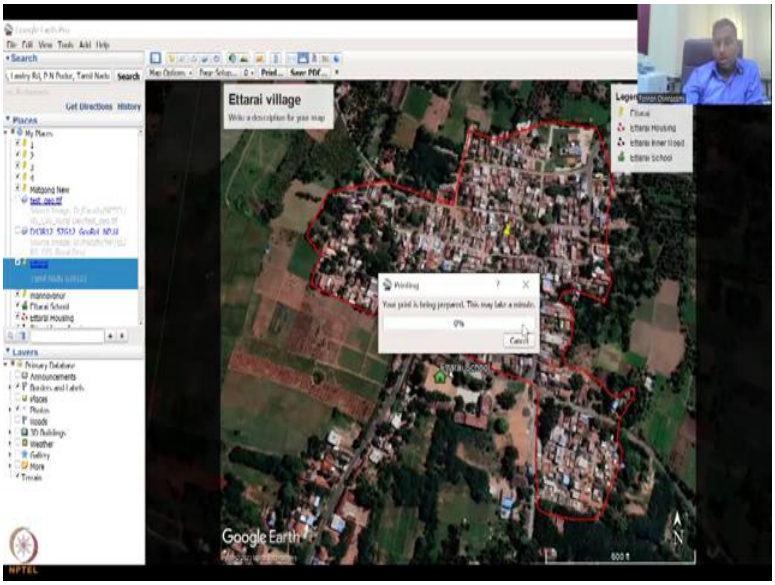

Untitled Map
Write a description for your map
Google Earth
NPTEL

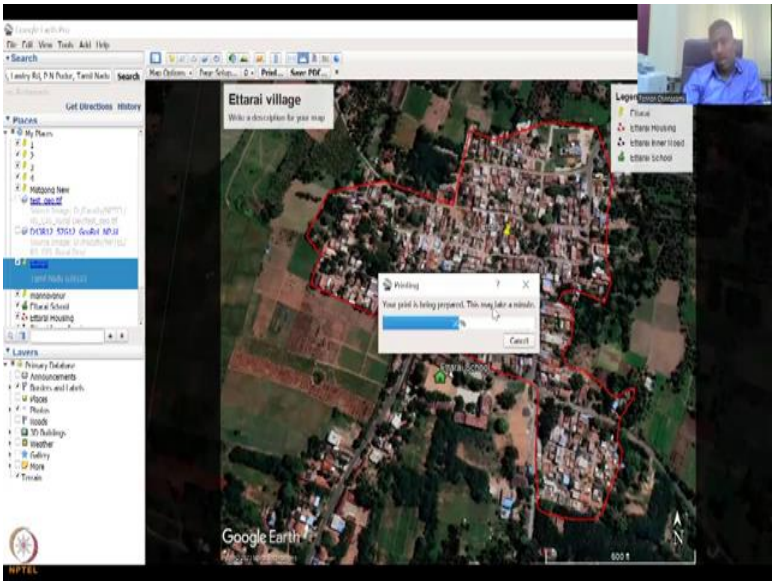

Edit Title and Description
Test image
Write a description for your map.
Google Earth
NPTEL

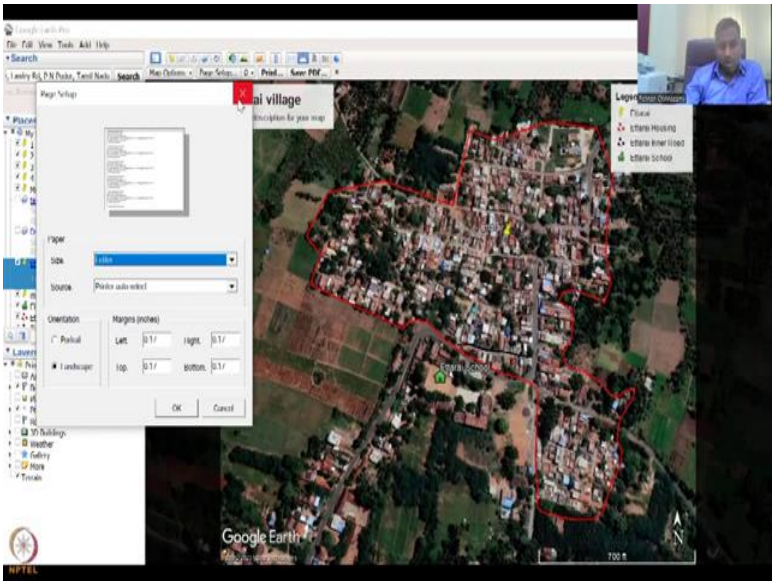

Ettarai village
Google Earth

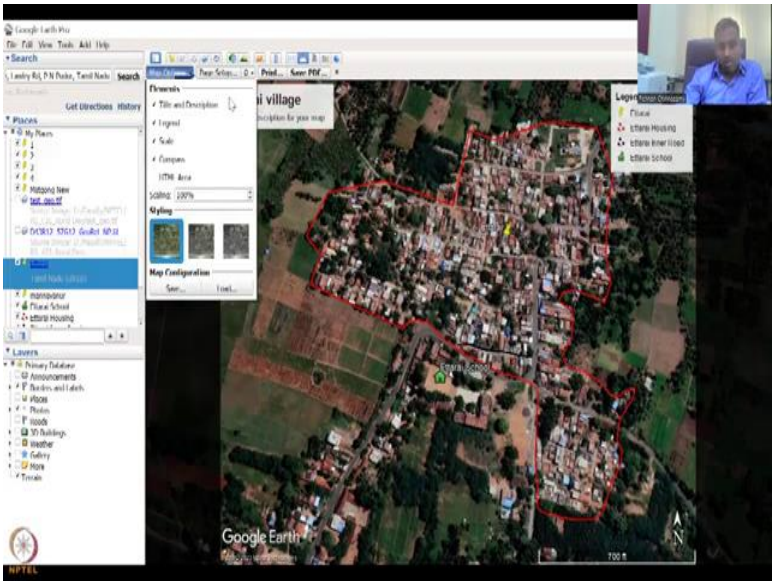

Ettarai village
Google Earth

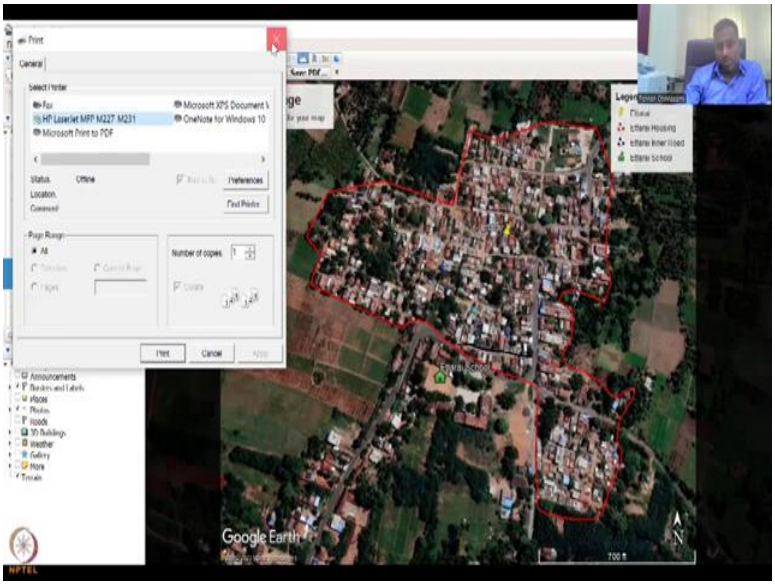

Save As
Ettarai village
Google Earth

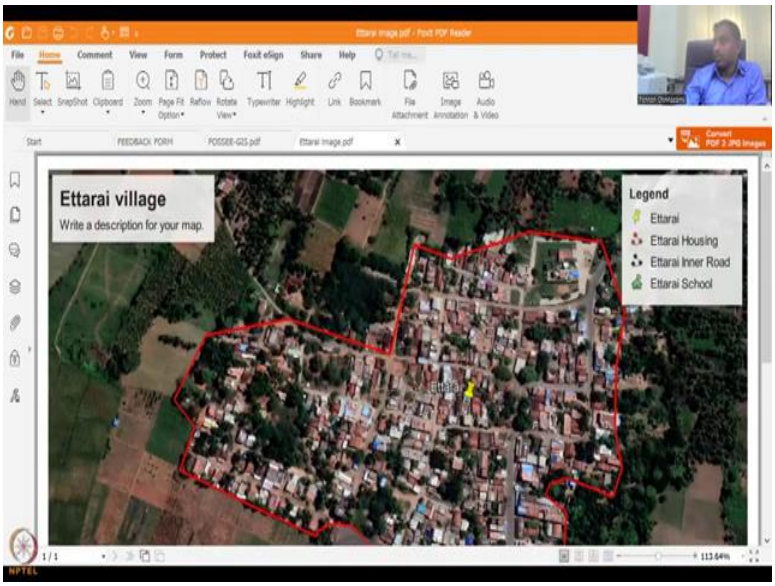

Ettarai village
Write a description for your map
Printing
Your print is being prepared. This may take a minute.
0%
Cancel
Google Earth

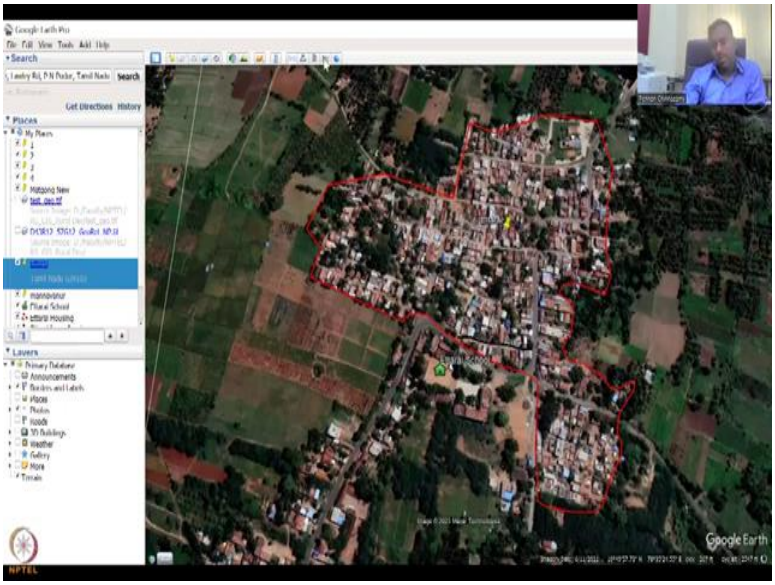

Ettarai village
Write a description for your map
Printing
Your print is being prepared. This may take a minute.
Cancel
Google Earth


Page Setup
Paper
Size
Source
Orientation
Portrait
Landscape
Margins (inches)
Left
Right
Top
Bottom
OK
Cancel
Google Earth


Google Earth
NPTEL


Print
Google Earth
NPTEL


Ettarai village
Write a description for your map.
Legend
Ettarai
Ettarai Housing
Ettarai Inner Road
Ettarai School
NPTEL



So this is the tool, you can always come back to Earth by clicking it and click Earth, welcome back to Earth. Now, so initially I took a plane from Ettarai to Thanjavur, back and forth or even to Australia back and forth, then we took the rocket to Mars and Moon. Now we are back to Earth. So let us click Ettarai. Now all our selected features are again back, so let this go in and I am going to do two more tools which are very very important.

Go to view go to reset, tilt, so one of the most important is the measurement tool. So this is quickly done. For example, this is a scale you can do a line, path, polygon, circle, 3D, 3D polygon. For us the three important are line, path and polygon, and circle also is important. For example, let us do a line. I am going to measure this road length. So from here I click and then from here I click, that is it.

So two points, what is the length? It is map length is 0.3 kilometres or meters, 129 meters, ground length, fine. So this is a quick way of measuring the distance between, let us say this is the school, yeah, this is actually the school and this is the house, so they have to walk 120 meters every day, up and down, which is good.

So then you can do a path, let us say this path is not accessible, so you have to go like this, come around, go like this and then go inside, come around, go to this root up, down, and you are in school. So now you see that you can do a path, a perimeter and then that is 400 meters length. So this also you can do quickly and then save, if you want to save the path you can do the path and then it goes as a path.

Click the ruler again, then you can do a polygon. Let us say I want to measure the size of the school, so I am just going to click the boundary of the polygon, you could see that it does not come as a space, as a road, it is not a line, it is a polygon, so it is always closing the loop, now it says close and it is, perimeter is 340 meters and the area is 0.01 square kilometres. You can also do it as hectares, square meters, whatever is the unit you want.

Then you can quickly note it down. The last one is circle, so you can click and then enlarge. So this is the circumference of radius of influence, those kind of things. For example, and then you clear, so whenever you want to restart again, you can clear. So for example, I want to do this circle, so let us say centre of this school as a centre of a circle, then you go out, so left click and then move the mouse out, it will go out.

So now you could see that the influence of the school is, you can say, let us say this is the influence of the school, the radius is 200 meters. So within 200 meters how many houses are there? Now you can physically count or you can count what percentage is housing and percentage is land. So if you just leave it, so you can just leave it and see that almost 60 percent is agriculture and 40 percent is housing in this 100 or 200 meter radius.

And these kids can come here, which is of ease, the kids which are staying far away have to take a cycle bus or something to come. Good. So then there are 3D path, 3D polygon not needed for our part, so I will leave it. So this is email, if you want email, this location, the screenshot, you can click ok, and email it to your yourself or to send someone you can email the view etcetera. But the easiest way is also you can click on print.

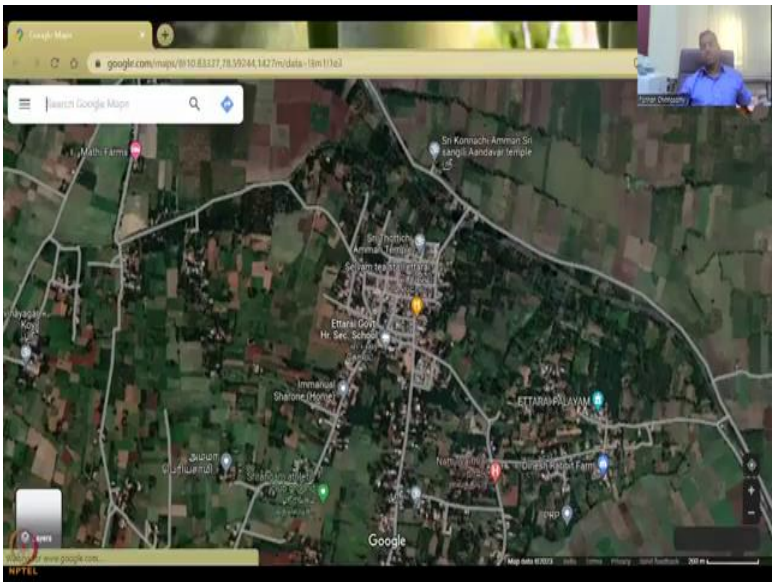
You can print an image map of this, see the print, it takes a little a couple of seconds, let us say it took 2 seconds, 3 seconds. So this image can be downloaded. Let us say test image is the title, if you want the title or we know that it is Ettarai village. So that is the name that will come up here. The legend is what are the tools that, what are the markings that there are in the map and you can adjust the map to centre it and all the stuff.

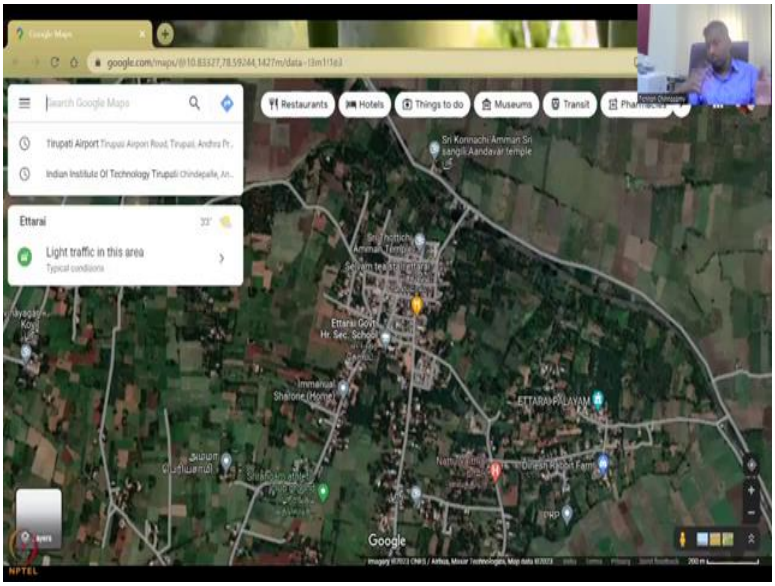
Once you are happy you can print it or save as a PDF and save as a PDF, I am going to put it in my GIS Course. Let us say Ettarai image, you can save, depending on the resolution it takes time. If you had a high, high resolution I will show you how it is. Then you will have a bigger time to take. So it is going to take some time, it is done now. So now it says map options, page setup, you can click how you want to print it.

Map options, entire map, whatever you want, if you do not want to title, you can take the title off. So it goes off, I will put it back in and then save as PDF. So all these are there, if you want to print it you can print it to your printer. We did save PDF, so it opened like this. Let me open this just for our sake. Once it opens I will share the, you see. So now I am sharing the image as a PDF.

So you can see that beautifully the image has come, now you can go into your report, your thesis or whatever it is. So now the last and the most important part, if you want to cancel you cancel now, it comes back to the normal.

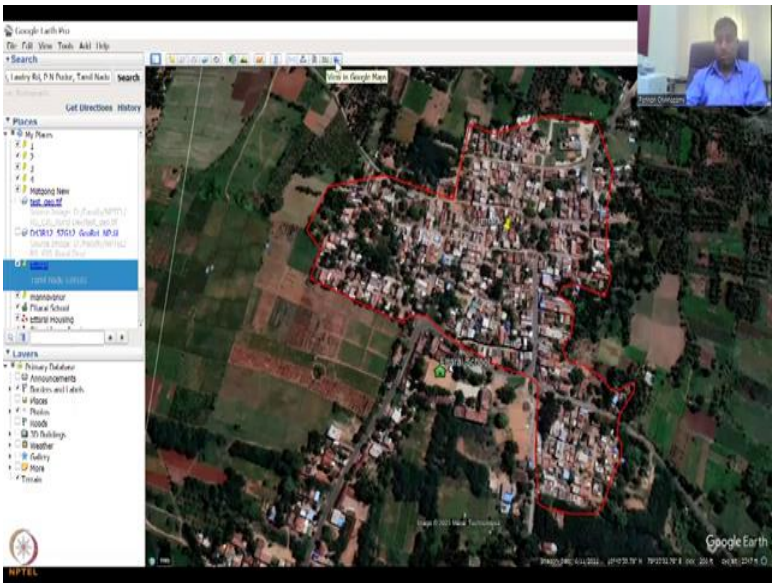
(Refer Slide Time: 34:29)

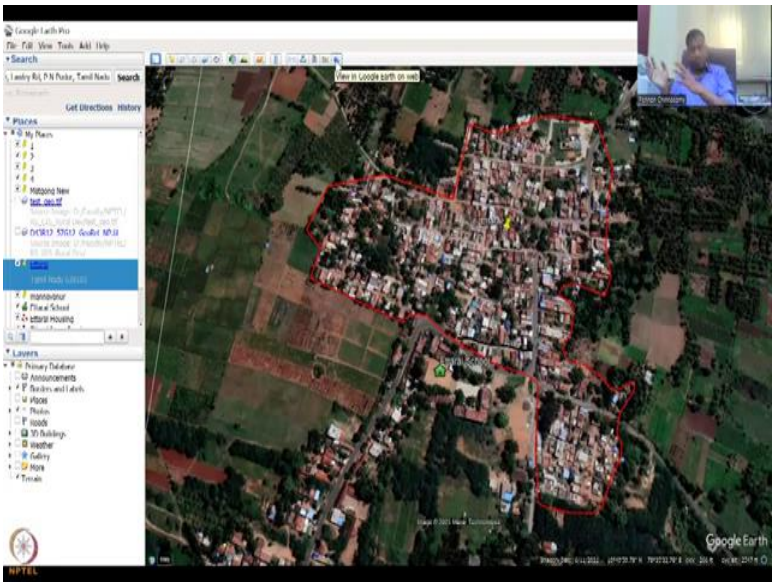


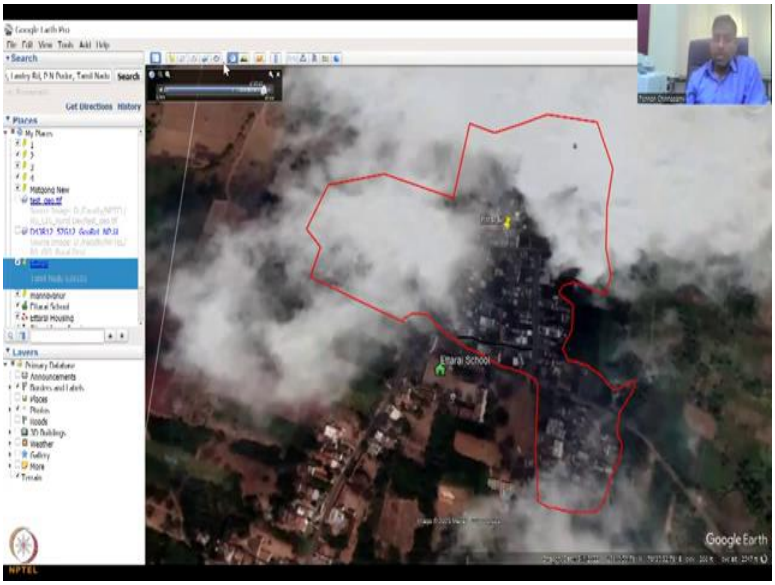


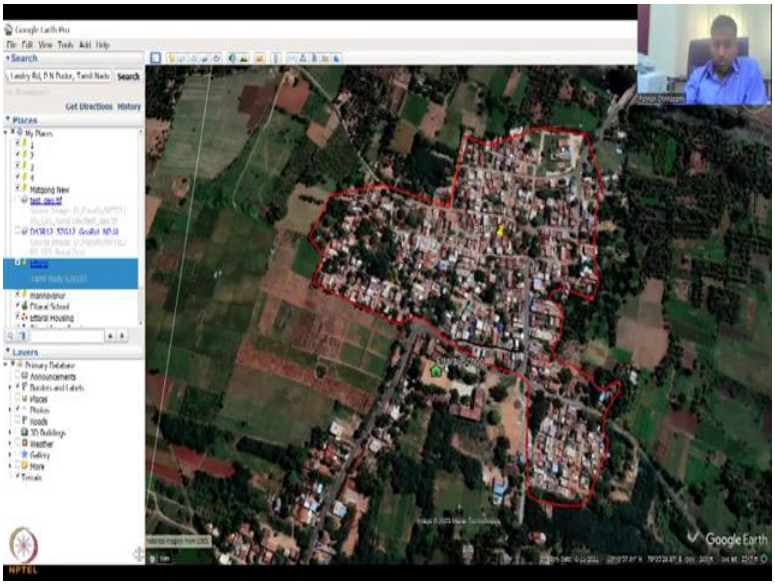
This is an important button which can take you to Google Maps. If you click it, it just automatically takes you to Google Map, let it upload, the same location, but now opens in Google Map, where you can do directions and like in Google Map that you use for booking Ola, Uber or something. So that is the map that it comes up, which is needed for making some distance calculations, etcetera. So let us go back to our Google Earth Pro.

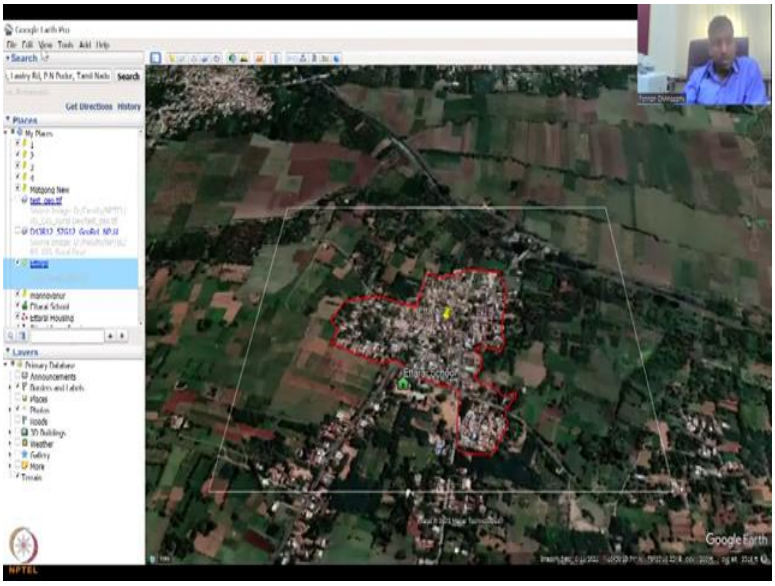
(Refer Slide Time: 35:03)

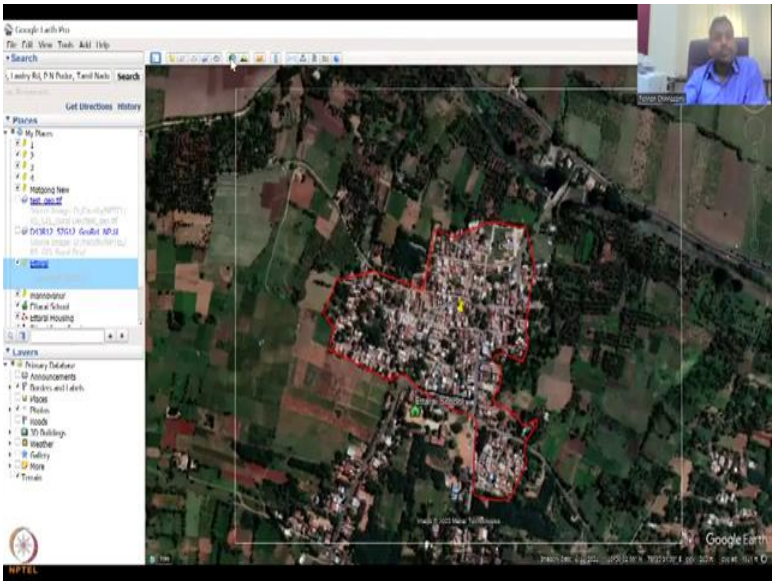


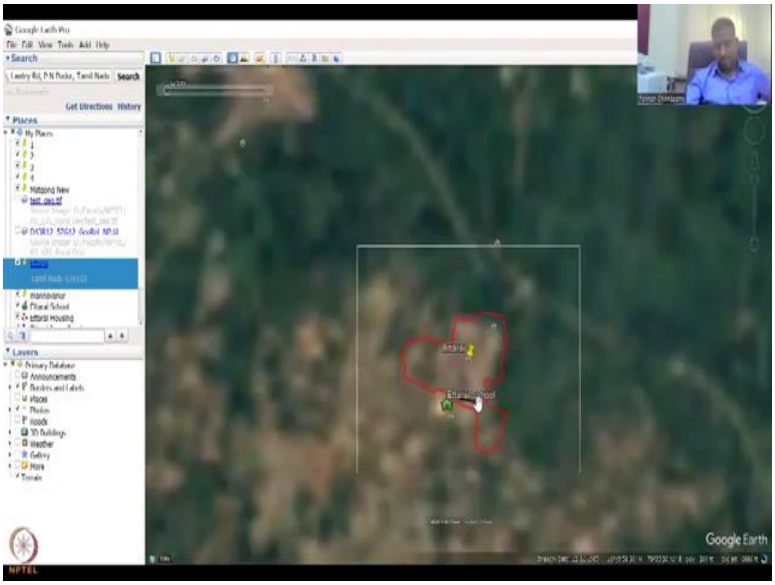


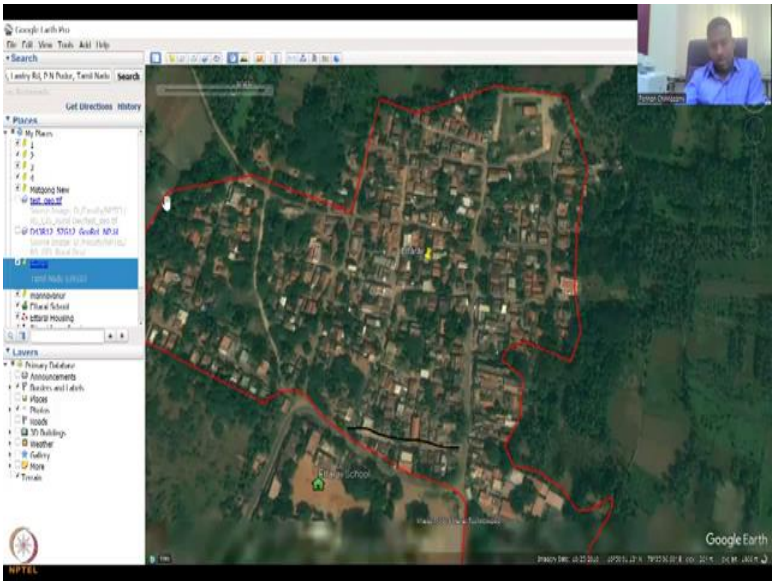

Google Earth
NPTEL

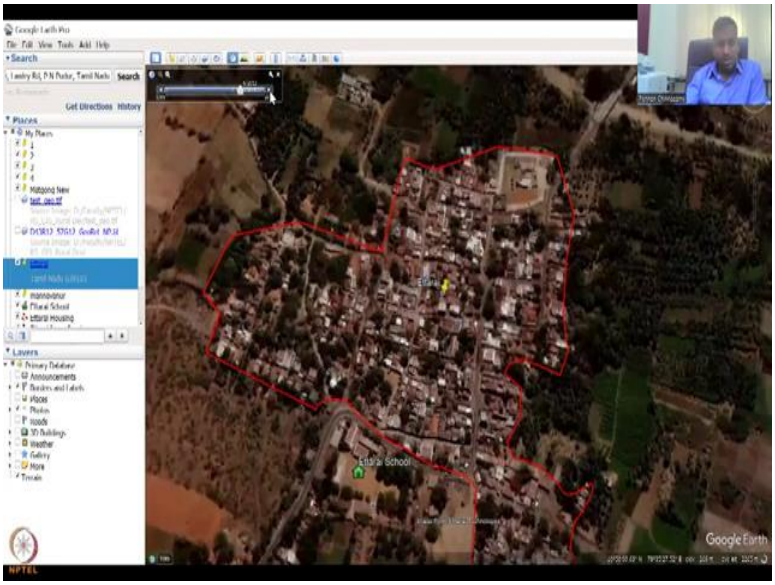

Google Earth
NPTEL

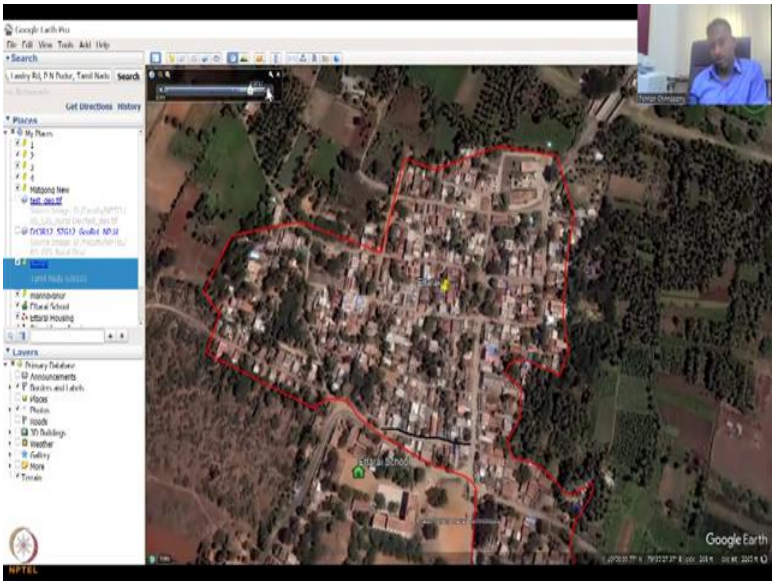

Google Earth
NPTEL

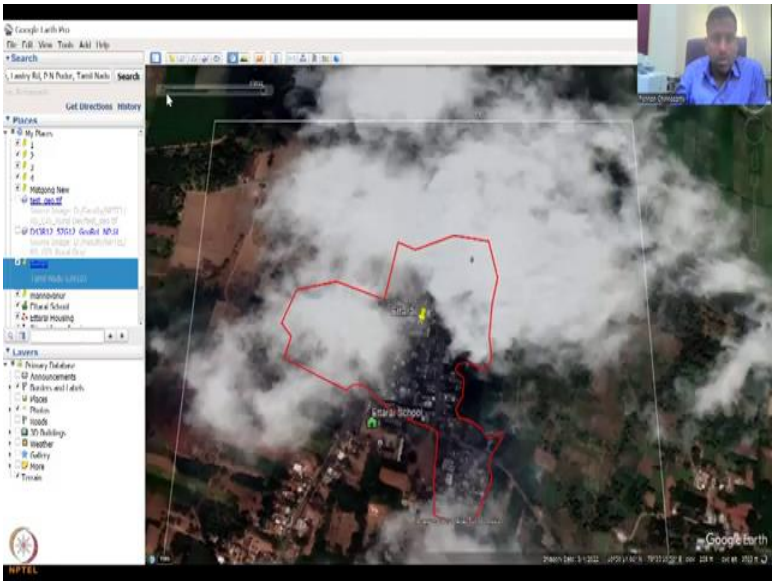

Google Earth
NPTEL

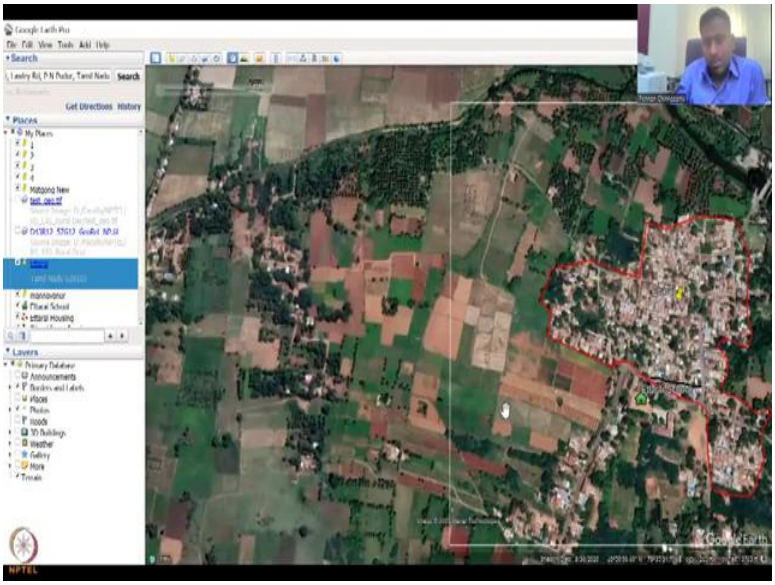

Google Earth
NPTEL

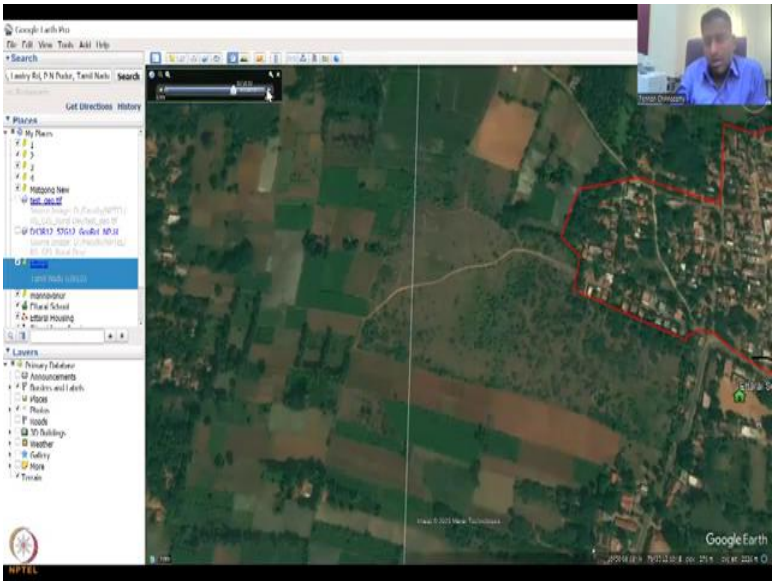

Google Earth
NPTEL

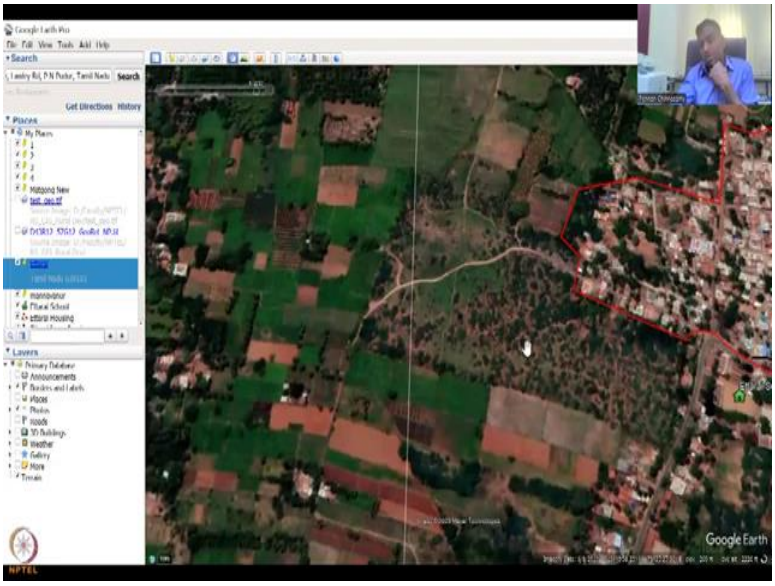

Google Earth
NPTEL

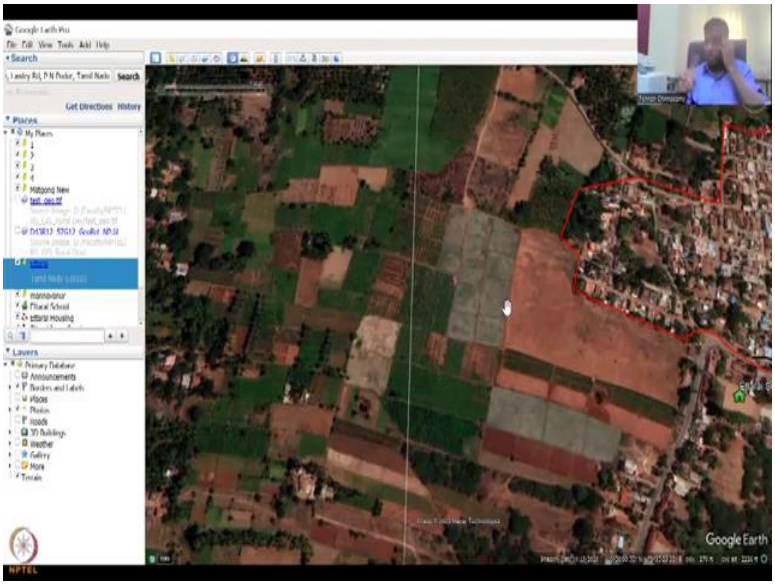

Google Earth
NPTEL

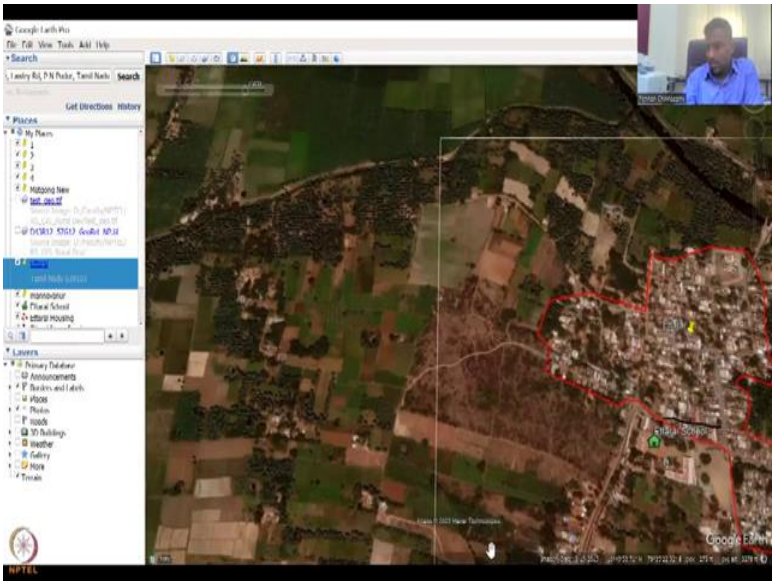

Google Earth
NPTEL

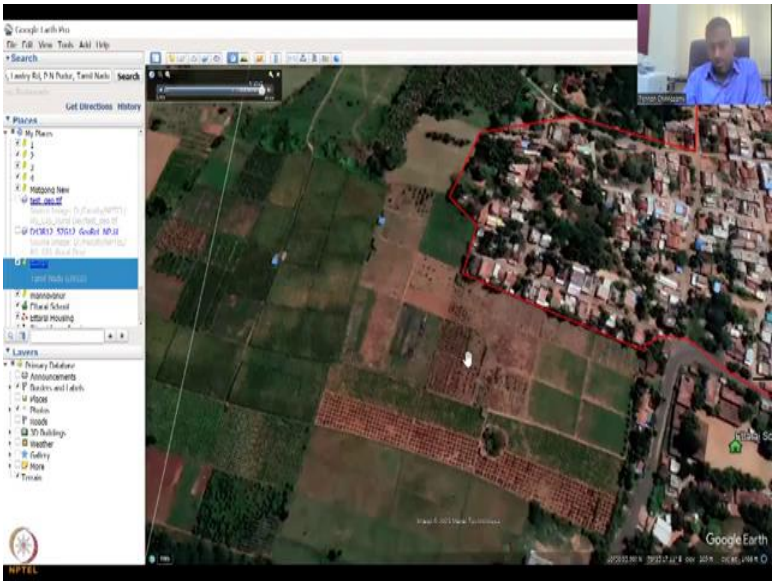

Google Earth
NPTEL

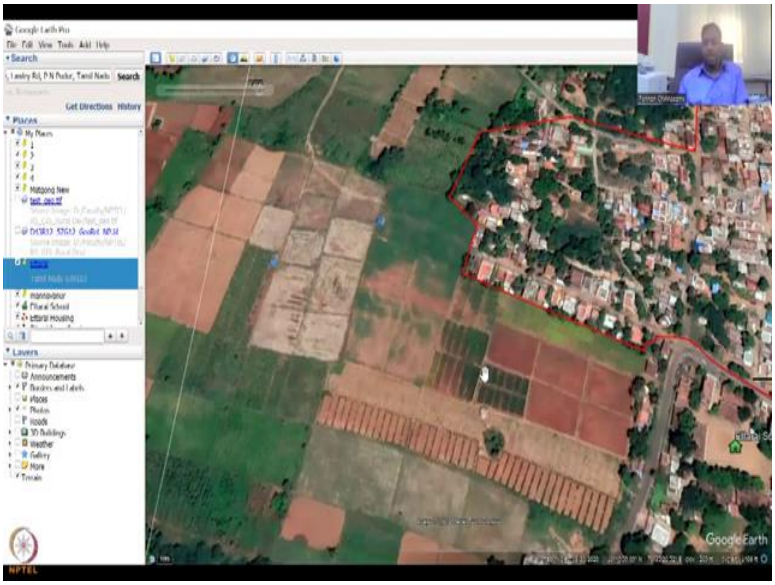

Google Earth
NPTEL


Google Earth
NPTEL


Google Earth


Google Earth


Google Earth



Yes, we are there. So this one is viewing Google Maps and then viewing Google Earth on web. It is the same thing but on the web version, it takes a long time, so I am not going to do it. The most important tool I would say is this clock tool, which we will spend some time here. So if you click the clock tool what happens is automatically the date from which the image is available comes up.

You remember that in the bottom, you can see in the bottom it tells that historic image from 1985 we have. So if I zoom out you may get better image also. So now the block does not come up, but let us go back to Ettarai. So now 1985 is the image that we can get, which is pretty amazing given that more than 40 years of data we can get, approximately, yeah. So this type of image can come.

Let us go to 1985 and see how this village performed. As I said the, it is done, so you can see the circle is done, which means the resolution is not good, those days satellites were not as high resolution as we have now, but you can zoom out and see okay, some part is still land, there was not much construction happening, and then when you come here you can have a play button. It is not going to play, it is not like a play button that plays like an animation.

But what it does is it goes to the next available image. So now you could see this boundary that we created for the village, still 80 percent is not being occupied as houses at 2010. So 1985 we saw a lot of brown, I think there is not much houses, but then 2010, within 15 or 25 years you could see that a lot of houses are coming up and then 2012 a lot of clearing, all the green color is gone, trees are gone.

2013, some this part is picking up some trees, some houses are bringing back the vegetation, 2014, let us pull it to 2017, and then just wait for it. So now you could see that full constructions has happened, so this is how you could map the boundaries of a village and how it has expanded uncontrollably. This is very important for your rural development activities also.

For example, I said houses, hospitals, health PHC - Primary Healthcare Centres, Anganwadis for the small kids, if they do not have it and they have a big village which is expanding, they better have more facilities. And the latest one we have is 2022, March 2022. There is a lot of cloud cover, so we can ignore it. So some images are taken out of the cloud cover, and if I zoom into this part, you can see this part, a lot of agriculture.

And then if I do 1985, you can still see brown, so this part, you can see here that is not much agriculture. Maybe it is shrubs, barren land, there is barren land a lot in this area I can confirm, but then as and when technology increase, the Green Revolution and access to water, etcetera, these fields, look at this, this is not agriculture. So but now you can see that they have been ploughed and then converted to agricultural patches.

See the boundaries you can see, clear boundaries, those were not available in the past, so now they have levelled it and then they created these boundaries where agriculture can be practiced. So this is very important tool in Earth Pro because you cannot download multiple images in GIS and then wait for an understanding to happen, whereas here now 2020 I can say clear agriculture, 2015 no agriculture.

So what was the image in 2015? It comes here, Maxar Technologies, so you can zoom in Landsat, mostly they will use Landsat imagery. This is not agriculture at all, but now you have good agriculture activities. So the idea is to get this image Maxar Technologies again and then do some crop mapping, which will give you the raw peel, water demand and other aspects. Good so now we have had two lecture courses on Google Earth Pro.

I hope you will use it extensively because it is free open source tool and it is a beautiful tool to quickly get satellite data that you can use. I can take a screenshot of this or download this image, which can readily sit into GIS, because this already has a spatial location data embedded in it. So this data can go seamlessly into QGIS as an image and you can work with it. We will look at all these in more detail at an advanced level.

I will see you in the next class where we will look at some ground control points from these Google Earth Pro imagery. Thank you.