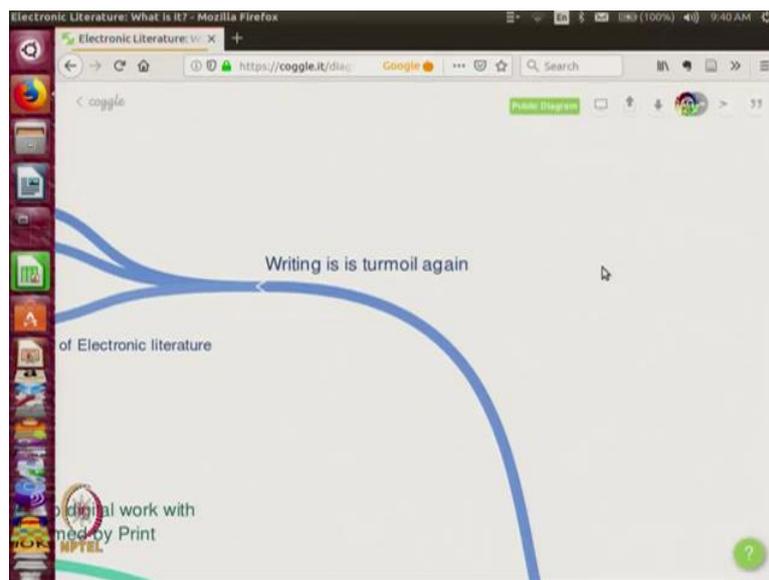


**Text, Textuality and Digital Media**  
**Professor Arjun Ghosh**  
**Department of Humanities and Social Sciences**  
**Indian Institute of Technology Delhi**  
**Lecture 24**  
**N. Katherine Hayles: Electronic Literature**

In order to take a closer look at the digital the literary works within the digital platform. We will take a look at this essay by Katherine Hayles on electronic literature. But before we do that let me give a disclaimer here is that much of the discussions that we are engaging in on these particular pieces of work are severely dated.

They are not what we would claim to be the state-of-the-art form of literature. Many of these arrived from the very early examples of electronic literature. The experimentations with the new form that artists engage in and writers engage in.

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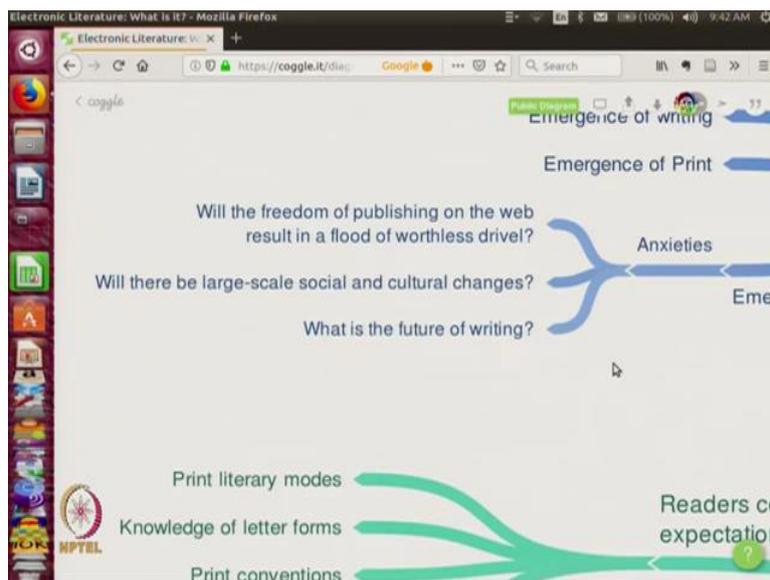
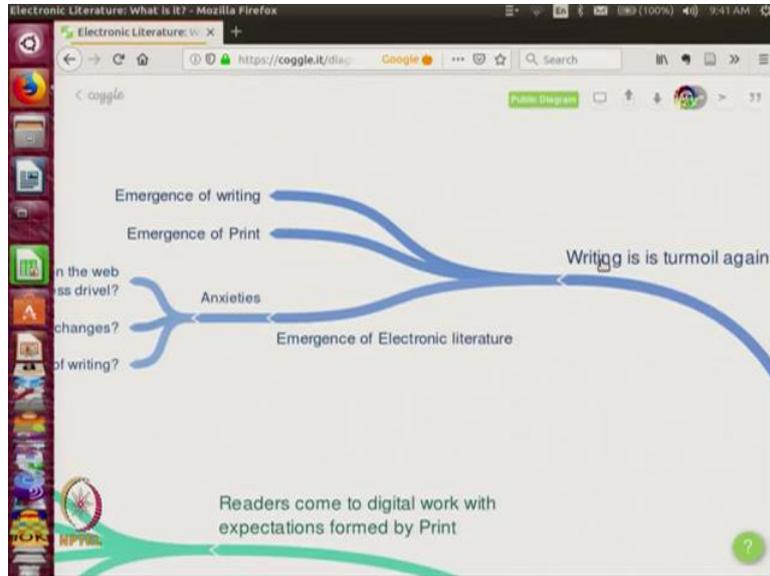


But what is important about this is that they point about the fundamental basis the fundamental structures of operation of underlying the newfound digital literature electronic literature. And many of those and by and large these analyses are very important for us to understand. So, I would request students to actually focus more on the analytical aspects of the lecture rather than the purely factual aspects.

It would of course fun to actually go and look into some of these various forms of literature which are there. I would also like to point out that because of issues related to copyright, it may not be possible for us to actually look through some of these platforms in the course of

this particular lecture but you are most welcome to actually go and explore some of these texts on your own.

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So, Katherine Hayles (02:26) that again once again with the coming of the digital literature the digital universe writing is once again in turmoil.. She said and it is similar she links it to the moment of the emergence of writing or the emergence of print where we have already discussed that what kind of turmoil, what kind of changes that were brought about in human understanding, in human communication in those moments of technological shifts, important technological shifts. So, the emergence of the electronic literature brings along with it similar kind of periods of anxieties.

And what are the anxieties, that there is a certain freedom of publishing on the web and will that lead to a flood of a lot of worthless material. But I think that is I mean of course Katherine Hayles does point out that some of these anxieties may not be completely unfounded but they are not unique to the coming of the digital universe and will there be large-scale social and cultural changes that are there.

That is also something that because print brought about a similar kind of change. And what is the future of writing? Will writing continue to exist or will it disappear from the face of the earth? Because there was a point of time when there was no writing.

So, let us closely look at each of these anxieties. The first one, will it lead to result in more spurious pieces of writing that could be there. So, remember the kind of debate that is between McLuhan and Sarnoff, where Sarnoff does discuss the fact that though a lot of worthless material has been put into place, because of the coming of print, it has also led to the increased circulation and increased engagement with the Bible so it is not altogether bad.

But what Sarnoff's statement actually testifies is the fact that there is what one would call a lot of spurious and worthless material that would have been available on the print as defined by Sarnoff. And we certainly looked at what Dryden had to say about the kind of literature that is produced out of Grub Street in his poem Mac Flecknoe.

So, this is not something that is new but what is important for us to understand, that from the very early days of printing, we found that printers did defer to scholarly opinion to decide on what is going to be what is print worthy.

And that has precisely been because print is a capital intensive venture and the printer before putting in a certain amount of money wants to ascertain what is the sale ability of material. And therefore they needed to take some cognizance of what is the current state of affairs through some scholarly opinion.

The other consideration that printers also had and why they need to defer to scholarly opinion is because print is a fixed form. Print being a fixed form, there is no possibility of recall and therefore the text that is printed needs to be well shaped, they should be free from errors. And that is also another area where the scholarly community could help the printing press. So, this partnership between printers and publishers and the scholarly world got solidified with the kind of canon formation the institutions.

Academic institutions did play a major role in shaping the world of print but print did also exist outside of academic universe. Print did exist within us what one looks at the market space, the market driven print. What would get printed is also dependent on what would sell. We always found that the kind of what got attacked by the state was pirated editions of texts or pirated volumes which were politically, ecclesiastically forbidden.

Certainly their profit played a very important mode, ideology also played a very important role, the profit also played a very important role. So, profit also did dictate what kind of texts do get printed. So the fear now is that it is this institutional basis of publication which runs the risk of getting subverted, of getting diverted by the coming of the digital media because institutions now no longer get to play much of a role.

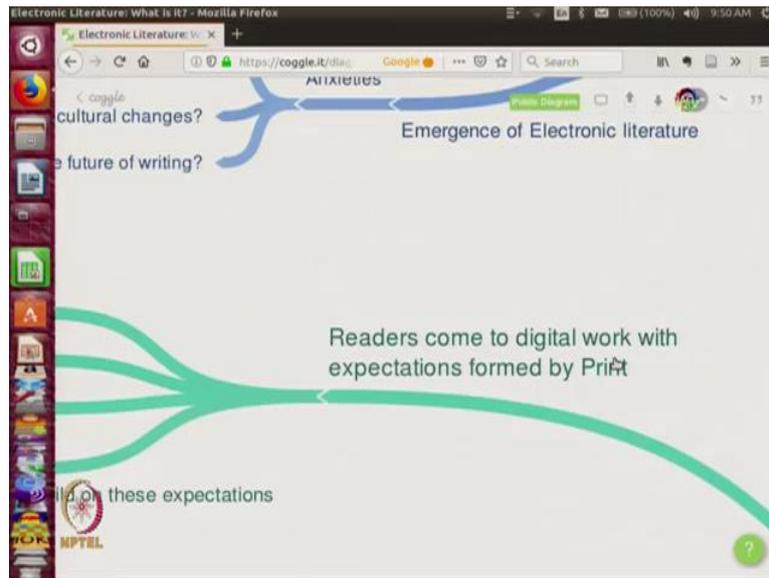
Simply because of the fact that there are ways now of actually gauging public opinion or public reception of texts outside of sales. Sales are not the only way in which public opinion are to be determined. One can engage in click baiting and look at the number of likes or comments on specific posts to be able to judge all that. So, and therefore that institutional basis is being challenged and that is probably being looked upon as a certain kind of freedom, anybody can publish whatever they want to.

What this kind of an anxiety actually down plays or overlooks is the role that platforms play. The fact that is there real freedom of publishing on the web. That is a major question that one can ask. Much of the points that I made are my own where I am trying to analyze or take further the points made by Katherine Hayles.

And so, the second question of these large-scale social and cultural changes are something that is a matter of concern, we can see certain directions in which digital media has taken the world in, with a readily available analysis one can look upon is the brexit referendum, the result of the brexit referendum or a large kind of scholarly community which looks upon the kind of elections that we have seen in Brazil in the recent past. The social media plays a very important role in mobilizing a certain kind of opinion.

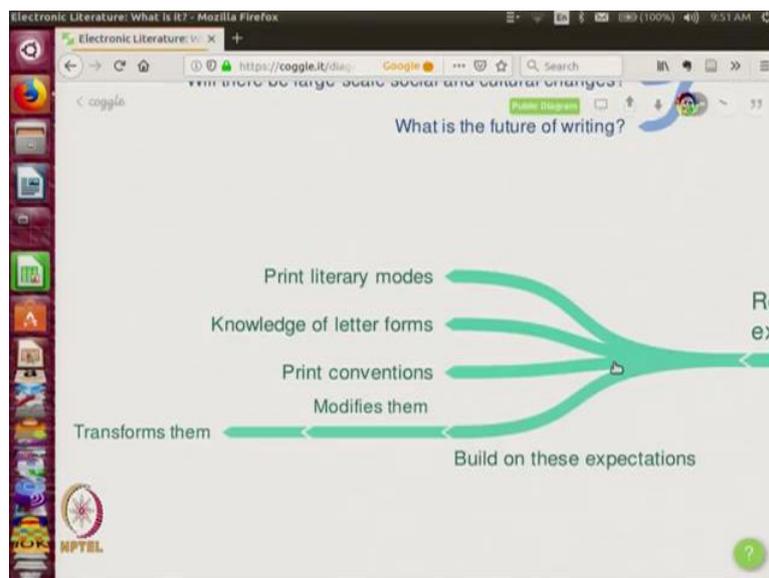
What is the future of writing? We see more and more people who engage in with electronic media actually circumvent writing. The only form of writing that does continue to exist is that of the memes or a lot of intervention of the visual media, videos, images play a major role. So, the importance of writing actually has been extremely reduced within the social universe with the coming of the digital media.

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Now, one would say that a large number of readers, not so much the readers of the third world because many readers within the third world, developing world or the underdeveloped world have never encountered print. The first real window to the universe that they have is not through a book but through the mobile phone. And therefore this is probably truer of the Western world where schooling is virtually universal and where readers come to the digital work with expectations formed by print.

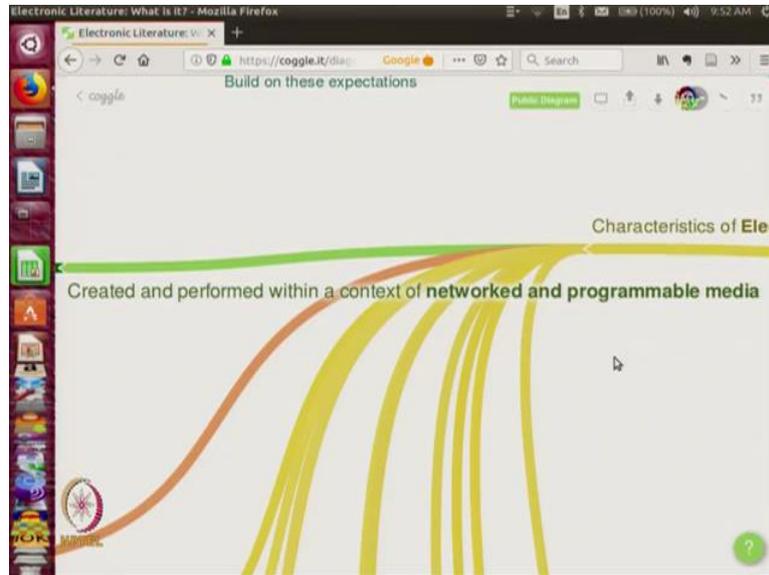
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So, one tries to the first encounter, try to understand these the digital literary modes through the modes of the print and the knowledge of the latter forms of conventional print the beginning middle and end. And so what artists do is they build on these expectations and

modifies them. So, a large part of the early electronic literature was to actually challenge the reader's perception of texts. The readers set expectations or reading conventions and challenged them into transforming them then preparing them for the electronic universe.

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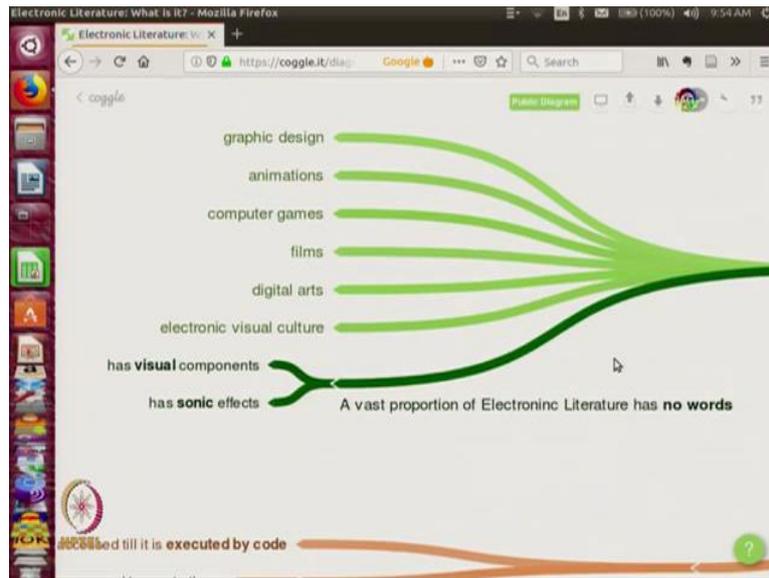
What Hayles does after that is she looks at some of the characteristics of electronic literature, of where these are created and performed within a networked and programmable media the back end, the program, the code which is there. As I have stated in a different lecture that unlike print where the manuscript is produced by the reader, by the writer and then it goes into printing or even the conceptualization of a certain text in the writer's imagination occurs prior to the act of writing.

What happens within the digital media is that the code and the platform has to be available before the writer actually writes and it and the restrictedness that genres are restricted by the particular kind of code.

I mean whether it be a novel, whether it be a play, whether it be a poem, the print that the task of printing remains by and large the same. There are not many or it is a new story, the task of the act of printing, the processes of printing remain the same for all of them. Whereas in the case of electronic media what we see is that genres are defined by the platforms, by the technique, by the technology involved and not by creative process.

So, therefore the creative process comes into play even in the creation of the programs or the backend. I will explain this point when we have to discuss another point, is that.

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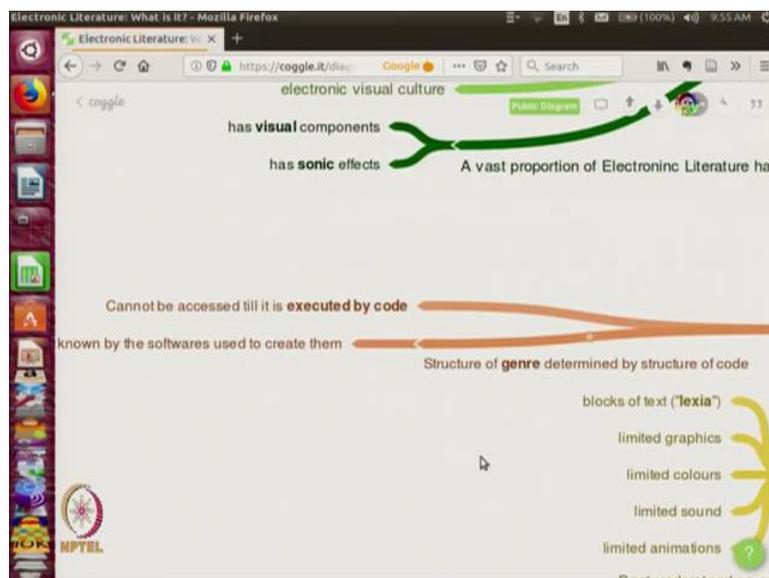
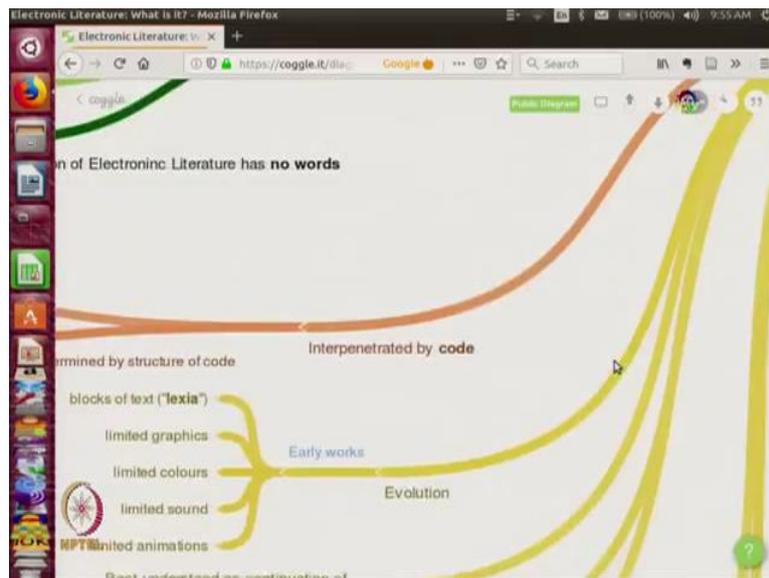


And what we have seen in our earlier discussions is that electronic media actually allows various kinds of media to intermingle and electronic media actually takes various shapes it can take the shape of a graphic design and a particular way in which these graphic elements are designed alongside the text. Various kinds of animations it could have a literary back end.

Computer games could have a literary back end. Short films, major emerging genre within electronic literary forms, art forms, they do have a script and therefore a literary back-end, the digital arts or electronic visual culture these are the various. This is the ecosphere of this digital art universe.

And a vast proportion of electronic literature does not have any words. And they have visual components and have sonic effects but what they do is they pull in these the various affects which refer back to the literal universe and what the reader would otherwise encounter within a certain literary universe.

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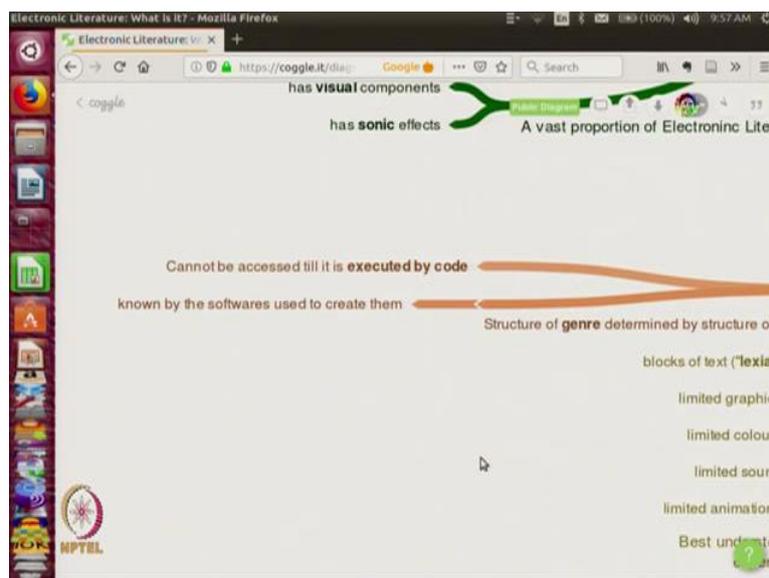
And she says that each of these texts are interpenetrated by the code and what she says is the structure or the genre is determined by the structure of the code. And cannot be accessed unless it is executed by the code and that is what we have seen, that many of these literatures they are dependent on the particular platform, the particular code that needs to run. And that needs to run on a machine, that needs to run on a computer for the reader to be able to access the text primarily.

So, there would be these various genres which are dependent on specific ways in which the code is written. So, if a particular artist wants to experiment with a new kind of genre or to develop a new genre, the structure, the code has to be written before the text is actually put into place. That is the important question whereas earlier if a romantic poet like Shelley

wants to play around with a new line form, a new rhyming structure or a new meter, they could do it without first having to figure out whether the printer can print it, I mean of course many of these poems are meant for manuscript circulation. So, they did not have to worry about whether a particular pen will allow them or the size of the paper. These were not the restrictive aspects.

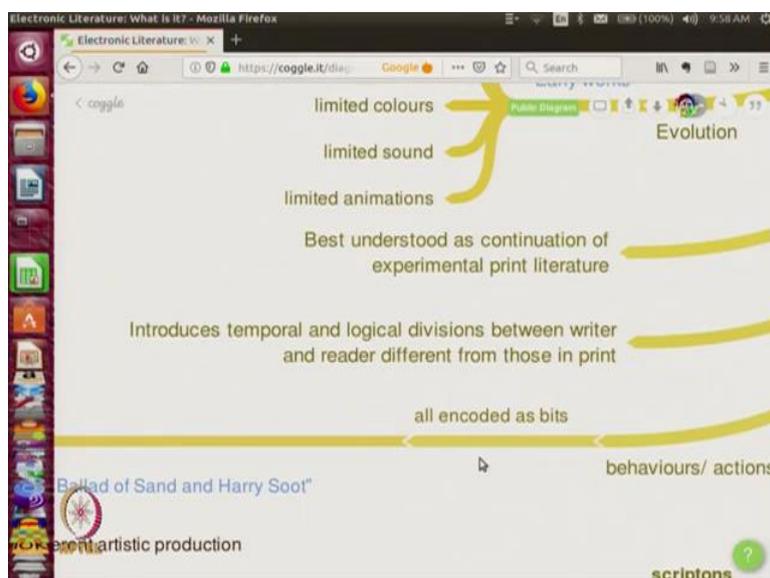
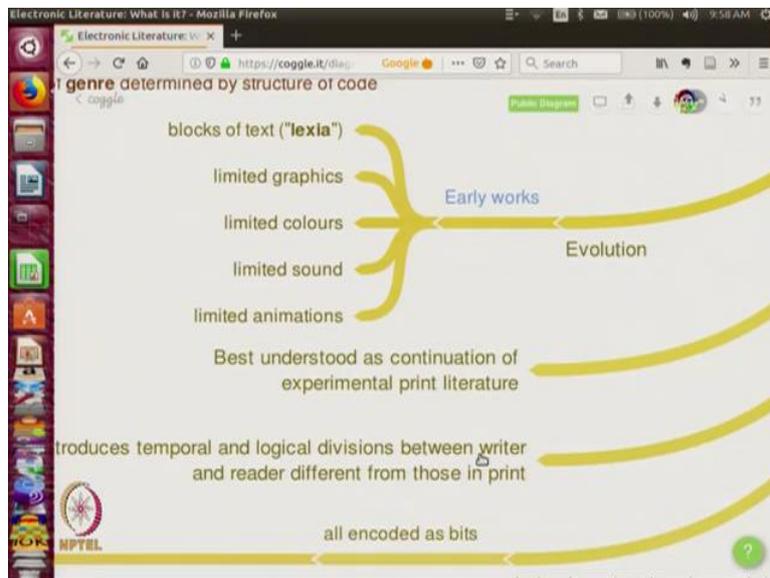
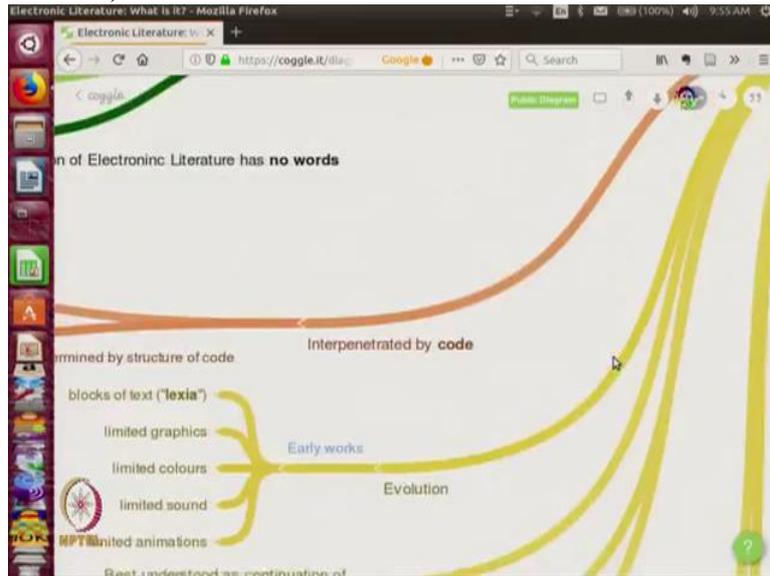
Technology was not it was a determining aspect but did not the role that technology played in hitherto in the creation of a kind of literary art was very limited. But in the case of the digital media, the technology plays a determining role, if there has to be an experimentation with genre that experimentation has to begin with the writing of the code. So, either the artists themselves can code or they have to work in very close collaboration with coders, people who can actually create the various kinds of software platform.

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And very interestingly many of the times the genre name the title are known by the softwares that are used to particular create like Storyspace is one very important example. Storyspace is a particular platform. Now, Storyspace is a genre of electronic literature which works on that Storyspace background and we can have various (())(18:56) various versions of Storyspace within which it is created.

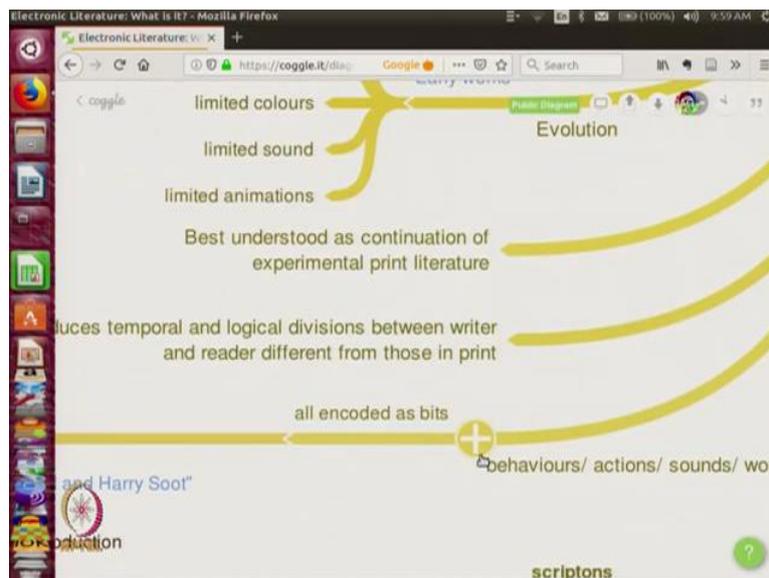
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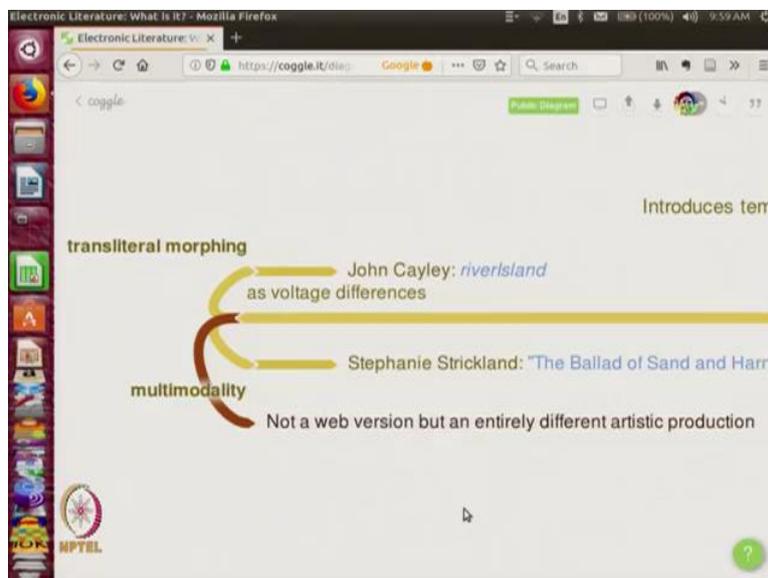
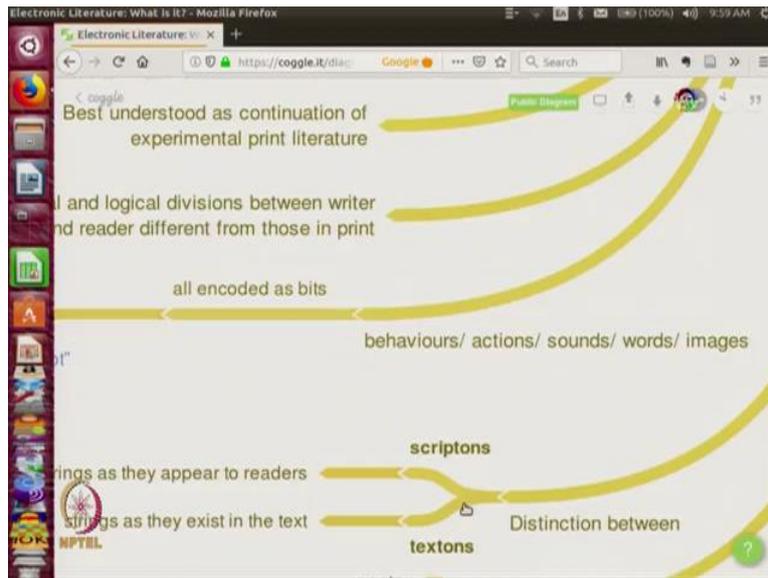


So and these earlier works, many of these earlier works of electronic literature, they were limited in graphics, they were limited in colors. There were experimentations, people worked with blocks of text, technology was very limited and these earlier forms of experimentation were looked would be better understood as a continuation of experimental print literature and they introduced certain temporal and logical divisions between the writer and reader which are different from those in print.

Because you know in print the text is basically done and dusted it is there waiting for the reader to be to read them. Here the text comes into being only when the reader encounters it and goes through a particular web and navigates through that web and it can produce some interesting passages, interesting connections between various nodes of the text which may have hitherto not been envisioned by the writer.

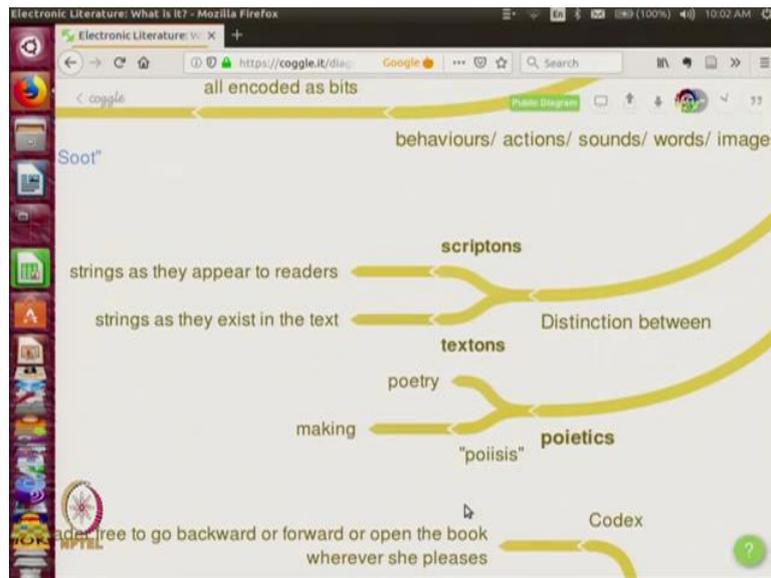
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And many a times because these would be randomly generated linkages the text does not even come into being before the act of reading actually comes around. Now, what we see is that various kinds of elements are encoded as certain bits within the various forms of electronic literature. These are some of the examples of electronic literature. So, as we know, many of these forms are no longer available to us because we do not have those machines, those who have the machines can understand them.

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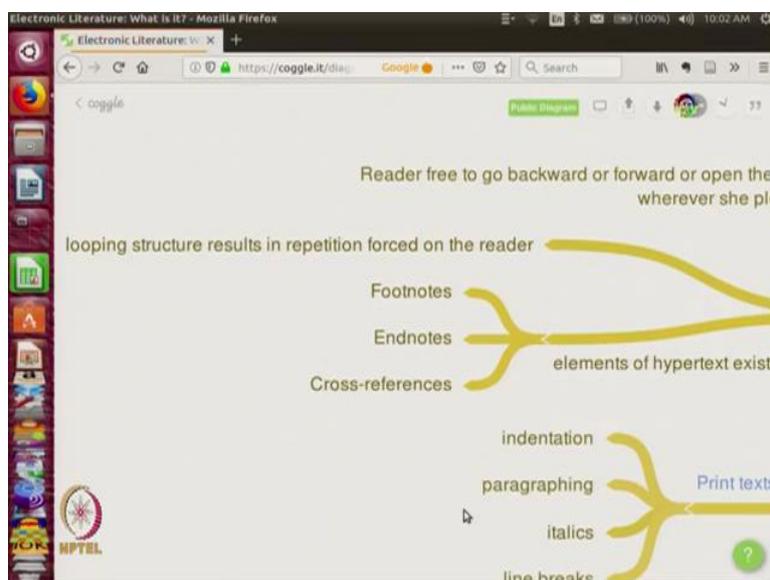
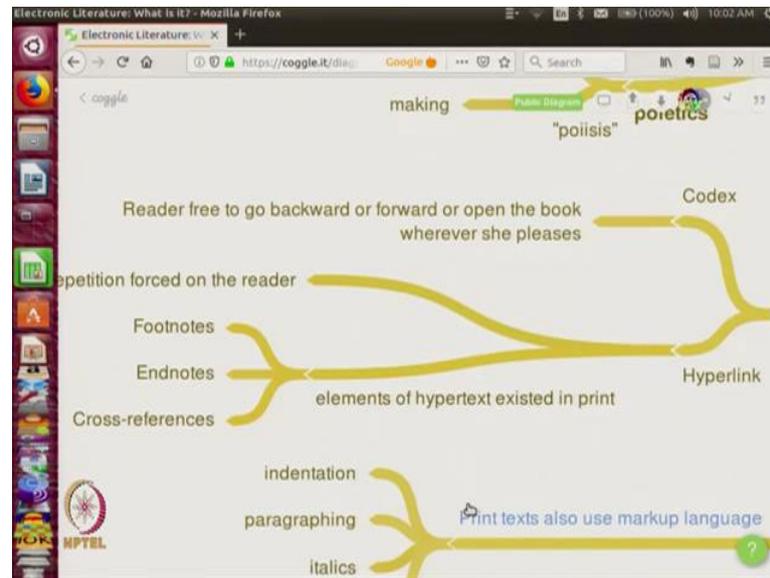
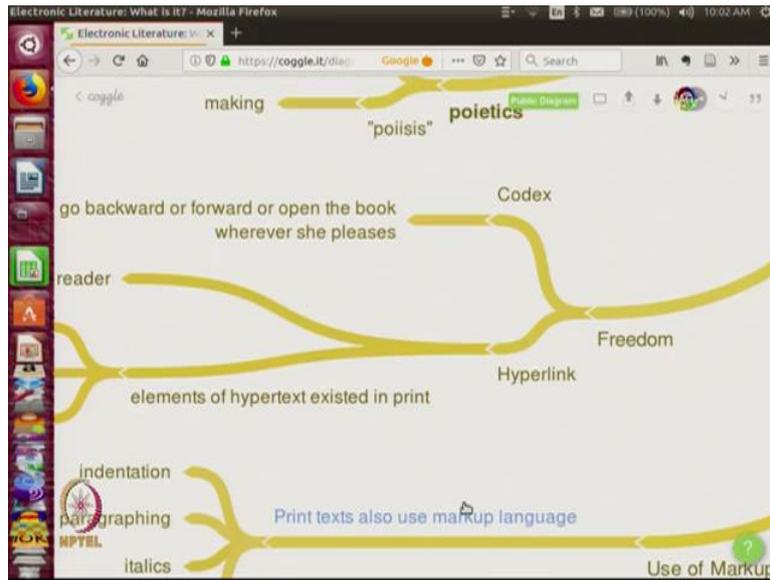
And what we see is Katherine Hayles tries to make sense of these analyzes what is the way of encountering understanding these electronic literatures. She says that there is a distinction between scriptons and textons. So, textons are where the way in which the writers actually plays the text within that larger web, within the site, within the various at the hypertext network. Whereas scriptons are strings as they appear to the readers.

That is either in a particular appearance or in the particular sequence in which they appear. The two are different whereas in a printed text by and large the two would be the same, the way it has been written is the same order in which it is read.

Whereas in the electronic literature, not only the order but also the appearance could be randomized. And therefore she talks of a new kind of mechanism through which electronic literature takes place. She moves on from poetics to poetics, so which is a combination between poetics and poises that is between poetry and making.

So, the task earlier, the task of making of the poetry was purely that of the poet. And the reception would be to that of the receiver, or the reader of poetry, to the listener or the reader of poetry. Whereas in this particular case of electronic literature, the reader also partakes in the making of the poetry. So, therefore that leads to what she calls the poetics.

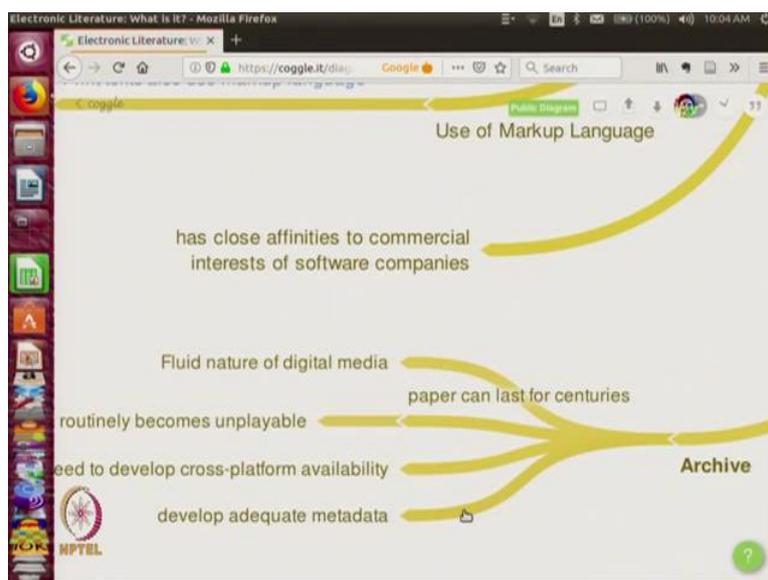
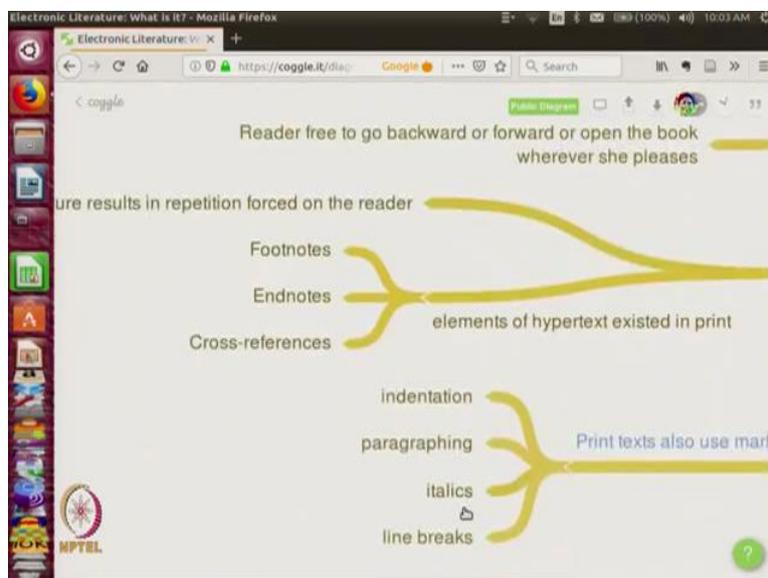
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So, now this freedom which electronic literature actually brings in from the Codex whether, codex gives a certain freedom to the reader to go back and forth that is that freedom which is there. But the exact ordering of the narrative the way it is presented there and that freedom is not there. Whereas in hyperlinked universe, there could be repetitive structures, there could be looping structures which are there which are forced onto the reader.

So that and she says that even certain elements of hypertext actually existed in print in the form of footnotes, endnotes or cross references which could be there. So there could be one could say okay now for further information see work so and so. So, that kind of linkages would be there.

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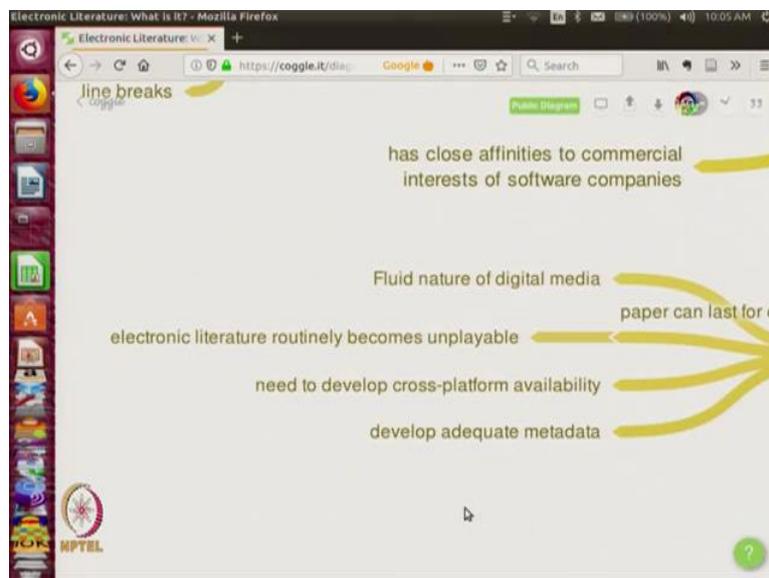


But of course in the hypertext universe, some of these linkages could actually be randomized and she of course points out that printed text also did use some amount of coding that is the markup language through the various visual elements which would be there.

And one important aspect is that as we have already seen is that much of this back-end is dependent on software companies. And therefore electronic literature has very close affinities to commercial interests of software companies. Now one of the ways to sidestep that would be if institutions specifically academic institutions play a certain role in developing some of the software back-end. And therefore make the software backend publicly available.

For example, the Brown University in Providence played a very important role in actually developing some of the early platforms on which the experimentation in electronic literature did occur. However, in the more popular platforms which are today are mostly those operated by commercial companies and therefore the choices being made are not necessarily those restricted or directed by creativity, the choices being made are those which are directed by profit.

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The other point of course is something that is a matter of concern we have been repeating again and again with electronic literature, is that of archiving. That, the fact that paper can last for centuries but digital media is a much more fluid setup and therefore they become unplayable and also certain games which may be available on Android may not be available on iOS or may not be available on Windows.

So, these various platforms, they do not sometimes talk to each other and unable to talk to each other. And therefore cross-platform availability becomes very difficult and of course this need to develop adequate metadata in fact that like bibliographic resources, within the print universe when you have to understand how to develop a bibliography there are various bibliographic resources which could be there.

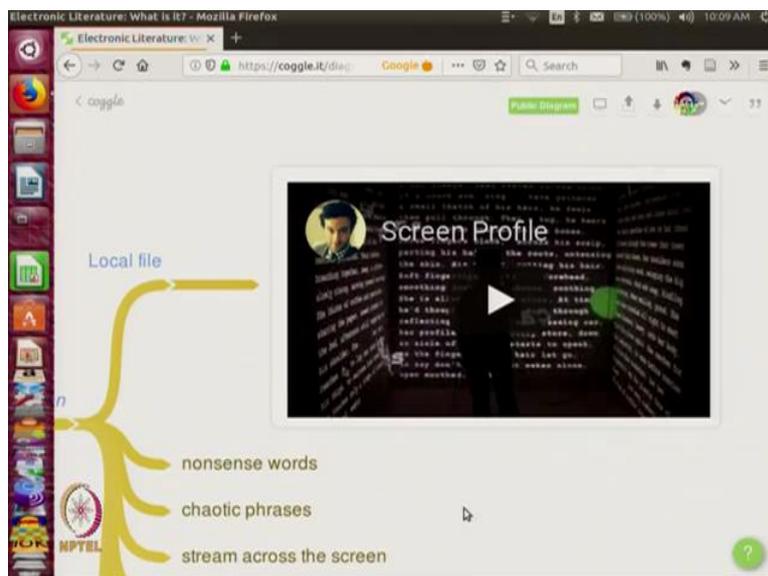
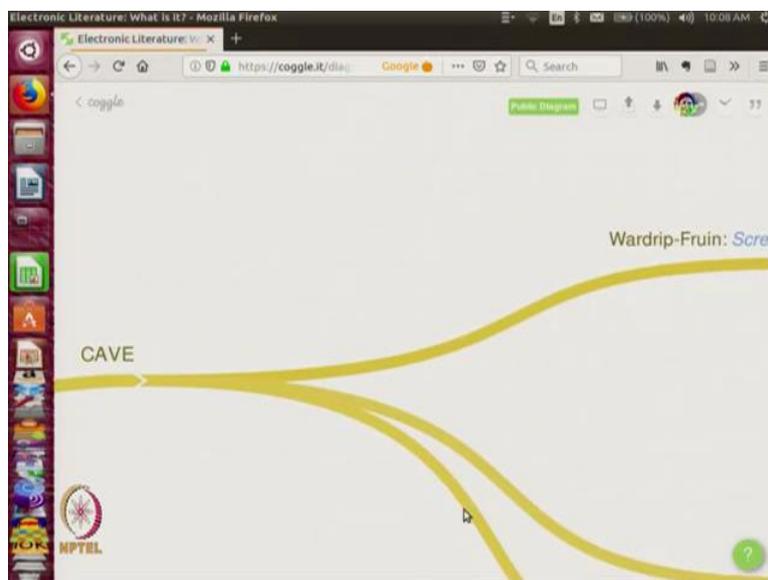
But in the digital media simply because of the huge plethora of the number of texts which are produced, you need to produce the metadata which would help access the text without actually having to go into it. And therefore things like search engines and other forms of storage and retrieval, archival tagging is a very important resource. Which helps us zero down on specific texts that we may want to read, that becomes a major challenge, the huge sea of material that is produced become, makes it very.

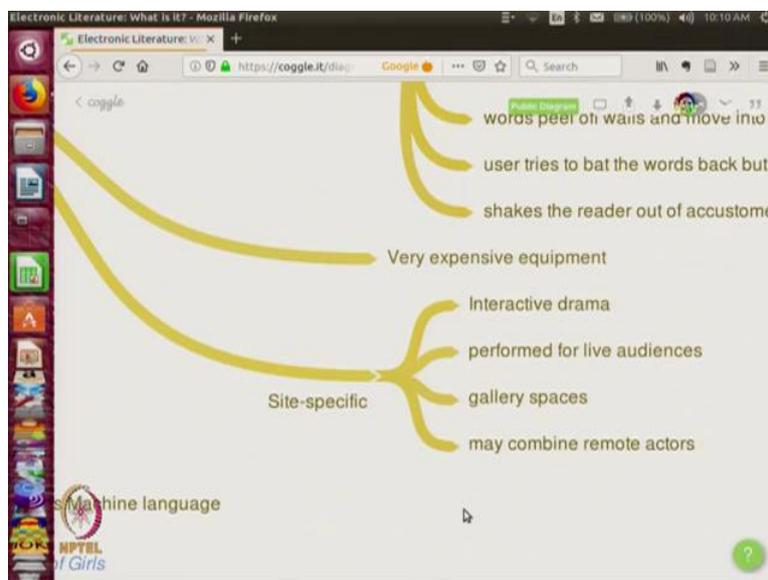
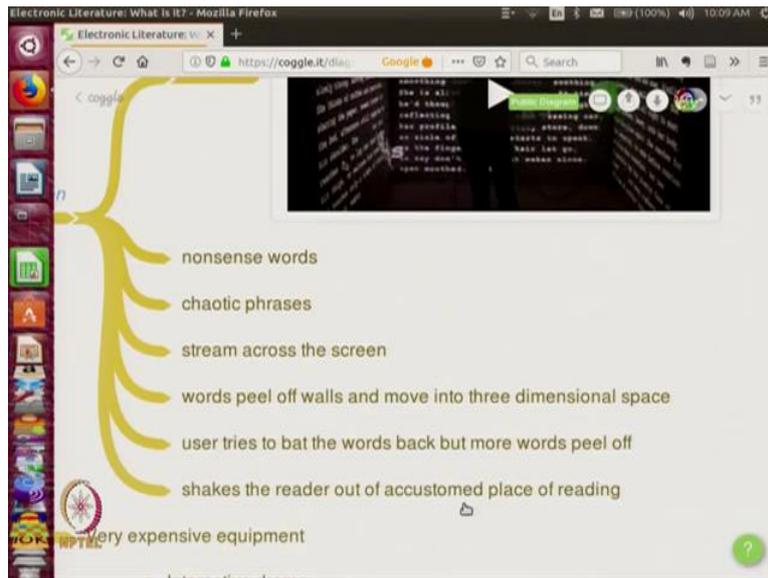
Because we have already seen within the electronic form is that institutional processes which would otherwise for example, one of the ways of canonization is the formation of syllabi and you go to a university, you go to a course like this particular course it has a certain reading list so it is given to you that read these, this is recommended.

If you want to get a sense of how textuality, the history of textualities, the history of writing, then these are a set of texts which could be recommended as a set of texts that will give a reader a certain degree of understanding. But those institutional processes are now being sidestepped or commercial interests are ruling the software back-end within which much of this literature is being produced.

So, therefore the only way the reader can figure out a set of recommended texts to read or encounter or refer to would be to develop certain archival resources like metadata.

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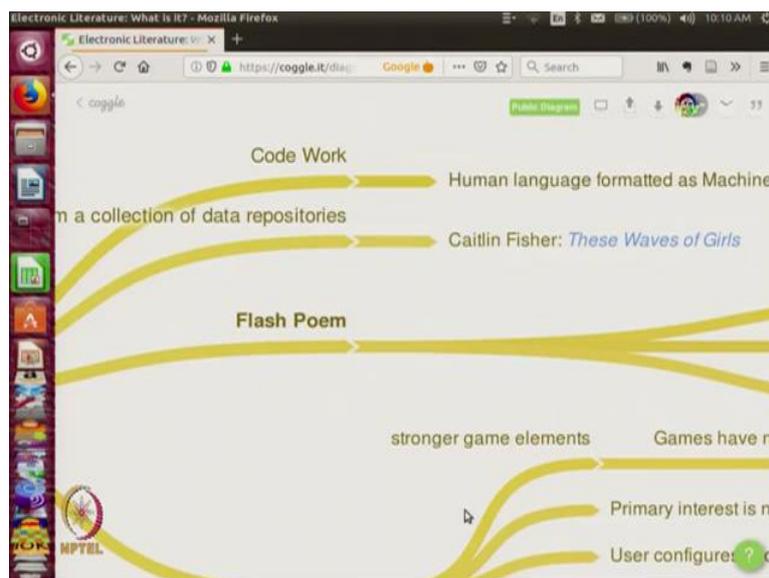
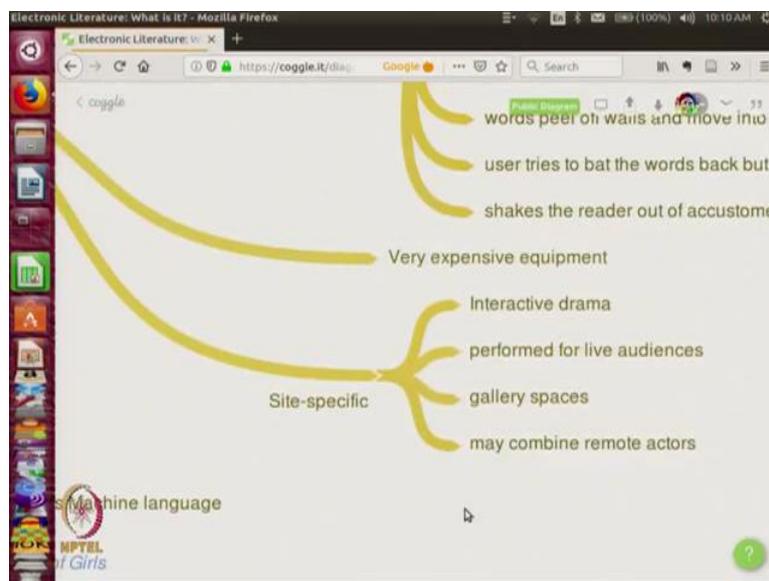
So, with that we now take a very quick look at some important some examples of early electronic literature, various kinds of platforms and types. So, she says that there could be various kinds of literature which could be there. Storyspace is one very important space as we said. There could be in the early form of Storyspace they could only handle limited colors and not handle sound, of course the modern story space can also handle videos certainly.

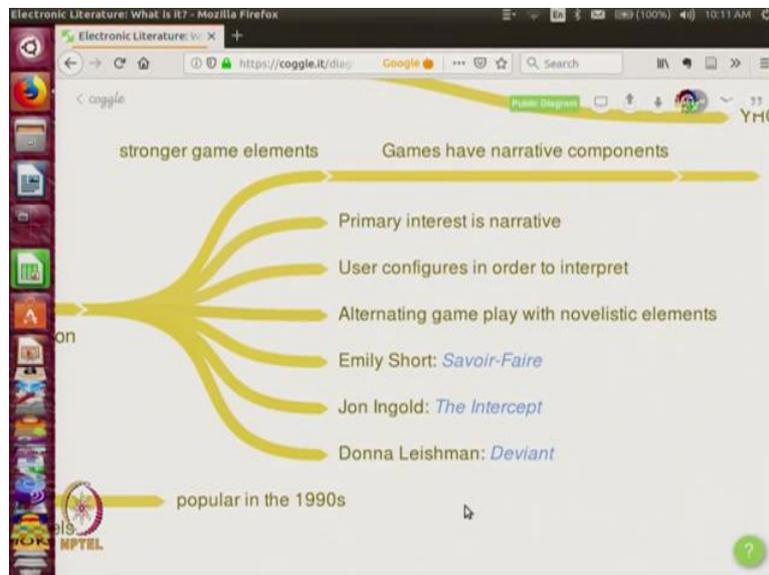
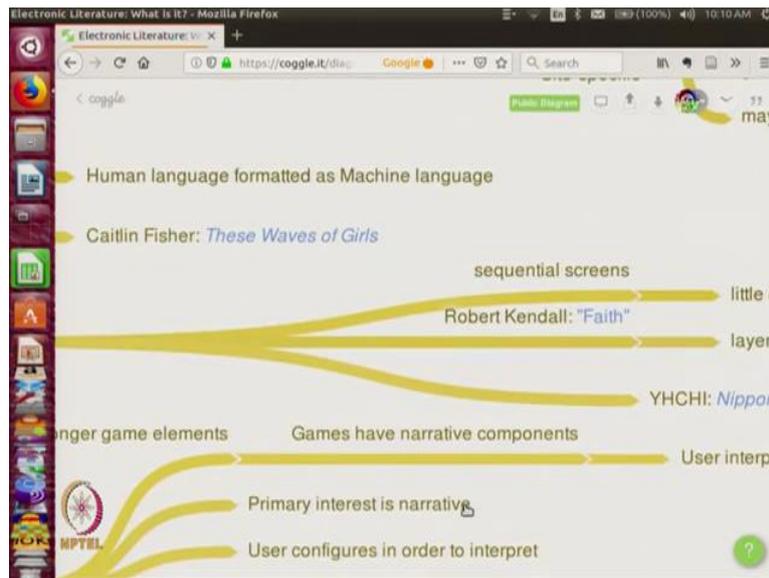
Then CAVE was a platform which was developed by certain enthusiasts and one of the ways in which worked is very interesting it is a cave, it is a wall of text within which the reader has to go into, it is surrounded by a complete wall of texts and then the reader interacts with this particular words, changes words around physically.

And so there are these sensors which are placed there which track the reader's gestures and movements and accordingly these words actually change positions and the reader can, the member of the spectator can actually play around with the words and see what the words are doing, how the words are changing and these various kinds of phrases and words nonsense words and other kinds of things.

Because of reasons of copyright I am unable to play this particular video file here. But you are most welcome to actually go and look through this particular video file it would be extremely educating.

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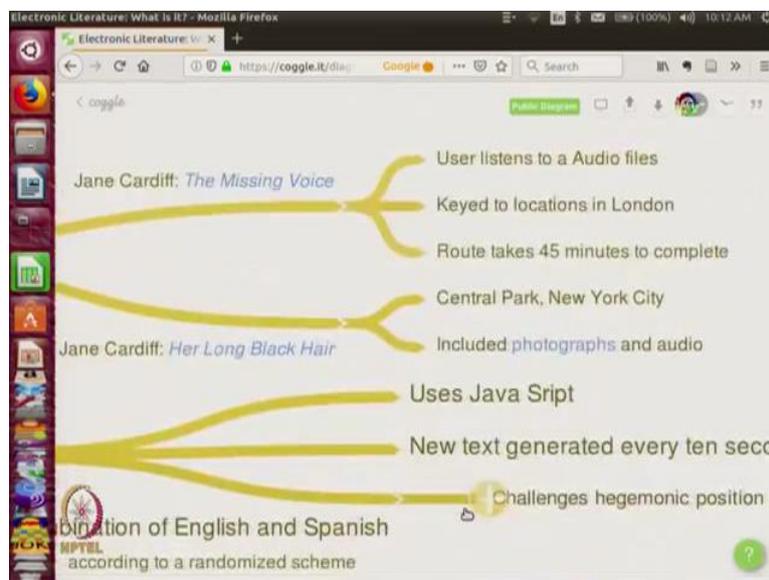
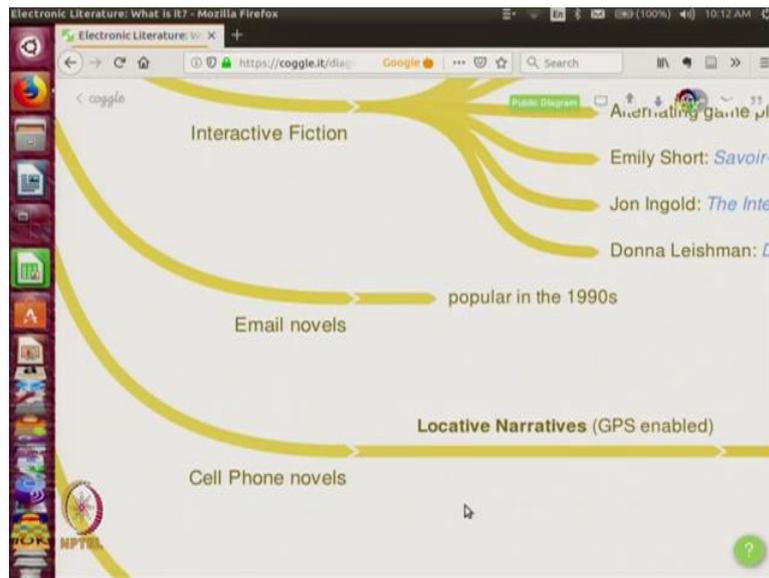




But what happens with many of these kind of exhibits and experimentations that they sometimes use very expensive equipment and they are site specific, there are installations. And we see other kinds of forms which are like the flash poem or there could be data repositories which takes up various kinds of text at the back end and produces texts before the reader, flashes them before them and try to create that random association or there is the genre of the flash poem which creates various sequences of texts.

I would provide the details of these, I would provide the links to some of these texts within the course description and you are most welcome to go and look into them and there could be interactive fiction also which could make use a lot of game elements. The important strand within the game would be that of the narrative interest.

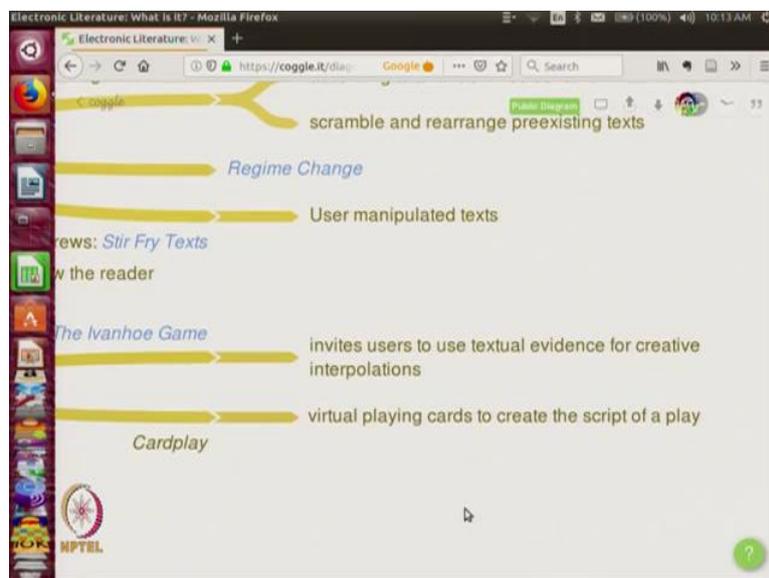
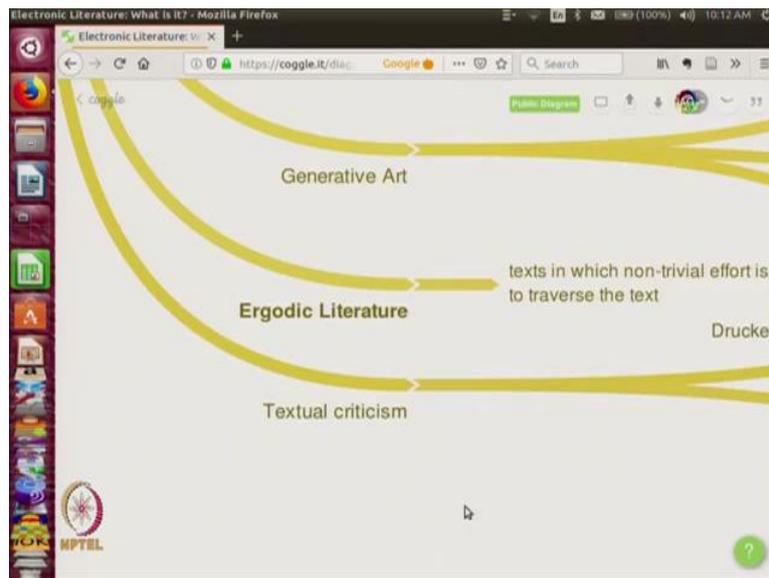
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But these would be organized in a way in which the reader can actually frame particular universe. Email novels, Cell phone novels these are also importantly emerging formats. Now, you have Twitter stories which one can present a story in the form of a twitter thread.

Some interesting thing about cell phone or mobile phone novels would be, they could have location enabled. So, there could be located so one could actually create a certain interesting ecosystem through which the reader is required to move to different locations and envisage that particular environment within which that action is happening. So imagine a novel which when you are referring to a particular area, you go to that area, you sit there and then you encounter that particular text.

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So, there could be various ways of creating these kind of texts. So, similarly there are many of these other forms which are experimentations of various kinds of literature. And there could also be, the text could also invite the users to manipulate the texts or create, add to the text, create it more, in the web 2.0 universe, the user adds more and more texts, creates more user generated texts.

Though we must always be very careful about the backend algorithm which actually plays a very important role in creating these particular user experiences or the text themselves. So, the point that we need to understand that each of them, each of these platforms, these multiple genres which could be there, they are dependent on the code back-end and they take the name from the code back-end most of the times and they are dependent on the code back-end.

And once one moves to a different system or moves to a different generation of machines and code, these codes become unplayable. So, these are some of the important points, some of the fundamental ways in which the electronic media operates, the importance of code, the importance of the longevity and the importance of the user's manipulation, manipulability and analytical abilities of electronic media. I think these are the important points that we need to understand before we go into and see, try to answer some of these questions as to what are the implications of the coming of electronic literature.

Unlike, our discussion on print, what we are trying to do is we are trying to write a or discuss a history of the contemporary, history of the present, history in the making which is a far more difficult task because a lot of it is predictive. But still we have the tools of the historian available to us which at times when writing was changing the universe or when printing was changing the universe, the discipline of history the methods of history were not available to the people of those times. So, they were not probably have been able to have a greater grasp of the changes that were coming about, being brought about to their universe through these new textual writing formats like printing.

But with the digital media, we will try to use some of these historical tools that we have already gained and try to see whether they are bringing about any kind of serious challenges to our political system, the dominant political systems, dominant cultural systems and social relationships between ourselves within our universe. A very difficult task but we shall try to conjecture in some of the lectures. Thank you.