Patent Search For Engineers And Lawyers
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Lecture – 36
Analytical tools for Patent search and analysis (Contd.)

So, having understood the different aspects of the tools that are available under the lens database, let us look at the demo of the lens tool and understand the different functionalities for Patent analysis.

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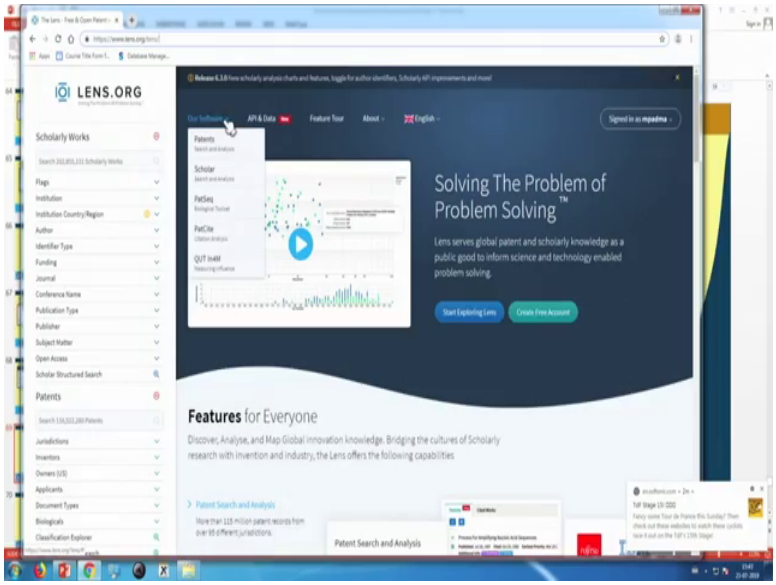

You can click on the our software under which these are the different tools available. So, the search analysis for patents. We discussed about the scholar works where you search analyze for the information in relation to publications in a particular technology area. PatSeq is the one with respect to search and analysis of information in relation to biological sequences. PatCite is for citation analysis and the proprietary tool additionally available is the, QUT In4M which helps in understanding the impact of a technology.

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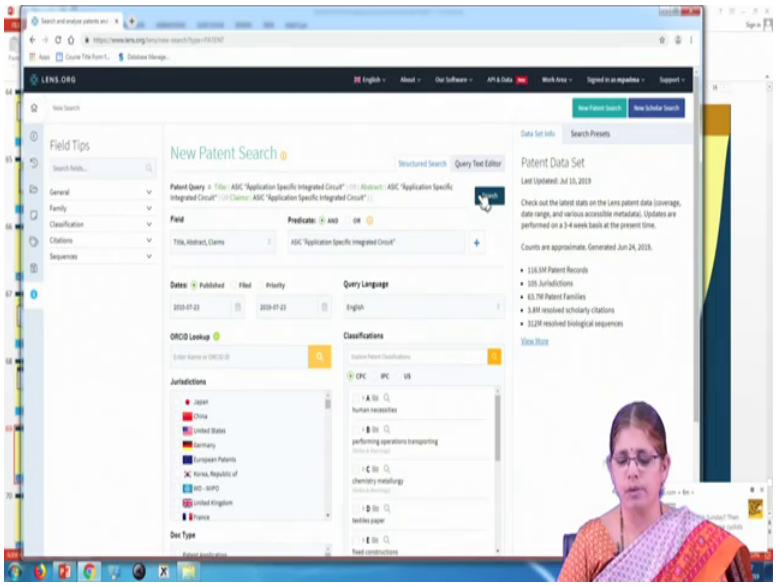

So, when you click on the patents link you get the new patent search and here you can see the different options that are available for searching as a part of this tool. One can also understand the last updation of information of the patent dataset, what are the jurisdictions data that is supported in this particular tool? And what is the total number of patent records which are available in the database? So, in this one can select the specific fields so, here you can select the title abstract and claims and you can given the keyword in this case I am giving in the keyword of ASIC Application Specific Integrated Circuit.

So, by giving this key term one can actually search for patents in relation to the area. So, as you can see the patent query is automatically created. So, in the initial tools for patent databases one needed to prepare the query in this case the tool itself is preparing the background query based on the terms that you have provided. Then one can looked at filed patent filing information, publication information, one can also decide on the specific dates for the information to be so, one can say from 2. So, you can go for the last 10 year information.

Normally if you are looking at trends emerging trends the last 5 year information is useful in order to understand trends. If you are looking at growth at least a 10 year data will be useful in relation to the patent information. So, one can actually specifically look at that particular information. So, in this case we are selecting 2010 to. So, we are looking at the last information from 2010 to 2019 and here if you do not select the

jurisdiction it would consider all of it, one can select for IPC or select for CPC queries can be run in different languages.

And for ease of use the IPC information is given here so, one can actually select on specific IPC code A which represents human necessity. So, the entire group including it is subclasses it is classes and subclasses will be searched for from the point of view of this particular information. So, once you select the different fields you actually conduct the search.

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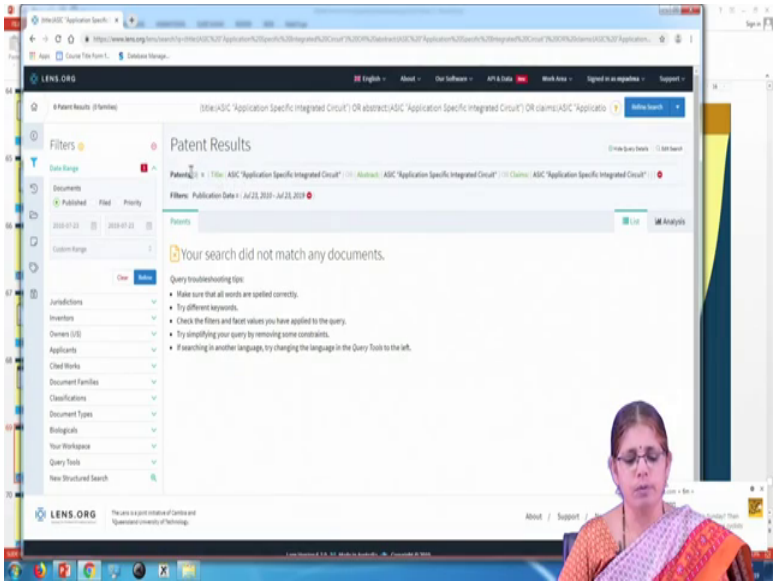

By submitting the search one can actually get the data in relation to a particular area. So, it is possible that for the ranges that you have searched the data may not be represented. So, one needs to clear this and go back to the patents link to conduct the search.

So, this is the search interface that is available whereby one can look at the data in relation to the information. So, it is possible that one can look at an information based on different fields. So, this is how one can use the database itself by using the options.

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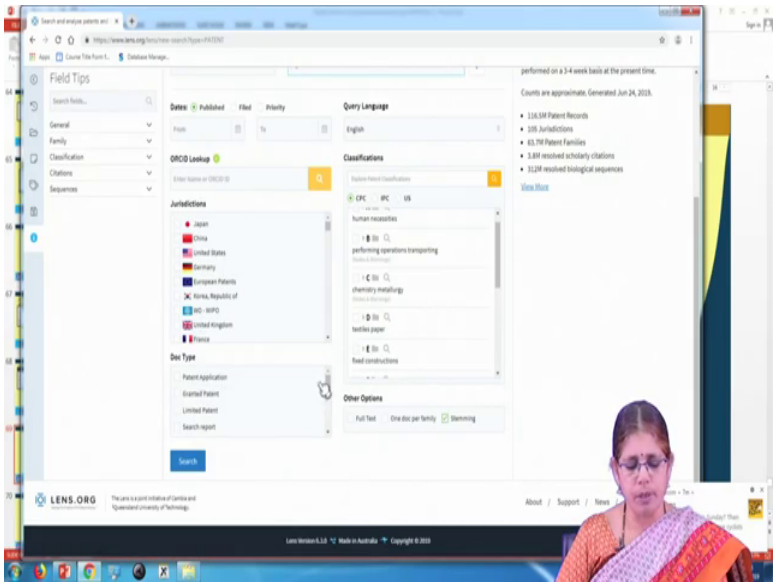

So, if you have the document type also can be selected in this case where you are looking only at the as the patent applications or the granted patents and then conduct the search.

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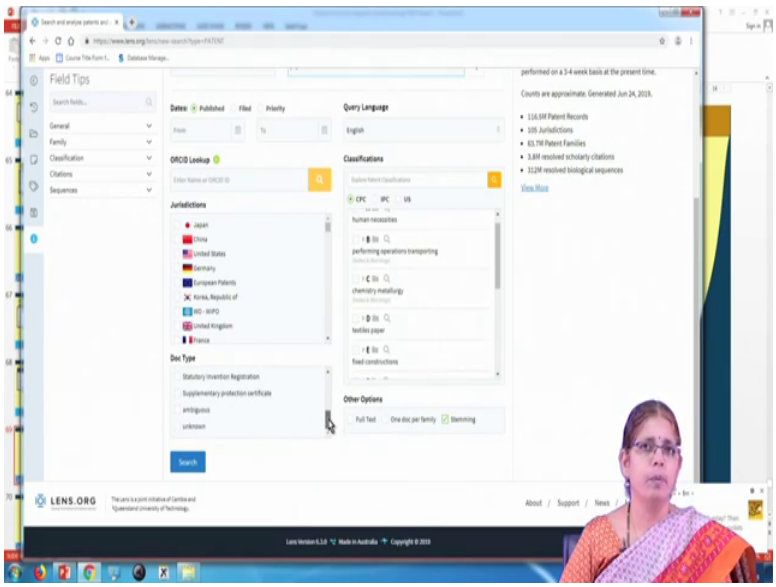

So, this database also has plant patent information, it also has supplementary protection certificate information which is typical in the case of the European Union, statutory invention registration system is available was available in the United States post the America invents act it is not available.

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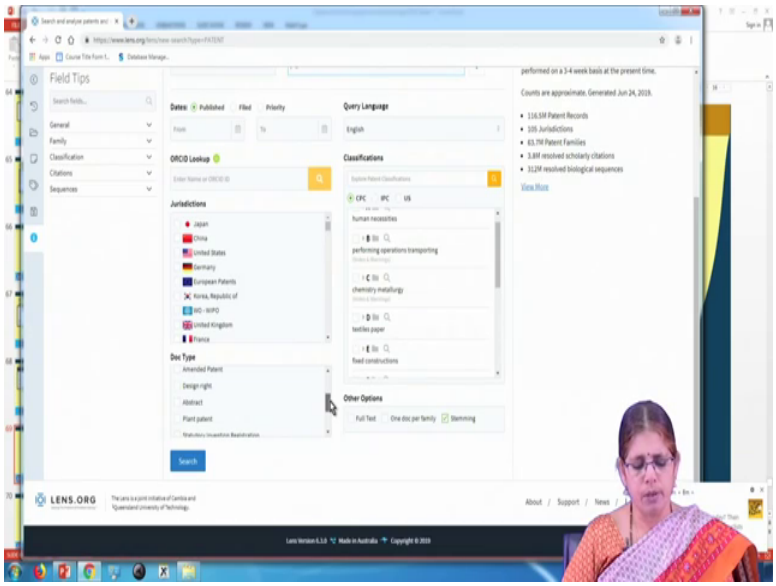

So, one can look at specifically that sort of document information. One can actually access information in relation to designs as well from this database, one can look at the search reports as well as amended patent information. So, this is one way in which. So, based on the patent search information you get the results and then one can actually look at the results and the analysis based on that.

So, when you look at this particular area of application specific integrated circuits ASIC. So, one can enter in the keyword select the field identify the dates of the search that is the period of search that is the last 5 years which represents the emerging trends. Here we are looking at all jurisdictions and you can select the specific class for instance you can select the class H which is electricity, then specific document type you can select granted patents and allow for stemming.

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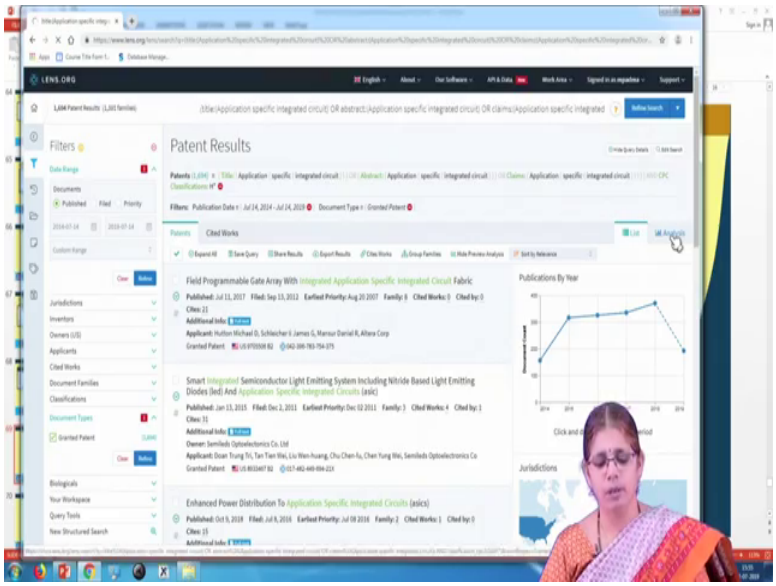

When you click on the search button here you see the different patents identified as part of the result. So, there are in this search has resulted in 1694 patents when the search was done with respect to title abstracts and the claims, Here you see the patents listed this is the patent list one by one, you have the basic information in the form of the title published when filed the earliest priority, how many members are represented as part of the patent family, cited works and cited by.

The additional information that is present you can access it in the form of the full text of the particular patent, applicant information and granted patent belonging to specific countries so, you can see the country flag. Besides this you can see the analysis that has come up with respect to the data that has been selected. So, we had selected 2014 July to 2019 July with the specific date of 14th of July, here you see the document count and the listing as per the number of years.

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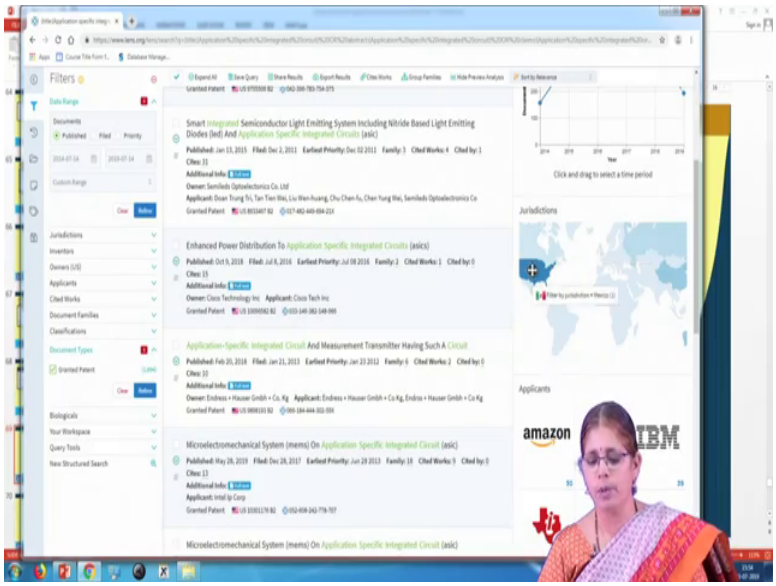

Further on one can see the jurisdictions which are represented. So, mouse over will give you that information. So, here you see the side by side representation of the patent information and the analysis.

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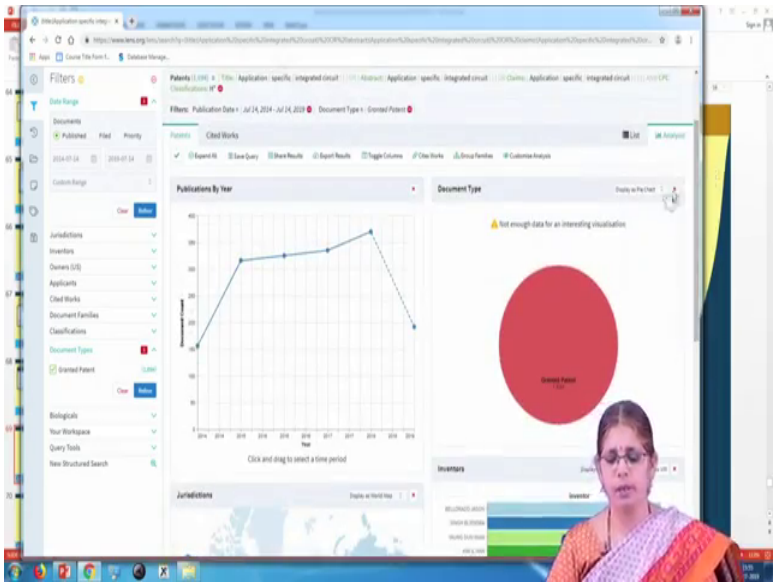

If you click on the analysis you can see the complete window with the analysis detail. Now, since we are looking at only the granted patent data set here we are getting only the general total number. So, there is no comparison with the published as well as the granted in this case.

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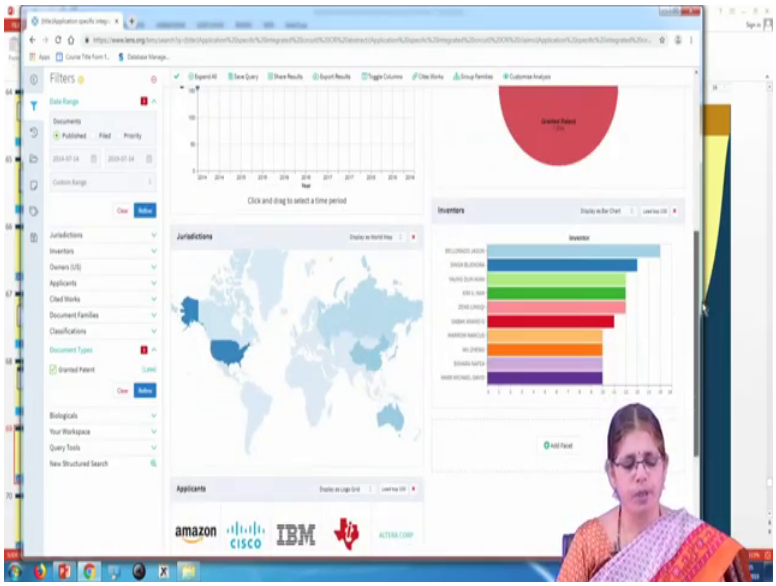

The jurisdictions information is provided where you can see the in the case of US, how many numbers of applications are there. Then in the case of Canada, what are the number of applications, in China what is the number of patents represented. So, you can see it on the world map what are the patents in the form of the representation.

One can also find the inventor chart and the total number of patents represented by the inventor in the form of this color coding, mouse over will give us a value with respect to what is the number of patents as well as the index in terms of the inventor indexing.

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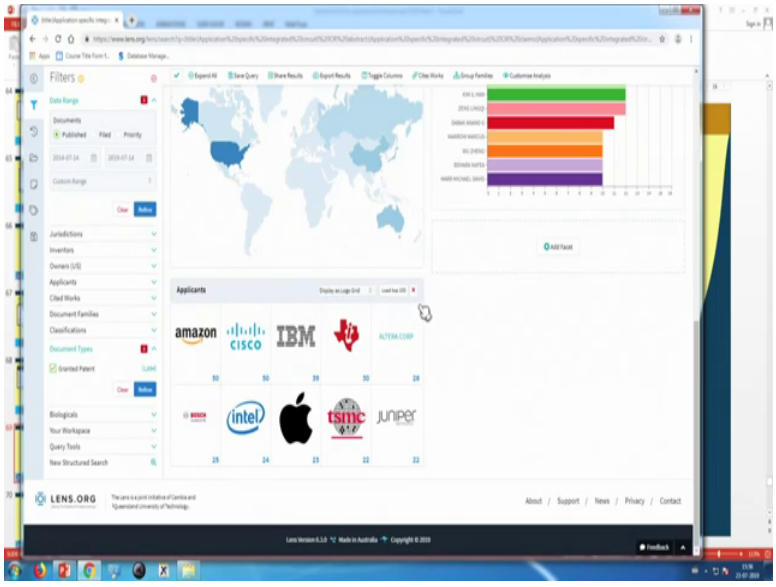

What are the different applicants which have patents in the area of application specific integrated circuits? These are the different companies that or institutions which actually own patents in relation to. So, one can actually filter by the applicant. So, if you click on ALTERA Corporation you would get the information only relation to ALTERA.

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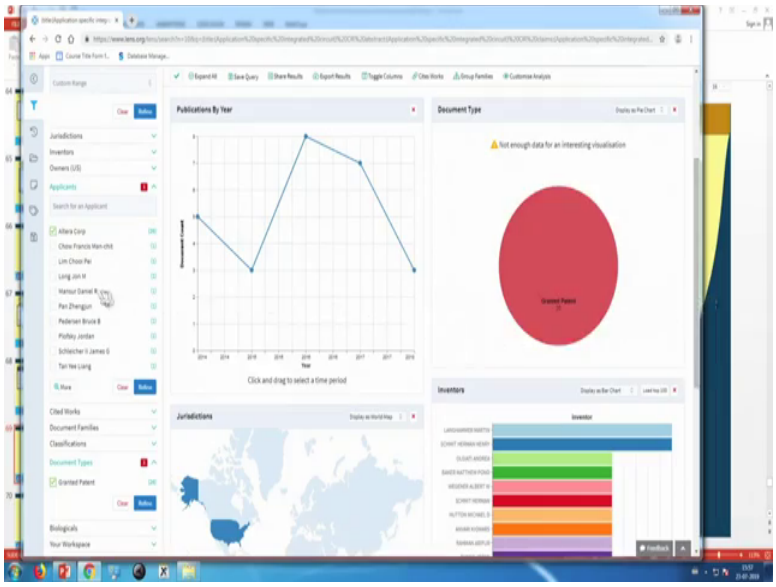

So, here it is generating the analysis this the same set of graphs, but specifically only for ALTERA. So, this is how one can look at specific information.

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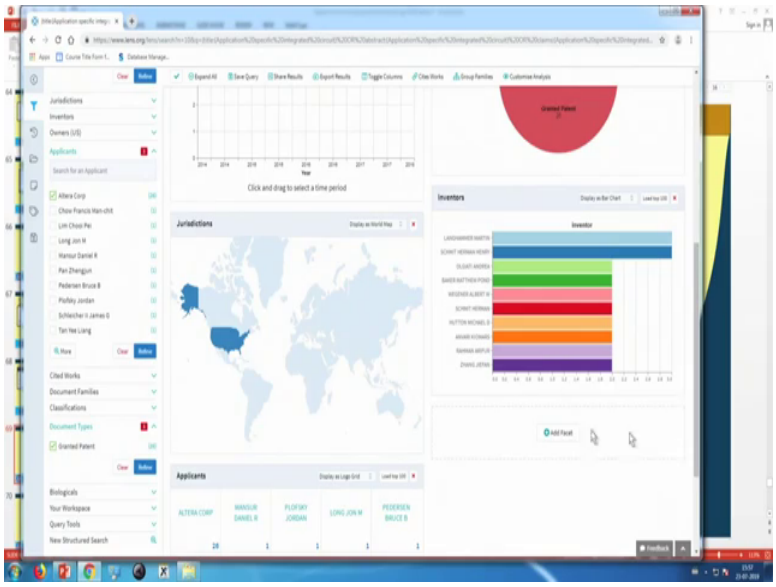

One can also filter the information as per inventor and you can have this workspace where you can actually create notes in relation to the workspace. So, this is how you can see the listing and the analysis of patents, one can edit the search by adding additional terms in relation to the particular area.

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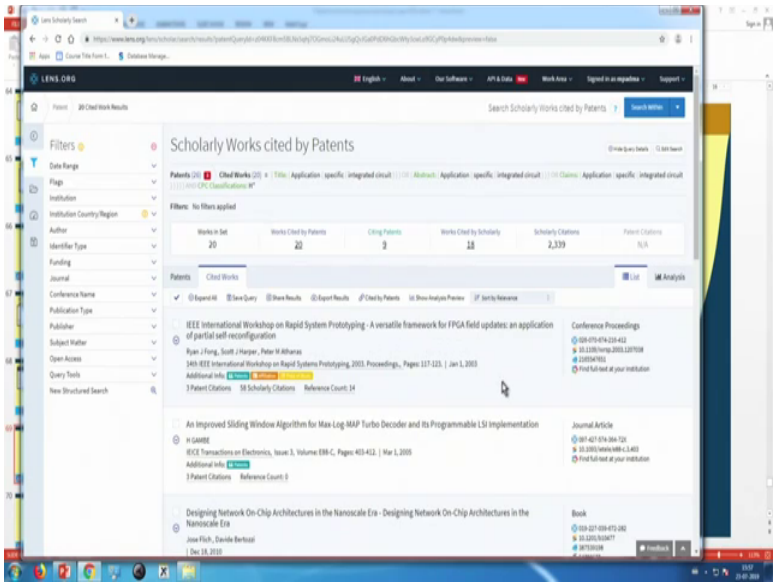

If you want to look at the cited works one can click on the cited works link to get the information in relation to the cited works.

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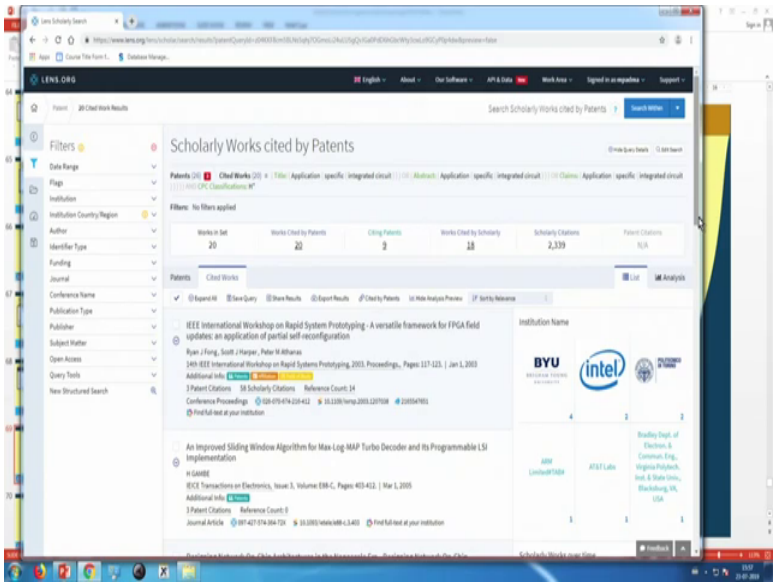

You can go for an analysis preview to get information in relation to the institutions that are available in relation to.

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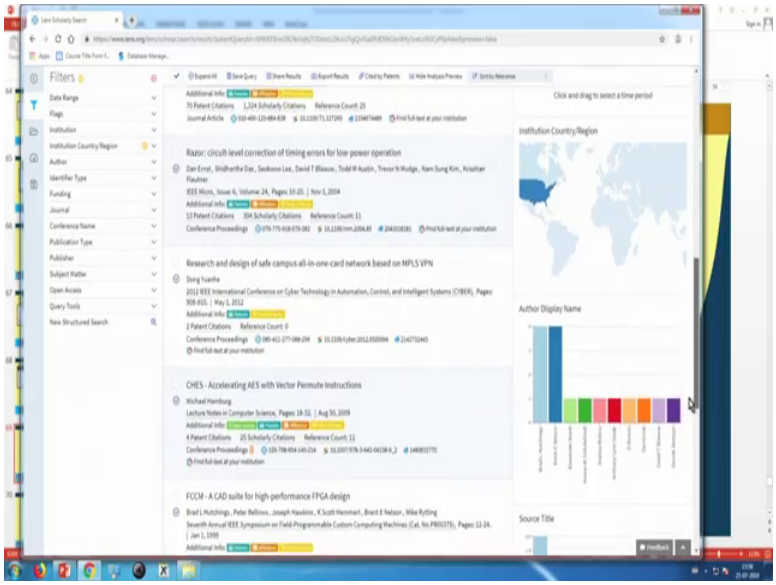

So, whole lot of analysis can be done from the general information to the specific information in relation to this particular areas. So, one can filter the information based on different options that are available and there are different ways in which one can actually go about with the search and the analysis.

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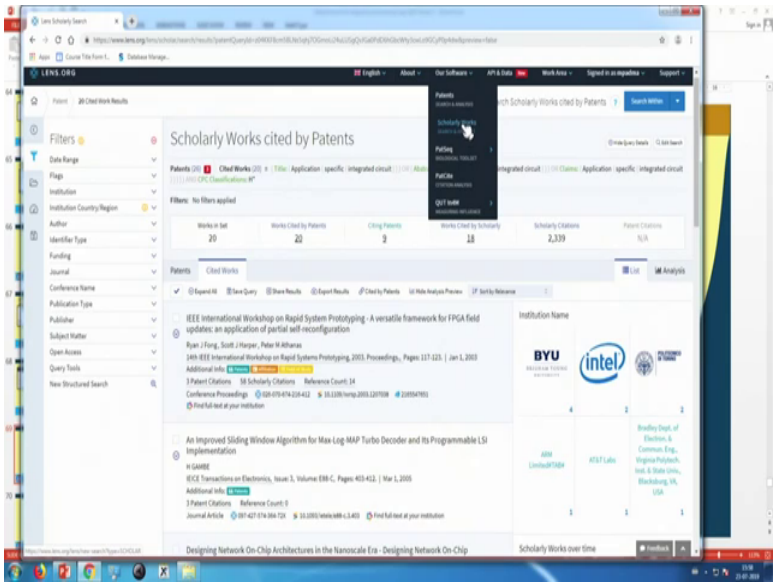

Let us go to the another part of this lens tool which is about scholarly works.

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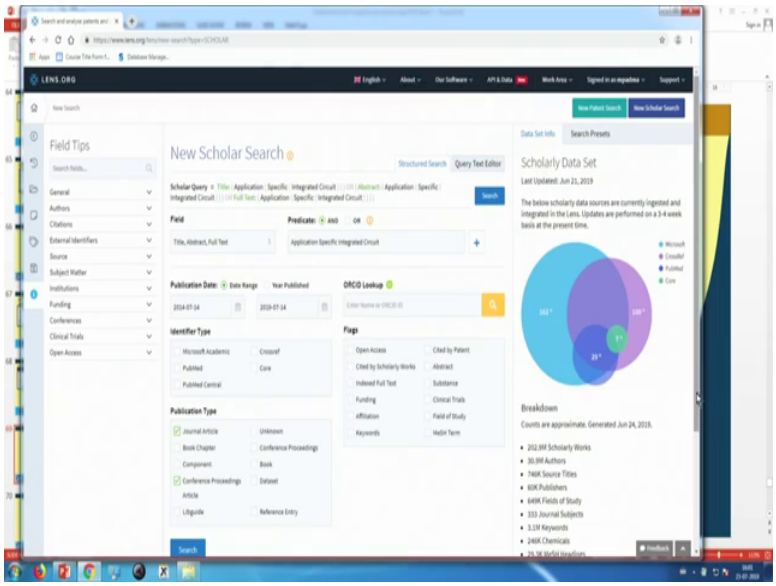

Now, in the new scholar search we can get information in relation to the non patent literature in the form of publications, conference proceedings, journal articles and the statistics in relation to the specific area. So, here you have the identifier type; that means, the database has the collection in relation to Microsoft Academic, PubMed, PubMed Central, Crossref and Core.

One can select again the fields of information here you are looking at not patents you are looking at the journal information or preceding information where again you can search for title abstract and the full text. You can identify the same area that is application specific integrated circuits and then identify to what extent there is the clustering of literature information, either in the form of conference proceedings or journal information.

So, one can select journal articles, conference proceedings which takes into consideration all of these one can actually define the year as well. So, if you are looking at the data spread in relation to the same set of years one can get the data in relation to the publication information which is available in as a part of the literature. So, let us input the word here again of applied application specific integrated circuit into this window ok, you can ask for a data range of 2014 to 2019 and identify a type we are not specifically selecting any.

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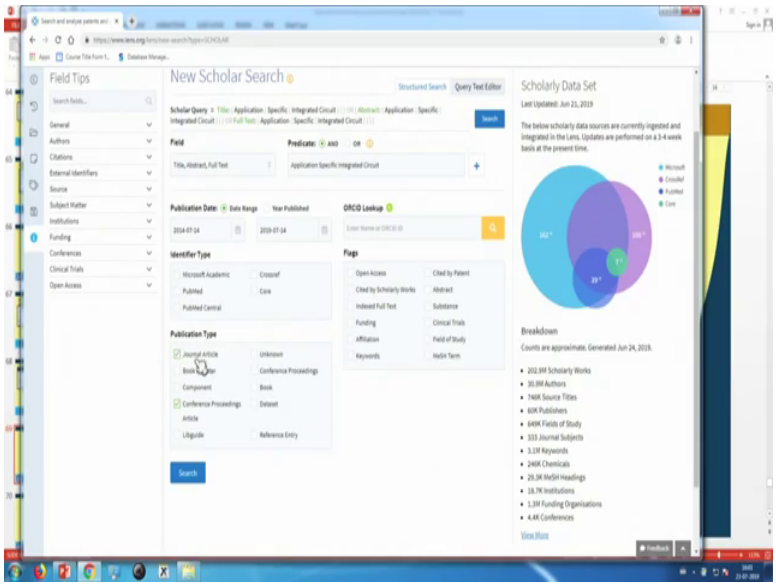

We would like the publication type journal articles or the conference proceedings to be shown up.

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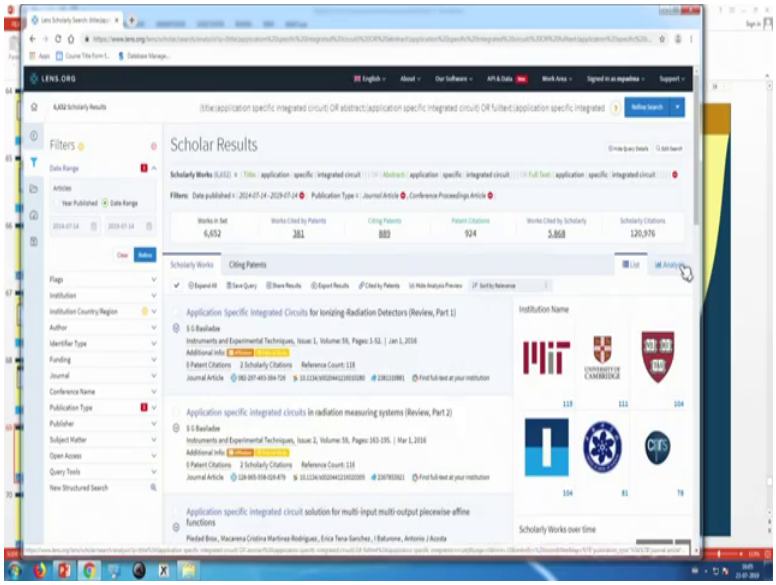

So, if you click on this search you get a whole lot of literature which is there with respect to the area of application specific integrated circuits. The each of these literatures which are shown up on this particular window are indicated by the field of study and the affiliation. One can export all these results, one can look at the analysis, one can actually also sort by relevance from the point of view of the highest in the scholarly citations to

the lowest. And since the there are citing patents information as well so, one can actually look at citing patents information also in relation to.

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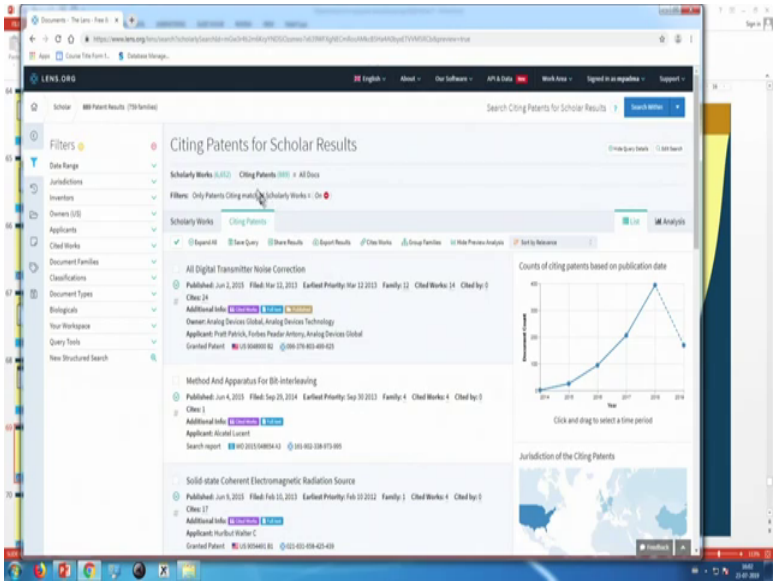

So, here you have citing patents for the particular area. So, one can look at this and look at the analysis.

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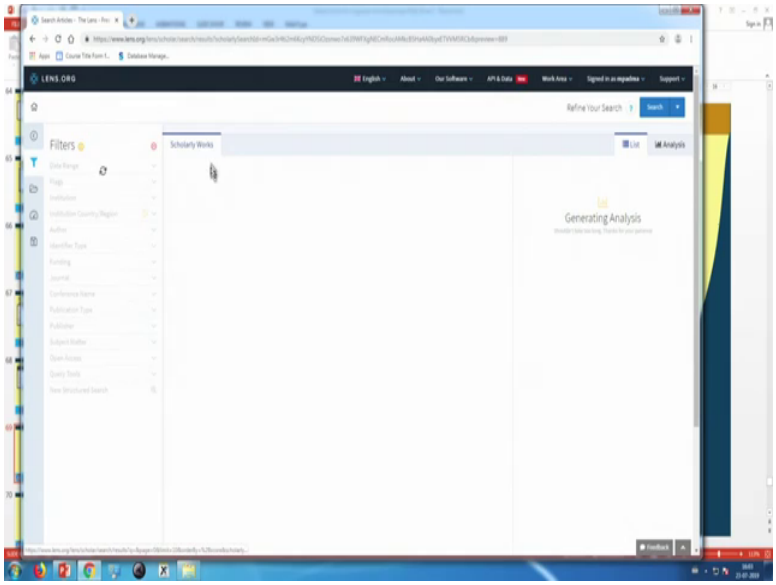

So, if you look at these scholarly works back again and go back to do the analysis one can actually analyze the information in relation to the specific area. So, the one can see

the different analytical options available in relation to the data obtained in relation to the non patent literature.

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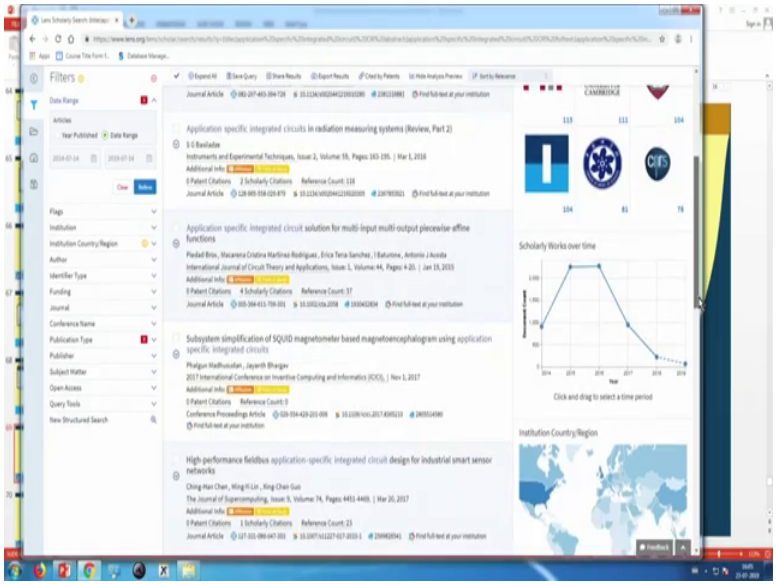

So, for all of this one can find out what is the institutional strength in that particular area in terms of the number of publications in the form of journal articles or conference proceedings.

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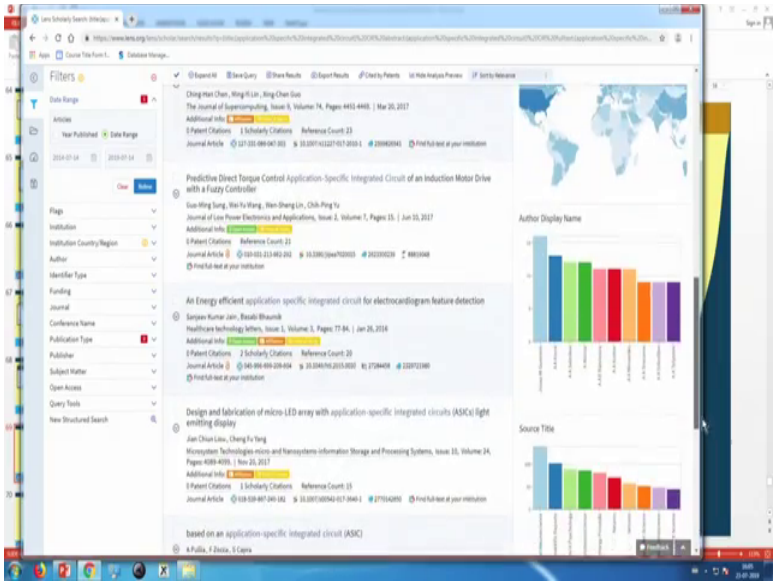

The number per time the country region representation and the maximum publications by author then field of study. So, one can see this information side by side.

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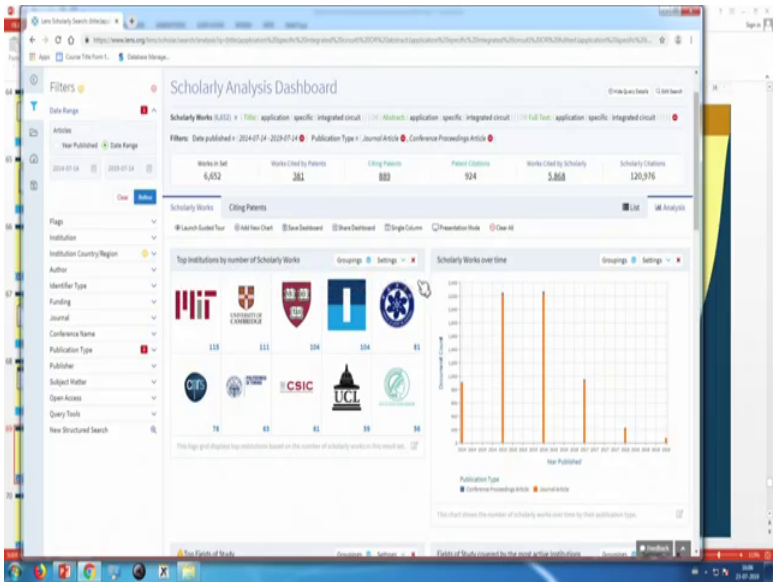

And if you click on the graphical analysis option one can see the details in more particular in the particular fashion. So, here you see the top institutions which are represented in this particular area or these different institutions from different parts of the world, one can select by the institution to look at the specific data in relation to that particular institution. Here what you see on the right side is the publication type vis a vis the document, count, whether it is a conference preceding article or a journal article.

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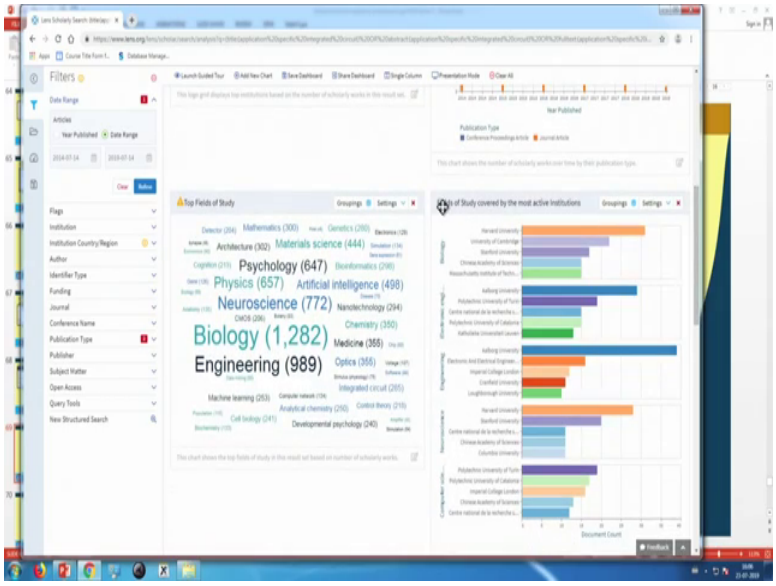

So, the relative publication number is shown, what you can see here is the field of study covered by the institutions. So, here you have different institutions and represented in a color code with respect to each different area for instance, computer science, neuroscience, engineering, electrical engineering and biology.

As we had discussed in the lecture one can also see the strength represented in a particular area by the document count in terms of the numbers represented in the bracketed beside the term. So, engineering biology is the largest number. So, there are there are some in the case of artificial intelligence, some represented in the area of psychology, some documents in relation to physics and so on and so forth. So, this is displaying the top fields of study based on the number of the scholarly works.

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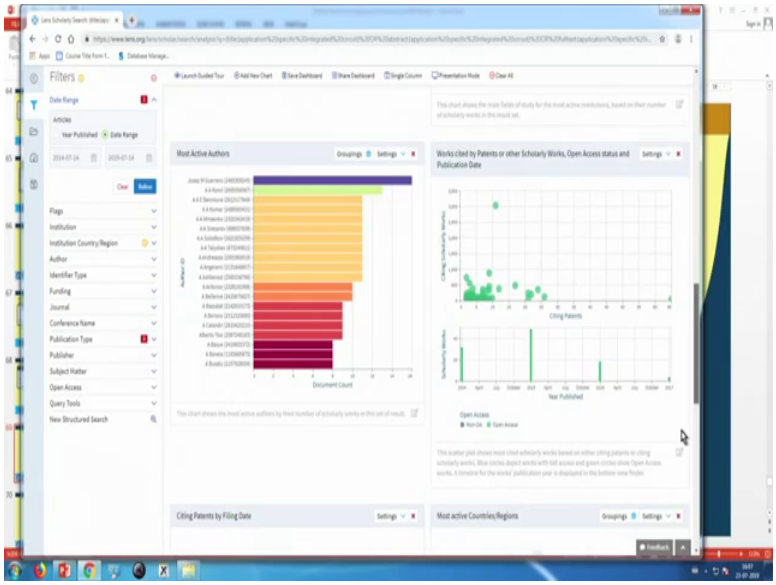

So, one can actually look at the further information in terms of the most active authors in a particular area, understand work cited by patents or by other in other scholarly work.

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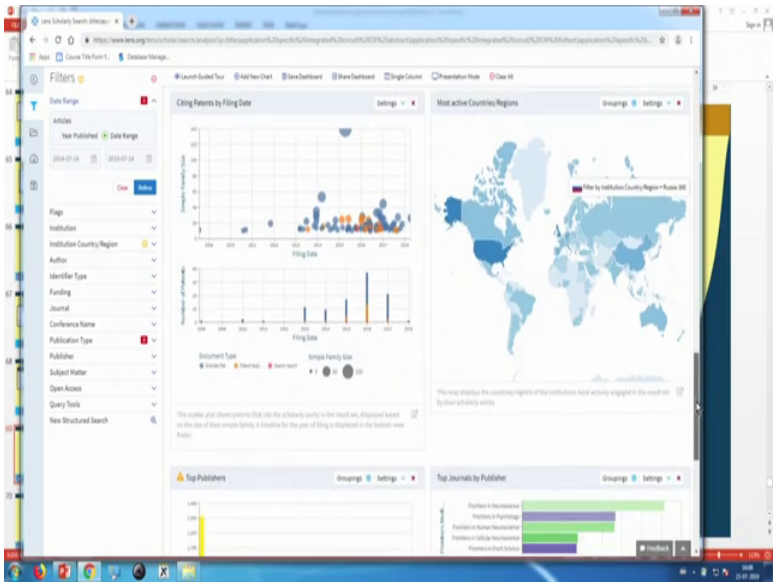

Most active regions which are represented which indicates those which are actively engaged in the research in this particular area.

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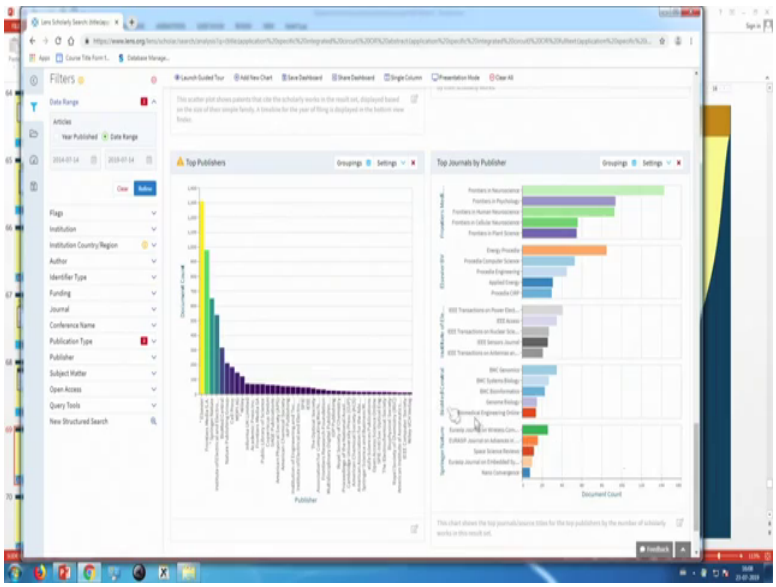

It also provides a top publisher information and also top journals by public publisher. So, it is almost one can get the entire information in relation to the growth of a research in a given area, one is the institution wise and the other is the strength of publications then which are the fields of study which are most worked, what is the level of research and the level of publication.

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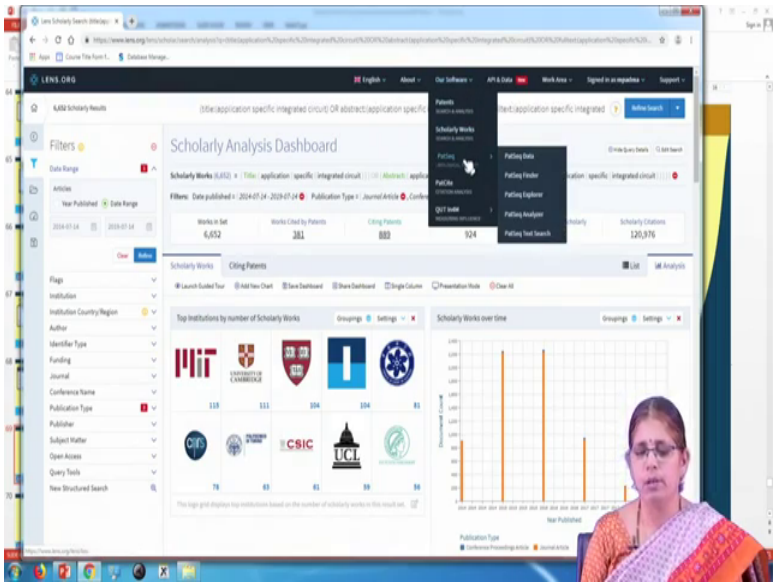

Let us look at the another tool which is the patent sequence tool under the lense database.

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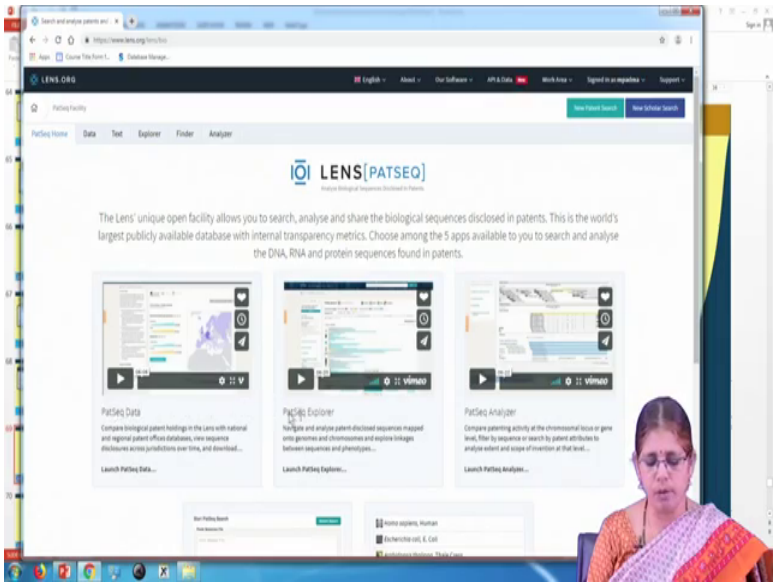

So, here you have Patent sequence data, patent explorer, patent analyzer.

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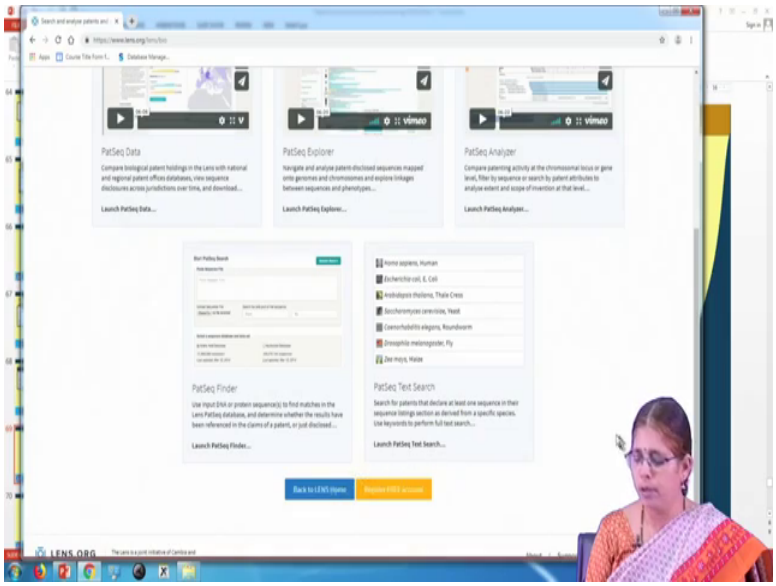

Patent sequence finder and text search.

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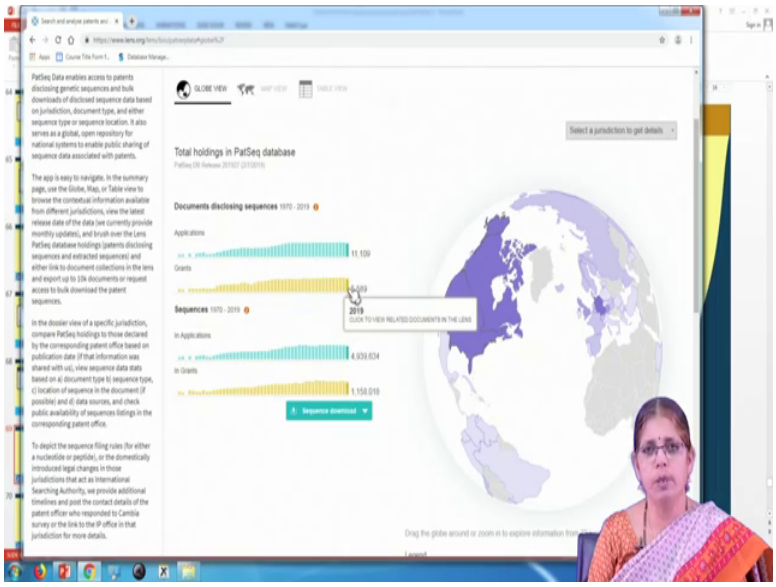

So, once you have the registration details for the lens information you can actually go to patent sequence each of these to explore and understand the value of searching and analysis in relation to the biological sequences as well. So, here you have the early representation of the documents which are available under the lens database which have which disclose sequences.

So, the period of time period is from 1970 to 2019. So, here you have so, for instance for the current year you have 11,109 documents which disclose sequences. Those which are represented by grants relatively you will find lesser number of documents that is; obviously, many applications are not moving into grants.

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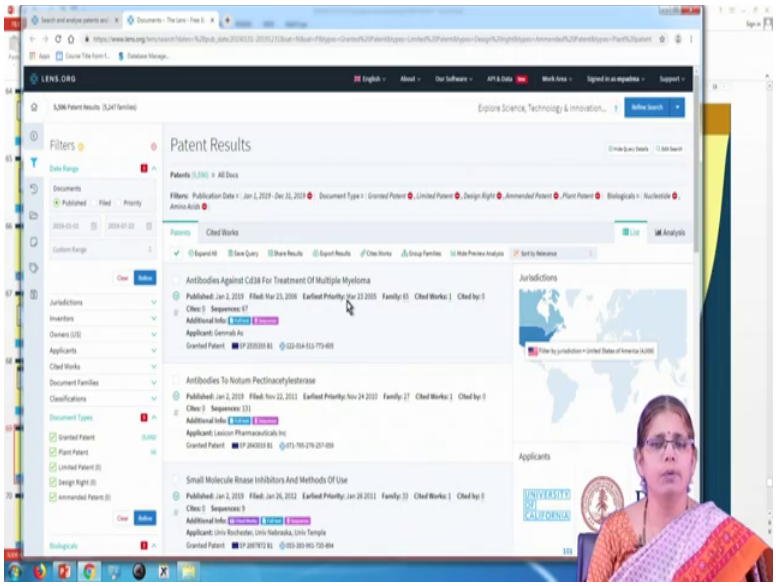

So, let us look at for the current year these are the different types of documents which include sequences disclosed. So, here you have see the 38 is one such the molecule for which you have the sequence information deposited. In this case you have antibodies for pectinacetylesterase enzyme, rnase Inhibitors in another case.

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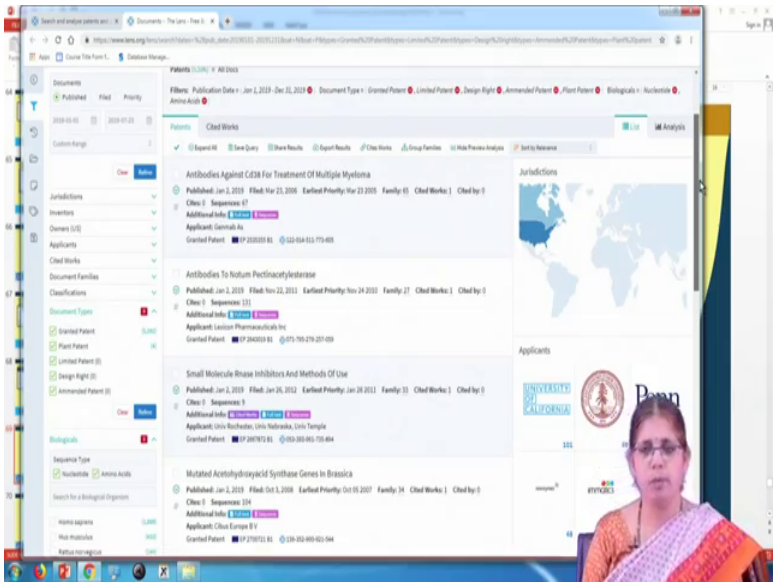

So, you have a whole lot of sequences of different type, here you have acetohydroxy hydrate synthase, acetohydroxy acid synthase which are from. So, the there are various sources and depending on the grants of patents sequences are being disclosed from different organisms. So, this way one can understand what are the new sequences that have being claimed in patent documents.

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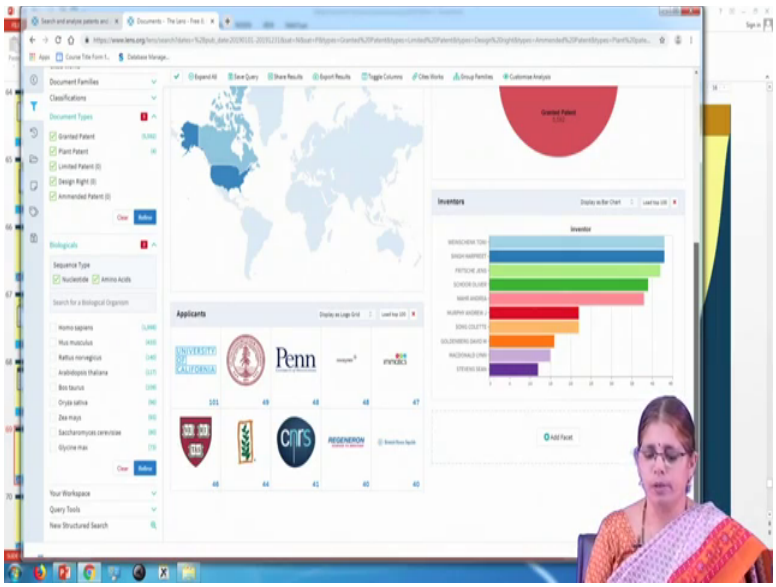

Again one can look at the analysis in relation to this particular data. Since we are looking at only one particular type of document grant there is not much information since it is

only granted patents. However, you can look at the, what are the different type of applicants in the current year who have claimed sequences in relation to patent documents. Then who are the inventors, who have claimed sequences as part of the who are the inventors, who are at the part of the patent and one can see the index.

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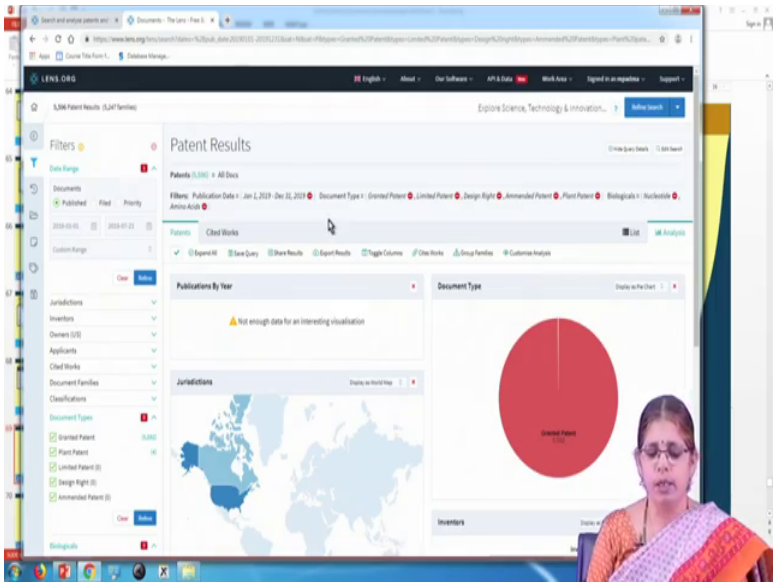

So, this is how one can actually look at the information in relation to a particular year and access the document access the information in relation to that document. One can actually look at the information in relation to cited works one can customize the analysis further. So, this is how one can actually utilize the information that is presenting the PatSeq data.

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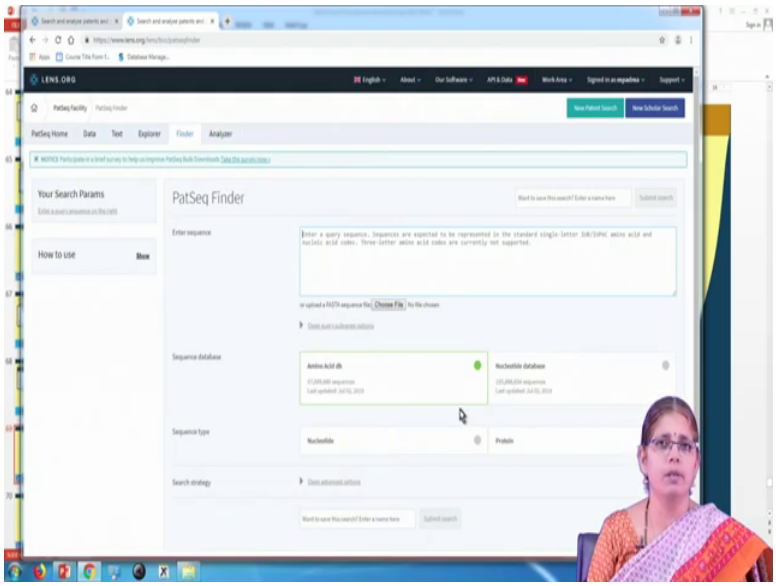

So, one can go to the PatSeq finder to look at the information in relation to certain patent sequences. So, here one can input the query sequence as per the standard representation in the area whether it is gene or in the case of a protein by 3 letter amino acid codes ok. So, either the in this case the nucleic acid codes or the can be actually inputted into this particular query window or one can actually choose a file where you can upload a faster sequence into this particular query.

Then you can search the specific database so, whether you call it an amino acid database you are looking at similar proteins, you can go for the nucleic acid database to look at the gene sequences. So, you can select the sequence database and then run the search. So, that way you will get the similar sequences and it will also list information in relation to from where the similar sequences are and which is the organism. One can also utilize the other tools that are available under PatSeq, for instance you can look at PatSeq explorer.

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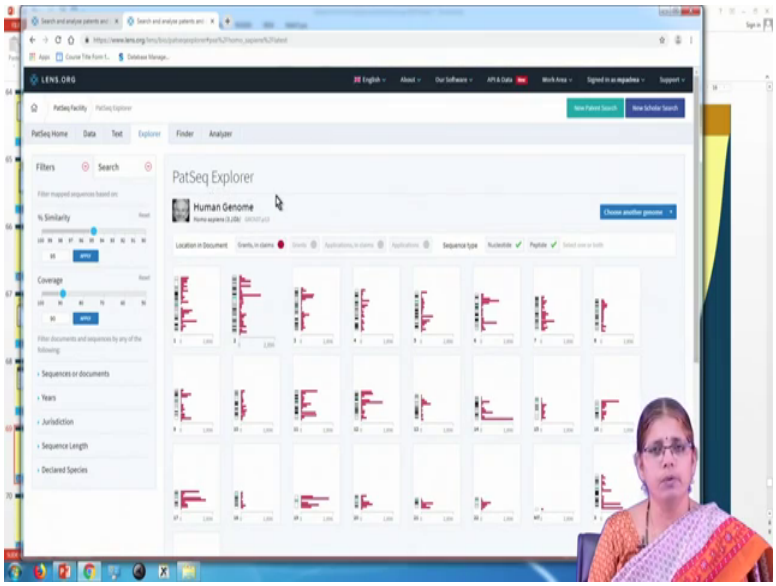

By clicking on the specific link here you can actually explore sequences from different genomes. Here you have by default the human genome and you have the representation of each of the chromosomes the total number of sequences and how many documents are represented.

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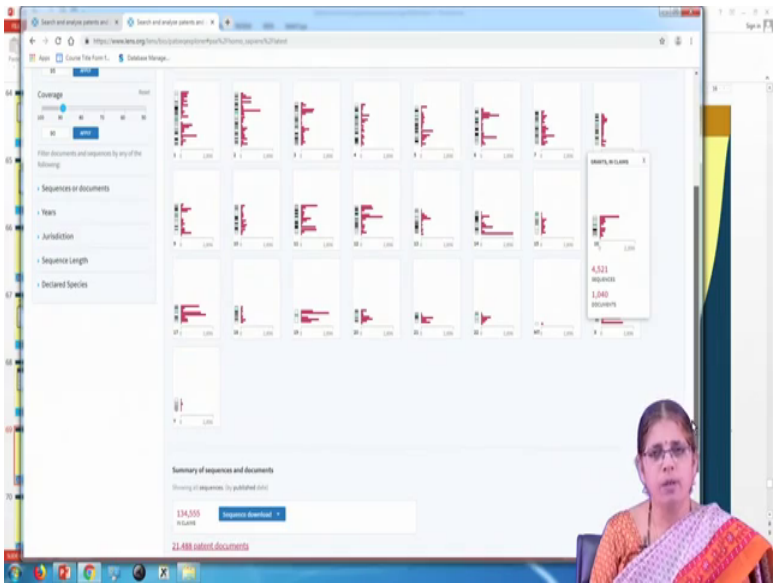

So, this way one can actually understand the, growth of the area in relation to isolation of sequences and claiming of sequences in patents in relation to given genome. One can

actually download bulk sequence information using the download option. There are additional databases that are genomes that are available.

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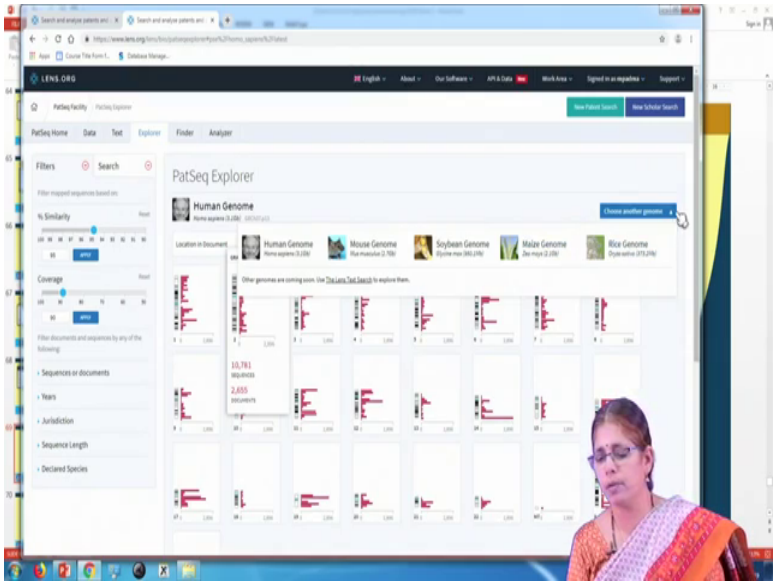

So, if you click on choose another genome you can find mouse genomes, soybean genome, maize, rice. So, the entire listing of genomes are available and based on the total number of genomes available under this tool one can select and then identify the sequences, there is also an option for analyzing sequences under the PatSeq using the analyzer option.

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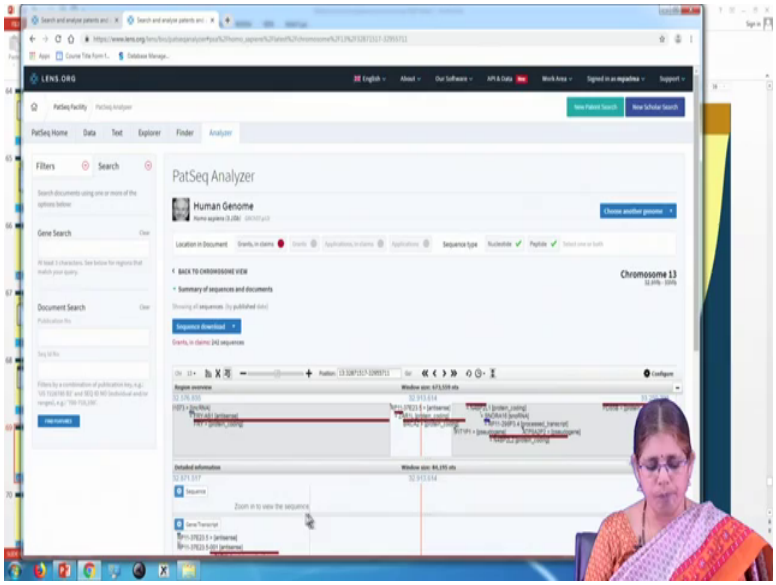

Where one can actually look at analyzing the sequence from it is different parts. So, one can understand in the entire stretch of the sequence which are the protein coding regions. How are the different regions represented in relation to that particular sequence.

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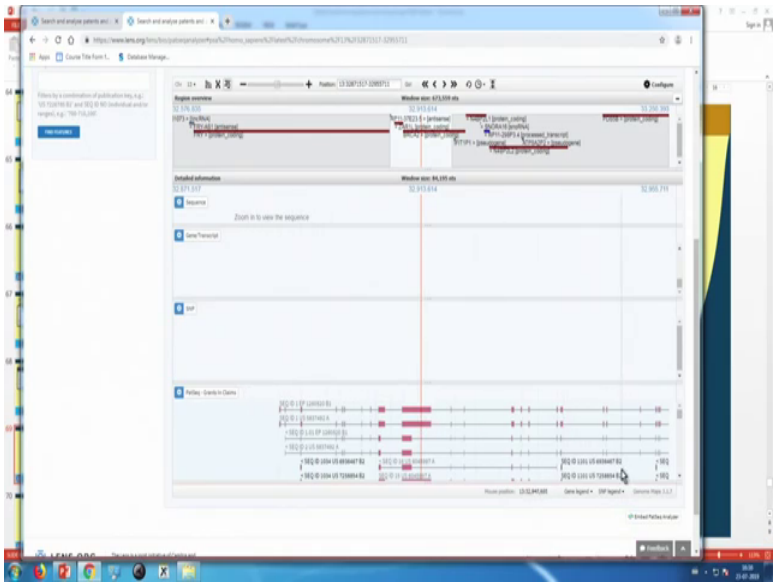

So, this gives a handle to understand the presence of the different genes in a given stretch and look at analysis beyond. So, here you can see in this panel, in a given stretch how many different sequence IDs are there and how many of those are claimed by different patents. Here you have an EP patent, another stretch in which you have the US patent taken. So, this gives you a complete view on the different patents claimed in relation to the sequences and that is how one can actually look at the gene information.

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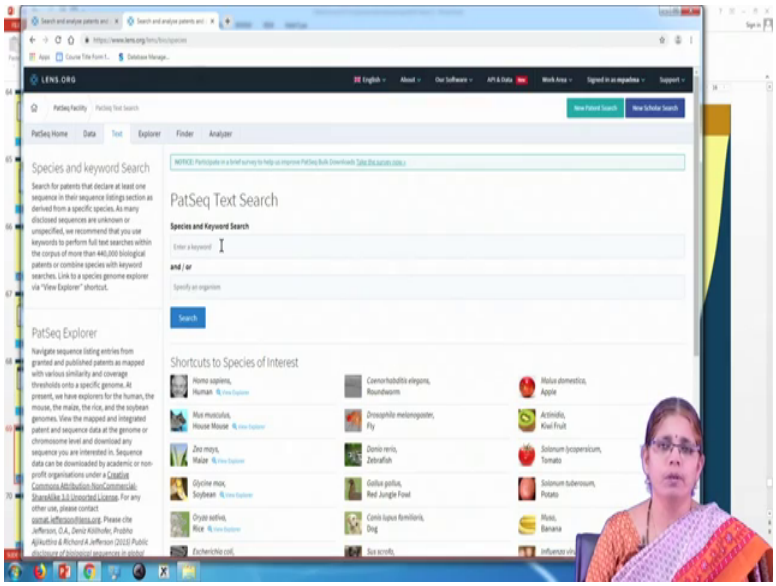

One can actually also look at SNP and further information based on the general information that is available. So, PatSeq analyzer can be used for analyzing sequence information. One can also actually use a keyword in order to search for sequences either from the point of view of using the species name or the gene or the protein name.

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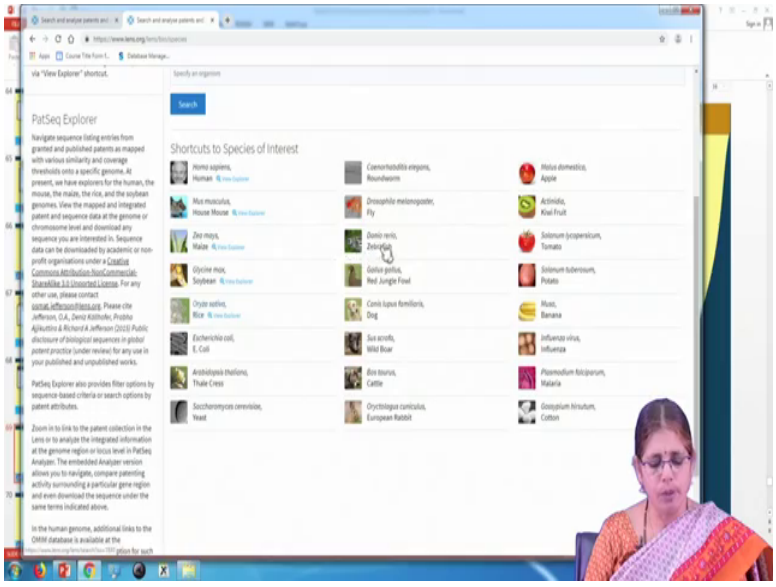

So, here you have the different shortcuts to the species of interest. So, these are all the different genomes represented you have different animal genomes, microbial genomes,

plant genomes, east and the human genome. So, one can select out one or more and identify the sequences of interest in relation to using the PatSeq text search.

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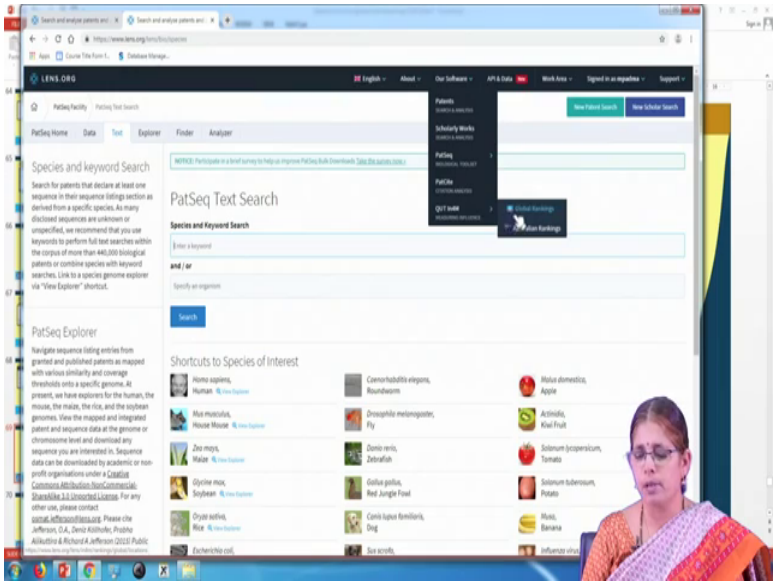

So, this is how one can actually look at the sequence and sequence related information. The proprietary tool that is available under the lens is the Qut In4M which provides rankings of institutions and different entities in relation to particular technologies.

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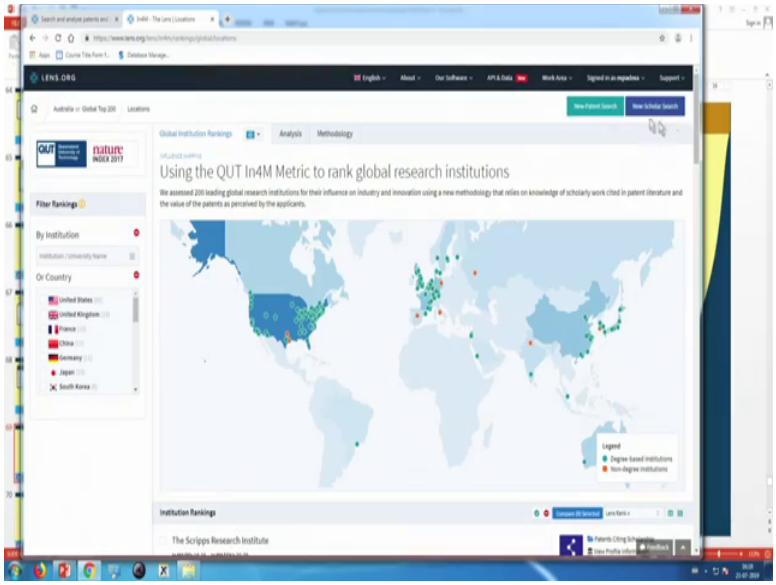

So, this is where one can look at the influence of the technology. So, one can understand from the basic write up on this particular technology on how the methodology is used to rank institutions.

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So, here you can see the institutional ranking based on certain metrics in terms of patent citing scholarship, profile, the draft institution patent portfolio.

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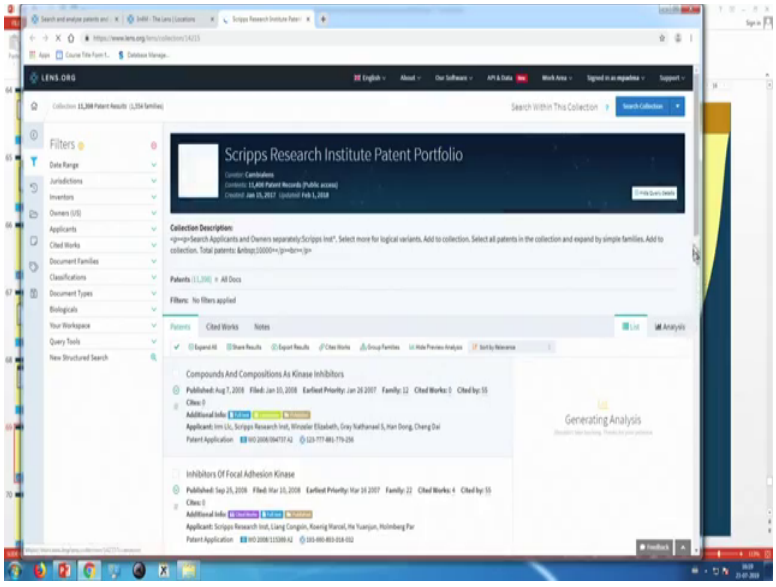

For instance if you click on Scripps research institution, for the Scripps research institute you have the different patents.

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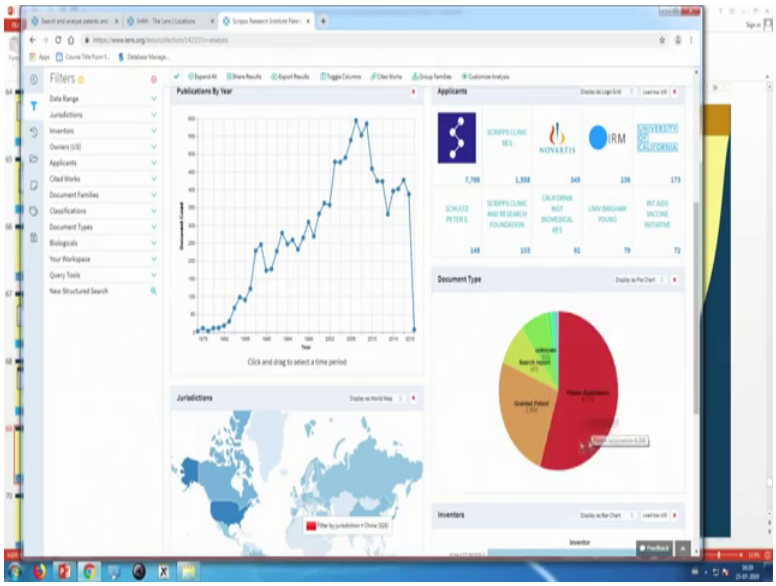

And if you click on the analysis tool one can see the information in relation to the documents vis a vis the number of years.

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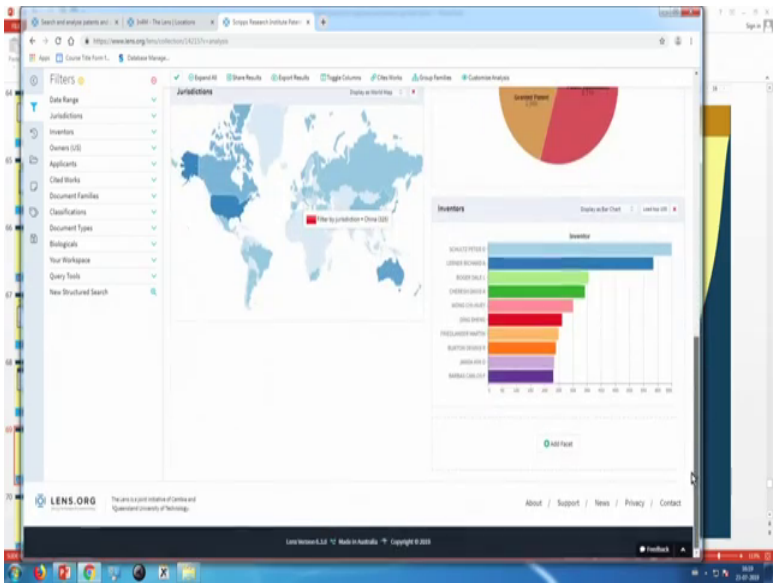

Also the jurisdictions in which the patents are represented, inventor information and the spread of the patent information in terms of applications and grants and so on. It also provides information in relation to cited works.

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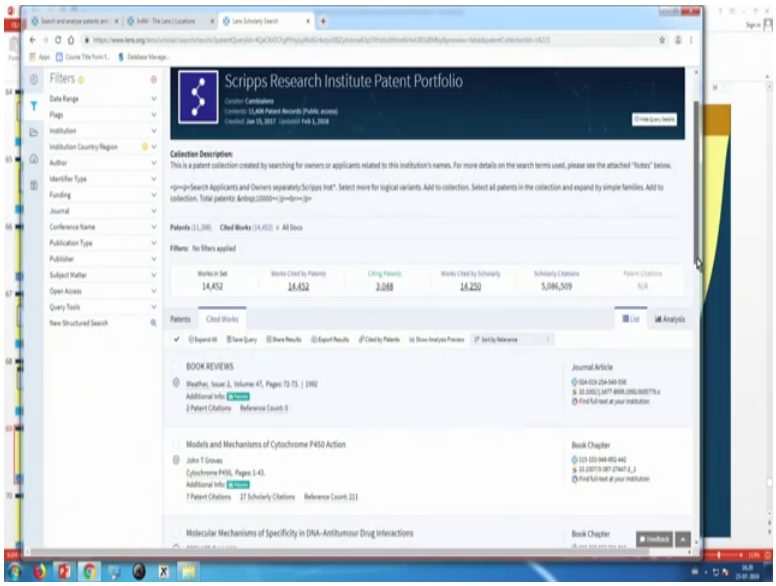

And one can actually also make notes based on the information obtained.

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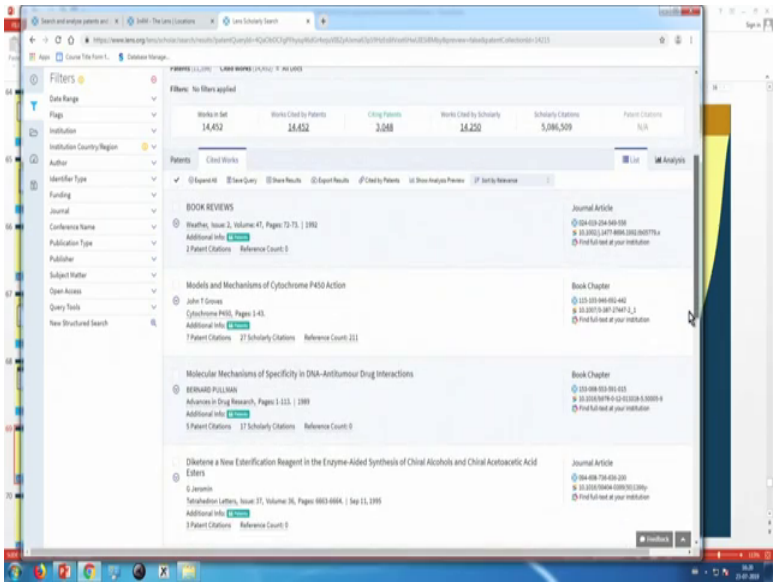

So, if one is undertaking a general search for institutional portfolio it may be simply to understand what is the patent portfolio, but many a time one may also look at comparing patent portfolio. And you may want to actually make notes in which case you can use the notes making option and input notes into that particular window. So, that is how one can look at analysis of the data.

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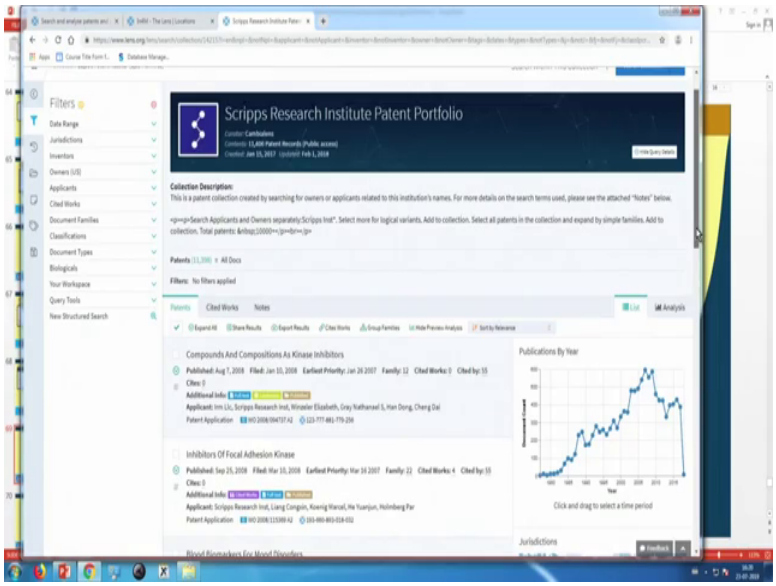

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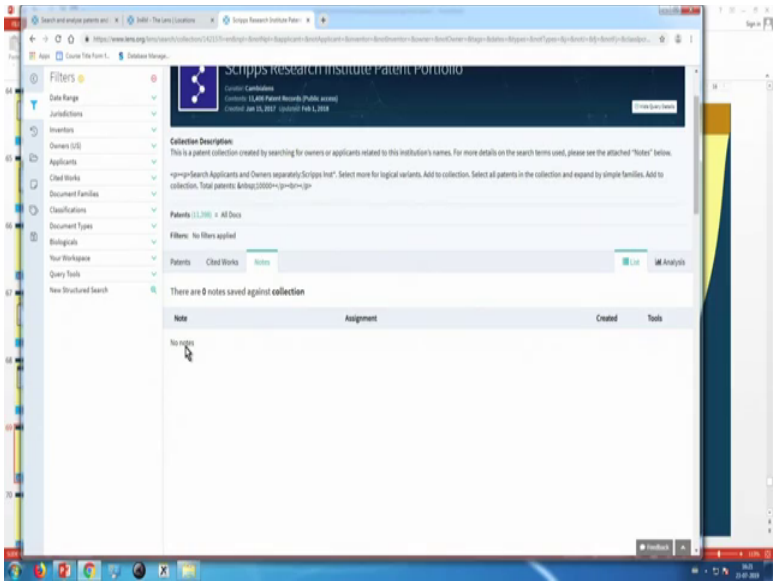

So, here you have the notes option and you may want to input certain notes which are thoughts that you would have in relation to either a further search or there is a correlation that you would like to do with relation to particular information. So, those are saved in the background which can be utilized for further work. So, here you have for one particular institution how the information is represented.

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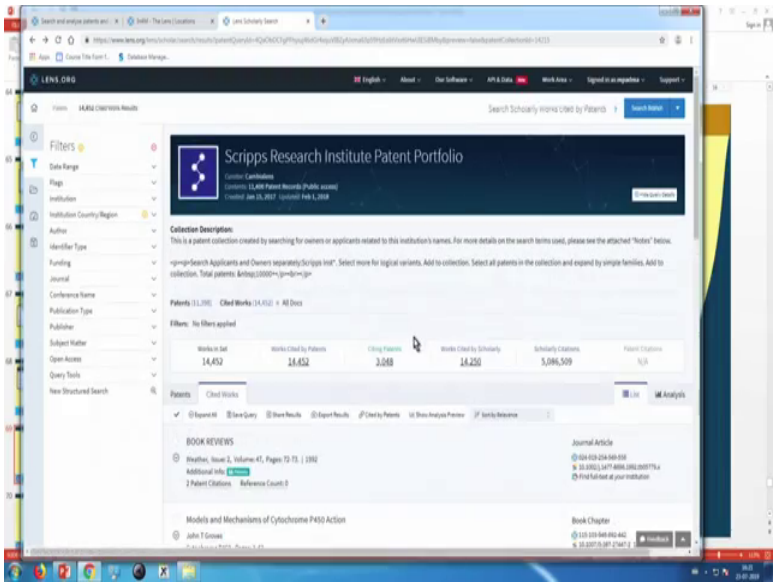

If you go back and look at the entire set of institutions one can get the information in relation to the technology space which each of those represents.

So, in the background of this particular tool the information is sourced from different sources, for instance in this case Cambia Lens is the place from where you have the records available and there is by when was this information generated in terms of the patent portfolio and to when it is being updated. So, keeping track of this information is useful.

So, it is at this stage one should keep in mind that while the different analytical, tools are available for patent analysis, it is important to keep in mind the updation of database collections, understanding relevantly the analysis options available in a given database with respect to the search that is being undertaken. So, this is how one can look through the different tools that are available under the lens database.

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So, in summary we have understood the value of enhanced analysis and visualization as a part of advanced patent tools. The demonstration that has been done with respect to some of the tools is representative in nature. There are many tools available in the public domain some which are available on which are freely accessible some which are available on subscription.

So, the databases that have been shown as a part of this lecture are only indicative in nature to encourage patent searchers to analyze utilizing some of these options. However, there are many proprietary databases that are available which are customized suiting to the needs of different type of search. One can go for a subscription of those databases to undertake analysis. Some of the public databases today also support a range of analytical tools. So, one can utilize as an academic person or a researcher one can utilize some of these tools in order to undertake patent analytics.

So, in summary the use of analytical tools is to enhance search from the point of view of providing ease of use and improvement in the speed. The option to look at information from the point of view of in depth review in an automated fashion is the other aspect of the use of analytical tools. We have understood the aspects of looking at global information in relation to patents and also looking at the visualization options locally that is as a part of a given network.

Interactive data analytics is very useful to understand the insights in relation to patent data many tools also provide analysis in relation to competitor portfolio. And so, therefore, this information is again useful from the point of view of the advanced analytics.

Citation analysis has moved from simple analytics to more complex analytics where we are looking at cited by information as well as the non patent literature information. So, an entire gamut of things can be done utilizing the analytical options available in different patent search tools.

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There are references for this particular lecture the global patent index link, the Lens link, the tool for the web link for optimum and the web link for patent inspiration. There are several other tools which are available and we encourage patent searchers to look at many more tools that are available in order to understand, what are the different ways in which patent analysis can be done. The patent search workbook provides you some examples of these tools so, that one can use that as a model in order to undertake the search and analysis.

Thank you.