

**Patent Search For Engineers And Lawyers**  
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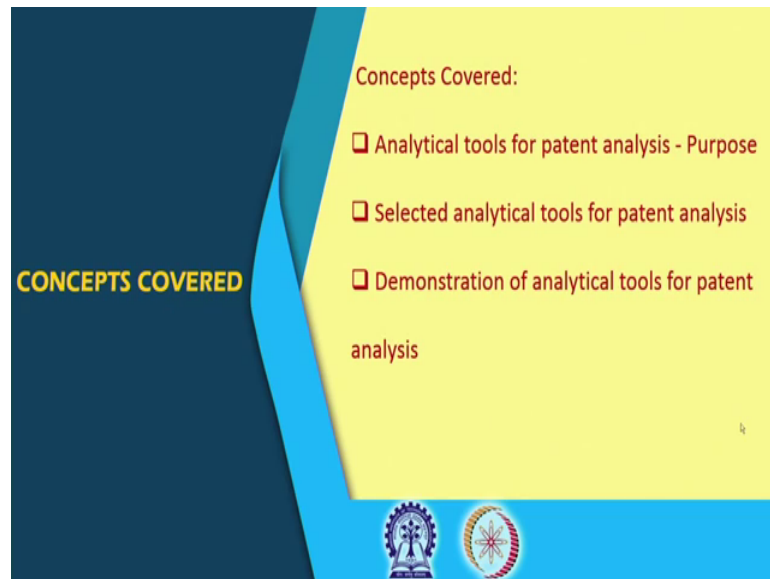
**Lecture – 31**  
**Analytical tools for Patent search and analysis**

Welcome to the lecture on the Analytical tools for Patent search and analysis. In the earlier lectures we have dealt with the aspect of patent analysis from the point of view of looking at the analysis of the data both from the point of view of qualitative and the quantitative analysis. In this lecture we will focus on what are the developments in relation to analytical tools which is out the analysis of patents. Patent analysis is done for various reasons from the point of view of looking at the qualitative statistics and quantitative statistics.

Today the area of patent search has moved into a newer dimension, where we looking at in depth analysis of technology that is also useful for people who are working with companies looking at taking strategic decisions in relation to R and D and also funding. So, given that scenario we not only want the analysis of tools from the point of your faster search, we also want data particularly co relative data. The other important aspect of were analytical tools today have emerged is to look at the portfolio in relation to patents.

So, we not only want market analysis to be overlay with patents we are also interested in understanding what are the technologies which are moving fast into a particular sector and what is the representation of those technologies. So, today the analytical tools have grown into the space of we are now looking at the competitor portfolio analysis as well and looking at the growth in technology (Refer Time: 02:16) the data that we get from the patents.

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So, this lecture will basically cover the aspects of the emergence of advanced analytical tools for patent analysis. Also some selected analytical tools will be taken up to understand how one can go about with analysis of patent data. Demonstration of the selected analytical tools will be done to understand how one can actually start with the given tool and analyse patterns from the point of view of searching as well as looking at the various analytical options that databases provide. Through this lecture we will also gain insights into how one can effectively combined certain analytical tools for patent analysis.

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Let us understand the purpose by which we need to use analytical tools. The need for analytical tools comes with respect to organisation of the patent data. Whether it is keyword search or classification search or a combination of keyword of classification search depending on the technology area that you are searching often, you come across several thousand hits of patents.

There is a need to logically analyse this data that we will look at it from the point of view of patent search and analysis. So, today we are also looking at the area of where we need co relative information. So, the primary purpose of any analytical tool in relation to patent analysis would be the organisation of data. Typically falling into the qualitative or the quantitative information area, with the advancement of different software tools the options for analysis as well as visualisation in relation to patents has improved.

Today there are advanced analytical tools available for patent search and analysis and these provide several great opportunities in relation to analytics, one is the aspect of network analysis. So, here we are looking at basically information in relation to patents among the space in that area, that is trying to understand different co relative aspects of a given data with respect to other data. So, it would mean one set of patents with other set of patents, one set of patents with not patent literature a given set of patents with portfolio analysis.

So, today we have this option of what we call network analysis that is available, because of advanced analytical tools. The other important aspect that advanced analytical tools provide is the capture of specialised information, today because of the in depth need for analysing patents we have several database that cater to specific needs.

For instance we are looking only at portfolio in which case there are database that in depth do an in depth analysis of portfolio. There are databases that cater to scientist in the area of biology for in sense sequence database information. So, there are specialised analytical tools developed to take care of the analysis an in relation to sequences. Similarly in different areas one can actually have specialised tools for analysis of patents.

So this is one important option that is available with advanced analytical tools. One of the important features with respect to advancements in the area of programming, which is impacted the area of patent analytics is what we call the interactive interface. Here is a

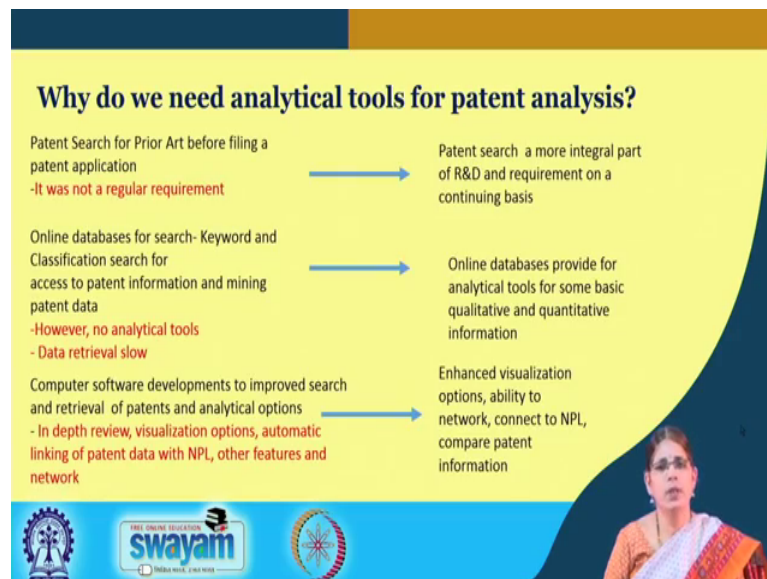
scenario where normally in simple databases one can draw graphs understand period wise growth of growth of patents percentage distribution of patents.

But many a time database do not provide the option of interactive data visualisation. What it means is that at any given data point by simply a mouse over one can understand what is the relevance of that data point from the point of view of the data hidden behind that particular figure. So, today advanced analytic software's in relation to patents provide this option of interactive data visualisation.

Another important aspect in relation to advanced analytical tools is the ability for the user to interface with the database. From the point of view of your writing small programs in order to retrieve specific information. So, today this area of patent analytics has grown to an extent where database is allowed for user interface to write your own query options to the extent of writing programs to retrieve specific information. Another important aspect that has also made a big change to the way data is analysed in relation to patent is the ability to combine different data sources.

As we had observed in the earlier lectures patent databases are limited from the point of view of the type of collection, the search interface the type of analytical options. So, given the scenario and depending on the emphasis of the database, each database has certain limitations. A given database cannot do all the things that we wanted to do given that, today it is also possible to combine the data from different data sources and also derive several important findings in relation to a given type of patent search. So, advanced analytical tools provide us this ability to combine with other data sources.

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So, let us understand how the growth of the analytical tools has taken place considering advanced and call ethical options. So, in an area where the early searches were done typically to look at prior art, it was more of look for patentability in relation to a given patent application. What was the important scenario that time was that, the use of a tool was only limited because it was not a regular requirement.

Today we have patent search which is an integral part of the R and D as well as many other areas of work which means it is a continuous requirement. Given that we need not only the faster search we also need the use of easier search options. So, this is one context which has helped the development of enhanced analytical tools. The other instance is the instance of where simple queries were used either keyword based or classification based to access patent information.

Where mining of the tools for patent data was the main focus, that is the database is needed to be robust with patent collection and search of the database would retrieve a whole lot of it is. The analytical option part was postponed to a later time so the analysis of patents was available as an option beyond the database that is as a separate option.

So, here there were database with no analytical tools and as the data retrieval options itself led to a lot of time, much of the time is spent only in data mining that is accessing the patent data. Today we have the development coming out of that where online database is now provide for analytical tools, that is we are not only retrieving the data from the point

of view of the search. Tools are available such that certain basic qualitative as well as quantitative data can be captured.

So, this is where you see the beginning of the development of analytical tools. In some of the earlier implementation of certain databases it was more of bibliography data that was available and so the organisation of patent data was more into period wise, priority date wise, publication year wise. So, those were the simple tools that were there with respect to the simple analytical tools available in the database.

There have been several hurdles despite the development of analytical tools, the more and more the need for data mining and analysis comes up not only from the point of view of improving the collection. But also from the point of view of better organisation of results, understanding of the co relative information in relation to patents. So, we now see the third important development in relation to patent search which is where we see the current development in relation to analytics.

So, the development in relation to computer programs and the software tools used for analytics certainly provide us better options for analysis and visualisation. However, there have been certain limitations nevertheless, one is that in depth review of patents was limited. There were limited visualisation options the linking of patent data with respect to other data such as non patent literature other features and other separate information which can form a part of the patent network this aspect is missing.

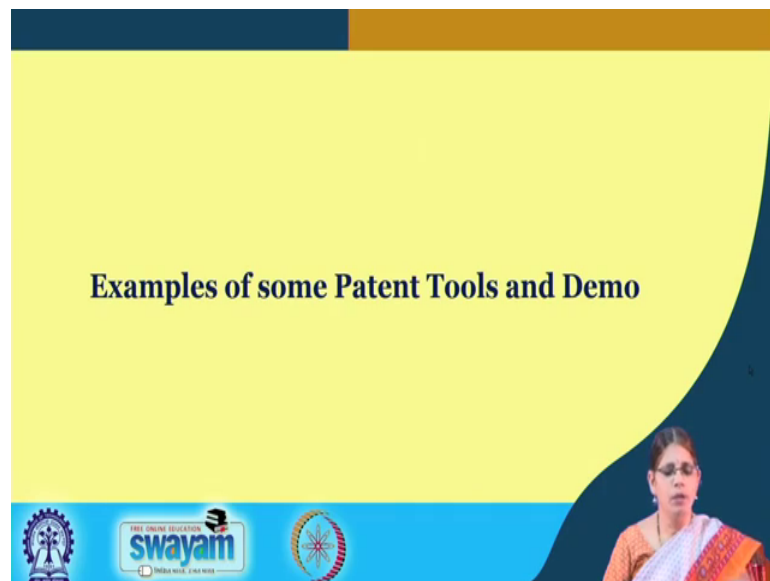
So, today the need for advanced analytical options is realised from the point of your providing one, the is of use the faster search and also the aspect of looking at enhanced visualisation. Today we looking at connecting patent data to any other information that is relevant to the patent. Which means it can mean patented patent information patent to non patent information patent R and D. So, we are looking at not only the proximal points in relation to patent data we are looking at the distal point.

So, this is what comes under the purview of the what we call network data. So, today we have the analytical options which provide for this option of looking at network analysis, this provides better insights into the analysis of patents. As we have more and more robust software being developed in this area we not only have the general tools where you have the improvements being done, the version being adopted we have also

specialised tools available which can be also utilised for driving specific data in relation to patents.

Given the area of development in relation to these tools it is important for a patent searcher to be aware of one what are the stools and how is it that provide better options in relation to analysis visualisation and also network information.

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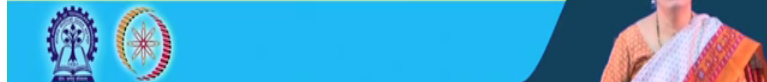


We will take in this lecture a few examples of different patent tools, that are available some which are from the free databases and some which are from the subscribe databases. To understand what are the options available in terms of the analytical tools and we will also look through the demonstration of the each of these tools to understand from a point of view of a searcher, what are all the options available from in terms of analysis.

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## Global Patent Index

- GPI is an advanced tool for searching the EPO's worldwide bibliographic and legal status patent data.
- GPI is an online tool that enables you to perform expert patent searches
- Link: <https://www.epo.org/searching-for-patents/technical/espacenet/gpi.html#tab-1>

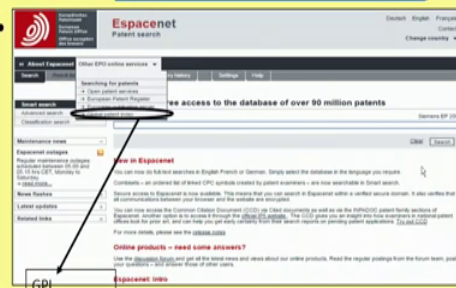


The first database that we will take up for the analytical options is the global patent index. The global patent index is available at the e space net, which is a worldwide collection of the information in relation to patents of several countries. The global patent index is a good online tool that is available for searches based on access to the particular tool. So, this is the link for the GPI, where one can go to the e space net and click on the global patent index to access the tool.

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## Analysis using GPI

- Go to GPI - <https://worldwide.espacenet.com/>

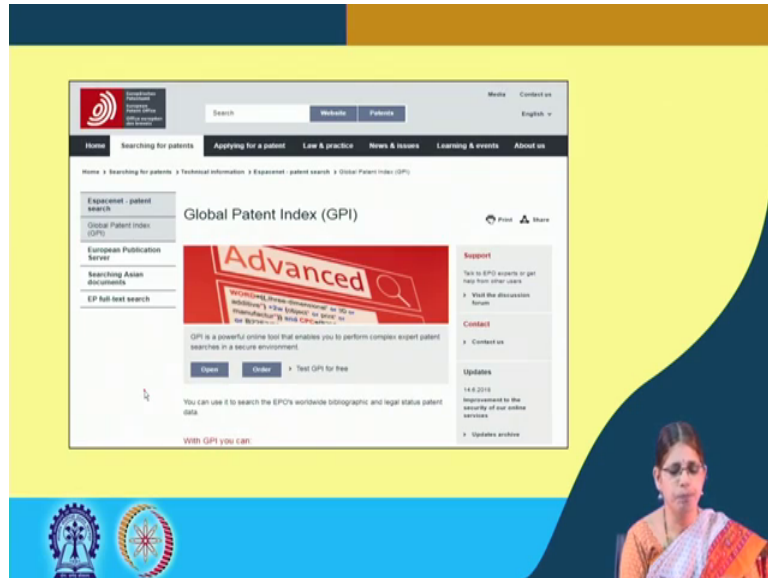


So, you have the global patent index, if you go to the e space net and go to the online services, one can look at searching for patents there are several options there are open



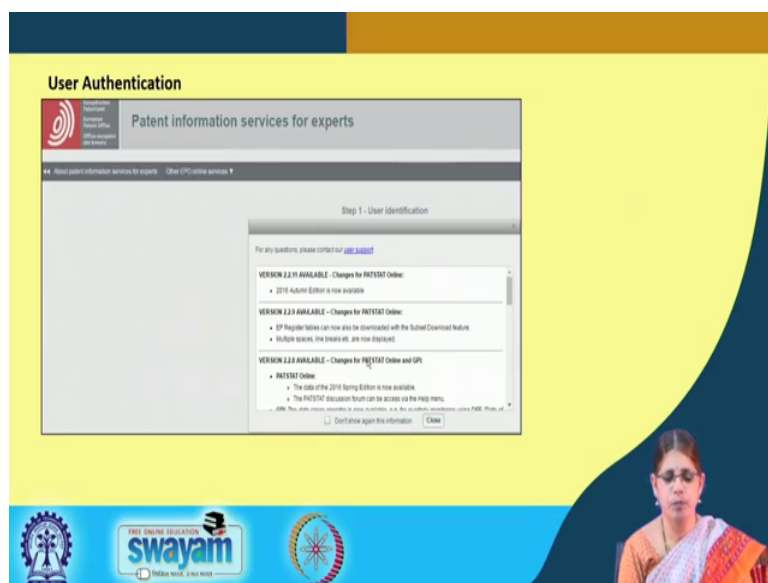
patent searches, there is European patent register, publication server and then you have here global patent index. So, if you click on this it takes you to the GPI tool.

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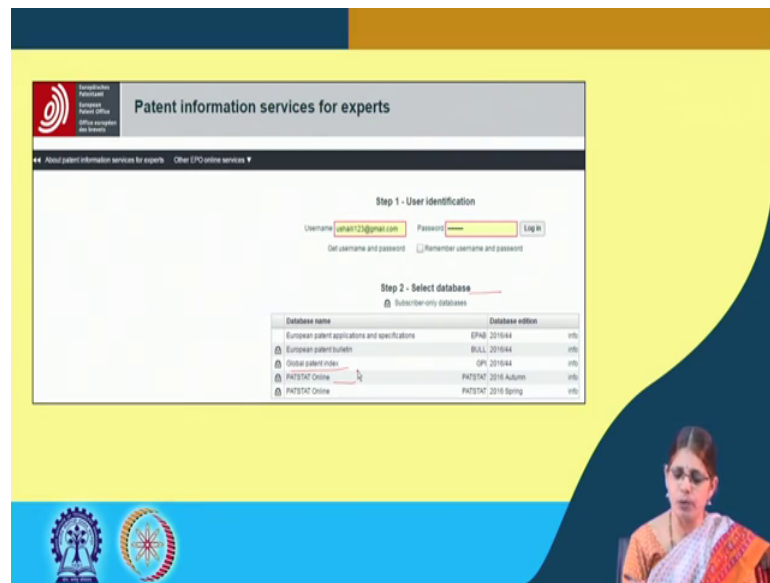
GPI tool is available for subscription, it is also available for test purposes where one can generate user id based on the login. So, if you go to the option of test GPI, one can actually provide the user registration details and get the login account to look at this particular tool.

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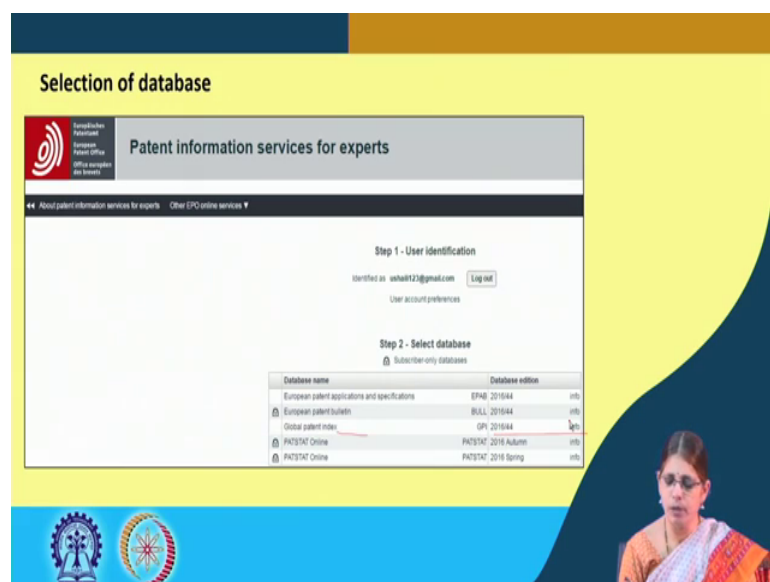
So, the first step is the user identification when you go to this particular database.

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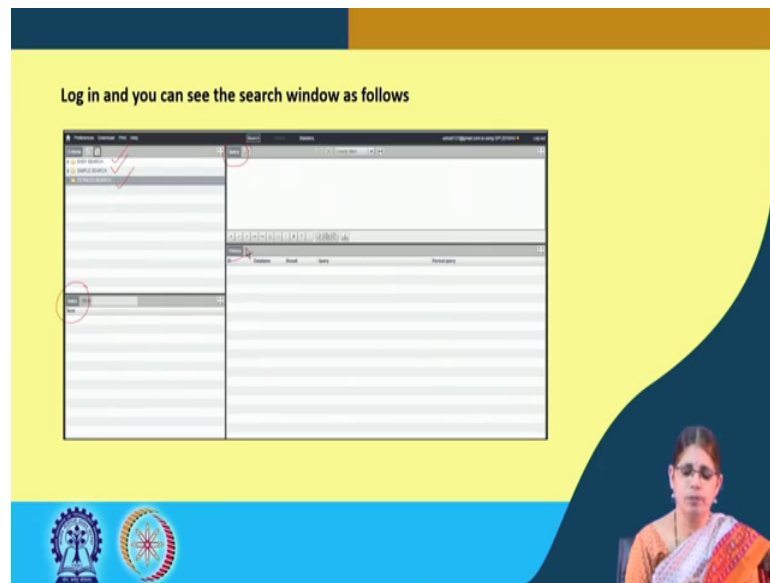
Where you input the user details and the password and after this stage you go to the step two which is the selection of the database. Now, here you have the global patent index. One click on this global index will take you to the GPI tool. There are other tools which you see as the pat stat online pat stat is for patent statistics one can sign up with the pat stat online as well to get the user id and login to look at the pat stat tool.

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So, here you are looking at the global patent index, it also tells you the database addition from the point of view of the data.

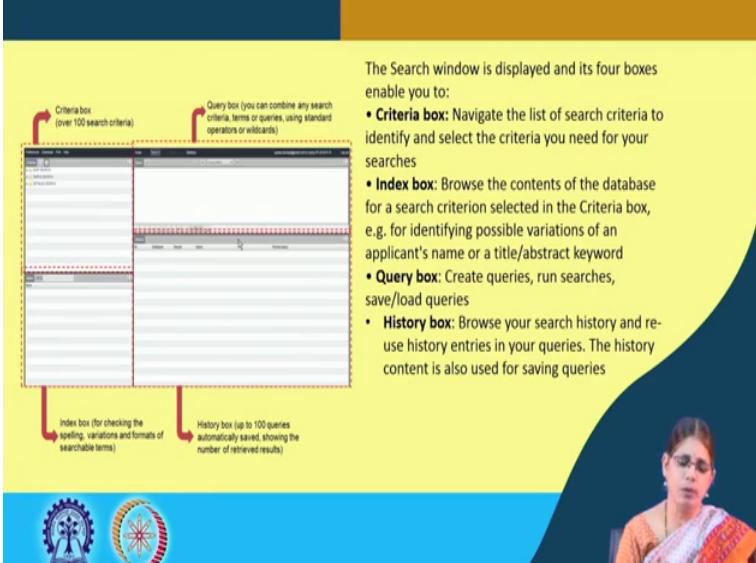
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What you see as you click is the login screen which is the basic search window. Now the search window is organised into four different categories. The first part is defining what we call the criteria here you have the easy search and the simple search. There is also a provision for carrying out the details search in relation to patents. So, we need to for select the criteria, then the database also provides the index of terms that can be utilised in order to conduct the search for example, there is a find option.

So, similarly there are many options. So, use the find option in order to look for the search for a finding a particular. Then you have the query window this is where you would paste the query and then there is also a window for history which provides you a log of the searches that you have carried out in relation to a given time point. So, if you access the history, one can see the number of searches that you have done it leaves back the ids with respect to each of the searches and also the type of query and the results.

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The Search window is displayed and its four boxes enable you to:

- **Criteria box:** Navigate the list of search criteria to identify and select the criteria you need for your searches
- **Index box:** Browse the contents of the database for a search criterion selected in the Criteria box, e.g. for identifying possible variations of an applicant's name or a title/abstract keyword
- **Query box:** Create queries, run searches, save/load queries
- **History box:** Browse your search history and re-use history entries in your queries. The history content is also used for saving queries

Criteria box (over 100 search criteria)

Query box (you can combine any search criteria, terms or queries, using standard operators or wildcards)

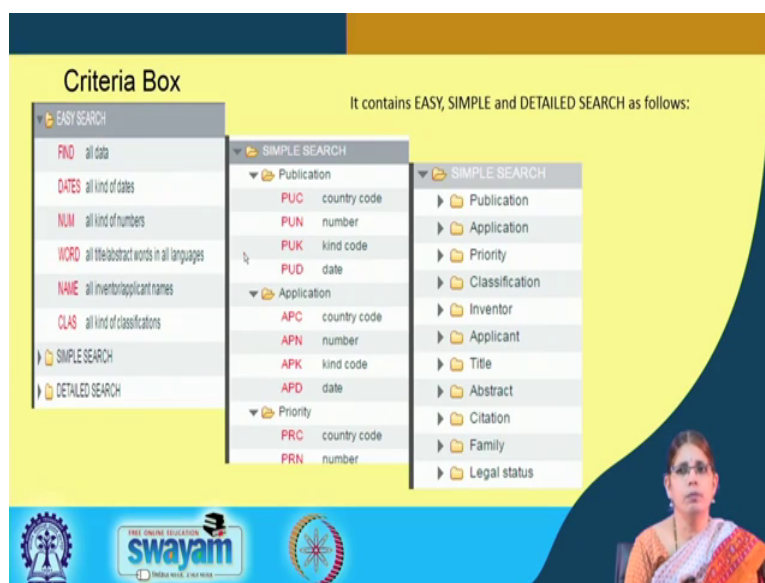
Index box (for checking the spelling, variations and formats of searchable terms)

History box (up to 100 queries automatically saved, showing the number of retrieved results)

So, there are limiters with respect to each of these options that are provided. The criteria box has over 100 different search criteria one can use utilising the index the different formats for search can be raised the query window helps you to combine different search terms.

So, here you have been at one go you have the 4 boxes the query box for navigation in relation to easy search, simple search or detail search then you have the index box from where you can pick up the terms on what you would like to search whether it is as a word or by applicant. The query box is used to run the searches one can also load the queries and then each of those searches find entry into the history box.

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Let us take a little elaborate look into the criteria box. So, under the easy search one can find for data using the find option, dates can be specified using the dates option word search, number search, patent number search, search by applicant name and search by classification. Now, if you look at the simple search you have the search which is organised into more specifically publication for instance if you take that particular option.

One can go for publication number publication date publication country code and similarly for application you can have the different types of options available. Simple search has options of searching for publication information applicant information in relation to the technical data that is the title abstract family information and the legal status. So, utilising any of these criteria whether it is the easy search, simple search or the details search one can actually carry out the search in the GPI.

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The detail search also has several options further beyond the simple search where you can have more options for searching and if you click on each of these individual links for instance publication, you get up these all this particular options and these options can be utilised for the search. Instantly the DOCDB database is the background database in relation to the EPO.

So, you have these different options in order to carry out with respect to the details search. In the next part of the talk we will take up specific areas so, that we can carry out search and understand how to use the data derived out of search to use the GPI for analytical options as well.

Thank you.