

# Taxonomy Tool – Brief Instructions on Operation

The main purpose of this tool is to guide the modeling of research landscapes through the automatic generation of taxonomies comprised of terms related to a given research field.

**Taxonomy Generation Tool Login**

User name (Please enter your first and last name)

Password

Login

Figure 1 Taxonomy Tool Login page

## I. Tool login

- a. The user needs to enter his/her first and second name as a user name.
- b. The user name will then be used in the next steps to show the user the taxonomies he/she generated.
- c. No need to enter any Passwords.

Welcome, user\_name

**Step 1 - Data set creation**

Search Term

Choose Database

Number of Documents (max 4025)

Create Data Set

**Step 2 - Taxonomy Generation**

user\_name's data sets (ordered by creation time)

Others data sets (ordered by creation time)

Select Taxonomy algorithm to choose

Select similarity measure

Select centrality metric

Number of most frequently occurring terms from dataset to include in taxonomy (default 100)

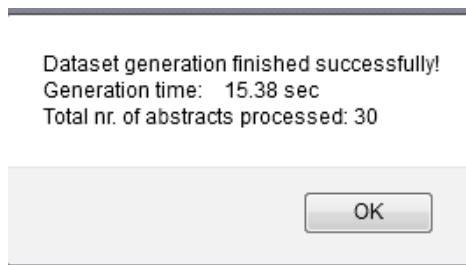
Reuse previously calculated distance matrices, if available?

Create Taxonomy

Figure 2 The main Taxonomy generation web page

## II. Step 1: Database generation

- a. After login the user will be directed to the main tool web page, where the first step is the database generation. Here, the user needs to enter a query expression into the search term field that can either consist of a term or a set of terms separated by a comma “,”.
- b. Then a database needs be selected from the dropdown menu (“Compendex” or “Inspec”).
- c. The number of documents to be used for this search could also be identified by entering a number into the “Number of documents fields”. Please notice the maximum number of documents cannot exceed 4025.
- d. When clicking on “create database”, using the query expression and searching the online databases (Compendex or Inspec ) a database of all the available meta data associated with the documents used is created. This meta data includes the list of the authors’ used key words which will later be the terms used to create the taxonomy.



**Figure 3 pop up window indicating successful generation of the database**

- e. When the database generation task is finished a pop up window shows with a message announcing the successful generation of the database and also contains the time and the number of documents used to generate the database.
- f. When clicking “ok” on the popup window a text area will appear showing the keywords found in the generated database and also showing the frequency of their appearance.

## Step 2 - Taxonomy Generation

user_name's data sets (ordered by creation time)	user_name_cyberspace (Compendex, 42K) ▾
Others data sets (ordered by creation time)	-- ▾
Select Taxonomy algorithm to choose	DJP ▾
Select similarity measure	Cosine ▾
Select centrality metric	Closeness ▾
Number of most frequently occurring terms from dataset to include in taxonomy (default 100)	<input type="text"/>
Reuse previously calculated distance matrices, if available?	Yes ▾

Figure 4 taxonomy generation parameters

### III. Step 2: is the Taxonomy generation

- Firstly, the user has the option to either choose his own created databases by selecting from the first dropdown menu or databases created by other users by selecting a database from the second dropdown menu.
- Then the user has a number of taxonomy generation parameter options to choose from such as (generation algorithm, similarity measure and centrality metric) for more information please check the main taxonomy generation document at (<http://taxonomy.mit.edu>)
- Clicking on the “Create Taxonomy” button generates the taxonomy based on the given parameters and shows the taxonomy viewer in the taxonomy viewer. If there are any errors in the way the fields in this subsection were completed, alert messages will appear, notifying the user.

## Step 3 - Taxonomy Viewer

user\_name\_cyberspace (Compendex, DJP) [SVG](#) [PNG](#)

### IV. Step 3: Taxonomy Viewer

- loads two saved taxonomies into a taxonomy viewer, a PNG file or a SVG file which opens in a web browser window.

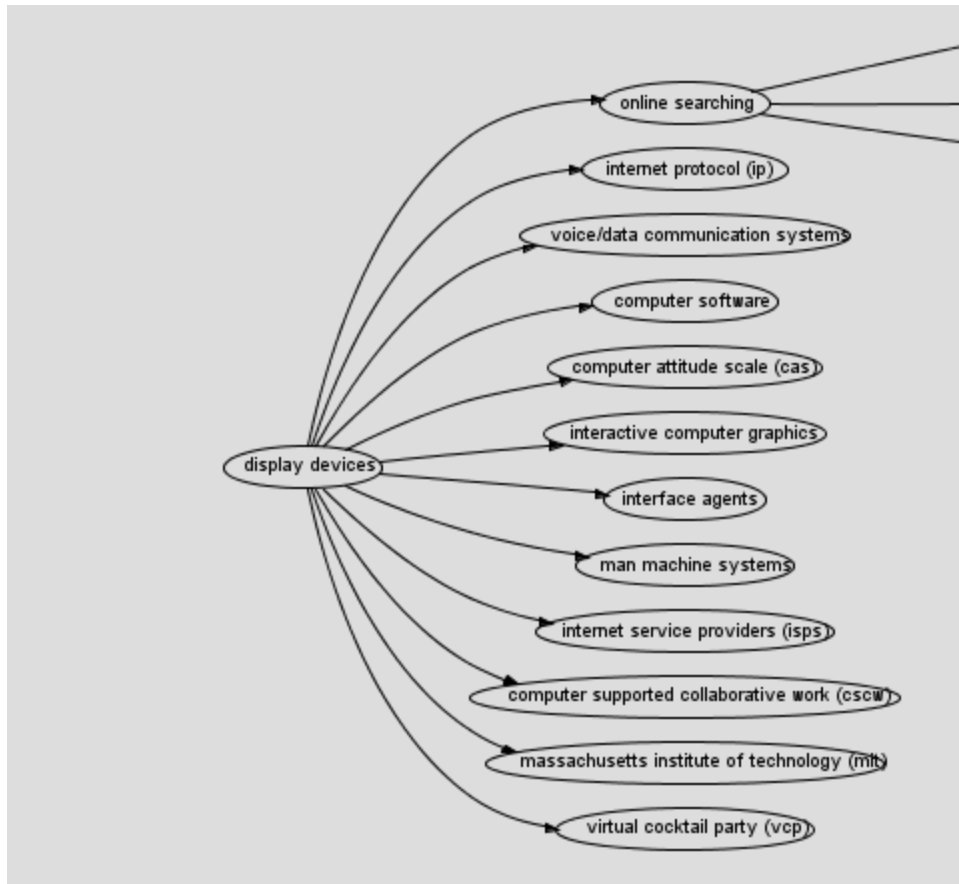


Figure 5 A simple visualisation of the taxonomy