

# The Compilation of a Personal Documentation System

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## THE COMPILATION OF A PERSONAL DOCUMENTATION SYSTEM

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At the Twente University of Technology, students are told as to how they can build up a simple documentation system for their own use. At the same time, they are given a guideline which they should follow in order to be able to do this. The starting principle is such, that somebody engaged in research should not have to spend too much time in building up such a system as well as the time involved in keeping it up to date. For that very reason, we have chosen a simple system using "key-words". The list of key-words, i.e. the collection of permitted terms, has to be arranged in such a way that it can be surveyed at a glance, that there are no "see-also references" and that the user can always make a quick choice from the key-words.

The list of terms is made in the form of a number of columns, each column representing a certain facet or viewpoint allowing the compiler of the documentation system both to index and retrieve the documents as it were in a multi-dimensional way.

Examples of such viewpoints, illustrating a documentation system in the field of physics, are as follows:

- theories
- physical phenomena
- mathematical techniques
- materials etc. etc.

When a document is to be assigned key-words, one should, as far as possible, choose one key-word from each column.

Every column consists of rather broad key-words; in addition a list also has to be made of narrower i.e. prohibited terms, and, which refer from these to the broader admitted terms of the list. It is self evident that the cross-reference list also contains references to prohibited synonyms which in turn, give the position of the permitted synonyms.

## How can one compile a list of terms ?

Such a list of terms can be built up in the following manner:

1. Firstly, make a choice of your viewpoints.
2. Assign key-words to some one hundred documents, from any possible viewpoint; compile a "frequency list" of these key-words.
3. Place these key-words in the various columns making note of the frequency of occurrence.
4. Scrap all the key-words and synonyms which are too narrow in their meaning, but, take note of the frequency.

The key-words are uniterms. Combinations of two or more of these terms are only made during the process of searching: the "post co-ordinate index" system.

There are not very many different hierarchial levels contained in the list of terms: depending on the situation, dictated by the frequency a key-word is likely to be used, the key-word has two, three or four sub-levels.

Through the use of examples, it is made clear to the students that the use of too many hierarchial levels has, as a result, that one has to go through all of the key-words in the sub-levels when conducting a somewhat broader search. This can result in a rather complicated search, and, during such a search, the possibility arises that one may forget some of the relevant terms. In this case, the retrieval does not achieve the 100 % recall which, for a personal documentation system, has great drawbacks. A work list containing only a few hierarchial levels gives a higher percentage of retrieval, but, has as a disadvantage, that the precision level is lower. In the case of a personal documentation system this disadvantage is, in my opinion, not as great as the disadvantage of too low a level of recall.

Of course, the students are not only told how they should compile a list of terms. They are also told how to make a document description, what role the unique document record number plays in the system and equally what the function is of the file of document descriptions, assorted according to the document record number, how one can produce a list of authors and a list of subjects from the list of document descriptions, despite there only being one complete record available per document.

They are taught the "uniterm card system" and, for other types of manual documentation systems, their attention is drawn to the available literature.

Finally, the students attention is directed to some of the advantages to be gained by the automation of a personal documentation system, such as:

- the ease with which the computer can produce lists of authors, subjects, etc. to each other,
- the simple correction procedure, thanks to the possibility of mutating per field of a particular record,
- the possibility, by making use of the computer of making cross-sections of two or more sets of documents with different key-words ("post co-ordinate searching").

With this, I hope that you have been able to obtain an impression of the contents of a part of the course in the use of literature and the processing of that literature as given to the students of the Twente University of Technology.