Relations in information

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5th February 2000

Background  What is written may be more data than information because many of the relations that is between parts is not specified in a good manner.

To fix this I have tried to give the user the ability to specify the relation. This relations should be stored in a way that the computer can handle in a easy way.

When this is in place it should be possible to rearrange a document by the explicit relations. I hope this will make it easy’er to maintain a document and generate different versions of it for different targets.

One target knows much about a subject and should not get drowned in my citation of it. Others need this information. Most will prefer information given in their usual terminology.

Challenges  Context graphs has been known for a long time and have there areas of usage. The problem by applying an unrestricted context graph to an amount of information is that the number of different relations will soon become a to large quantity to handle proper. To avoid this there should be applied restrictions on what types of relations is allowed.

To let a subset of relations enclose all the others they should be the abstractions of the others.

Storing the right relations  When someone want information it is the characterization of our culture to indicate that by a question. The questions is started by a word that indicate the type of question. There is few of these question types and I have used these as the types of relations. This may be further argumented by the fact that one of the reason that I wanted to store the relations in the first place was to get the ability to answer questions about the information given.

The question words that I have picked out is:

• what (is)
• how (realizations)
• why (background)
• what (result)

This means that my most often asked questions is (or may be mapped into one of this):

1. What is this? (an abstract definition of parts)
2. How is this realized? (by example)
3. Why did this happen? (by causal reasons)
4. Why is this important? (by intentional reasons)
5. What will happen (effect) because of this? (causal reasons)
6. What will happen (solution) because of this? (intentional reasons)

Here the names correspond to the equal number in in the questions above. It is also important to notice that that two and two relation names refer to the same nodes but indicate different directions.

**Usage**  When having the relations described it should be possible to not only suite the information better to the target, but also to ask questions. If for example the information consumer reads about the war in Bosnia and wonder why this happened. Even if the information given don’t contain the information it is possible to give it if it exists in the database by following the relations.

It should also be possible to make queries in a such information database. If someone wants to know why there was a war in Bosnia the person would simply indicate the two abstractions “Bosnia” and “war”. The system could then find the nodes that have both this two abstractions. If the information system is quite complete there could be done a priority of the nodes with least other abstractions to get only what what was asked for. When this node is found it is possible to follow the relations intentional and causal and consume from there.

To present information about a subject it could be done in a similar fashion to this if the target know some about the subject already:

1. The abstract part as an introduction.
2. The causal part of the background.
3. the intentional part of the background.
4. References and abstract descriptions of other realisations on the same subject.
5. The information given in this block.
6. Direct effect of what is presented.
7. Suggestions to further work (solutions).

**Scalability** To let the system presented scale I suggest the use of containers. And the general node. A container is a node that refer to other nodes so one reference to the node will return all the information refered from the node. A general node consists of the information given in the core of the node. It is first of all this that other nodes refer. Second to that it also contains zero or more references of the type described.

**Further work** As with many things, standing alone they are not much value. This document tries to enhance value by relations but without ease of use this is not worth much. What I have made is clumsy and it lack the important ability of being able to give an abstract view of all the parts of the database when giving the relations.