



an XQuery-program: forward propagation, cycle removal, and backward propagation. Static analysis serves to assign a specific mode to any construct of XQuery-program before the stage of transcription.

Finally Chapter 10 summarizes results and offers some suggestions for further research.

General comments and questions:

- In my own experience any one particular method for XQuery evaluation is not the best for all possible use cases. If the author considers that the method of R-programs may be successfully used in any case, he should show this.
- It is well-known that user-defined functions in SQL may be recursive too. Probably it would be reasonable to try to apply the proposed ideas to SQL-queries. I don't know, may be somebody already tried to do something similar.
- I would be much better if the author provide some experimental results. I mean that it would be better to have at least very simple system prototype to experiment with it.

*Other remark, questions, and objections:*

31– the definition of the *grouping* operator is not perfect. This operator as all other operators creates a new relation. BTW the definition of *ordered run grouping* is ideal.

61 – it would be better to explain at first why this mode is called *canonical*.

*Conclusion:* The thesis significantly contributes to the area of XQuery processing. The results may be used in other areas of recursive program evaluation. The methods and the methodology of author's don't contradict with recent approaches used in literature. Most of the original results have been published by the author in a relevant literature. That unpublished material can be used for a number of other papers. In my opinion, the thesis fulfils all conditions of creative scientific work and I would like to recommend it to the defence.

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