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Paper # 15 (Download paper of type application/pdf, 1908840 bytes)	
Title:	Query Optimization by Simulated Annealing
Abstract:	

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Attribute	Value
Are you finished with this review?	Finalize, I am done editing
Provide a short summary of the paper	This paper presents the simulated annealing (SA) algorithm of query optimization. SA is particularly well suited to applications that have large search spaces (i.e. queries with many joins). The authors begin with a discussion of the use of SA as well as some background information about query processing in general. The authors submit that they are interested in answering the query where relations are recursively defined. The authors then present a mathematical framework for expressing their recursive queries. In SA, the state space is represented as a set of nodes in a graph. Edges connect the nodes and facilitate movement through the graph. A downhill move (i.e. one that reduces cost by moving to a state containing a query plan that is cheaper) is always allowed. Also, uphill moves (i.e. moves that take the algorithm to a state with higher cost) are accepted with a probability. The reasoning is to allow the algorithm to escape from states which are of locally but not globally minimum cost. The authors move on to discuss their implementation of SA. Discussions of state space enumeration and pruning as well as selection of the initial state are discussed. As well, discussions of the initial temperature, freezing and equilibrium conditions are presented. The paper concludes with some performance results, a critique and closing remarks.
What is the strength of the paper? (1-3 sentences)	This paper presents the application of a novel concept, SA, to the query optimization problem. It presents the algorithm in an easy to understand manner. The algorithm appears to perform quite well.
What is the weakness of the paper? (1-3 sentences)	This paper presents far too much background information that does not appear relevant to a discussion of the presented algorithm. Also, the background presented is tough to read. Further, limited performance results were presented, leaving the reader with an inadequate understanding of the viability of this algorithm.

Your qualifications to review this paper	I know the material, but am not an expert
Writing Quality	Good
Relevance to query processing?	The paper is relevant to query processing
Experimental Methodology	**Poor**
Novelty of paper	This is a new contribution to an established area
Overall paper merit	**The paper is a novel or new contribution with average/weak methodology, or an incremental contribution that has good methodology. Someone in the area should read it**
In your opinion, will this paper be important over time?	Good
Provide additional detailed comments to the author	You have provided an excellent overview of your algorithm. I have, hoever, several concerns with your presentation: -A large amount of background material was presented that does not appear relevant to your algorithm. Please either remove it or explain its relevance. -The presented background material is difficult to understand. Care should be taken to ensure that the topics presented are at a level for less technical readers as well. However, your discussion of the SA algorithm is at the right technical level. -Your performance evaluation was very poorly done. greater testing should have been performed in situations with small as well as large state spaces. Further, your experiments should have been replicated to determine if SA will repeat its good results each time it is run. Overall, I believe that much work needs to be done on this novel concept.
Additional comments to PC (not seen by author)	**This paper has a major flaw in its performance evaluation. However, I do not feel that is enough to warrant discounting this paper for publication.**

Goto Main Index Close Window