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Paper # 14 (Download paper of type application/pdf, 139584 bytes)	
Title:	An Overview of Query Optimization in Relational Systems
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 an overview of query optimization algorithms that are in use today. The article begins by presenting some of the underlying concepts required for query optimization (i.e. the idea of plan space and enumeration algorithms). The author then presents the System R optimizer - the first to make use of cost-based optimization. System R performs costing using interesting orders and cardinalities. A detailed description of join costing is presented. Also, the dynamic programming model used by System R is discussed. The author next presents some join operators and the commutivity of them. Also discussed are some methods of representing query plans in memory. The presentation then turns to methods of transforming multiblock and nested queries into single SPJ statements. A method of reducing data transfers using semijoins is also presented. The article next turns to present some of the statistics that are gathered and methods of performing cost estimation. Statistics required include cardinalities, histograms, max and min values, etc. Factors that affect estimation, as well as some estimation methods and important characteristics of statistics are also highlighted. The discussion then turns to the two phases of the Starburst optimizer, and the Volcano optimizer. As the article closes, the author presents an overview of optimization in distributed and parallel databases (i.e. taking communication cost into account, etc.) as well as a discussion of materialized view and user-defined function costing. Some brief remarks close out the paper.
What is the strength of the paper? (1-3 sentences)	This paper presents a good overview of some of the optimization techniques in use in DBMS's. It is a well written general introduction to the field.
What is the weakness of the	This paper, while good for an overview, does not provide any comparison of the

paper? (1-3 sentences)	algorithms. As well, insufficient technical detail is provided on any one concept.
Your qualifications to review this paper	I know the material, but am not an expert
Writing Quality	Excellent
Relevance to query processing?	The paper is relevant to query processing
Experimental Methodology	**Unacceptable**
Novelty of paper	This has been done and published before
Overall paper merit	**Paper is an incremental contribution with average/weak methodology. I would recommend it to someone working in the area only if they have lots of time**
In your opinion, will this paper be important over time?	Poor
Provide additional detailed comments to the author	You have provided a very well written overview of the problem area and some solutions. However, some of your discussions are too brief. More technical detail would have been appreciated. Also, some comparison between algorithms would have been useful.
Additional comments to PC (not seen by author)	**The material in this paper has been presented previously. However, it is a very useful introduction for someone who is new to the field. I would recommend publishing it for this reason.**

Goto Main Index Close Window