

# AN EFFICIENT ALGORITHM FOR DATABASE QUERY OPTIMIZATION IN CROWDSOURCING SYSTEM

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## ABSTRACT

Query optimization is important to crowdsourcing system as it provides declarative query interface in relational database management system. In the proposed approach, a technique called crowd optimization in which the user has to submit an SQL query and the system compiles the query, generating the execution plan and evaluating that query giving an optimized plan to the user. In relational database systems, query optimization is providing query interfaces, which are important for crowdsourcing. The system considers cost and latency in query optimization and generates query plans that give a good balance between the cost and latency. Efficient algorithms for optimizing four types of queries are used i.e. selection queries, join queries, complex queries and order-by queries.

**Keyword:** Crowdsourcing, query optimization, select query, join query, complex queries, order by query.

## 1. INTRODUCTION

Crowdsourcing is the process of getting work, usually through online, from a crowd of people. The word is a combination of the words 'crowd' and 'outsourcing'. The idea is to take work and outsource it to a crowd of workers. Crowdsourcing has created a variety of opportunities for many challenging problems by leveraging human intelligence. Some of the applications such as image tagging, natural language processing, and semantic-based information retrieval are used in crowdsourcing. Crowdsourcing depends on human workers to complete a job, but human workers give errors, which can make the results of crowdsourcing arbitrarily bad. The reason is, first, to obtain rewards, a malicious worker can submit random answers to all questions. This can significantly degrade the quality of the results. Second, for a complex job, the worker may lack the required knowledge for handling it. Human workers in crowdsourcing solve problems based on their experience, knowledge, and perception. It is therefore difficult to find which problems can be better solved by crowdsourcing than solving using traditional machine-based methods. Therefore, a cost sensitive quantitative analysis method is needed. Since data sets can be enormous and monetary cost and latency of data processing with humans can be large, optimizing the use of humans for finding items is an important challenge. In proposed system, a method crowd optimization is designed to hide the complexities as well as relieve the user from the burden of dealing with the crowd data. Query optimization is a function of many relational database management systems. The query optimizer determines the most efficient way to execute a given query by considering the possible query plans. In crowd optimization, the query optimizer generates evaluation plans for submitted query and system selects the best query plan considering both cost and