Smart Caching in Spark SQL

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**ABSTRACT**

Ever since the advent of “Big Data” in many enterprise-level database architectures and high-throughput applications, the need for low latency queries has become increasingly relevant for creating responsive systems. However, the challenge of optimizing these query times is complex and may be approached from many angles (via hardware monitoring, software optimizations, etc). In this paper, we employ a **simple** technique based on the transaction-basket model via APRIORI for query speculation, and use the results to preemptively cache data in memory for use in the computation of future query results. Fundamentally, our approach takes advantage of offline processing in order to enable efficient online computations (i.e. via the *lambda architecture* computing paradigm). We evaluate the performance gain of our results on different workload types in the Spark SQL ecosystem.

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