Stop That Query! The Need for Managing Data Use  

1. Summary
The paper presents a new extension component for current database system to enable declarative specification and enforcement of complex data use policies. It can do online monitoring and offline auditing as well. In this paper, it discussed in detail the data use management problems and the deficiencies of current mechanisms such as access control and differential privacy, and the challenges of developing a simple yet flexible enough query language and the tradeoff to offer efficient data monitoring.

2. Positive
a. This paper pointed out the state-of-the-art of existing systems that offer some mechanisms to ensure the data usage policies are adhered to. It showed that this system would be a much more agile and pioneering project. No other systems offer its functionalities.
   b. The capabilities of this system is comprehensive. The proposed system is designed to enable users to specify data utilization policies easily, detect the policy violations on-the-fly, and offer online warning mechanism and post-fact auditing analysis as well.
   c. It talked about the potential challenges comprehensively. It demonstrated with concrete examples to explain, for example, how even the simple data usage restrictive rules can be difficult to implement with a predicate. It introduced probabilistic semantics.

3. Negative/Potential extensions and improvements
a. The real-world situation is much more complex to handle. For example, there may exist malicious users and they may collide with each other. In order to make it more tractable, the authors just assume the users are honest and won't try to violate the policies on purpose.
   b. It's a short paper presenting the need to develop a new DBMS component that is called Data Use Manager. Though it's concerned of many challenges, the paper doesn't offer much concrete solutions at hand, just presenting aspects to be tackled.
   c. They don't have a clear and comprehensive mechanism for the implementation at present.

4. Research Questions and Points for Discussion
a. They proposed a functionality called probabilistic detection of misuse. It can suggests a potential violation of usage policies. But how to verify it based on the query logs?
   b. the criterion to determine whether a certain query to be checked online or offline?