Security and privacy for database systems

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Abstract
Database security is a discipline that seeks methods to protect data stored at DBMSs from intrusions, improper modifications, theft, and unauthorized disclosure of private information. This is realized through a set of security services, which meet the security requirements of both the system and the data sources. A number of different techniques and approaches has been developed to assure data confidentiality, integrity, and availability in DBMSs, however, despite such advances, the database security area faces several new challenges. This talk first presents the most relevant concepts underlying the notion of database security and summarizes the most well-known techniques such as key access control models, namely, the discretionary and mandatory access control models, and the role-based access control model. It then analyses optimal privacy-aware path approaches in Hippocratic Databases and a pairwise-systematic microaggregation for statistical disclosure control; additionally theoretical analysis of limiting disclosure of private information in relational database systems is discussed.

Keywords: Database, Security, Privacy, Access control.