A Proposed Architecture for Query Anomaly Detection and Prevention against SQL Injection Attacks

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Abstract

SQL injection is a predominant type of attack which targets web applications and databases. SQL injection bypasses the authentication logic and breaks the confidentiality of the database or manipulates the database. It helps the attacker to obtain unauthorized access into the backend database. Vulnerability exists within a web application when it does not provide a proper validation system for the data entered by the user in the input field. Vulnerability scanners aid in checking vulnerabilities embedded in a web application and has the potential to test invalid forms of input query. However, the limitation lies in the reduction of system availability due to denial of service, especially in case of false positives. In this paper, an approach which focuses on query template based detection of SQL injection attack and reconstruction of queries is proposed. Thus the proposed architecture can mitigate the denial of service and increase the availability by potentially reconstructing malicious queries.

References
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Index Terms

Computer Science  
Software Engineering
Keywords

SQL Injection, Authentication, Vulnerability, Validation, Malicious, Reconstruct.