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**Major Computer Science
Stream in Networking
Sarjana Komputer Thesis
Semester Even year 2009/2010 (completion period)**

**IMPLEMENTING HASH TABLE TO DETECT AND SANITIZE ENCODED
CROSS-SITE SCRIPTING (XSS) AND SQL INJECTION ATTACK STRINGS**

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Abstract

This thesis is aimed to research whether hash table algorithm can be implemented to detect and sanitize Cross Site Scripting and SQL Injection attack strings from both regular and encoded ones. In order to do so, a preliminary analysis would be done to identify some existing solutions, including their mechanism, strengths, and drawbacks. This knowledge serves as a foundation in implementing hash table algorithm for input validation and sanitization functions. As the result, this research will address some drawbacks from existing solutions.

Two deliverables are implemented: a proof-of-concept to show both SQL Injection and Cross Site Scripting attacks resulting from both regular and encoded input strings. Encoded input strings are critical because they usually can escape from input filtering or sanitization functions. The second deliverable is input filtering and sanitization functions that implement hash table algorithm in Java programming language. Both of them will be directly implemented in the proof-of-concept.

Through many thorough tests, this thesis project is proven to achieve all of the objectives. All of the finished functions are done satisfactorily, and it is believed to be able to serve the intended functionalities.

Key Words

Cross Site Scripting, SQL Injection, Hash Table, website security, character encoding, Java Script.