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وزارة التعليم العالي والبحث العلمي

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(ESI-SBA)

END OF STUDY THESIS

To obtain a **state engineer's** diploma

Stream: **Computer Science**

Speciality: **Information Systems Engineering (ISI)**

CYBERGUARD: A MULTI-SERVICE AUTOMATED FRAMEWORK FOR WEB VULNERABILITY SCANNING AND DETECTION

Presented by:

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Presented on: **30/06/2024** In front of a committee composed of :

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Abstract

In the digital age, widespread use of web technologies is central to global collaboration, communication and productivity. However, this trust also exposes web applications to a myriad of security vulnerabilities and threats. This thesis focuses on developing an automated system that will help advanced and non-advanced users scan their websites for vulnerabilities.

CyberGuard is mutli-service automated vulnerability scanning framework aims to provide robust solutions that can identify common network vulnerabilities such as cross-site scripting (XSS), SQL injection (SQLi), and local file inclusion (LFI) in addition to many other attacks that can easily be added thanks to its architecture. This system this aims to facilitate the process of identifying security risks, making comprehensive security practices accessible to all users.

The focus of this project is a comprehensive analysis of security threats affecting web applications. Any identified flaw represents a potential entry point for malicious actors, posing a serious threat to sensitive data and user trust. In addition, we examine emerging threats and highlights the dynamic and changing nature of the cyber threat landscape.

keywords: Automation, Docker, Multi-Service, Web Application Security, Vulnerability Analysis, Injection Attacks, Cross-Site Scripting (XSS), SQL injections, Local File Inclusion (LFI), Penetration Testing, Risk Assessment.