Cyberattack Prevention Through the Development of a Multi-Vulnerability Scanner

UNDERGRADUATE THESIS

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By:

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CHAPTER I

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1.1.1 Background

Chapter 2

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Specifications

1.1 Existing and Proposed System

1.1.1 Existing Business Process

Chapter 3

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CHAPTER III

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1.1 Alternative Design Solutions Design

1.1.1 Alternative Solution 1: Multi Vulnerability Scanner Website

Chapter 4

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CHAPTER III

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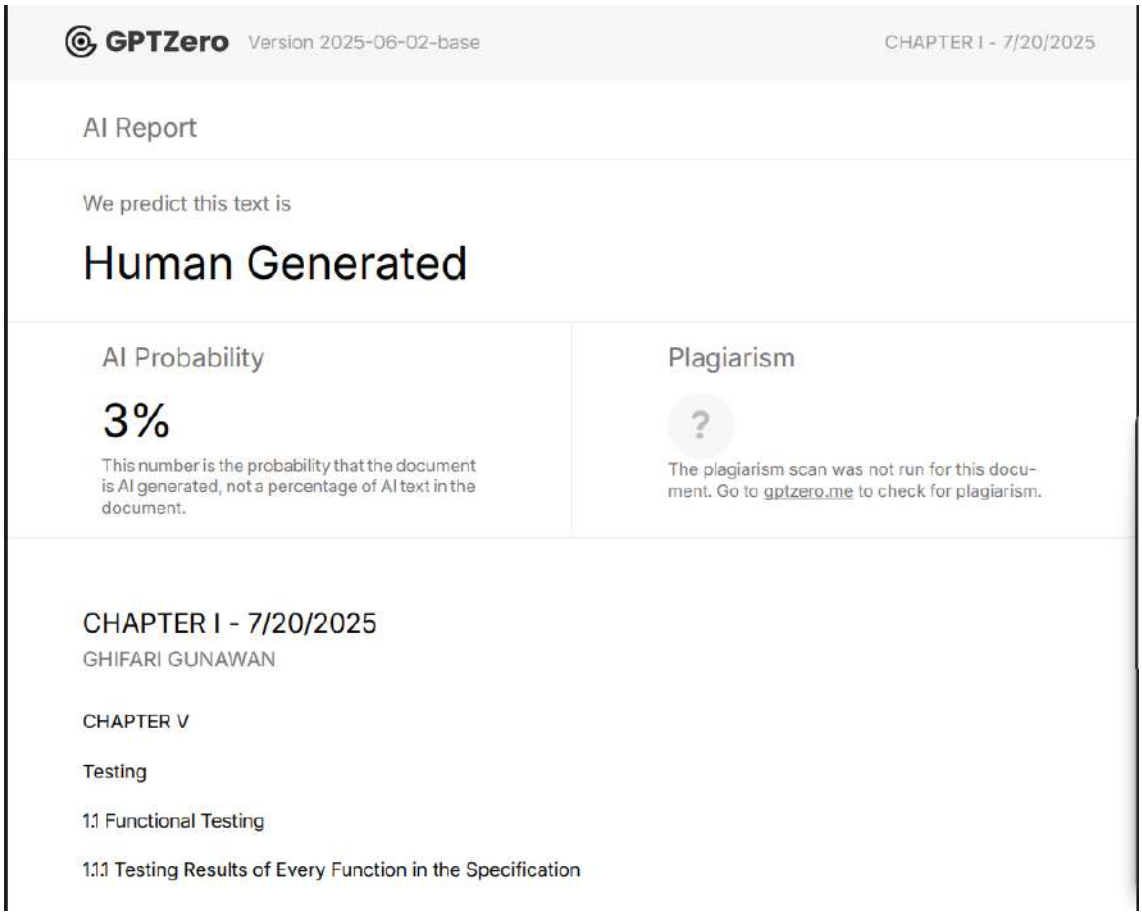
Chapter 5



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CHAPTER V

Testing

1.1 Functional Testing

1.1.1 Testing Results of Every Function in the Specification

ABSTRACT

With the fast development of digital technology, cyber threats by malware and phishing attacks have gradually grown to be a regular and harmful occurrence. Most of these attacks focus on vital data, which comprise Personally Identifiable Information (PII), including Sensitive PII (SPII). The objective of this study is to develop a web-based Multi Vulnerability Scanner to help users identify threats originating from URLs, files, and emails in an accessible and user-friendly manner, even for those with minimal technical background. The system performs threat detection across multiple input types by analyzing URLs using a supervised machine learning model using XGBoost, inspecting email components such as domain reputation, suspicious links, and sender Ips using SVM, and evaluating uploaded files through hash matching and entropy analysis. The system successfully detects threats and provides detailed results and recommendations to users. This solution helps increase cybersecurity awareness and offers an effective way to protect against attacks via .exe files, emails and URLs

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