



Proposer par moi ze3ma hahaha pour chapitre 1

**Table of contents**

**General introduction ............................................................................................. 1**

### **Chapter 1: SQL Injection and Modern Detection Approaches…………2**

#### **1.1 Introduction**

#### **1.2 Understanding Web Applications and Databases**

* 1.2.1 Architecture of Web Applications
* 1.2.2 Role of Databases in Web Applications
* 1.2.3 Common Vulnerabilities in Web Applications

#### **1.3 SQL Injection: Definition and Mechanisms**

* 1.3.1 What is SQL Injection?
* 1.3.2 How SQL Injection Works
* 1.3.3 Impact of SQL Injection Attacks

#### **1.4 Techniques of SQL Injection**

* 1.4.1 Tautology-Based SQL Injection
* 1.4.2 Error-Based SQL Injection
* 1.4.3 Blind SQL Injection
  + 1.4.3.1 Content-Based Blind SQL Injection
  + 1.4.3.2 Time-Based Blind SQL Injection
* 1.4.4 Union-Based SQL Injection
* 1.4.5 Other Advanced Techniques

#### **1.5 Traditional Defense Mechanisms Against SQL Injection**

* 1.5.1 Input Validation and Sanitization
* 1.5.2 Parameterized Queries and Prepared Statements
* 1.5.3 Escaping Special Characters
* 1.5.4 Web Application Firewalls (WAF)
* 1.5.5 Limitations of Traditional Methods

#### **1.6 Conclusion**





