

DAFTAR ISI

ABSTRAK	ii
<i>ABSTRACT</i>	iii
LEMBAR PENGESAHAN	iv
LEMBAR PERNYATAAN ORISINALITAS	i
Kata pengantar	ii
Daftar Isi.....	iii
Daftar Gambar.....	viii
Daftar Tabel	x
Daftar lampiran	xi
Daftar Istilah.....	xii
Bab I Pendahuluan	1
I.1 Latar Belakang	1
I.2 Perumusan Masalah.....	3
I.3 Tujuan Penelitian.....	3
I.4 Batasan Penelitian	3
I.5 Manfaat Penelitian.....	4
Bab II Tinjauan Pustaka	5
II.1 Penelitian Terdahulu.....	5
II.2 <i>Cyber Crime</i>	6
II.3 Keamanan Informasi	7
II.4 Kerentanan <i>Website</i>	8
II.5 Damn Vulnerable Web App (DVWA)	10
II.6 <i>Walkthrough</i>	11
II.7 <i>Threat Modelling</i>	11
II.8 <i>Activity Diagram</i>	11

II.9	<i>Data Flow Diagram</i>	12
II.10	Web Application Firewall.....	12
II.11	OctopusWAF	12
II.12	Kali Linux	12
II.13	<i>Penetration Testing</i>	13
II.14	<i>Vulnerability</i>	13
II.15	<i>Threat</i>	13
II.16	<i>Control</i>	13
II.17	CWE.....	13
II.18	CVE	14
II.19	CVSS	14
II.20	CVSS v2 Calculator.....	14
II.21	CVSS Score	14
II.22	<i>Attack Trees</i>	15
II.23	Arachni.....	15
II.24	Information Systems Security Assessment Framework (ISSAF)....	15
	16
Bab III	Metodologi Penelitian.....	17
III.1	Sistematika Penyelesaian Masalah.....	17
III.2	Pengumpulan Data	19
III.3	Pengolahan Data atau Proses Pengembangan Produk / Artifak	19
III.3.1	Tahap Awal	19
III.3.2	Tahap Hipotesis.....	19
III.3.3	Tahap Eksperimen.....	19
III.3.4	Tahap Analisis.....	20
III.3.5	Tahap Akhir	20

III.4	Metode Evaluasi	20
III.5	Alasan Pemilihan Metode.....	20
III.6	Jadwal Kegiatan	21
Bab IV	Perancangan sistem dan skenario pengujian.....	22
IV.1	<i>Information Gathering</i>	22
IV.1.1	Spesifikasi Perangkat Keras	22
IV.1.2	Spesifikasi Perangkat Lunak	23
IV.1.3	Platform Eskperimen.....	25
IV.2	<i>Network Mapping</i>	26
IV.2.1	Daftar IP Address	26
IV.2.2	Gambaran Mekanisme Topologi.....	26
IV.2.3	Gambaran Mekanisme TCP/IP	28
IV.3	<i>Vulnerability Identification</i>	29
IV.3.1	Skenario Pengujian <i>Vulnerability Scanning</i> Menggunakan Arachni	
	29	
IV.4	<i>Penetration</i>	30
IV.4.1	Skenario Pengujian Serangan Berdasarkan <i>Activity Diagram</i>	31
IV.4.2	Skenario Pengujian Berdasarkan <i>Data Flow Diagram</i>	31
Bab V	Analisis	33
V.1	Analisis Pemilihan Metode ISSAF Berdasarkan Literatur.....	33
V.2	Analisis Pemilihan OctopusWAF Berdasarkan Literatur	34
V.3	Analisis Literatur <i>Vulnerability</i> pada DVWA	36
V.4	Analisis <i>Vulnerability</i> berdasarkan Data Sampling.....	37
V.5	Analisis serangan Berdasarkan CWE.....	38
V.6	Analisis Serangan Berdasarkan CVE	40
V.7	Perancangan <i>Activity Diagram</i>	41

V.7.1	Hasil perancangan <i>Activity Diagram SQL Injection</i>	42
V.7.2	Hasil perancangan <i>Activity Diagram Blind SQL</i>	44
V.7.3	Hasil perancangan <i>Activity Diagram Brute Force Attack</i>	46
V.7.4	Hasil perancangan <i>Activity Diagram Command Injection</i>	48
V.7.5	Hasil perancangan <i>Activity Diagram Clickjacking</i>	50
V.7.6	Hasil perancangan <i>Activity Diagram XSS (Reflected)</i>	52
V.7.7	Hasil perancangan <i>Activity Diagram SQL Injection</i> Menggunakan <i>Web Application Firewall</i>	53
V.7.8	Hasil perancangan <i>Activity Diagram Blind SQL</i> Menggunakan <i>Web Application Firewall</i>	56
V.7.9	Hasil perancangan <i>Activity Diagram Brute Force Attack</i> Menggunakan <i>Web Application Firewall</i>	58
V.7.10	Hasil perancangan <i>Activity Diagram Command Injection</i> Menggunakan <i>Web Application Firewall</i>	61
V.7.11	Hasil perancangan <i>Activity Diagram Clickjacking</i> Menggunakan <i>Web Application Firewall</i>	64
V.7.12	Hasil perancangan <i>Activity Diagram XSS (Reflected)</i> Menggunakan <i>Web Application Firewall</i>	66
V.8	Perancangan <i>Data Flow Diagram</i>	70
V.8.1	Hasil <i>Data Flow Diagram Walkthrough SQL Injection</i>	70
V.8.2	Hasil <i>Data Flow Diagram Walkthrough Blind SQL</i>	72
V.8.3	Hasil <i>Data Flow Diagram Walkthrough Brute Force Attack</i>	74
V.8.4	Hasil <i>Data Flow Diagram Walkthrough Command Injection</i>	75
V.8.5	Hasil <i>Data Flow Diagram Walkthrough Clickjacking</i>	76
V.8.6	Hasil <i>Data Flow Diagram Walkthrough XSS (Reflected)</i>	77
V.8.7	Hasil <i>Data Flow Diagram Walkthrough SQL Injection</i> Menggunakan <i>Web Application Firewall</i>	79

V.8.8	Hasil <i>Data Flow Diagram Walkthrough Blind SQL</i> Menggunakan <i>Web Application Firewall</i>	80
V.8.9	Hasil <i>Data Flow Diagram Walkthrough Brute Force Attack</i> Menggunakan <i>Web Application Firewall</i>	82
V.8.10	Hasil <i>Data Flow Diagram Walkthrough Command Injection</i> Menggunakan <i>Web Application Firewall</i>	84
V.8.11	Hasil <i>Data Flow Diagram Walkthrough Clickjacking</i> Menggunakan <i>Web Application Firewall</i>	86
V.8.12	Hasil <i>Data Flow Diagram Walkthrough XSS (Reflected)</i> Menggunakan <i>Web Application Firewall</i>	87
V.9	Analisis Perhitungan <i>Vulnerability</i> Dengan CVSS Calculator v2	90
V.9.1	Analisis Efektivitas Secara Kuantitatif Berdasarkan <i>Vulnerability</i> dan <i>Threat</i>	98
V.9.2	Analisis Hasil Serangan Secara Kualitatif Berdasarkan <i>Vulnerability</i> dan <i>Threat</i>	101
Bab VI	Kesimpulan dan saran	103
VI.1	Kesimpulan	103
VI.2	Saran	103
	Daftar Pustaka	104
	Lampiran	106