5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

1. Project Overview

Objective

This project aims to strengthen cybersecurity defenses by utilizing real-time security intelligence for the detection, assessment, and mitigation of vulnerabilities. The focus is on identifying significant security threats and applying real-time monitoring techniques along with mitigation strategies to enhance overall security resilience.

Scope

- Detecting and addressing key vulnerabilities, including:
    - SQL Injection (SQLi)
    - Cross-Site Scripting (XSS)
    - Cross-Site Request Forgery (CSRF)
    - Security Misconfigurations
- Deploying **Snort** for intrusion detection.
- Conducting security scans using **Nessus**.
- Enhancing security measures and implementing real-time threat intelligence.
- Developing automated strategies for mitigation and response.

Expected Outcomes

- Strengthened security monitoring and defensive mechanisms.
- Effective real-time identification and mitigation of security threats.
- Deployment of automated threat intelligence and response solutions.

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2. Project Phases & Tasks

Phase	Tasks

Phase 1: Research & Requirement Analysis	- Investigate vulnerabilities (SQLi, XSS, CSRF, Security Misconfigurations). - Explore best practices for configuring Snort & Nessus.
Phase 2: Environment Setup & Tools Configuration	- Establish a testing environment with vulnerable applications. - Install and set up Nessus & Snort. - Configure security headers and access control mechanisms.
Phase 3: Vulnerability Scanning & Detection	- Utilize Nessus to perform security scans. - Simulate cyber-attacks (SQL Injection, XSS, CSRF). - Assess security misconfigurations.
Phase 4: Real-Time Monitoring & Intelligence	- Implement Snort intrusion detection rules. - Establish real-time alert mechanisms for security events.
Phase 5: Remediation & Security Enhancements	- Apply fixes to identified vulnerabilities. - Automate security mitigation techniques.
Phase 6: Testing & Validation	- Conduct penetration testing to confirm security improvements. - Refine Snort detection rules for better accuracy.
Phase 7: Documentation & Reporting	- Generate comprehensive reports on identified vulnerabilities, mitigation steps, and key insights.

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3. Tools & Technologies

Scanning & Detection

- **Nessus** (for identifying security vulnerabilities)

- **Snort** (for monitoring and detecting intrusions)

Exploitation & Attack Simulation

- **SQLMap** (for simulating SQL Injection attacks)
- **XSSer** (for testing XSS vulnerabilities)
- **Burp Suite** (for evaluating CSRF, XSS, and misconfigurations)

Security Hardening & Defense

- Web Application Firewall (WAF)
- Implementation of Security Headers (CSP, X-Frame-Options, etc.)
- Admin Access Control and Configuration Management

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4. Risk Management

Challenges & Risks

- **False Positives/Negatives:** The potential for incorrect alerts affecting detection accuracy.
- **Security Tool Misconfiguration:** Improper setup may result in inefficiencies.
- **Limited Remediation Time:** Constraints in addressing vulnerabilities in a timely manner.

Mitigation Plan

- **Routine Snort Rule Optimization** to reduce false alerts.
- **Ongoing Testing & Patching** to enhance security measures.
- **Frequent Security Audits** to ensure continuous protection.

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5. Reporting & Metrics

Key Performance Indicators (KPIs)

- Total vulnerabilities detected and mitigated.
- Effectiveness of real-time threat detection and alerts.
- Response time to security incidents.

Final Deliverables

- Comprehensive Vulnerability Assessment Report.

- Security Hardening Guidelines.
- Incident Response Documentation.

This project plan provides a structured approach to implementing real-time security intelligence, helping organizations enhance their cybersecurity resilience against evolving threats. By following this systematic methodology, the project ensures proactive threat detection and mitigation.