Penetration Testing on Web Server

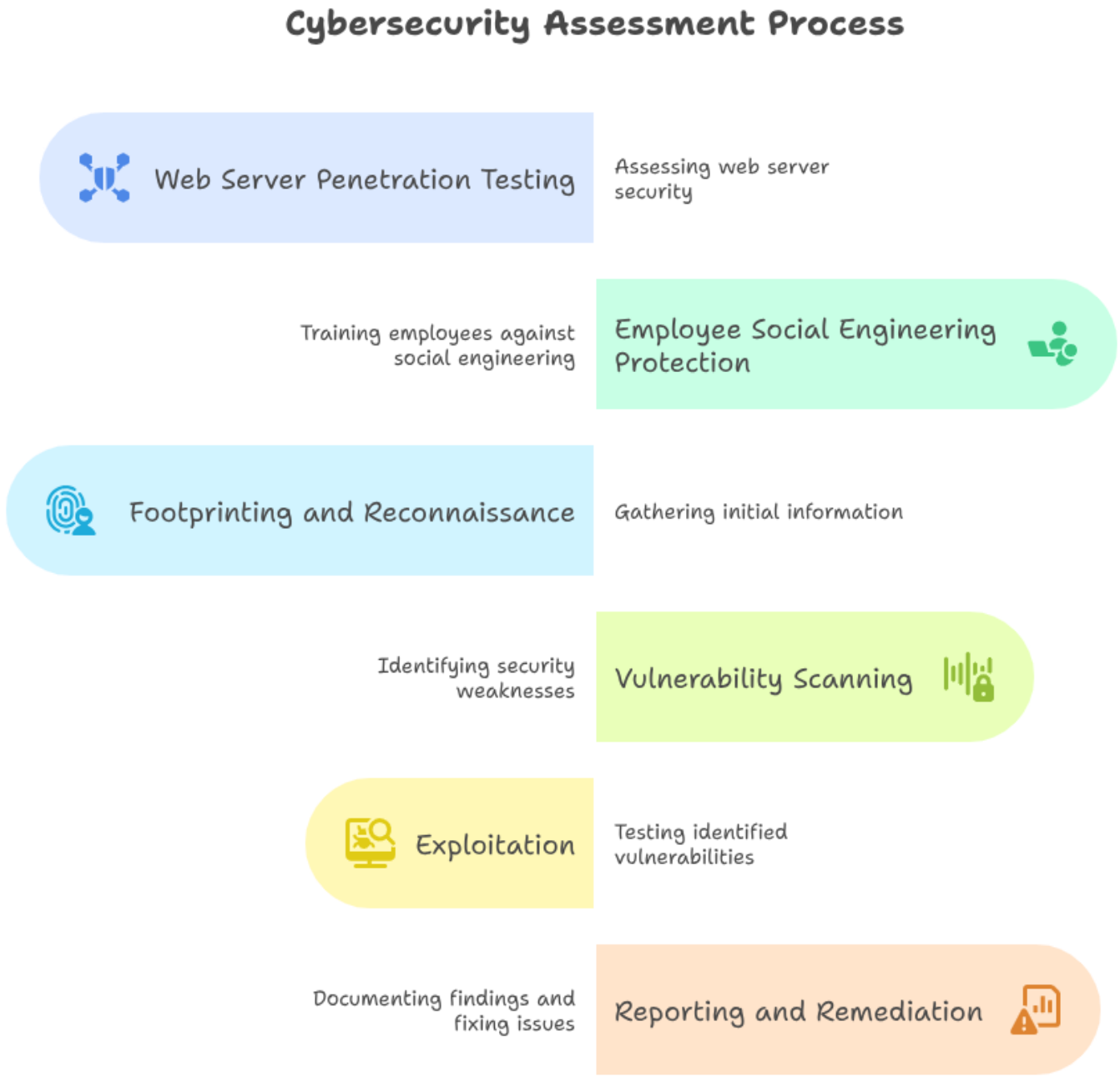
Model Institute of Engineering & Technology (Autonomous) Permanently Affiliated to the University of Jammu Accredited by NAAC with "A" Grade

Jammu, India 2025

Project Overview

Objective: Assess and harden the security of a company's web server.

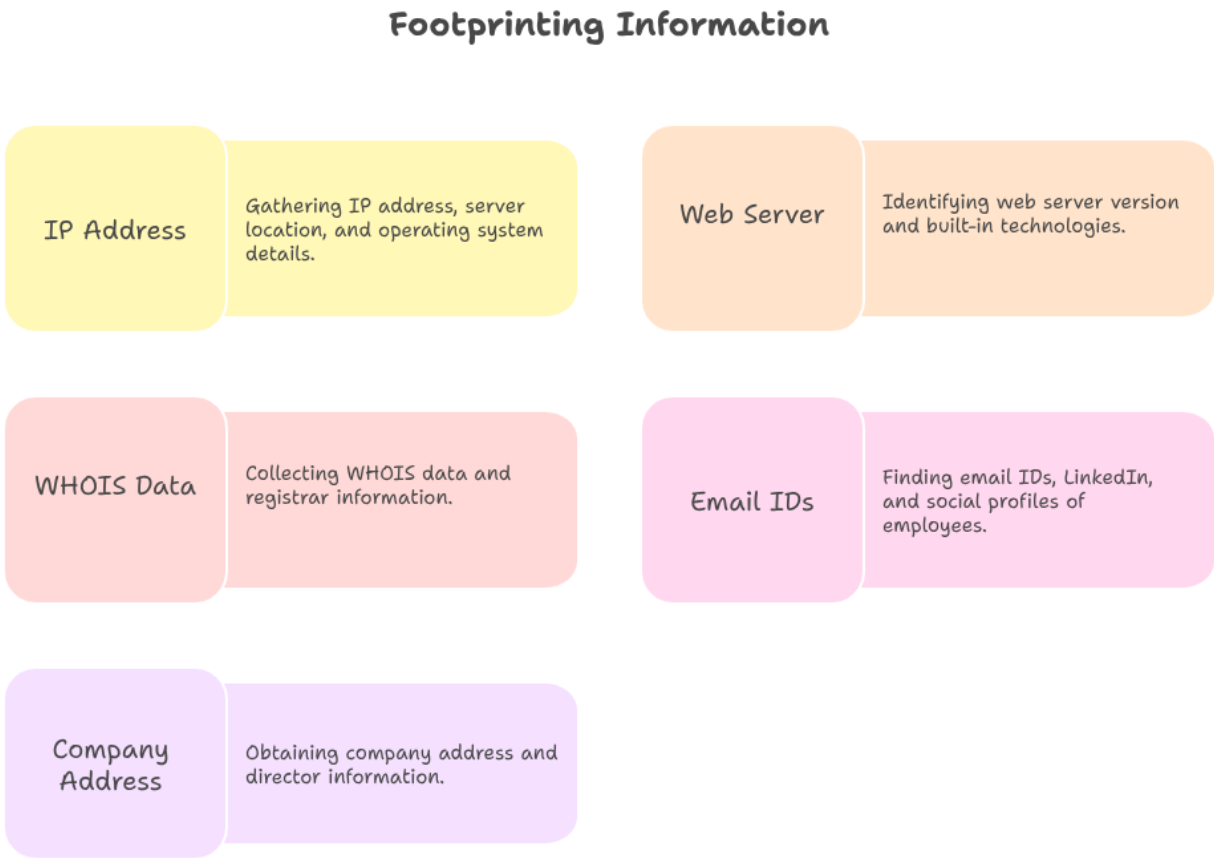
- Scope: 1. Web server penetration testing
  2. Employee social engineering protection
- Approach: 1. Footprinting and Reconnaissaince
  2. Vulnerability Scanning
  3. Exploitation
  4. Reporting and Remedation



Footprinting and Reconnaissance

Footprinting is gathering information about a target system before launching an attack

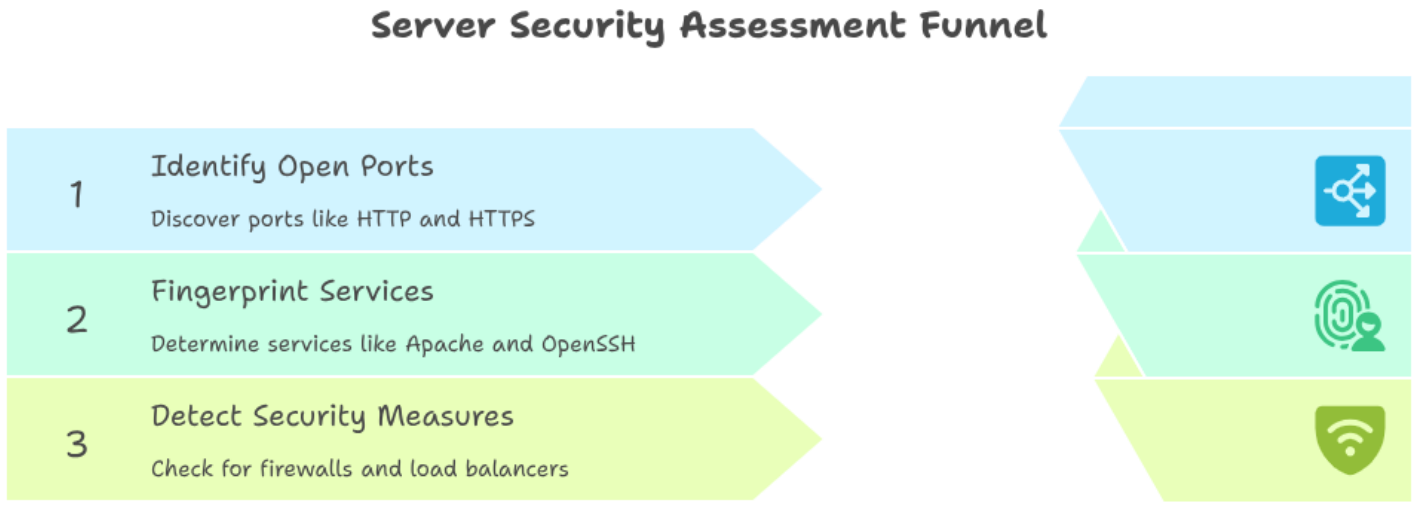
- IP Address, Server Location, OS
- Web Server Version & Built-in Technologies
- WHOIS Data & Registrar Info
- Email IDs, LinkedIn & Social Profiles of Employees
- Company Address & Director Info



Port and Service Enumeration

Scanning is used to identify open ports and services running on the server.

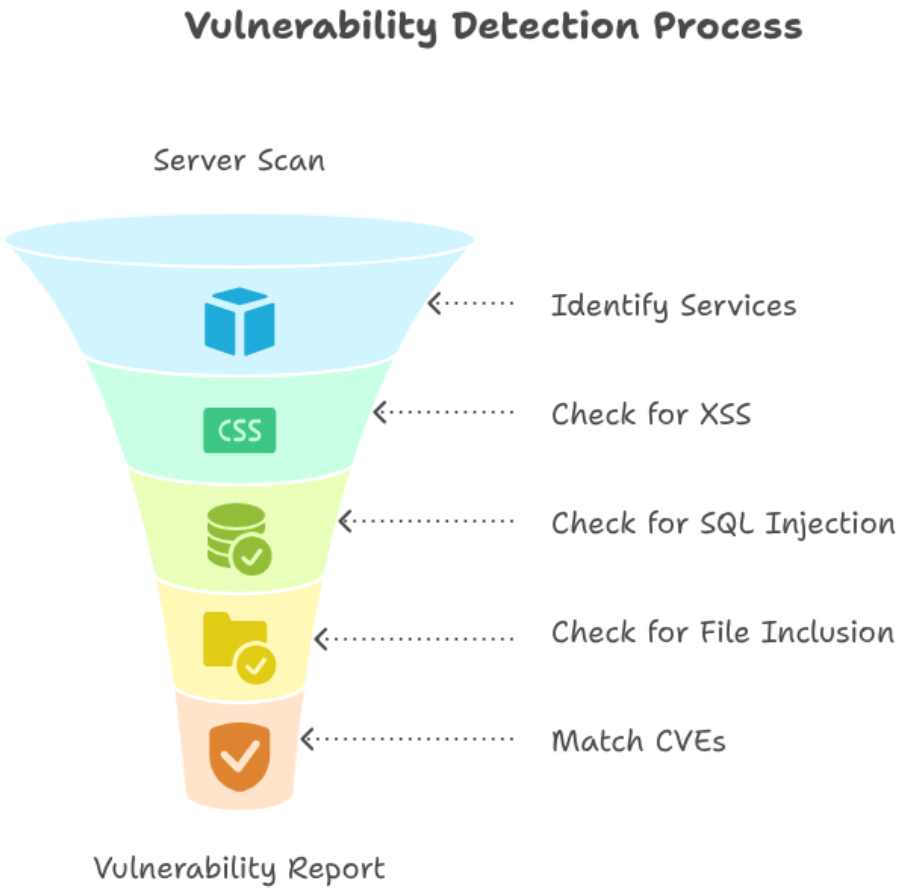
- Open Ports Discovered: 80 (HTTP), 443 (HTTPS), etc.
- Service Fingerprinting (e.g., Apache 2.4.41, OpenSSH).
- Firewall/Load Balancer Presence.



Vulnerabilty Assessment

Scanning the server for known vulnerabilities in services & web apps.

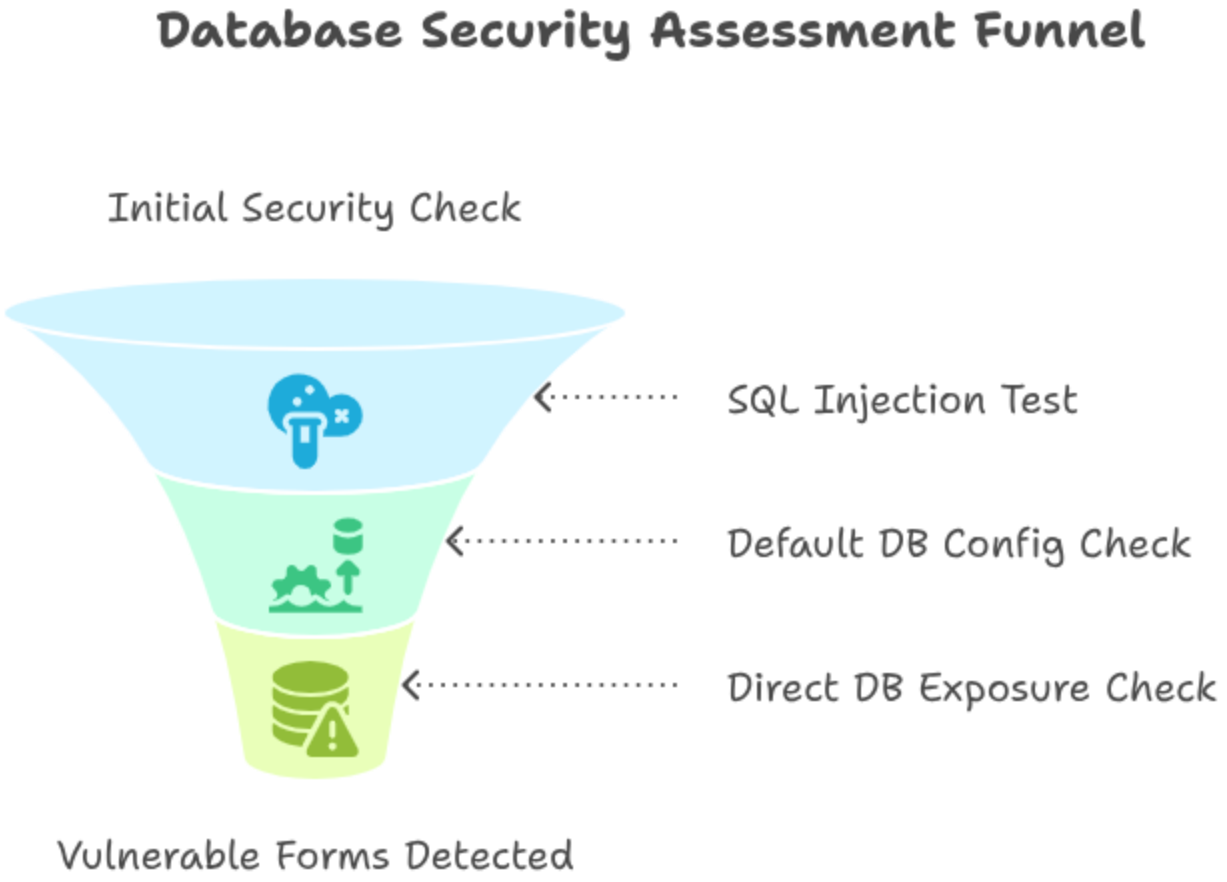
- Checked for XSS, SQL Injection, File Inclusion.
- CVEs matched using service version.



Database Exposure Testing

Checking for access to backend database or leaks.

- SQL Injection Test.
- Checked for default DB config.
- No direct DB exposed, but vulnerable forms detected.



Tools and Their Purpose

Summary of key tools used:

- `nmap` – Network scanning and service detection
- `whois`, `nslookup`, `dig` – Domain and IP info
- `nikto` – Web app vulnerabilities
- `sqlmap` – Password & DB attacks
- `BuiltWith` – Tech stack discovery

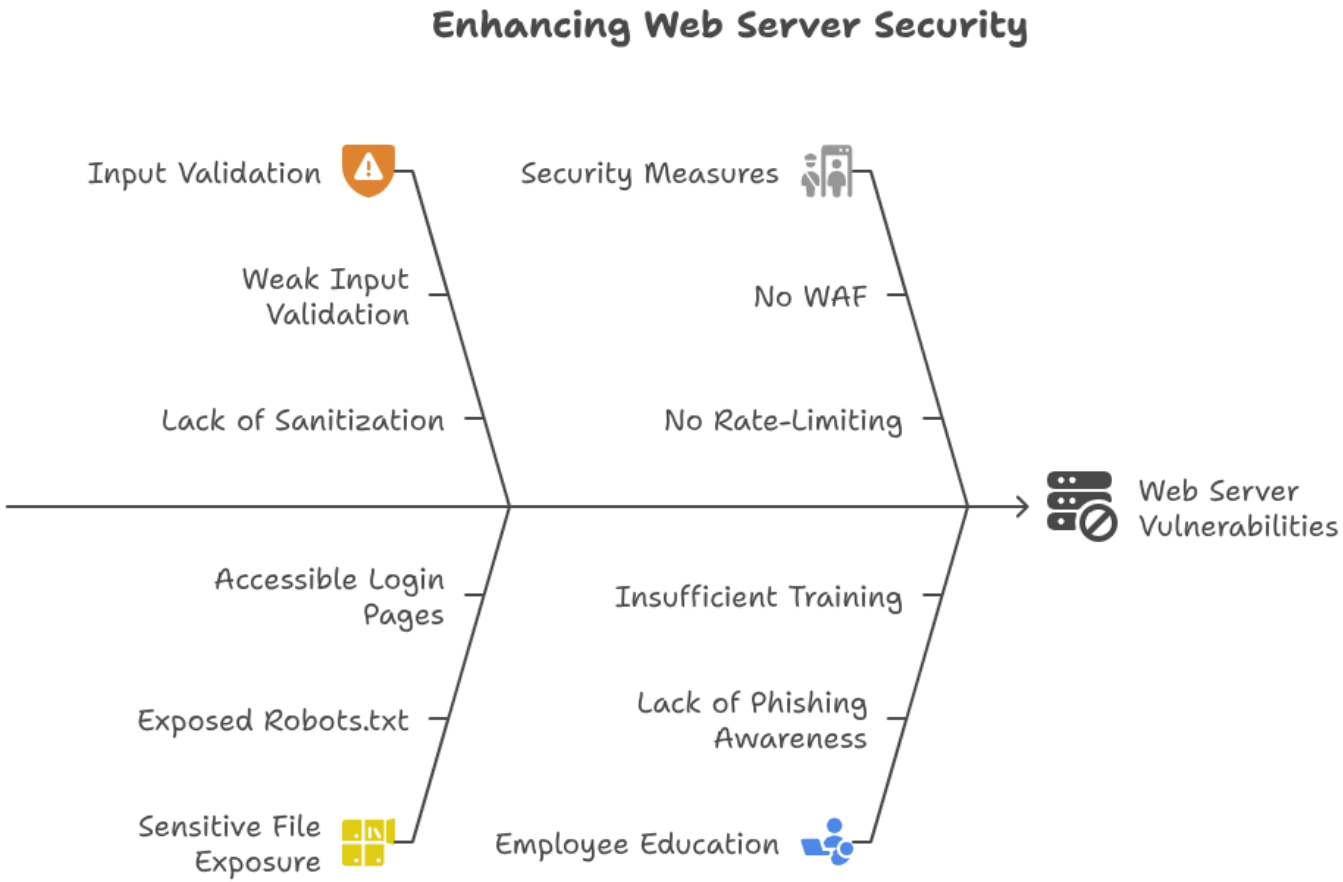
Final Conclusion and Remediation

Findings:

- Web server has weak input validation.
- Sensitive files exposed (`robots.txt`, login pages)
- No WAF or rate-limiting found

Recommendations:

- Input validation & sanitization
- Enable WAF & IDS
- Disable directory listing
- Educate employees about phishing



References and Additional Content

- Detailed command outputs and screenshots are available in the PDF attached/submitted separately.
- Commands and Output Link