ETHICAL PHISHING SIMULATION PLATFORM
Project Report

1. INTRODUCTION

Phishing attacks remain one of the most prevalent cybersecurity threats, targeting organizations worldwide. This project presents an Ethical Phishing Simulation Platform designed to educate users about phishing techniques through controlled campaigns. The platform enables security teams to assess vulnerability and improve employee awareness through realistic simulations.

2. ABSTRACT

The Ethical Phishing Simulation Platform is a web-based application built using Flask, SQLite, and SMTP. It allows administrators to create customizable phishing campaigns, track user interactions, and deliver security awareness training. The system features realistic phishing templates, real-time analytics dashboard, and educational modules with a unique cybersecurity-themed design featuring dark gradients and modern UI elements.

3. TOOLS USED

Flask - Python web framework for backend development
SQLite - Lightweight database for campaign data storage
HTML/CSS/JavaScript - Frontend with responsive design
Sendmail/Postfix - SMTP email delivery system
Chart.js - Data visualization for analytics dashboard
Font Awesome - Icon library for enhanced user interface
SQLAlchemy - Database ORM for Python

4. STEPS INVOLVED IN BUILDING THE PROJECT

Step 1: Database Design - Created SQLAlchemy models for Campaigns, Templates, Results, and Users with proper relationships.

Step 2: Flask Backend Development - Implemented RESTful API endpoints for campaign management, email tracking, and result collection.

Step 3: Email Service Integration - Configured SMTP service with tracking links and HTML templates for phishing emails.

Step 4: Frontend Development - Designed responsive UI with dark cybersecurity theme and interactive dashboards using Chart.js.

Step 5: Campaign Management - Built interface for creating campaigns, selecting templates, and targeting user groups.

Step 6: Analytics Dashboard - Implemented real-time tracking of clicks, submissions, and reports with visual charts.

Step 7: Educational Module - Created comprehensive training content with phishing awareness best practices.

Step 8: Testing & Deployment - Tested all functionalities and prepared for deployment with security measures.

5. CONCLUSION

The Ethical Phishing Simulation Platform successfully demonstrates how organizations can proactively train employees against phishing threats. The system provides comprehensive tracking, realistic scenarios, and educational resources. Future enhancements include machine learning for behavior analysis, mobile app integration, and advanced reporting features. This project serves as a valuable tool for

cybersecurity awareness training and helps transform employees into the first line of defense against cyber attacks.