BreachBuster: Cybersecurity Chatbot for Vulnerability Analysis

BreachBuster is an interactive, user-guided cybersecurity chatbot designed to enhance vulnerability analysis and penetration testing. It assists users by guiding them through essential phases of pentesting, providing real-time insights, customizable reporting, and an integrated web-based shell. This tool empowers organizations to detect and address security weaknesses systematically, helping to reduce cybersecurity risks with a hands-on, user-driven approach.

Key Features

Backend

Flask for web interactions and SQLite for data management, ensuring efficient, organized vulnerability tracking.

Frontend

Intuitive, web-based interface with a responsive design, facilitating seamless user interaction.

Core Functionalities

1 User-Guided Vulnerability Analysis

The chatbot prompts users on specific actions for vulnerability assessment, offering step-by-step guidance through scanning, enumeration, exploitation, and documentation phases.

2 Customizable Reporting

Automated report generation captures each phase's actions, providing users with a comprehensive document of findings.

3 Integrated Web-Shell Access

Allows for real-time command execution and system interaction, enhancing the user's control over the pentesting process.

Skills and Technologies Demonstrated

Natural Language Processing (NLP)

Engages users in a conversational format for seamless vulnerability analysis.

Real-Time Threat Insights

Guides users with contextual prompts to detect and address vulnerabilities effectively.

Secure Database Management

Utilizes SQLite for efficient data handling and storing chat history, user actions, and reporting data.

Web Development

Developed with Flask and customized front-end design for an engaging, user-friendly experience.

Technical Stack

Python	NLP capabilities for prompt analysis and tailored responses, using libraries like NLTK.
Flask	Manages user interactions, data storage, and web interface.
SQLite	Database for chat history and user data.
Web-Based Interface	User-friendly design with interactive elements for improved accessibility and user engagement.