CYBERSENTINEL

SUMMER INTERNSHIP TRAINING REPORT

Submitted by

ISHA

in partial fulfillment for the award of the degree

of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

AT

SCHOOL OF ENGINEERING, DESIGN AND AUTOMATION

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

JUNE – JULY, 2023

CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the 45- days summer internship project report entitled "CYBERSENTINEL" by "ISHA" in partial fulfillment of requirements for the award of degree of B.Tech (CSE) submitted in the Department of CSE at GNA University, Phagwara is an authentic record of my own work carried out during a period from 9th June, 2023 to 28th July, 2023 under the supervision of **DR. ANURAG SHARMA.**

Signature of the Student

Isha

GU-2021-4164

BTech CSE (5th)

This is to certify that the above statement made by the candidate is correct to the best of my/our knowledge.

Signature of the SUPERVISOR (S)

The B.Tech Viva –Voce Examination of (NAME OF CANDIDATE) has been held on _____ and accepted.

Signature of External Examiner

Signature of H.O.D

TRAINING COMPLETION CERTIFICATE

ACKNOWLEDGEMENT

I would like to place on record my deep sense of gratitude to (Name of supervisor), Department of Computer Science and Engineering, GNA University, Phagwara, for his generous guidance, help and useful suggestions.

I express my sincere gratitude to Mr. Shubham**,** for his continuous guidance and support in carrying out industrial project work at Cyber Defence Intelligence, Sahibzada Ajit Singh Nagar.

I express my sincere gratitude to Dr. Anurag Sharma, HOD, Department of Computer Science and Engineering, GNA University, Phagwara, for his stimulating guidance, continuous encouragement and supervision throughout the course of present work.

I am extremely thankful to Dr. Vikrant Sharma, Dean (SEDA-E) for providing me infrastructural facilities to work in, without which this work would not have been possible.

Isha

GU-2021-4164

BTech CSE (5th)

ABSTRACT

CyberSentinel is designed to address various critical aspects of network security. In an increasingly interconnected world, protecting network assets against cyber threats is paramount. In straightforward language, we aim to explain and empower individuals and organizations to protect their digital assets against a multitude of threats.

The first aspect of the project deals with brute force attacks on FTP, SSH, and Telnet ports. Brute force attacks involve relentless attempts to guess usernames and passwords, exploiting vulnerabilities in these services. Through this project, we explore preventive measures and detection techniques to thwart these malicious endeavors.

Privilege escalation is another pivotal concern, both horizontally and vertically. Horizontal privilege escalation involves an attacker gaining access to another user's account with the same level of privilege, while vertical privilege escalation entails an attacker elevating their privileges to gain access to more sensitive data or systems. CyberSentinel explains these concepts and demonstrates methods to mitigate such vulnerabilities.

The project also explores how Shodan can be used to identify FTP servers, further emphasizing the importance of securing these servers against unauthorized access.

Lastly, the project emphasizes the role of pfSense, an open-source firewall, as a fundamental security measure. It demonstrates how pfSense can be configured to enhance network security, how to block single port as well as multiple ports and furthermore.

So, in a nutshell, It'll help us to understand and tackle brute force attacks, privilege escalation, Shodan, and using pfSense to lock down your ports.

TABLE OF CONTENT

LIST OF FIGURES