

# ■ ■ Cyber Security Internship — Task 8

**Task Name:** Identify and Remove Suspicious Browser Extensions

**Organization:** Elevate Labs (MSME, Govt. of India)

## ■ Objective

Understand the role of VPNs (Virtual Private Networks) in protecting privacy and enabling secure communication over the internet.

## ■ Tools Used

- 1 ProtonVPN (Free Tier)
- 2 Windscribe (Free Version)
- 3 Website: <https://www.whatismyipaddress.com>

## ■ ■ Steps to Perform Task

- 1 Choose a Free VPN Service — Selected ProtonVPN and created a free account.
- 2 Download & Install — Downloaded the VPN client from protonvpn.com and installed it.
- 3 Connect to VPN Server — Selected Netherlands server and connected successfully.
- 4 Verify IP Address — Checked before and after VPN connection on whatismyipaddress.com.
- 5 Check Encrypted Traffic — Confirmed HTTPS browsing after connection.
- 6 Disconnect & Compare — Verified IP and browsing speed difference.
- 7 Research VPN Features — Studied ProtonVPN encryption and tunneling protocols.
- 8 Write Summary — Noted VPN benefits and limitations.

## ■ Summary: Benefits & Limitations of VPNs

### Benefits:

- 1 Encrypts internet traffic for privacy.
- 2 Hides real IP and location.
- 3 Prevents ISP tracking and unsafe Wi-Fi threats.
- 4 Allows access to geo-restricted sites.

### Limitations:

- 1 VPN may slow down internet speed.
- 2 Free VPNs have data/server restrictions.
- 3 VPNs do not ensure complete anonymity.
- 4 Some sites block VPN connections.

## ■ Interview Questions & Answers

### What is a VPN?

A Virtual Private Network is a secure tunnel between your device and the internet that encrypts data and hides your IP.

### How does a VPN protect privacy?

It encrypts internet traffic so ISPs or hackers cannot monitor your data.

### Difference between VPN and Proxy?

VPN encrypts all network traffic, Proxy only hides IP for apps. VPN is more secure.

### What is encryption in VPN?

It converts readable data into code to prevent interception.

**Can VPN guarantee complete anonymity?**

No, it hides IP but tracking via cookies is possible.

**What protocols do VPNs use?**

OpenVPN, IKEv2/IPSec, WireGuard, PPTP, L2TP.

**What are some VPN limitations?**

Reduced speed, data limits, possible logs by providers.

**How does a VPN affect network speed?**

Encryption adds overhead which slightly reduces speed.

## ■ Outcome

Gained practical experience with VPN setup and verified encrypted browsing. Learned about VPN encryption, tunneling, and privacy methods.

## ■ Key Concepts

VPN, Encryption, Privacy, Tunneling Protocols, Network Security

## ■ Deliverables

- Screenshot of VPN connected status
- Screenshot of IP before and after connection
- README.md report (this file)

## ■■ GitHub Submission

Create a repository named CyberSecurity-Task8 and upload screenshots and this report. Submit the repo link in the submission form.