

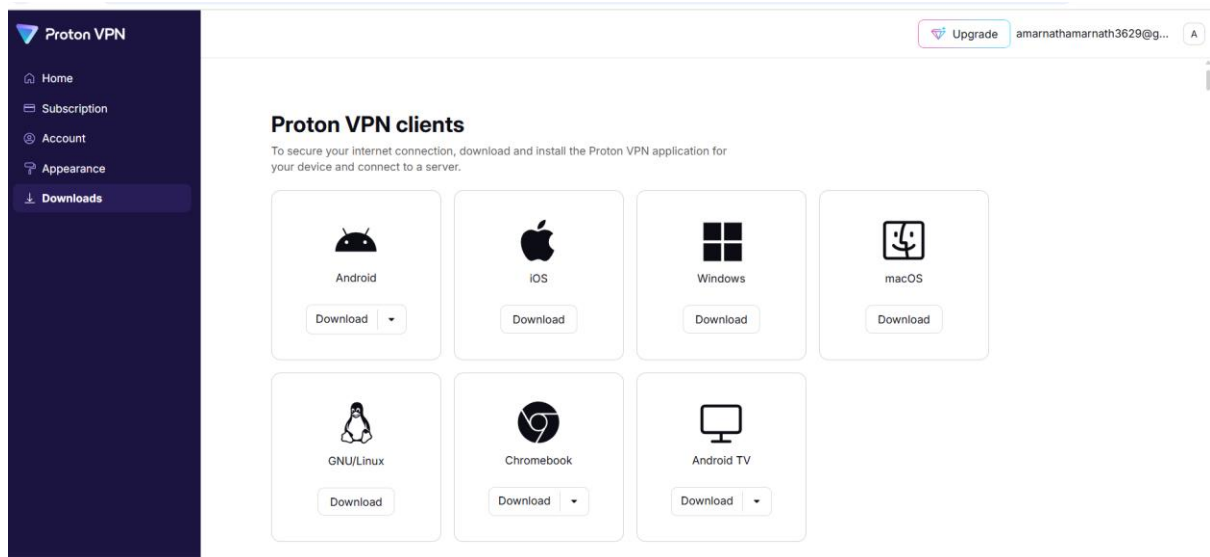
Working and understanding VPN

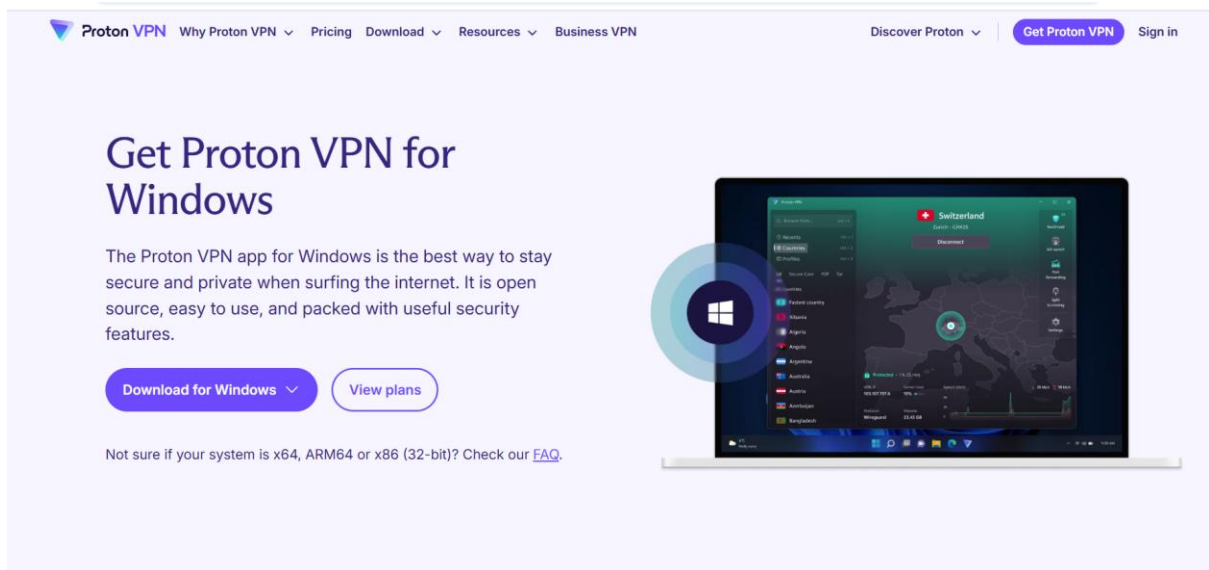
Objective: Understand the role of VPNs in protecting privacy and secure communication.

Tools: Free VPN client (ProtonVPN free tier)

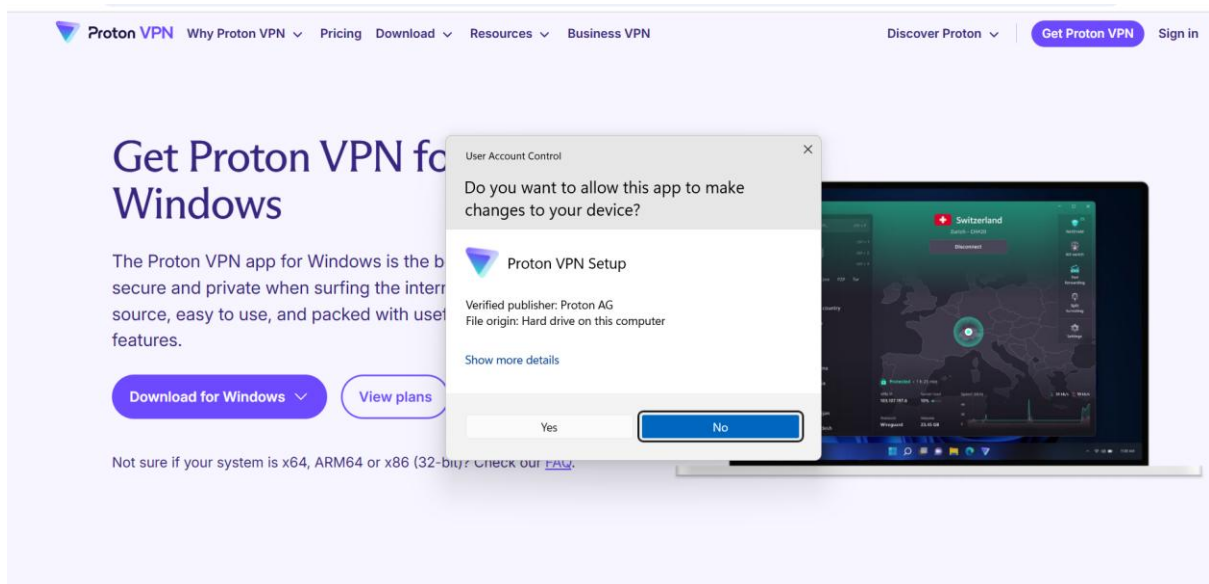
Deliverables: Report describing VPN setup steps and connection status screenshot

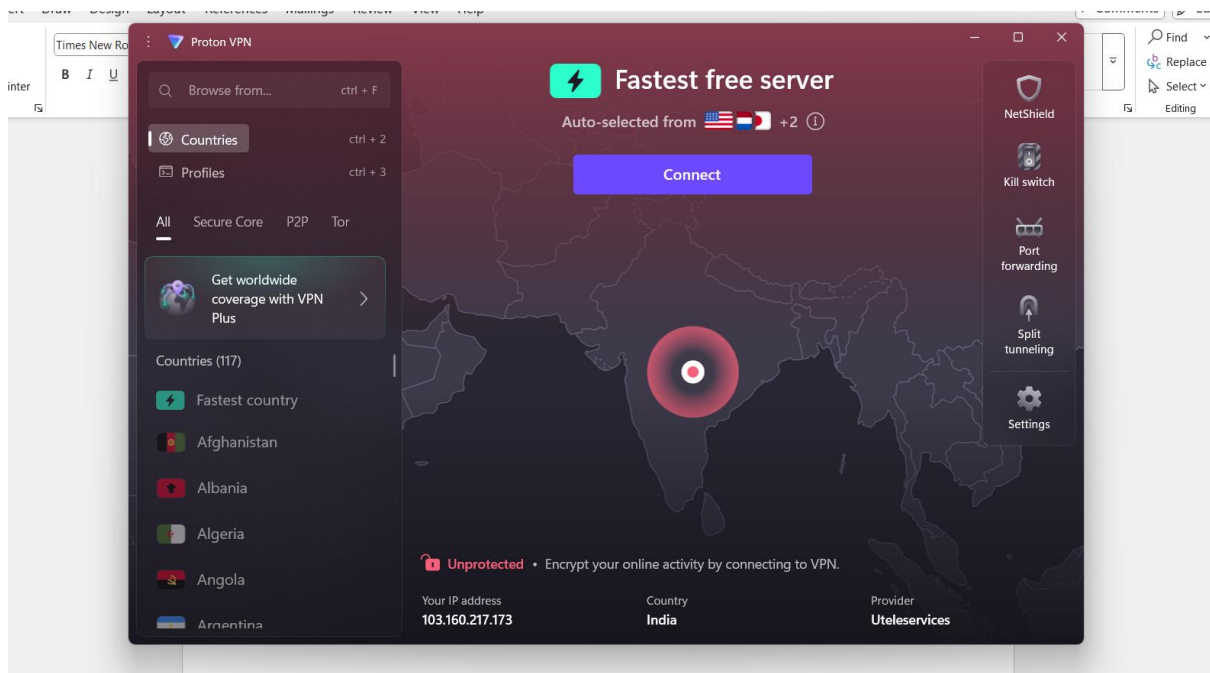
STEP 01: Choose a reputable free VPN service and sign up



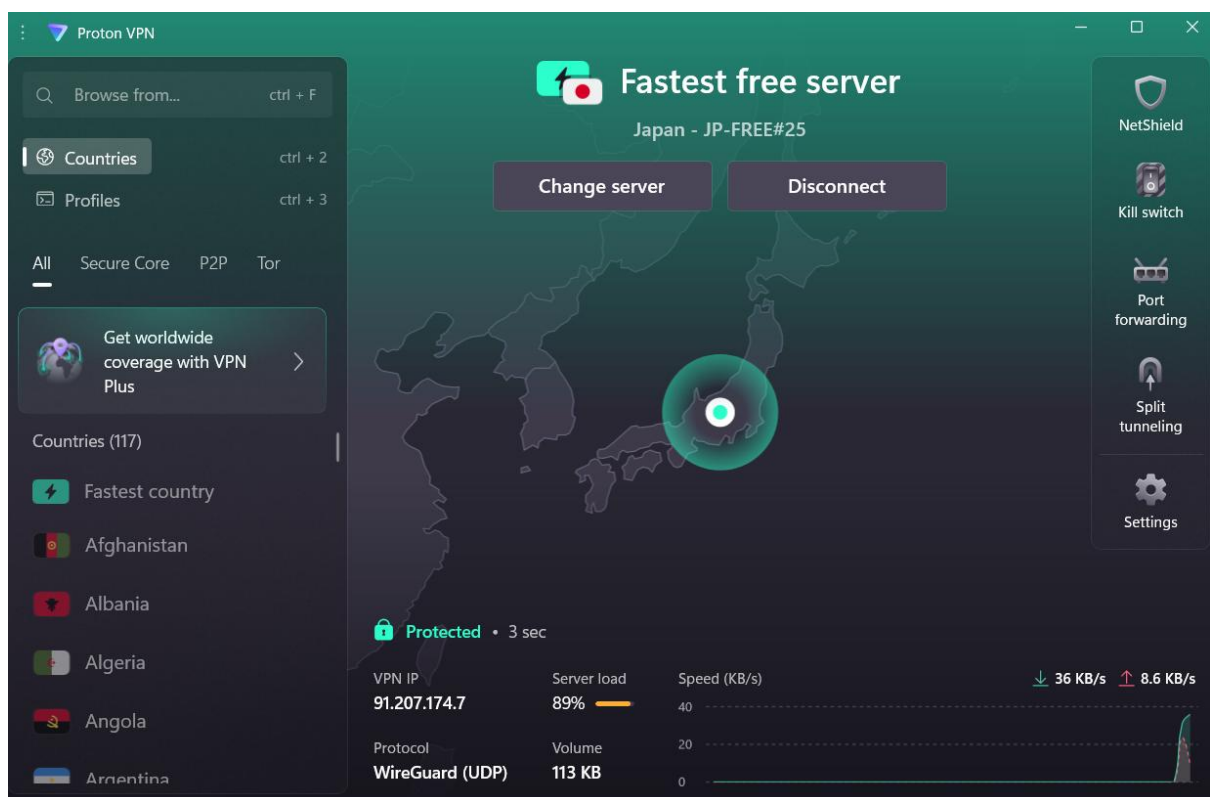


STEP 02 : Download and install the VPN client.

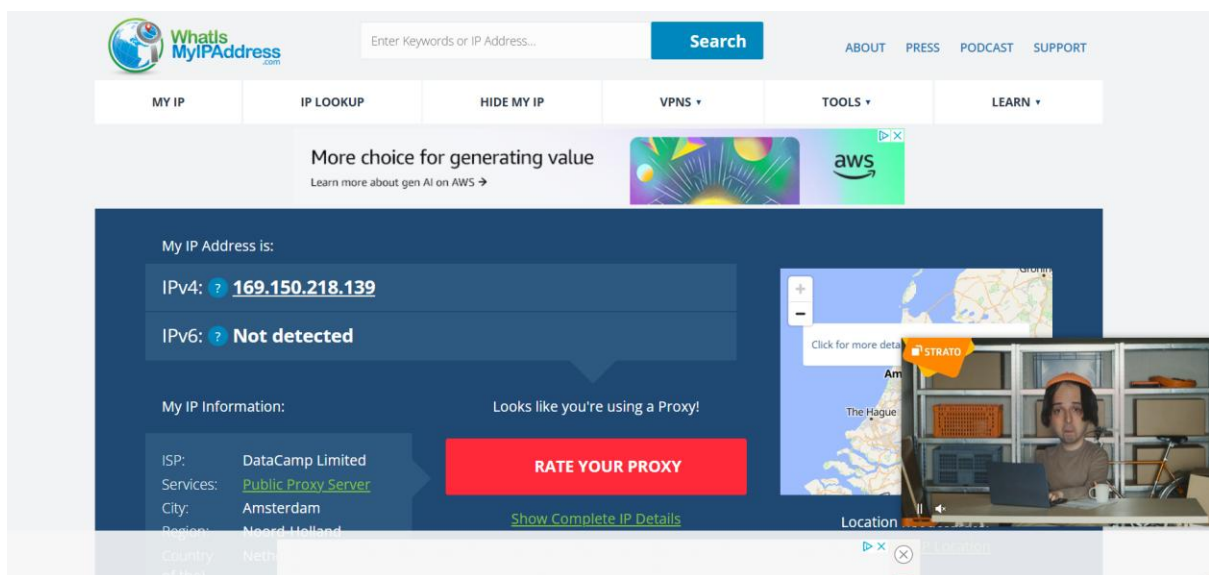
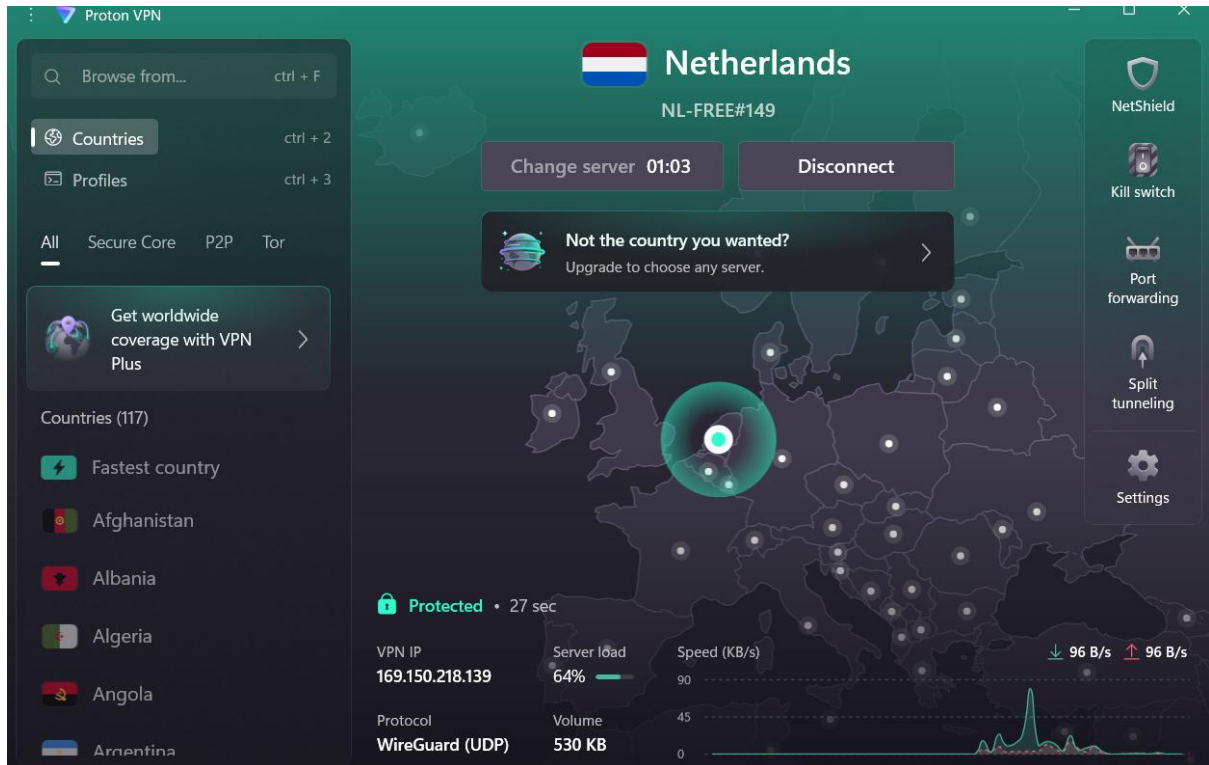




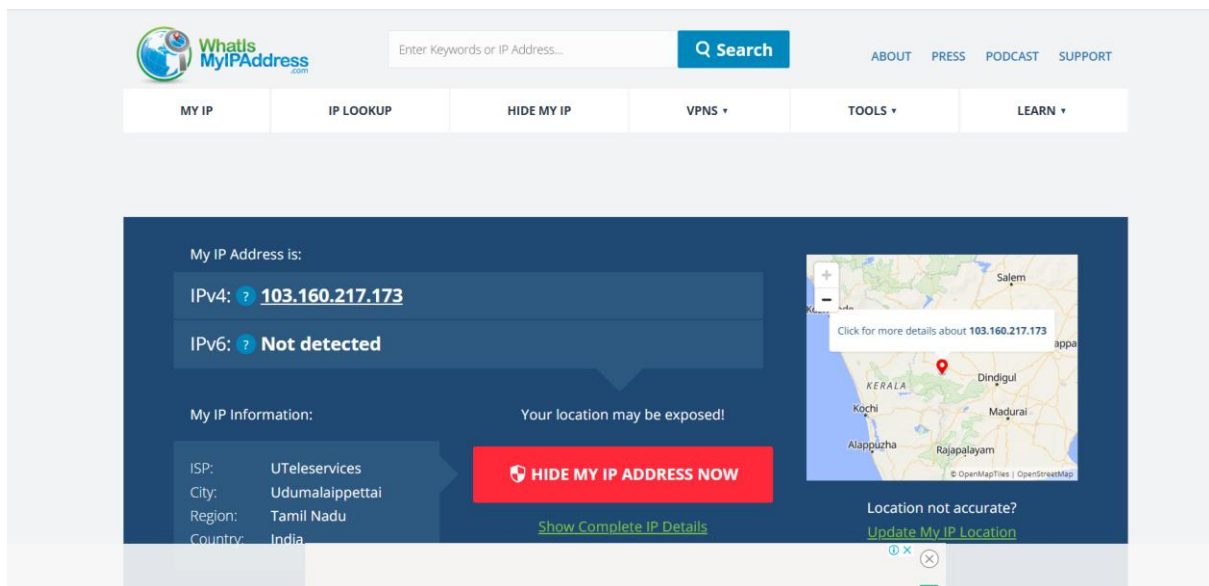
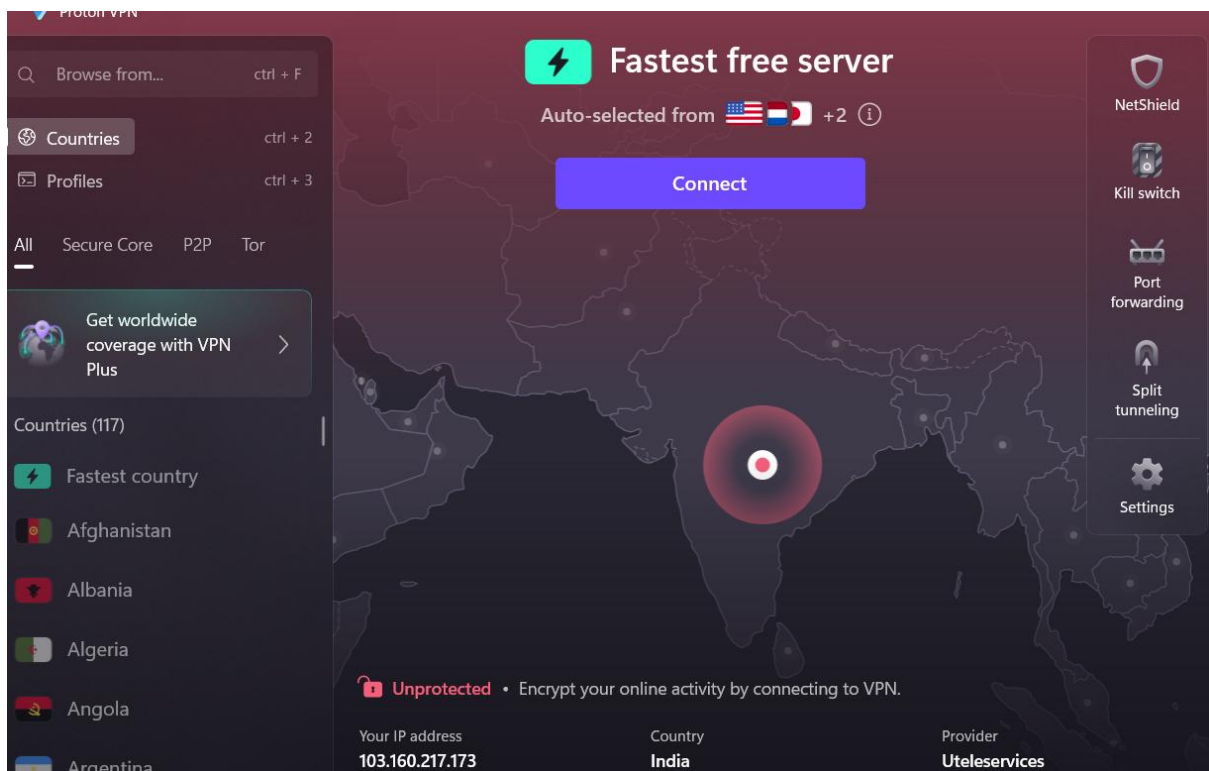
STEP 03: Connect to a VPN server (choose closest or any location)



STEP 04: Verify your IP address has changed (use whatismyipaddress.com).



STEP 05: Disconnect VPN and compare browsing speed and IP.



STEP 06: Research VPN encryption and privacy features.

- Most VPNs use **AES-256 encryption** for data protection.
- Common protocols: **OpenVPN, IKEv2/IPSec, WireGuard** (modern, faster).
- VPNs hide your real IP and encrypt traffic, protecting against snooping on public Wi-Fi.
- Some VPNs keep logs, others have strict no-log policies.
- Free VPNs often have limitations like speed caps, fewer servers, or ads.

STEP 07: Write a summary on VPN benefits and limitations.

Using a VPN (Virtual Private Network) enhances online privacy by encrypting internet traffic and masking the user's real IP address. This encryption protects data from interception by hackers, ISPs, or other third parties, especially on unsecured networks like public Wi-Fi. VPNs also enable access to geo-restricted content by routing traffic through servers in different locations.

Popular VPN encryption methods include AES-256, providing strong security. Protocols like OpenVPN and WireGuard balance security and performance.

However, VPNs have limitations. Free VPN services often impose data caps, limited server choices, or slower speeds. Some may log user activity, compromising privacy. Additionally, VPNs cannot protect against all cyber threats (e.g., phishing, malware) and may not work well with some streaming services due to VPN blocking.

