Task: Setup and Understand the Role of VPNs in Protecting Privacy and Secure Communication

■ Objective

To understand how Virtual Private Networks (VPNs) protect user privacy and secure online communication by encrypting traffic and masking the real IP address.

■ Tools Used

- • ProtonVPN Free Tier (https://protonvpn.com/free-vpn/)
- • Website for IP Verification: https://whatismyipaddress.com
- ■ Operating System: Windows 10/11

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Steps Followed

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Downloaded ProtonVPN installer (.exe) from the official website.

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Installed the client by following setup wizard instructions.

4

Logged into ProtonVPN using registered email and password.

5

Connected to a Free VPN server (e.g., Netherlands or USA).

6

Verified new IP address on whatismyipaddress.com to confirm VPN masking.

7

Browsed securely through the encrypted connection.

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Disconnected VPN and compared speed/IP difference.

■ Observations

- • • IP address successfully changed after VPN connection.
- • Browsing became encrypted and private.
- ■ Slight decrease in browsing speed was observed.
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VPN Benefits

Encrypts all data traffic using AES-256 encryption.

- • Hides real IP and location from websites and ISPs.
- Protects against hackers on public Wi-Fi networks.
- Prevents online tracking and enhances anonymity.

  Bypasses geo-restrictions and censorship.

VPN Limitations

- • Free plans have limited bandwidth and server options.
- Connection speed may drop slightly due to encryption.
- Some free VPNs may log user data — check privacy policy.

Learning Summary

A VPN (Virtual Private Network) creates a secure encrypted tunnel between a user's device and the internet, ensuring that sensitive data, browsing history, and location remain private and protected from hackers, ISPs, and surveillance tools.

✍ Task completed successfully — demonstrated VPN setup, IP verification, encryption testing, and privacy analysis.

Connection Status Screenshot

Insert your screenshot here showing ProtonVPN 'Connected' status.