**Task 8: Identify and Remove Suspicious Browser Extensions**

**6. Disconnect VPN and Compare Browsing Speed and IP**

After completing the browsing session with the VPN enabled, I disconnected from Proton VPN to assess any differences in browsing speed and IP address visibility.

* **With VPN Connected:**
  + VPN Server: Netherlands - NL-FREE#131
  + VPN IP Address: 185.107.56.141
  + Protocol: Wire Guard (UDP)
  + Server Load: 92%
  + Speed: Approximately 13 KB/s download, 3.4 KB/s upload
  + Web pages loaded securely and anonymously
* **After Disconnecting VPN:**
  + IP address reverted to my original ISP-provided IP
  + Noticeable improvement in browsing speed
  + Pages loaded slightly faster without encryption overhead

Conclusion: The VPN adds a layer of privacy but may cause minor speed reduction, especially when connected to high-load servers.

**7. VPN Encryption and Privacy Features**

VPNs ensure private, encrypted communication over public networks. Proton VPN, in this task, utilized the **Wire Guard protocol**, known for its efficiency and security.

* **Encryption Algorithm**: ChaCha20 for encryption, Poly1305 for data authentication
* **Key Privacy Features**:
  + **IP Masking**: Hides real IP to protect identity
  + **Encrypted Tunnels**: Protects data from eavesdropping on public Wi-Fi
  + **No Logs Policy**: Proton VPN guarantees not to store user activity logs
  + **DNS Leak Protection**: Prevents DNS requests from being exposed to third parties
  + **Kill Switch**: Disconnects internet if VPN drops (available in paid version)

These features ensure user activity remains private and inaccessible to hackers, ISPs, or trackers.

**8. Summary: Benefits and Limitations of VPNs**

**Benefits:**

* Secures data with end-to-end encryption
* Protects identity by masking IP address
* Allows safe browsing on public networks
* Bypasses geo-restrictions and censorship
* Prevents tracking by websites and advertisers

**Limitations:**

* Free VPN servers may be overcrowded, affecting speed
* Not a complete anonymity solution; some services log metadata
* Some websites block known VPN IP addresses
* Limited server options and speed on free tiers

Overall, VPNs are vital tools for maintaining privacy and security online, but their effectiveness depends on the p

provider, protocol, and usage scenario.





