Network security project proposal

The main idea of our solution is to enhance the security of home IoT networks by identifying and mitigating vulnerabilities commonly found in connected devices. With the growing adoption of IoT technology, many devices lack adequate security measures, leaving them susceptible to attacks such as unauthorized access, data breaches, and malware propagation. Our project aims to provide users with an accessible tool to analyze the security posture of their home networks and take proactive steps to address potential threats.

One method of implementation involves using a **Raspberry Pi** as a portable and cost-effective platform. This approach enables users to deploy a plug-and-play device that scans the home network, identifies IoT devices, and performs automated vulnerability assessments. The Raspberry Pi can analyze factors such as weak credentials, unencrypted communications, and outdated firmware, generating actionable recommendations to improve the network's security.

The second method of implementation uses a **web application** as the central interface for managing IoT network security. The application allows users to scan their network directly from a web browser, identify connected devices, and assess their security risks. With an intuitive user interface, the platform provides detailed insights and step-by-step instructions to resolve vulnerabilities, catering to both technical and non-technical users.