***Abstract:***

This project focuses on developing a peer-to-peer (P2P) network monitoring system using the C programming language. The system enables monitoring of network nodes (computers) within a P2P network, providing real-time updates on each node's status, resource usage (e.g., CPU, memory), and connectivity.

In a P2P setup, each node acts as both a client and a server, allowing decentralized monitoring without a central server. Each peer in the network can request and share monitoring data with other peers, enhancing fault tolerance and resilience. The system is designed to detect offline nodes, high CPU usage, or network congestion, and notify other peers accordingly.

**Decentralized Monitoring**: Each peer can monitor and be monitored by other nodes without a central server.

**Resource Tracking**: Monitors CPU, memory usage, and connectivity status of each peer.

**Real-time Notifications**: Alerts peers when a node goes offline or reaches critical resource thresholds.

**Lightweight Communication Protocol**: Uses UDP or TCP sockets to efficiently exchange monitoring data between nodes.