Title of the Project : Network Performance Analyzer (NPA) with BI analytics

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**ABSTRACT**

The internet is vital for schools, colleges, and businesses, but common issues like slow connections, cyberattacks, and unauthorized bandwidth use persist due to a lack of affordable oversight tools. To address this gap, we designed and developed the Network Performance Analyzer (NPA), a low-cost, Java-based system using JPcap/WinPcap to monitor and capture network traffic. Captured packets are filtered, exported to a CSV format, and visualized in Power BI (Business Intelligence) dashboards. Administrators can use the dashboards to track internet bandwidth usage and access protocols (PUA), identify anomalous behavior, and receive real-time warnings about potential risks. The tool is lightweight, easy to use, and supports a secure digital infrastructure, aligning with SDG 9 (Industry, Innovation, Infrastructure) and SDG 4 (Quality Education). Future upgrades include AI-driven threat prediction, cloud storage, IoT support, and mobile functionality.