ABSTRACT

This report presents a practical approach to developing **TaskCore**, a Windows desktop utility designed for efficient process monitoring and management. A fundamental goal in system performance management is to provide users with clear, real-time insights into the tasks running on their machines. TaskCore addresses this by enabling users to view, analyze, and manage system processes with an intuitive interface that goes beyond the basic functionality of the built-in Task Manager.

The report discusses the means to monitor system resources such as CPU and memory usage in real time and presents mechanisms for task control, such as process termination. The architecture of the application integrates continuous process scanning with a dynamic UI, ensuring the displayed information remains up to date. User–tool interactions are carefully considered to provide a smooth experience, including the use of a collapsible sidebar, toggleable panels, and interactive process lists. Solutions for accuracy in CPU and memory reporting are implemented, ensuring that the information presented is reliable and meaningful.

Using system data collected during runtime, TaskCore also proposes advanced features for future improvements, such as graphical visualizations of CPU and memory usage trends, detailed task insights (executable path, threads, start time), RAM cleanup tools, and watchdog alerts for restricted applications. These planned extensions highlight the scalability of the tool, making it adaptable to a wide range of use cases from personal system monitoring to enterprise-level supervision.

While the current implementation ensures core stability and responsiveness, the report emphasizes areas for continued refinement, such as improving refresh performance, optimizing resource usage, and expanding usability with modern UI enhancements. These findings suggest that a modular and extensible design approach not only helps in maintaining system efficiency but also opens the door for further innovations in process management utilities. TaskCore demonstrates how practical system utilities can evolve into robust, user-centric tools that support both everyday users and IT professionals.