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EMBEDDED C FOR AUTOMOTIVE SAFETY SYSTEMS DESIGN AND PERFORMANCE EVALUATIONS

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ABSTRACT

This report aims to assess the significance of Embedded C in safety systems of automobiles in regard to the design and the performance of vehicles as well as safety implications. The research design of the study is a concurrent mixed-methods triangulation design to conduct a literature review and empirical evaluation of Embedded C. The outcomes show that the use of Embedded C promotes a short time of response, low errors, and high system reliability, which is crucial for real-time safety-important applications like ABS and ESC. The comparison with other programming languages show that Embedded C is more reliable and efficient than any other programming language. The paper closes with directions to the automotive safety and suggestions for further research where it is established that Embedded C plays a crucial part in the development of safety-related technologies within the automotive industry.

KEYWORDS: *Embedded C, Automotive Safety Systems, Real-Time Applications, Performance Evaluation, Reliability, System Stability*

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