

## ABSTRACT

### **Design and Development of a Web-Based Library Application for SMAS Arif Rahman Hakim Using the Waterfall Method**

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*A library is a functional unit that serves as a place for storing collections of library materials systematically arranged for continuous use as a source of information. However, the suboptimal management of library data often poses challenges, particularly in recording and retrieving information. These issues can reduce the efficiency of library management and hinder users' access to information. This research aims to design and develop a web-based library application for SMAS Arif Rahman Hakim. The application is designed to support structured and efficient management of book data, member records, and borrowing transactions. The system development follows the waterfall methodology, encompassing the stages of requirement analysis, system design, implementation, and testing. The outcome of this research is a web-based application that enables library staff and members to manage data quickly, accurately, and accessibly.*

**Keywords :** *Library, Website, Waterfall, SMAS Arif Rahman Hakim, Data Processing*

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