



**REAL-TIME BLOOD SAMPLE TRACKING AND HEALTH MANAGEMENT
SYSTEM FOR MODERN HEALTHCARE**

UNDERGRADUATE THESIS

**Submitted as one of the requirements to obtain
Sarjana Komputer**

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ABSTRACT

Blood sample management is an important aspect of healthcare systems that supports both the efficacy of therapy and the accuracy of diagnosis. One of the most common diagnostic tools used in healthcares is blood tests. However, many hospitals and laboratories still face challenges in managing blood sample information efficiently. These inefficiencies not only interfere the quality of healthcare services but also create significant challenges for medical professionals and patients alike.

Like many similar facilities, Muara Beliti Regional Public Hospital manages patient data and blood samples mostly through manual methods. Currently, laboratory staff manually enter blood test data from a diagnostic machine into Microsoft Word. This method is not only time-consuming but also is sensitive to human error, such as incorrect data entry, which may reduce the accuracy of the results. Additionally, lab staff manually highlight abnormal results using color codes to indicate whether the values are high or low. Although this approach acts as a visual help, it also raises the possibility of workflow delays and inconsistencies.

Patient data management at Muara Beliti Regional Public Hospital still also relies on manual systems. All patient records, including personal details, test bookings, and results, are recorded manually. This time-consuming procedure is ineffective and tends to cause data processing mistakes which may lead to lost documents or make it difficult to locate historical information. Furthermore, due to the lack of automation technologies, it is difficult to maintain accurate and up-to-date records, which is crucial for both patient care and operational efficiency.

These manual processes collectively contribute to a range of problems such as workflow delays, increased risk of errors, lack of data integration, and patient inconvenience. With the increasing demand for digital solutions in healthcare, there is an

urgent need for Muara Beliti Regional Public Hospital to modernize its blood sample management system. A web-based application designed to streamline and automate these processes would not only address the current inefficiencies but also enhance overall healthcare delivery.

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