PENERAPAN IOT UNTUK SISTEM SKRINING PENDONOR DARAH BERBASIS HEART RATE MONITORING DAN RFID

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ABSTRACT

Blood donation is a critical component of healthcare, playing a vital role in fulfilling the blood requirements for various medical conditions. However, its implementation often encounters challenges, particularly during big events, such as long registration times and lengthy queues. These issues can impede the process, especially for first-time donors, highlighting the necessity for solutions that streamline operations and enhance efficiency. Young individuals, particularly those aged 17, represent a key demographic for increasing the donor base. However, the current manual approach frequently falls short of meeting the expectations of a digital generation accustomed to fast and user-friendly technology. The application of Internet of Things (IoT) technology presents a viable solution to these challenges. By utilizing RFID devices, registration can be automated through E-KTP scanning, while the MAX30100 sensor facilitates real-time health screening to monitor heart rate and blood oxygen levels. Integration with cloud computing technologies, such as Google Forms and Google Sheets, supports efficient and accurate data management. This innovation not only accelerates the blood donation process but also alleviates the workload of PMI staff, encourages participation from new donors, and optimizes blood supply management effectively.

Keywords: Blood Donation, Cloud Computing, IoT, MAX30100 Sensor, RFID.