

## INTISARI

### **RANCANG BANGUN APLIKASI MONITOR KADAR GULA DARAH BERBASIS *MOBILE***

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Diabetes merupakan kondisi serius pada kesehatan masyarakat serta menjadi salah satu penyebab mortalitas tertinggi secara global. *American Diabetes Association* (ADA) menjabarkan pendekatan multifaktorial untuk mengurangi risiko komplikasi diabetes yang diterapkan melalui perubahan gaya hidup dan edukasi diabetes. Manajemen diabetes melalui aplikasi berbasis *mobile* terbukti membantu individu dalam keberhasilan melakukan manajemen diabetes secara mandiri.

Pada penelitian ini, sistem monitor kadar gula darah berbasis *mobile* dirancang untuk membantu pasien diabetes dalam melakukan manajemen diabetes. Fungsi aplikasi dibangun berdasarkan pendekatan multifaktorial. Selain itu, teknologi pengembangan didasarkan pada pendekatan *modern Android development* (MAD). Adapun tahapan pengembangan mencakup analisis, perancangan, implementasi, dan pengujian.

Aplikasi berhasil dibangun dengan 2 fitur utama, yakni monitor kadar gula darah dan rekomendasi perawatan diabetes. Fitur monitor menyajikan grafik gula darah, pencatatan aktivitas yang dapat memengaruhi gula darah, dan alarm gula darah. Adapun rekomendasi perawatan diabetes memberikan edukasi dan dorongan kepada pasien untuk menerapkan gaya hidup sehat. Dari hasil pengujian, fungsi aplikasi berjalan sesuai dengan hasil analisis dan perancangan sehingga sistem dapat digunakan dengan baik oleh pasien. Hasil penelitian ini diharapkan dapat membantu pasien dalam manajemen diabetes.

**Kata kunci:** diabetes, manajemen diabetes, sistem monitor, rekomendasi diabetes, aplikasi *mobile*, pendekatan multifaktorial, *modern Android development*.

## **ABSTRACT**

### **DESIGN OF A MOBILE-BASED BLOOD GLUCOSE MONITORING APPLICATION**

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*Diabetes is a serious condition affecting public health and remains one of the leading causes of global mortality. The American Diabetes Association (ADA) outlines the multifactorial approach to reduce the risk of diabetes complications, which involves lifestyle changes and diabetes education. Managing diabetes through mobile-based applications has been proven to assist individuals in successfully managing their diabetes self-care.*

*In this study, a mobile-based blood glucose monitoring system was built to aid people with diabetes in managing their condition. The application's functionalities were built based on the multifactorial approach, and the technology stack was based on modern Android development (MAD). The development process encompassed analysis, design, implementation, and testing.*

*The application was successfully built with two key features: a blood glucose monitor and diabetes treatment recommendations. The monitoring feature presents blood glucose graphs, records events that can affect blood glucose levels, and provides blood glucose alarms. The diabetes treatment recommendations offer education and encouragement to patients for adopting a healthy lifestyle. The testing results demonstrated that the application functions aligned with the analysis and design outcomes, enabling the system to be effectively utilized by patients. The findings of this research are expected to assist patients in diabetes self-management.*

**Keyword:** *diabetes, diabetes management, monitoring system, diabetes recommendations, mobile application, multifactorial approach, modern Android development.*