

## ABSTRAK

*Stunting* merupakan gangguan pertumbuhan kronis pada balita yang memerlukan dukungan teknologi informasi untuk meningkatkan efektivitas deteksi dan pemantauan. Pengembangan aplikasi *mobile* prediksi *stunting* memerlukan layanan *backend* yang mampu mengelola pertukaran data serta mengintegrasikan model *machine learning*. Penelitian ini bertujuan untuk merancang dan mengembangkan *backend RESTful API* pada aplikasi *mobile* prediksi *stunting* menggunakan *Node.js* dan *framework Express.js*. Penelitian difokuskan pada pengembangan *backend* yang mencakup autentikasi pengguna, pengelolaan data, integrasi model *machine learning*, serta pemanfaatan layanan *Google Cloud Platform*, yaitu *Cloud SQL*, *Google Cloud Storage*, dan *Cloud Run*. Metode pengembangan sistem yang digunakan adalah *Waterfall* yang terdiri atas tahapan *requirement analysis*, *system design*, *implementation*, *testing*, *deployment*, dan *maintenance*. Pengujian fungsionalitas sistem dilakukan menggunakan metode *Black-Box Testing* dengan bantuan *Postman*. Hasil penelitian menunjukkan bahwa *backend RESTful API* berhasil dirancang, diimplementasikan, dan di-deploy menggunakan *Node.js* dan *framework Express.js*. Selain itu, *backend* berhasil mengintegrasikan layanan *Cloud SQL*, *Google Cloud Storage*, dan *Cloud Run* sesuai dengan kebutuhan sistem. Berdasarkan hasil pengujian menggunakan metode *Black-Box Testing*, seluruh *endpoint RESTful API* berhasil berfungsi sesuai dengan spesifikasi kebutuhan sistem dan menghasilkan respons yang sesuai untuk setiap layanan yang dikembangkan. Dengan demikian, *backend RESTful API* yang dikembangkan mampu memenuhi kebutuhan fungsional aplikasi *mobile* prediksi *stunting* serta mendukung integrasi layanan berbasis *Google Cloud Platform* sesuai dengan kebutuhan sistem.

Kata kunci: *Backend, RESTful API, Node.js, Express.js, Stunting*.

## ABSTRACT

*Stunting is a chronic growth disorder in children that requires information technology support to improve the effectiveness of detection and monitoring. The development of a mobile application for stunting prediction requires a backend service capable of managing data exchange and integrating machine learning models. This study aims to design and develop a RESTful API backend for a mobile stunting prediction application using Node.js and the Express.js framework. The research focuses on backend development, including user authentication, data management, machine learning model integration, and the utilization of Google Cloud Platform services, namely Cloud SQL, Google Cloud Storage, and Cloud Run. The system was developed using the Waterfall method, which consists of the requirement analysis, system design, implementation, testing, deployment, and maintenance phases. Functional testing was conducted using the Black-Box Testing method with the assistance of Postman. The results indicate that the RESTful API backend was successfully designed, implemented, and deployed using Node.js and the Express.js framework. In addition, the backend successfully integrated Cloud SQL, Google Cloud Storage, and Cloud Run services in accordance with the system requirements. Based on the Black-Box Testing results, all RESTful API endpoints functioned in accordance with the specified system requirements and generated appropriate responses for each developed service. Therefore, the developed RESTful API backend is capable of fulfilling the functional requirements of the mobile stunting prediction application while supporting the integration of services based on Google Cloud Platform in accordance with the system requirements.*

*Keywords: Backend, RESTful API, Node.js, Express.js, Stunting*