

ABSTRACT

Leprosy is a chronic infectious disease that remains a serious public health issue in Indonesia. Indonesia ranks third in the world in terms of new cases, with 14,698 new cases reported in 2024. Delays in early detection, limited availability of specialist medical personnel, and unequal distribution of healthcare services are major obstacles in controlling the disease, particularly in remote areas with limited internet access. This study aims to design and develop a software application to assist the initial screening process of leprosy for the public and field healthcare workers. The software was developed using the ICONIX Process method through the stages of Requirements, Analysis/Preliminary Design, Detailed Design, and Implementation. The application was built using the Flutter framework, while skin image classification was performed using a Convolutional Neural Network (CNN) model running offline with TensorFlow Lite. The application is also equipped with patient data recording and examination location recording features. Testing was conducted using the Black-Box Testing method to ensure that all application functions operated according to the specified requirements. The results of this study indicate that the developed software can be used as a tool for the initial screening of leprosy in accordance with the established functional requirements.

Keywords : *Software, Flutter, TensorFlow Lite, Leprosy, ICONIX Process, Convolutional Neural Network*