

## ABSTRACT

*Health is very important for human life. Healthy or not a person can affect the course of daily activities. In Indonesia, many people receive minimal health care. This is caused by many factors. Some of these factors, such as for people in rural areas, the distance to the puskesmas is not always close to where they live and for urban people sometimes they do not have time to queue at the hospital or do not get good service from the hospital. The telehealth system can solve health problems in Indonesia. By using a telehealth system combined with augmented reality, it can help people get closer to doctors or save time in dealing with illnesses or consulting health issues. The result of the development of this augmented reality-based telehealth system is the function of the doctor to see the measurement results of the medical check-up device that is placed in the patient's house. Patients can also consult a doctor in the form of a real-time chatbox where patients don't need to reload the page to get a reply to the consultation.*

*The use of Augmented reality technology in medical check-ups aims to simplify the work of nursing doctors and make it easier to check the initial state of patients such as body temperature, blood pressure and heart rate by using a smartphone as a tool to view data and markers as a medium for generating data. The telehealth application based on augmented reality displays data in the form of numbers to determine body temperature, heart rate and blood pressure. Data from Firebase that is sent and received in the app in realtime.*

*The application can run on a smartphone with an Android operating system of at least OS 4.4.4 kitkat with features that can function properly. The application displays 3D objects using Augmented Reality technology with the best distance to take Markers at a distance of 10-30 cm. The application displays 3D objects using Augmented Reality technology with the best angle to take Markers at an angle of 0 ° and less than 45 °. The data from Firebase is successfully displayed through the measured 3D object. The measurement result data is realtime when the tool is used.*

**Keywords:** *telehealth, medical checkup, augmented reality, android, ar-iot, realtime*