ABSTRACT

Technological developments in various fields have brought significant changes in human life, especially in the health sector. The latest innovations continue to emerge, contributing greatly to improving the quality of medical services. One of them is in the field of health monitoring. Effective health monitoring helps individuals understand their condition better. However, health monitoring is often limited to routine visits to doctors or hospitals. This research develops a mobile application for monitoring heart rate connected to the Internet of Things (IoT) sensor through the Application Programming Interface (API). The development model used is the prototyping model. This system is designed to monitor heart conditions continuously, to detect potentially fatal heart health problems early. Existing monitoring devices usually require manual intervention, which makes patient mobility limited and increases the workload of medical personnel, reducing monitoring efficiency. This system aims to overcome these problems. The development process involved several stages, from requirements analysis, interface design, implementation, to testing. The methods used included Design Thinking to ensure a user-friendly solution that meets the needs of the users. Design evaluation is done by User Testing (UT) and system usability evaluation is done through User Acceptance Testing (UAT). The UT results showed a score of 90%, while the UAT results showed a score of 90%, signaling a high level of acceptance among users. Users felt comfortable and were able to use the system well, indicating that the system has the potential to be well received and meet user needs.

Keywords— **heart rate monitoring, prototyping process, user acceptance testing, user testing.**