ABSTRACT

Temperature or temperature is an indicator of the degree of heat of an object. Simply put, the higher the temperature of an object, the hotter the object. Cold chain or cold chain is a supply chain system that considers the temperature level in the process. Cold chain to keep frozen or chilled products in an environment with a certain temperature during production, storage, transportation, processing and sales. This is intended to maintain product quality. The purpose of this study was to determine the temperature distribution in the Blood bank at UDD PMI Surabaya City which was used for storage of blood products. By using the ESP32 system and the DS18B20 temperature sensor which will then be monitored via IoT, it will make it easier for users to monitor. The results of these measurements will be stored in a micro SD card for analysis. The results of the storage are also to meet the requirements in the storage of blood products as a history of storage temperature. The data is processed by Non-Parametric Test resulting in an interpretation that the temperature of each shelf is different due to the difference in the location of the sensor placement. The temperature difference is also influenced by the pattern of use and the process of heat transfer from the bottom to the top of the shelf. This research was considered successful with the result of the highest temperature distribution being $3^\bullet C$ and the lowest being $2^\bullet C$. The location of these racks can be useful in determining day-to-day monitoring measuring points. This value has met the standard for storage of blood products, which is in the range of $2^\bullet C$-$6^\bullet C$.

Keyword: Blood Bank, Blood Product, DS18B20, ESP32, IoT, Micro SD Card, Temperature