Implementing the OSTEC System for COVID Detection by Measuring Oxygen Saturation in Blood and Body Temperature and Sending Data to a Database in the Cloud in the Chalhuanca District

Esquivel Romero, Estrella (School: High Performance College of Apurimac)

World Health Organization (WHO) declared COVID-19 as a pandemic. Body temperature> = 37 ° and oxygen saturation ≤93% are present on potential patients. Therefore, the purpose of the project is to “Implement the OSTEC system for COVID detection by measuring oxygen saturation and temperature, sending the information to a database in the cloud for the analysis, follow-up, and timely decision-making”. Sensors that measure the symptoms, such as MLX90614 sensor to measure the temperature and MAX30102 sensor to measure the oxygen saturation, were used; the ESP8266 module processes and sends the information to the database in the cloud. Likewise, the OSTEC prototype and commercial oximeter were used on 5 people for 10 times, obtaining an average of 95.6% and 96% respectively. Similarly, 5 people were measured with the OSTEC prototype and commercial thermometer for 10 times, obtaining an average of 35.3 ° and 35.9 ° respectively. It was possible to send the recorded data through the sensors in real time, with the telephone number or DNI (National Document of Identity) to a database in the cloud. The margin of error between commercial devices and our OSTEC prototype is 0.4% and 0.6° in the amount of oxygen in the blood and body temperature, respectively. This difference is acceptable because the margin of error among commercial devices is 2% and 0.3°. Commercial devices do not store or send data and are independent. On the other hand, our prototype is integrated, storing, or sending the information to a database in real time.