

Digital Platform for Psychological Assessment Supported by Sensors and Efficiency Algorithms

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Abstract : Technology is evolving, creating an impact on our everyday lives and the telehealth industry. Telehealth encapsulates the provision of healthcare services and information via a technological approach. There are several benefits of using web-based methods to provide healthcare help. Nonetheless, few health and psychological help approaches combine this method with wearable sensors. This paper aims to create an online platform for users to receive self-care help and information using wearable sensors. In addition, researchers developing a similar project obtain a solid foundation as a reference. This study provides descriptions and analyses of the software and hardware architecture. Exhibits and explains a heart rate dynamic and efficient algorithm that continuously calculates the desired sensors' values. Presents diagrams that illustrate the website deployment process and the webserver means of handling the sensors' data. The goal is to create a working project using Arduino compatible hardware. Heart rate sensors send their data values to an online platform. A microcontroller board uses an algorithm to calculate the sensor heart rate values and outputs it to a web server. The platform visualizes the sensor's data, summarizes it in a report, and creates alerts for the user. Results showed a solid project structure and communication from the hardware and software. The web server displays the conveyed heart rate sensor's data on the online platform, presenting observations and evaluations.

Keywords : Arduino, heart rate BPM, microcontroller board, telehealth, wearable sensors, web-based healthcare

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