

# The Helping Hand

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The purpose of this project was to create a pair of gloves that gives the visually impaired the ability to read any text and recognize and say aloud the value of any currency notes and provide him with an emergency button, an ultrasonic sensor to prevent him from bumping into things, a temperature sensor that warns him before touching a hot object and an electric shock generator to be used for self-defense. Firstly, the scanning module was constructed and the system was programmed to read the scanned text aloud or recognize the value of the currency note and say it aloud with the press of a specific button for each function. The ultrasonic sensor module was programmed to vary the delay between the beeps depending on the distance. The system was programmed to send the emergency SMS to the number specified saying that person is in danger with the press of the emergency button. The temperature module was programmed so that its beep delay time varies with the temperature. The electric shock generator was then built. All the modules were put together in the glove and they were tested. The device proved to be very successful. In overall, the project was 99.9% successful and the gloves functioned as expected with speed, ease and accuracy. After seeing that it was successful, a second device was built that had everything soldered on a PCB instead of being connected with wires and was smaller and more comfortable to wear.