# Type Independently

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People with partial or total visual disabilities suffering from a problem while writing on the traditional smartphone keyboard due to the inability to distinguish between letter buttons that are close to each other. Relying on other people makes them lose their privacy and independency. And sometimes these helpers may not be there all the time. A wearable keyboard was designed to be worn between fingers that would act as a keyboard. using Arduino Nano board and Bluetooth module to send the typed key to the smartphone. An Arduino board was programmed for this purpose using Arduino IDE, and an Android application was employed via Bluetooth technology to interact with the device. Conducting rings was used as sensors with six rings at each hand in order to yield 6 by 6 combinations to make possible to write 36 different letters. One finger can have more than one ring. The prototype was experimented on a 16 years' student with vision impairment. Then she was interviewed to investigate the user experience. The interview indicated her satisfaction from using the wearable keyboard. Another prototype was designed for the same purpose using Flex sensor instead of rings to yield more accuracy. Three sensors are used for each hand for the second prototype. The Flex sensor indicates the degree of figure folding with two mapped values for each sensor to get the same combination count for the first prototype. As a conclusion, it was evident that the wearable keyboard is helpful to people with vision disabilities by enables them to communicate textually with others easily and independently. Moreover, the wearable keyboard is easy to use where the training time is relatively short.

**Awards Won:**