Braille Keyboard Development on Android OS

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Smartphones are gaining popularity with blind people who often use them for taking notes instead of using braille slates or braille keyboards. However, typing on smartphones still has limitations; for example, in order to find the right character, sound feedback is essential. This project developed an android keyboard that used touch screen finger-drawn symbols ("Gesture") on smartphones which allowed greater accuracy in entries. The symbols designed are based on the braille alphabet which of course all blind users know well. The keyboard developed supports the both English and Thai alphabets, as well as other commonly used symbols and numbers. The development tools used in this project were Java and XML. First, Java was used for processing input data (from screen co-ordinates) to become symbols. Second, XML was used to build a layout of a keyboard. The program was developed by using Eclipse, an open source program for developing Android applications. The keyboard developed in this project can be used effectively with no need for audio or visual feedback. In case user wished to make sure that the characters typed were what they wanted, sound feedback could be enabled. Trial with blind users using our keyboard compared to a default Samsung keyboard to type 4 English words (19 characters), typing time decreased about 22.93% on average. We also found that after the blind had used our keyboard for about 10 minutes, there was no mis-typing. So the developed keyboard on an android OS smartphone was shown to be a more efficient choice for typing for the blind.

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