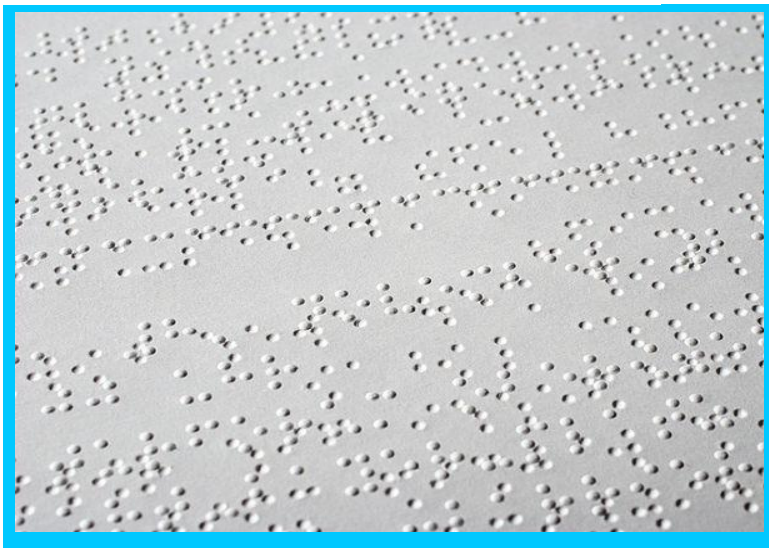
Dynamic Braille

Design Challenge



Learn It!

Our means of communicating with one another depends highly on what we use to communicate. For most people there is a language barrier, for others there may be a necessary degree of trust but what if there was a barrier that played on our senses. Written communication takes many forms, one of which being for those who cannot see. Braille is an international written language for the blind, arranging raised dots on a sheet in a way that allows for deciphering between words, capitalized letters and numbers. The challenge of creating Braille is in distinguishing between entire words and singular characters. The Braille standard is necessary and used often in hospitals schools and in translations of a large portion of literature. This module will challenge you to create a dynamic Braille system that can take user input text and generate the corresponding Braille text as Boolean outputs. These Boolean signals should be connected to the inputs of solenoid circuits.

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Build It!

Dynamic Braille System Challenge

Build a series of six solenoid control circuits powered externally and wired to six digital input lines of your National Instruments hardware.

Develop means of reading user input text and stepping through each letter. Pass each letter to a processing case structure that can create the Boolean array that can be passed to the digital lines controlling the solenoids.

Wire a buzzer up to your National Instruments hardware and have it provide a certain signal after the completion of each word and a different one after the completion of the entire phrase entered.

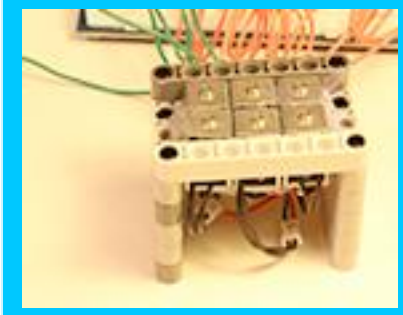

Figure 1 Braille Circuit Example