Whole Class Project Description

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Whole Class Project - Description

A senior engineer at Brain Corp has developed a sensor that can read and encode a special set of brain signals. To date, the senior engineer has correlated the brain signals to a series of waveforms that represent each of the letters of the alphabet. For safety reasons the latest sensor design outputs an optical signal via a red LED.

Your task is to create an embedded system to output the corresponding letter to a 7-segment display.

Note: there is only one special brain sensor in the world. Your access to it will be very limited.

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- Optical signal characteristics
  - Red LED
  - On: represents a 1
  - Off: represents a 0
  - Approximate baud rate : 40Hz

- Optical signal encoding (1 = on, 0 = off)

A	10111	J	1011101110111	S	10101
B	111010101	K	111010111	T	111
C	11101011101	L	101110101	U	1010111
D	1110101	M	1110111	V	101010111
E	1	N	11101	W	101110111
F	101011101	O	11101110111	X	1110101011
G	111011101	P	10111011101	Y	1110101110111
H	1010101	Q	111011010111	Z	1110110101
I	101	R	1011101		

Individual letters are separated
By 3 0's in a row

Individual words are separated
By 7 0's in a row

Baud rate = 40Hz
  Each 1 or 0 lasts for 25ms