

ProgramFunctions

byte***drawingLetters; // Three-dimensional array for all letters (level), each letter has 8 line and 6 column (line vertical, column horizontal)

void LEDMatrix8::InitializeLetters

First letter

	Column →					
← Line	0/0/0	0/0/1	0/0/2	0/0/3	0/0/4	0/0/5
	0/1/0	0/1/1	0/1/2	0/1/3	0/1/4	0/1/5
	0/2/0	0/2/1	0/2/2	0/2/3	0/2/4	0/2/5
	0/3/0	0/3/1	0/3/2	0/3/3	0/3/4	0/3/5
	0/4/0	0/4/1	0/4/2	0/4/3	0/4/4	0/4/5
	0/5/0	0/5/1	0/5/2	0/5/3	0/5/4	0/5/5
	0/6/0	0/6/1	0/6/2	0/6/3	0/6/4	0/6/5
	0/7/0	0/7/1	0/7/2	0/7/3	0/7/4	0/7/5

Example T

1	1	1	1	1	1	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
0	0	1	0	0	0	0
2	2	2	2	2	2	0

Second letter

	Column →					
← Line	1/0/0	1/0/1	1/0/2	1/0/3	1/0/4	0/0/5
	1/1/0	1/1/1	1/1/2	1/1/3	1/1/4	0/1/5
	1/2/0	1/2/1	1/2/2	1/2/3	1/2/4	0/2/5
	1/3/0	1/3/1	1/3/2	1/3/3	1/3/4	0/3/5
	1/4/0	1/4/1	1/4/2	1/4/3	1/4/4	0/4/5
	1/5/0	1/5/1	1/5/2	1/5/3	1/5/4	0/5/5
	1/6/0	1/6/1	1/6/2	1/6/3	1/6/4	0/6/5
	1/7/0	1/7/1	1/7/2	1/7/3	1/7/4	0/7/5

Example E

1	1	1	1	1	1	0
1	0	0	0	0	0	0
1	0	0	0	0	0	0
1	1	1	1	1	0	0
1	0	0	0	0	0	0
1	0	0	0	0	0	0
1	1	1	1	1	1	0
2	2	2	2	2	2	0

byte**drawingMatrix; // Two dimensional array for all letters, 8 lines and X columns (line vertical, column horizontal)

void LEDMatrix8::WriteLetterToDrawingMatrix

	Column →																																							
← Line	0/0	0/1	0/2	0/3	0/4	0/5	0/6	0/7	0/8	0/9	0/10	0/11	0/12	0/13	0/14	0/15	0/16	0/17	0/18	0/19	0/20	0/21	0/22	0/23	0/24	0/25	0/26	0/27	0/28	0/29	0/30	0/31	0/32	0/33	0/34	0/35				
	1/0	1/1	1/2	1/3	1/4	1/5	1/6	1/7	1/8	1/9	1/10	1/11	1/12	1/13	1/14	1/15	1/16	1/17	1/18	1/19	1/20	1/21	1/22	1/23	1/24	1/25	1/26	1/27	1/28	1/29	1/30	1/31	1/32	1/33	1/34	1/35				
	2/0	2/1	2/2	2/3	2/4	2/5	2/6	2/7	2/8	2/9	2/10	2/11	2/12	2/13	2/14	2/15	2/16	2/17	2/18	2/19	2/20	2/21	2/22	2/23	2/24	2/25	2/26	2/27	2/28	2/29	2/30	2/31	2/32	2/33	2/34	2/35				
	3/0	3/1	3/2	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12	3/13	3/14	3/15	3/16	3/17	3/18	3/19	3/20	3/21	3/22	3/23	3/24	3/25	3/26	3/27	3/28	3/29	3/30	3/31	3/32	3/33	3/34	3/35				
	4/0	4/1	4/2	4/3	4/4	4/5	4/6	4/7	4/8	4/9	4/10	4/11	4/12	4/13	4/14	4/15	4/16	4/17	4/18	4/19	4/20	4/21	4/22	4/23	4/24	4/25	4/26	4/27	4/28	4/29	4/30	4/31	4/32	4/33	4/34	4/35				
	5/0	5/1	5/2	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21	5/22	5/23	5/24	5/25	5/26	5/27	5/28	5/29	5/30	5/31	5/32	5/33	5/34	5/35				
	6/0	6/1	6/2	6/3	6/4	6/5	6/6	6/7	6/8	6/9	6/10	6/11	6/12	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21	6/22	6/23	6/24	6/25	6/26	6/27	6/28	6/29	6/30	6/31	6/32	6/33	6/34	6/35				
	7/0	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	7/32	7/33	7/34	7/35				

Example TEENSY

Example T

1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	0	1	0	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0	1	0
0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0
0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	
0	0	1	0	0	0	0	1	1	1	1	0	0	1	1	1	1	0	0	1	0	0	1	1	0	0	1	1	1	1	0	0	0	0	1	0	0	
0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	
0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	
0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	
0	0	1	0	0	0	0	1	1	1	1	1	0	1	1	1	1	1	0	1	0	0	0	1	0	1	1	1	1	0	0	0	0	0	1	0	0	
2	2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	2	2	0	2	2	2	2	2	0	

byte*drawingArray; // One-dimensional array with all the pixels of the string

void LEDMatrix8::DrawingMatrixToDrawingArray

Drawing matrix (Two dimensional array) to drawing array (One dimensional array)

	Column 0								Column 1								Column 2								Column 3							
drawingMatrix	0/0	1/0	2/0	3/0	4/0	5/0	6/0	7/0	7/1	6/1	5/1	4/1	3/1	2/1	1/1	0/1	0/2	1/2	2/2	3/2	4/2	5/2	6/2	7/2	7/3	6/3	5/3	4/3	3/3	2/3	1/3	0/3
drawingMatrix	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
drawingArray	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Example T	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	1	1	1	1	1	1	1	2	2	0	0	0	0	0	0	1

	Column 4								Column 5							
drawingMatrix	0/4	1/4	2/4	3/4	4/4	5/4	6/4	7/4	7/5	6/5	5/5	4/5	3/5	2/5	1/5	0/5
drawingMatrix	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
drawingArray	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
Example T	1	0	0	0	0	0	0	0	2	2	0	0	0	0	0	1

Wiring LEDs on matrix	0	15	16	31	32	47
	1	14	17	30	33	46
	2	13	18	29	34	45
	3	12	19	28	35	44
	4	11	20	27	36	43
	5	10	21	26	37	42
	6	9	22	25	38	41
	7	8	23	24	39	40

void LEDMatrix8::ShiftDrawingArrayRight

void LEDMatrix8::ShiftDrawingArrayLeft

void LEDMatrix8::ShiftDrawingArrayUp

void LEDMatrix8::ShiftDrawingArrayDown

These functions shift the array *drawingArray by one column (right, left, up or down).

Then the array length of *DrawPixelArray is copied from the *drawingArray to the *DrawPixelArray

For example shift right one column:

Positions:	0 →	15	15 →	16
	1 →	14	14 →	17
	2 →	13	13 →	18
	3 →	12	12 →	19
	4 →	11	11 →	20
	5 →	10	10 →	21
	6 →	9	9 →	22
	7 →	8	8 →	23

byte*DrawPixelArray; // One-dimensional array to be drawn

void DrawPixels

The array *DrawPixelArray is the same as *drawingArray, except the array length.

The length of the *drawingArray is the length for all the letters of the string

The length of the *DrawPixelArray is the amount of LEDs

In the function DrawPixels the color of each individual LED is set. For example:

Value 0 = BACKGROUNDCOLOR (light blue)

Value 1 = GREEN

Value 2 = RED

ProgramFunctions