SegDisp Reference

Function Reference:

Notes:

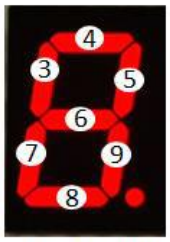
Parameters in *italics* are optional

Patterns are described by an integer array of 1's and 0's. 1 corresponds to turning on a segment, and 0 to turning it off. The segments are numbered as follows:

```
*-1-*
0   2
*-3-*
4   6
*-5-*
```

"show" functions should not be used where exact timing is required. Due to the nature of implementation, there is a possible error of up to 1 millisecond in execution. If you are using an old version of the library, this could be as high as 12 ms.

The attach function assumes your display is wired as shown below (all are digital pins):



Decimal: 10
Colon: 2

```
void attach(int p2, int p3, int p4, int p5, int p6, int p7, int p8,
int p9, int p10, int GND_A, int GND_B, int GND_C, int GND_D)

-or-

void attach(int pins[13])
```

Function must be called one time for every display. This function can only be called from with the **setup** function. If wired as shown above, the pins should correspond as written, otherwise, make the necessary adjustments. Alternatively, the pins can be put in an array in the same order. Note that Ground A-D corresponds to the digits from left to right.

```
void clear()
```

Turns the display off by writing low to all power pins and disconnecting all ground pins

`void colonOff()`

Turns off the colon

`void colonOn()`

Turns on the colon

`void decOff()`

Turns off the decimal (ground pins are not changed)

`void decOn()`

Turns on the decimal (ground pins are not changed)

`void digitOff(int digit)`

Turns off a digit.

digit	The position to turn off. (0-3, 0 is far left)

`void digitOn(int digit)`

Turns on a digit

digit	The position to turn on. (0-3, 0 is far left)

`void noTrans()`

Call this function in the setup if your circuit uses Arduino pins as ground instead of using transistors

`void showFloat(float num, int dec, int ms, char align)`

Displays a floating point number for a specified amount of time. If more decimal places are present than can be displayed, the number is rounded up if remainder is >=0.5. It is rounded down otherwise.

num	The number to display
dec	The number of decimal places to display (must be less than 4)
ms	The number of milliseconds to show the float
align	Left or right align, optional, defaults to R. Must be either 'L' or 'R'

`void showInteger(int num, int ms, char align)`

Displays an integer for a specified amount of time. Must be in the range -999 to 9999

num	The number to display
ms	The number of milliseconds to show the integer
align	Left or right align, optional, defaults to R. Must be either 'L' or 'R'

`void showPattern(int digit, int pattern[7], int ms, bool dot)`

Displays a pattern on 1 digit for a specified amount of time.

digit	The position to turn on. (0-3, 0 is far left)
pattern[7]	The pattern to display as an array. See note on patterns.
ms	The number of milliseconds to show the pattern.
dot	Whether or not to show the decimal point. Optional, defaults to false

`void showSequence(int pattern1[7], int pattern2[7], int pattern3[7], int pattern4[7], int ms, int dot)`

Displays 4 patterns at once (one per digit) for a specified amount of time. The dot will be displayed in the position specified.

pattern1[7]	The pattern for the first digit
pattern2[7]	The pattern for the second digit
pattern3[7]	The pattern for the third digit
pattern4[7]	The pattern for the fourth digit
ms	The number of milliseconds to display the sequence
dot	The location to display the dot (0-3, 0 is far left). Optional. The dot is not displayed if this parameter is not specified.

`void showTime(int a, int b, int ms, bool leading)`

Displays 2, 2-digit numbers separated by a colon for a specified amount of time. The leading zero is always displayed for b. If leading is true, it is also displayed on the first number.

a	The first two digit number to display
b	The second two digit number to display
ms	The number of milliseconds to display the time
leading	Whether or not to show the leading zero on the first number. Optional, defaults to false

`void writePattern(int pattern[7], bool dot)`

Writes a pattern to the pins, but does not modify the state of the grounds. Useful for displaying the same pattern on multiple digits or in positions not normally supported.

pattern[7]	The pattern to write. See the note on patterns

dot	Whether or not to turn on the dot. Optional, defaults to false

Error Codes:

Code:	Error Location	Message
1	digitOff	Invalid choice (0 <= digit <= 3 required)
2	digitOn	Invalid choice (0 <= digit <= 3 required)
3	showFloat	Invalid number of decimal places (o <= dec <= 3 required)
4	showFloat	The number is too large (9999 max)
5	showFloat	The number is too negative (-999 max)
6	showFloat	Align must be 'L' or 'R'
7	showFloat	Time to display must be positive
8	showInteger	The number is too large (9999 max)
9	showInteger	The number is too negative (-999 max)
10	showInteger	Align must be 'L' or 'R'
11	showInteger	Time to display must be positive
12	showPattern	Time to display must be positive
13	showPattern	Invalid choice (0 <= digit <= 3 required)
14	showSequence	Time to display must be positive
15	showSequence	Invalid dot position (-1 for off, 0<= dot<=3 for position)
16	showTime	Invalid First number (0 – 99 required)
17	showTime	Invalid second number (0 – 99 required)
18	showTime	Time to display must be positive
If you encounter errors below this point, email your code to your instructor. These represent bugs in the library.		
1000	moveRight	Invalid Number
1001	moveLeft	Invalid Number
1002	splitInteger	The number is too large
1003	splitInteger	The number is too negative
1004	splitFloat	Too many decimal places
1005	splitFloat	The number is too large
1006	splitFloat	The number is too small
1007	splitFloat	Logic error
1008	stripFirst	Negative number encountered
1009	stripLast	Negative number encountered