EQUIVALENTS TO DigitalWrite (Bare Metal)

Lets suppose we have LED on bit 2

LED   0 0 0 0 0 1 0 0

Suppose initial condition on PORTD is

PORTD   1 1 0 0 0 0 0 0

Turn LED on   PORTD = PORTD | LED
              (PORTD | = LED)

Or-Gate

A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

PORTD   1 1 0 0 0 0 0 0
LED   0 0 0 0 0 1 0 0
         _____
         1 1 0 0 0 1 0 0

↑ required pin goes high

Equivalent to using digitalWrite() with HIGH

To turn the LED off

PORTD &= ~LED

PORTD = PORTD & ~LED

LED   0 0 0 0 0 1 0 0
~LED   1 1 1 1 1 0 1 1

PORTD   1 1 0 0 0 1 0 0
~LED   1 1 1 1 1 0 1 1
         _____
         1 1 0 0 0 0 0 0

↑ required pin goes low

Equivalent to using digitalWrite() with LOW

And Gate

A	B	K
0	0	0
0	1	0
1	0	0
1	1	1