

```

// #include <stm32l476xx.h> // Comment out this file while using simulator
#include <stdio.h>
#include <stdint.h>

uint16_t a[8] = {0xFFFF};
uint16_t b[8] = {0x0000};
uint16_t mask = 0b1111111111100111;
uint16_t value = 0b0000000000010000;

int main() {

    // Task 1
    a[0] = (a[0] & mask) | value;
    b[0] = (b[0] & mask) | value;

    printf("Value of a[0] is 0x%04X and b[0] is 0x%04X.\n", a[0], b[0]);

    // Task 2
    a[1] = a[0] | b[0];
    b[1] = a[0] & b[0];

    printf("Value of a[1] is 0x%04X and b[1] is 0x%04X.\n", a[1], b[1]);

    // Task 3

    a[2] = ~a[1];
    b[2] = a[1] ^ b[1];

    printf("Value of a[2] is 0x%04X and b[2] is 0x%04X.\n", a[2], b[2]);

    // Task 4
    a[3] = a[0] || b[0];
    b[3] = a[0] && b[0];

    printf("Value of a[3] is 0x%04X and b[3] is 0x%04X.\n", a[3], b[3]);

    // Task 5

    printf("The addresses of a and b are 0x%p and 0x%p, respectively.\n", &a,
    &b);

}

```

Printout Results

```
Debug (printf) Viewer
Value of a[0] is 0xFFF7 and b[0] is 0x0010.
Value of a[1] is 0xFFF7 and b[1] is 0x0010.
Value of a[2] is 0x0008 and b[2] is 0xFFE7.
Value of a[3] is 0x0001 and b[3] is 0x0001.
The addresses of a and b are 0x20000000 and 0x20000024, respectively.
```

Memory

Memory 1	
Address:	0x20000000
0x20000000:	F7 FF F7 FF 08 00 01 00 00 00 00 00 00 00 00 00 E7 FF 10 00 40 78 7D 01 34 00 00 20 88 00 00 20 DC 00 00 20
0x20000024:	10 00 10 00 E7 FF 01 00
0x20000048:	00 00
0x2000006C:	00 00
0x20000090:	00 00
0x200000B4:	00 00
0x200000D8:	DC 00 00 20 00
0x200000FC:	00 00
0x20000120:	00 00
0x20000144:	00 00

Command | Call Stack + Locals | Watch 1 | Memory 1 | Debug (printf) Viewer