```c
#include <stdio.h>

int main() {
    int a = 5;  // binary: 0101
    int b = 3;  // binary: 0011

    printf("a = %d, b = %d\n", a, b);

    // 1. Bitwise AND (&)
    printf("a & b = %d\n", a & b);  // 0101 & 0011 = 0001 (1)

    // 2. Bitwise XOR (^)
    printf("a ^ b = %d\n", a ^ b);  // 0101 ^ 0011 = 0110 (6)

    // 3. Bitwise NOT (~)
    printf("~a = %d\n", ~a);        // ~0101 = 1010 → -6 (in 2's complement)

    // 4. Logical NOT (!)
    printf("!a = %d\n", !a);        // a=5 (true), so !a = 0
    printf("!0 = %d\n", !0);        // 0 (false), so !0 = 1

    // 5. Left Shift (<<)
    printf("a << 1 = %d\n", a << 1); // 0101 << 1 = 1010 (10)

    // 6. Right Shift (>>)
    printf("a >> 1 = %d\n", a >> 1); // 0101 >> 1 = 0010 (2)

    return 0;
}
```

Ou put :

a = 5, b = 3

a & b = 1

a ^ b = 6

~a = -6

!a = 0

!0 = 1

a << 1 = 10

a >> 1 = 2