The following code uses the cout object to print the design input and output on the screen. Note that this object is not synthesisable. However, it is one of the few objects that HLS ignores during high-level synthesis.

```cpp
ap_int<5> leading_one(ap_uint<9> a) {
#pragma HLS INTERFACE ap_none port=a
#pragma HLS INTERFACE ap_ctrl_none port=return


    ap_int<5> index;

    if (a[8] == 1) {
        index = 8;
    } else if (a[7] == 1) {
        index = 7;
    } else if (a[6] == 1) {
        index = 6;
    } else if (a[5] == 1) {
        index = 5;
    } else if (a[4] == 1) {
        index = 4;
    } else if (a[3] == 1) {
        index = 3;
    } else if (a[2] == 1) {
        index = 2;
    } else if (a[1] == 1) {
        index = 1;
    } else if (a[0] == 1) {
        index = 0;
    } else {
        index = -1;
    }

    std::cout << " a = " << a.to_string() << std::endl;
    std::cout << " index = " << index.to_string() << std::endl;


    return index;
}
```