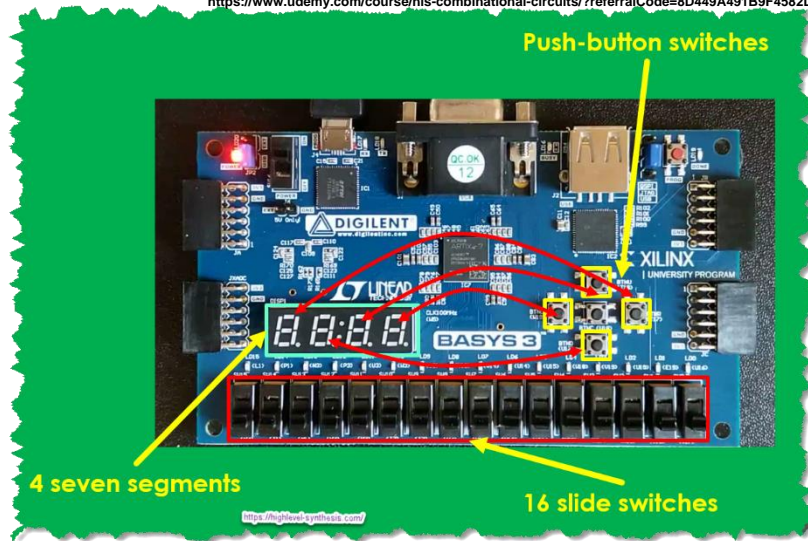


This file is a resource of the UdeMy course: Digital System Design with High-Level Synthesis for FPGA: Combinational Circuits
<https://www.udemy.com/course/hls-combinational-circuits/?referralCode=8D449A491B9F4582DDEF>



This is the code:

```
void four_digit_7segment(uint16 in_binary,
                        uint4 pushbutton,
                        uint8 *code,
                        uint4 *anodes) {
#pragma HLS INTERFACE ap_none port=in_binary
#pragma HLS INTERFACE ap_none port=pushbutton
#pragma HLS INTERFACE ap_none port=code
#pragma HLS INTERFACE ap_none port=anodes
#pragma HLS INTERFACE ap_ctrl_none port=return

    uint16 packed_bcd;
    packed_bcd = binary2bcd_double_dabble(in_binary);

    if (pushbutton[0] == 0b1) {
        *code = digit_7segment_encode(packed_bcd(3, 0));
        *anodes = 0b11110;
    } else if (pushbutton[1] == 0b1) {
        *code = digit_7segment_encode(packed_bcd(7, 4));
        *anodes = 0b1101;
    } else if (pushbutton[2] == 0b1) {
        *code = digit_7segment_encode(packed_bcd(11, 8));
        *anodes = 0b1011;
    } else if (pushbutton[3] == 0b1) {
        *code = digit_7segment_encode(packed_bcd(15, 12));
        *anodes = 0b0111;
    } else {
        *code = digit_7segment_encode(packed_bcd(3, 0));
        *anodes = 0b11110;
    }
}
```