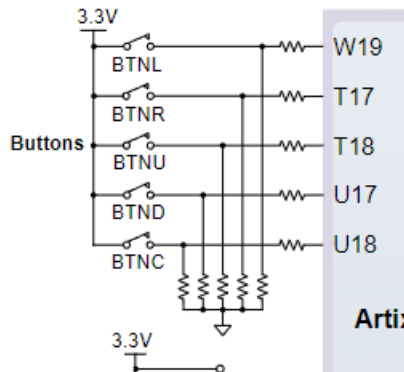## 5.1 Active High

Because when the button is not pressed the current will go down to the ground. But when the button is pressed the 3.3V will drive the input port.

5.2 bounce is a short period of unstable signal that happen when the button is pressed or released. We can debounce by sampling with a period. With the sampling period more than bouncing period we can ensure that the signal we get will not be affect by the bounce effect.

5.3

```verilog
module Single_Pulser(
    input wire P,
    input wire clock,
    output reg Z
    );
    reg tmp = 0;
    always @(posedge clock) begin
        tmp <= P;
        if(tmp == 0 && P == 1) begin
            Z <= 1;
        end else if(tmp == 1 && P == 1) begin
            Z <= 0;
        end else if(P == 0) begin
            Z <= 0;
        end
    end
endmodule
```

My method :

1.Use tmp to collect the recent input.

2.if the tmp is 0 and input is 1. We issue the pulse.

3.otherwise the output is 0.