

```
void left_register(bool d, ap_uint<3> &q) {
#pragma HLS INTERFACE ap_none port=d
#pragma HLS INTERFACE ap_none port=q
#pragma HLS INTERFACE ap_ctrl_none port=return

    static ap_uint<3> reg = 0b000;

    reg = reg << 1;
    reg[0] = d;

    q = reg;
}
```