A chain of if-else can describe the multiplexer implementing the 7-segment encoder.

The rest of the code is exactly the same as our code with switch-case.

The performance and resource usage of using switch-case versus if-else statement will be explained later in this section.

```
void one_digit_seven_segment(ap_uint<8> digit,
                             ap_uint<8> *code7segment,
                             ap_uint<4> *anodes) {
#pragma HLS INTERFACE ap_none port=anods
#pragma HLS INTERFACE ap_none port=code7segment
#pragma HLS INTERFACE ap_none port=digit
#pragma HLS INTERFACE ap_ctrl_none port=return

    if(digit==0)
      *code7segment = 0b11000000;
    else if (digit==1)
      *code7segment = 0b11111001;
    else if (digit==2)
      *code7segment = 0b10100100;
     ... ...
    else
      *code7segment = 0b11111111;


   *anodes = 0b1110;


}
```

https://highlevel-synthesis.com/

```
if(digit==0)
  *code7segment = 0b11000000;
else if (digit==1)
  *code7segment = 0b11111001;
else if (digit==2)
  *code7segment = 0b10100100;
else if (digit==3)
  *code7segment = 0b10110000;
else if (digit==4)
  *code7segment = 0b10011001;
else if (digit==5)
  *code7segment = 0b10010010;
else if (digit==6)
  *code7segment = 0b10000010;
else if (digit==7)
  *code7segment = 0b11111000;
else if (digit==8)
  *code7segment = 0b10000000;
else if (digit==9)
  *code7segment = 0b10010000;
else
  *code7segment = 0b11111111;
```