

```

1  module seven_seg_decoder (Z, Y, X, W, A, B, C, D, E, F, G, O);
2      input  Z, Y, X, W, O;
3      output A, B, C, D, E, F, G;
4      reg   A, B, C, D, E, F, G;
5
6      always @ (O, Z, Y, X, W)
7      begin
8
9          case ({O, Z, Y, X, W})
10             5'b00000: {A, B, C, D, E, F, G} = 7'b1111111;
11             5'b00001: {A, B, C, D, E, F, G} = 7'b1111111;
12             5'b00010: {A, B, C, D, E, F, G} = 7'b1111111;
13             5'b00011: {A, B, C, D, E, F, G} = 7'b1111111;
14             5'b00100: {A, B, C, D, E, F, G} = 7'b1111111;
15             5'b00101: {A, B, C, D, E, F, G} = 7'b1111111;
16             5'b00110: {A, B, C, D, E, F, G} = 7'b1111111;
17             5'b00111: {A, B, C, D, E, F, G} = 7'b1111111;
18             5'b01000: {A, B, C, D, E, F, G} = 7'b1111111;
19             5'b01001: {A, B, C, D, E, F, G} = 7'b1111111;
20             5'b01010: {A, B, C, D, E, F, G} = 7'b1111111;
21             5'b01011: {A, B, C, D, E, F, G} = 7'b1111111;
22             5'b01100: {A, B, C, D, E, F, G} = 7'b1111111;
23             5'b01101: {A, B, C, D, E, F, G} = 7'b1111111;
24             5'b01110: {A, B, C, D, E, F, G} = 7'b1111111;
25             5'b01111: {A, B, C, D, E, F, G} = 7'b1111111;
26
27             5'b10000: {A, B, C, D, E, F, G} = 7'b0000001;
28             5'b10001: {A, B, C, D, E, F, G} = 7'b1001111;
29             5'b10010: {A, B, C, D, E, F, G} = 7'b0010010;
30             5'b10011: {A, B, C, D, E, F, G} = 7'b0000110;
31             5'b10100: {A, B, C, D, E, F, G} = 7'b1001100;
32             5'b10101: {A, B, C, D, E, F, G} = 7'b0100100;
33             5'b10110: {A, B, C, D, E, F, G} = 7'b0100000;
34             5'b10111: {A, B, C, D, E, F, G} = 7'b0001111;
35             5'b11000: {A, B, C, D, E, F, G} = 7'b0000000;
36             5'b11001: {A, B, C, D, E, F, G} = 7'b0000100;
37             5'b11010: {A, B, C, D, E, F, G} = 7'b0001000;
38             5'b11011: {A, B, C, D, E, F, G} = 7'b1100000;
39             5'b11100: {A, B, C, D, E, F, G} = 7'b0110001;
40             5'b11101: {A, B, C, D, E, F, G} = 7'b1000010;
41             5'b11110: {A, B, C, D, E, F, G} = 7'b0110000;
42             5'b11111: {A, B, C, D, E, F, G} = 7'b0111000;
43
44
45         endcase
46     end
47
48 endmodule
49

```