# C code

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Assignment 4

```
1  //Code written on December 30, 2020
2
3  //Revised   December 30, 2020
4
5  // by bailapudivijay
6
7  //This program implements the incremental decoder using boolean
       logic in C
8
9  #include <stdio.h>
10
11 //The  main function
12 int main(void)
13 {
14
15 //2 bits = 1 baud
16 //4 bits = 1 nibble
17 //8 bits = 1 byte
18
19 //unsigned char takes input as 1 byte
20
21 unsigned char  Z=0x01,Y=0x00,X=0x00,W=0x01;//inputs in hex
22 unsigned char one = 0x01;//used for displaying the output in bit
23 unsigned char A,B,C,D;//outputs
24
25 D = (W&X&Y&(~Z))|((~W)&(~X)&(~Y)&Z);//Boolean function for D
26 B=((~Z)&(~Y)&(~X)&W)|((~Z)&(~Y)&X&(~W))|((~Z)&Y&(~X)&W)|((~Z)&Y&X
       &(~W));
27 C=((~Z)&(~Y)&X&W)|((~Z)&Y&(~X)&(~W))|((~Z)&Y&(~Z)&W)|((~Z)&Y&X&(~W)
       );
28 A = ((~W)&(~X)&(~Y)&(~Z))|((~W)&(X)&(~Y)&(~Z))|((~W)&(~X)&Y&(~Z))
       |((~W)&X&Y&(~Z))|((~W)&(~X)&(~Y)&(Z));
29 //Boolean function for A
30
31 printf("%x%x%x%x",one&Z,one&Y,one&X,one&W);//Iutput ZYXW
32 printf(" ");
33 printf("%x%x%x%x\n"  ,one&D,one&C,one&B,one&A);//Output DCBA
34 return 0;
35 }
```