

```

1  /***** #INCLUDES *****/
2  /* Include every header that is needed for this file to be interpreted
3   * correctly. Ideally, there should be no reliance in the order in which
4   * header files are included. Do not rely on a header file to be included
5   * by other header files.
6   */
7  #include <stdio.h>
8  #include "system.h"
9  #include <unistd.h>
10
11 volatile unsigned int *hex0_3 = (unsigned int*) HEX3_HEX0_BASE;
12 volatile unsigned int *hex4_5 = (unsigned int*) HEX5_HEX4_BASE;
13
14 /**
15  * print_num
16  * Purpose: to print a given number to the 7 seg displays
17  * args:
18  *     num - number to be printed on the 7seg displays
19  * returns:
20  *     nothing
21  */
22 void print_num(int num){
23     int hexShift = 0;
24     char buff[10];
25     sprintf(buff, "%06d", num);
26
27     clear_hex();
28
29     for(int i = 5; i >= 0; i--){
30         if(i >= 2){
31             *hex0_3 |= (((int)buff[i]-0x20)<<hexShift);
32         } else {
33             *hex4_5 |= (((int)buff[i]-0x20)<<(hexShift-32));
34         }
35         hexShift += 8;
36     }
37 }
38
39 /**
40  * clear_hex
41  * Purpose: to turn the displays blank
42  * args:
43  *     nothing
44  * returns:
45  *     nothing
46  */
47 void clear_hex(){
48     *hex0_3 = 0;
49     *hex4_5 = 0;
50 }
51

```