/home/simone/Desktop/SommaSottrazioneMoltiplicazione bit a bit.c
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```
#include <stdio.h>
 1
 2
     #include <stdlib.h>
 3
     void vec write(short *v, int dim);
 4
     void vec_print(short *v, int dim);
 5
     void vec clean(short *v, int dim);
 6
 7
     void bin sum(short *v1, short *v2, short *vR, short *vResult, int dim);
 8
 9
     int main () {
10
         short *vA = (short*)calloc(32,sizeof(short));
                                                            //1st numero binario
11
         short *vB = (short*)calloc(32,sizeof(short));
                                                            //2nd numero binario
         short *vR = (short*)calloc(32,sizeof(short));
12
                                                            //Resto delle operazioni
13
         short *vResult = (short*)calloc(32,sizeof(short)); //Risultato
14
         vec write(vA, 32);
15
16
         vec_print(vA, 32);
17
         printf("\n\n");
18
         vec write(vB, 32);
19
         vec_print(vB, 32);
20
         printf("\n\n");
21
22
         vec clean(vR, 32); vec clean(vResult, 32); //Pulisco vettore del resto e del
         risultato
23
         bin sum(vA, vB, vR, vResult, 32);
         vec print(vResult, 32); printf("\n\n");
24
25
26
         return 0;
27
     }
28
29
     void vec write(short *v, int dim){
30
         int a, mask;
31
         printf("Inserisci il numero decimale\t");
         scanf("%d", &a);
32
33
34
         for (int i=(dim-1); i>=0; i--) {
35
             mask = 1 << i;
36
             if ((mask\&a) == 0) v[i] = 0;
37
             else v[i] = 1;
38
         }
39
     }
40
41
     void vec_print(short *v, int dim) {
42
         for (int i=(dim-1); i>=0; i--) {
43
             printf("%hd", v[i]);
44
         }
45
     }
46
47
     void vec clean(short *v, int dim) {
48
         for (int i=0; i<dim; i++) {</pre>
49
             v[i] = 0;
50
         }
51
     }
52
53
     void bin sum(short *v1, short *v2, short *vR, short *vResult, int dim) {
         for (int i=0; i<dim; i++) {</pre>
54
55
             if (vR[i] == 0) {
                  //printf("Resto 0 ");
56
57
                  if (v1[i] == v2[i] && v1[i] == 0) {
58
                      //printf("%d == %d, next resto 0\n", v1[i], v2[i]);
59
                      vR[i+1] = 0;
60
                      vResult[i] = 0;
61
                 }else if (v1[i] != v2[i]) {
                      //printf("%d != %d, next resto 0\n", v1[i], v2[i]);
62
63
                      vR[i+1] = 0;
                      vResult[i] = 1;
64
                 }else if (v1[i] == v2[i] && v1[i] != 0) {
65
```

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```
66
                         //printf("%d == %d, next resto 1\n", v1[i], v2[i]);
67
                         vR[i+1] = 1;
                         vResult[i] = 0;
68
69
                    }
70
               }else {
71
                    //printf("Resto 1 ");
72
                    if (v1[i] == v2[i] && v1[i] == 0) {
73
                         //printf("%d == %d, next resto 0\n", v1[i], v2[i]);
74
                         vR[i+1] = 0;
75
                         vResult[i] = 1;
76
                    }else if (v1[i] != v2[i]) {
                         //printf("%d != %d, next resto 1\n", v1[i], v2[i]); vR[i+1] = 1;
77
78
79
                         vResult[i] = 0;
                    }else if (v1[i] == v2[i] && v1[i] != 0) {
    //printf("%d == %d, next resto 1\n", v1[i], v2[i]);
    vR[i+1] = 1;
80
81
82
83
                         vResult[i] = 1;
84
                    }
85
              }
          }
86
87
     }
88
```