```c
#include <stdio.h>
#include <stdlib.h>

void vec_write(short *v, int dim);
void vec_print(short *v, int dim);
void vec_clean(short *v, int dim);
void bin_sum(short *v1, short *v2, short *vR, short *vResult, int dim);

int main () {
    short *vA = (short*)calloc(32,sizeof(short));   //1st numero binario
    short *vB = (short*)calloc(32,sizeof(short));   //2nd numero binario
    short *vR = (short*)calloc(32,sizeof(short));   //Resto delle operazioni
    short *vResult = (short*)calloc(32,sizeof(short)); //Risultato

    vec_write(vA, 32);
    vec_print(vA, 32);
    printf("\n\n");
    vec_write(vB, 32);
    vec_print(vB, 32);
    printf("\n\n");

    vec_clean(vR, 32); vec_clean(vResult, 32); //Pulisco vettore del resto e del risultato
    bin_sum(vA, vB, vR, vResult, 32);
    vec_print(vResult, 32); printf("\n\n");

    return 0;
}

void vec_write(short *v, int dim){
    int a, mask;
    printf("Inserisci il numero decimale\t");
    scanf("%d", &a);

    for (int i=(dim-1); i>=0; i--) {
        mask = 1<<i;
        if ((mask&a) == 0) v[i] = 0;
        else v[i] = 1;
    }
}

void vec_print(short *v, int dim) {
    for (int i=(dim-1); i>=0; i--) {
        printf("%hd", v[i]);
    }
}

void vec_clean(short *v, int dim) {
    for (int i=0; i<dim; i++) {
        v[i] = 0;
    }
}

void bin_sum(short *v1, short *v2, short *vR, short *vResult, int dim) {
    for (int i=0; i<dim; i++) {
        if (vR[i] == 0) {
            //printf("Resto 0  ");
            if (v1[i] == v2[i] && v1[i] == 0) {
                //printf("%d == %d, next resto 0\n", v1[i], v2[i]);
                vR[i+1] = 0;
                vResult[i] = 0;
            }else if (v1[i] != v2[i]) {
                //printf("%d != %d, next resto 0\n", v1[i], v2[i]);
                vR[i+1] = 0;
                vResult[i] = 1;
            }else if (v1[i] == v2[i] && v1[i] != 0) {
```

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