```c
// lab00, lab procesure, task 4



//This solution also contains the prelab Bonus exercise 5

#include "functions.h"


int main(int argc, char *argv[])
{

   while(1)
   {
     uint16_t num1;
     uint16_t num2;


     printf("write first hexadecimal number");
     scanf("%x",& num1);

     printf("write second hexadecimal number");
     scanf("%x",& num2);

     if (num1 == 0 && num2 == 0){
        break;
     }
     uint16_t sum=num1+num2;

     uint32_t merge=bit_merge(num1,num2);
     printf("merging 0x%x and 0x%x results in 0x%x\n",num1,num2,merge);

     printf("the sum is ");
     print_bits(sum);
     printf("\n \n");

}
   return 0;
}
```