#include<stdio.h>  
#include<string.h>  
int checksum(int fl)  
{  
char in[100];  
int buf[25];  
int i,sum=0,n,temp,temp1;  
scanf("%s",in);  
if(strlen(in)%2!=0)  
        n=(strlen(in)+1)/2;  
else  
        n=n=(strlen(in))/2;  
for(i=0;i<n;i++)  
    {  
temp=in[i\*2];  
temp=(temp\*256)+in[(i\*2)+1];  
sum=sum+temp;  
    }  
if(fl==1)  
    {  
printf("Enter the checksum value \n");  
scanf ("%x", &temp);  
sum+=temp;  
    }  
if(sum%65536!=0)  
    {  
        n=sum%65536;  
sum=(sum/65536) + n;  
    }  
sum=65535-sum;  
printf("%x\n",sum);  
return sum;  
}  
void main()  
{  
int ch,sum;  
do{  
printf("1.Encode \n2.Decode \n3.Exit \n");  
scanf("%d",&ch);  
switch(ch)  
        {  
  
case 1: printf("Enter the string \n");  
sum=checksum(0);  
printf("Checksum to append is:%x \n",sum);  
break;  
case 2: printf("Enter the string \n");  
sum=checksum(1);  
if(sum!=0)  
printf("The data has been tampered with or invalid checksum\n");  
else  
printf("The checksum is valid \n");  
break;  
case 3: break;  
default: printf("Invalid option, try again \n");  
        }  
    }  
while(ch!=3);  
}