

Checksum:

PROGRAM:

```
#include<stdio.h>
#include<string.h>
int main()
{
    char a[20],b[20],complement[20],sum[20];
    int i,length;
    printf("Enter the first binary String:");
    scanf("%s",&a);
    printf("Enter the second binary String:");
    scanf("%s",&b);
    if(strlen(a)==strlen(b))
    {
        length=strlen(a);
        char carry='0';
        for(i=length-1;i>=0;i--)
        {
            if(a[i]=='0'&&b[i]=='0'&&carry=='0')
            {
                sum[i]='0';
                carry='0';
            }
            else if(a[i]=='0'&&b[i]=='0'&&carry=='1')
            {
                sum[i]='1';
                carry='0';
            }
            else if(a[i]=='0'&&b[i]=='1'&&carry=='0')
            {
                sum[i]='1';
                carry='0';
            }
            else if(a[i]=='0'&&b[i]=='1'&&carry=='1')
            {
                sum[i]='0';
                carry='1';
            }
            else if(a[i]=='1'&&b[i]=='0'&&carry=='0')
            {
                sum[i]='1';
                carry='0';
            }
            else if(a[i]=='1'&&b[i]=='0'&&carry=='1')
            {
                sum[i]='0';
                carry='1';
            }
        }
    }
}
```

```

    }
    else if(a[i]=='1'&&b[i]=='1'&&carry=='0')
    {
        sum[i]='0';
        carry='1';
    }
    else if(a[i]=='1'&&b[i]=='1'&&carry=='1')
    {
        sum[i]='1';
        carry='1';
    }
    else
        break;
}
printf("carry=%c,sum=%s\n",carry,sum);
for(i=length-1;i>=0;i--)
{
    if(sum[i]=='1'&&carry=='1')
    {
        sum[i]='0';
        carry='1';
    }
    else if(sum[i]=='0'&&carry=='1')
    {
        sum[i]='1';
        carry='0';
    }
    else
        break;
}
for(i=0;i<length;i++)
{
    if(sum[i]=='0')
        complement[i]='1';
    else
        complement[i]='0';
}
printf("checksum=%s",complement);
}
else
{
    printf("wrong input strings");
}
}

```

OUTPUT :

```
C:\Users\admin\Desktop\checksum.exe
Enter the first binary String:101010101
Enter the second binary String:111110000
carry=1,sum=101000101
checksum=010111001
-----
Process exited after 9.538 seconds with return value 18
Press any key to continue . . .
```