class Solution {

public:

string addBinary(string a, string b) {

string str="",dummy="";

int l1=a.size(),l2=b.size();

int len=l1;

int carry=0;

if(l1>l2){

for(int i=0;i<l1-l2;i++)

dummy+='0';

for(int i=0;i<b.size();i++){

dummy+=b[i];

}

len=l1;

b=dummy;

}

else if(l2>l1){

for(int i=0;i<l2-l1;i++)

dummy+='0';

for(int i=0;i<a.size();i++){

dummy+=a[i];

}

len=l2;

a=dummy;

}

cout<<a<<" "<<b;

for(int i=len-1;i>=0;i--){

if(a[i]=='0' && b[i]=='0' && carry==0){

str+='0';

carry=0;

}

else if(a[i]=='0' && b[i]=='0' && carry==1){

str+='1';

carry=0;

}

else if(a[i]=='1' && b[i]=='0' && carry==0){

// int res=(a[i]-'0')+(b[i]-'0')+carry;

// string stri = to\_string(res);

str+='1';

carry=0;

}

else if(a[i]=='1' && b[i]=='0' && carry==1){

str+='0';

carry=1;

}

else if(a[i]=='0' && b[i]=='1' && carry==0){

str+='1';

carry=0;

}

else if(a[i]=='0' && b[i]=='1' && carry==1){

str+='0';

carry=1;

}

else if(a[i]=='1' && b[i]=='1' && carry==0){

str+='0';

carry=1;

}

else if(a[i]=='1' && b[i]=='1' && carry==1){

str+='1';

carry=1;

}

}

if(carry==1){

str+='1';

}

reverse(str.begin(),str.end());

return str;

}

};