

```

#include <iostream>
#include <cstring>

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using namespace std;

char y[3];
int w[5][5],u,c,a,q[70],i,j,m,ok,k,t;

int main()
{
    for(j=1;j<=5;j++)
    {
        cin>>y;
        u=1,m=0,ok=0,a=0;
        for(int jo=1; jo<=8; jo++) q[jo]=0;
        for(i=strlen(y)-1; i>=0; i--)
        {
            if(y[i]>='A'&&y[i]<='F') c=y[i]-55;
            else c=y[i]-48;
            a=a+c*u;
            u=u*16;
        }
        while(a)
        {
            q[++m]=a%2;
            a=a/2;
        }
        k=1;
        for(i=2; i>=1; i--)
            for(int j=4; j>=1; j--)
            {

```

```
w[i][j]=q[k];  
k++;  
}
```

```
if(w[1][1] and w[1][2] and w[1][3] and w[1][4])
```

```
{  
  for(i=1; i<=4; i++)  
    w[1][i]=0;  
  ok=1;  
  cout<<"B";  
}
```

```
if(w[2][1] and w[2][2] and w[2][3] and w[2][4])
```

```
{  
  if(ok) cout<<"+";  
  ok=1;  
  for(i=1; i<=4; i++)  
    w[2][i]=0;  
  cout<<"~B";  
}
```

```
if(w[1][1] and w[1][2] and w[2][1] and w[2][2])
```

```
{  
  if(ok) cout<<"+";  
  ok=1;  
  for(i=1; i<=2; i++)  
    w[i][1]=w[i][2]=0;  
  cout<<"A";  
}
```

```
if(w[1][2] and w[1][3] and w[2][2] and w[2][3])
```

```
{
```

```

if(ok) cout<<"+";
ok=1;
for(i=1; i<=2; i++)
    w[i][2]=w[i][3]=0;
cout<<"C";
}
if(w[1][1] and w[1][4] and w[2][1] and w[2][4])
{
    if(ok) cout<<"+";
    ok=1;
    for(i=1; i<=2; i++)
        w[i][1]=w[i][4]=0;
    cout<<"~C";
}
if(w[1][3] and w[1][4] and w[2][3] and w[2][4])
{
    if(ok) cout<<"+";
    ok=1;
    for(i=1; i<=2; i++)
        w[i][3]=w[i][4]=0;
    cout<<"~A";
}
if(w[1][1] and w[1][2])
{
    if(ok) cout<<"+";
    ok=1;
    w[1][1]=w[1][2]=0;
    cout<<"AB";
}

```

```
if(w[1][2] and w[1][3])
```

```
{
```

```
    if(ok) cout<<"+";
```

```
    ok=1;
```

```
    w[1][2]=w[1][3]=0;
```

```
    cout<<"BC";
```

```
}
```

```
if(w[1][3] and w[1][4])
```

```
{
```

```
    if(ok) cout<<"+";
```

```
    ok=1;
```

```
    w[1][3]=w[1][4]=0;
```

```
    cout<<"~AB";
```

```
}
```

```
if(w[2][1] and w[2][2])
```

```
{
```

```
    if(ok) cout<<"+";
```

```
    ok=1;
```

```
    w[2][1]=w[2][2]=0;
```

```
    cout<<"A~B";
```

```
}
```

```
if(w[2][2] and w[2][3])
```

```
{
```

```
    if(ok) cout<<"+";
```

```
    ok=1;
```

```
    w[2][2]=w[2][3]=0;
```

```
    cout<<"~BC";
```

```
}
```

```
if(w[2][3] and w[2][4])
```

```
{
    if(ok) cout<<"+";
    ok=1;
    w[2][3]=w[2][4]=0;
    cout<<"~A~B";
}
if(w[1][1] and w[2][1])
{
    if(ok) cout<<"+";
    ok=1;
    w[1][1]=w[2][1]=0;
    cout<<"A~C";
}
if(w[1][2] and w[2][2])
{
    if(ok) cout<<"+";
    ok=1;
    w[1][2]=w[2][2]=0;
    cout<<"AC";
}
if(w[1][3] and w[2][3])
{
    if(ok) cout<<"+";
    ok=1;
    w[1][3]=w[2][3]=0;
    cout<<"~AC";
}
if(w[1][4] and w[2][4])
{
```

```
if(ok) cout<<"+";
ok=1;
w[1][4]=w[2][4]=0;
cout<<"~A~C";
}
if(w[1][1] and w[1][4])
{
if(ok) cout<<"+";
ok=1;
w[1][1]=w[1][4]=0;
cout<<"B~C";
}
if(w[2][1] and w[2][4])
{
if(ok) cout<<"+";
ok=1;
w[2][1]=w[2][4]=0;
cout<<"~B~C";
}

if(w[1][1])
{
if(ok) cout<<"+";
ok=1;
cout<<"AB~C";
}
if(w[1][2])
{
if(ok) cout<<"+";
```

```
    ok=1;
    cout<<"ABC";
}
if(w[1][3])
{
    if(ok) cout<<"+";
    ok=1;
    cout<<"~ABC";
}
if(w[1][4])
{
    if(ok) cout<<"+";
    ok=1;
    cout<<"~AB~C";
}
if(w[2][1])
{
    if(ok) cout<<"+";
    ok=1;
    cout<<"A~B~C";
}
if(w[2][2])
{
    if(ok) cout<<"+";
    ok=1;
    cout<<"A~BC";
}
if(w[2][3])
{
```

```
    if(ok) cout<<"+";
    ok=1;
    cout<<"~A~BC";
}
if(w[2][4])
{
    if(ok) cout<<"+";
    ok=1;
    cout<<"~A~B~C";
}
cout<<endl;
}
}
```