

```

#include <fstream>
#include <cstring>
using namespace std;
int x[3][5];
int main()
{ ifstream f("date.in");
  ofstream g("date.out");
  int i,j,ind=-1,pp,p;
  char rez[30],lin[4]="ACA";
  for(p=1;p<=5;p++){
  f.getline(rez,3);ind=-1;
  for(i=1;i<=2;i++)
  { j=4;
    if(rez[i-1]>='0'&&rez[i-1]<='9')
      do
        {x[i][j]=rez[i-1]%2;
          rez[i-1]=rez[i-1]/2;
          j--;}
        while(rez[i-1]>0&&j>0);
      else
      switch (rez[i-1]){
        case 'A':{x[i][1]=1;x[i][3]=1;}break;
        case 'B':{x[i][1]=1;x[i][3]=1;x[i][4]=1;}break;
        case 'C':{x[i][1]=1;x[i][2]=1;}break;
        case 'D':{x[i][1]=1;x[i][2]=1;x[i][4]=1;}break;
        case 'E':{x[i][1]=1;x[i][2]=1;x[i][3]=1;}break;
        case 'F':{x[i][1]=1;x[i][2]=1;x[i][3]=1;x[i][4]=1;}break;}
    }
  for(i=1;i<=2;i++)
  { j=1;
    while(x[i][j]==1&&j<=4)
      j++;
    if(j>4)
      {ind++;
        if(i==1)
          {rez[ind]='B';
            for(pp=1;pp<=4;pp++)
              x[1][pp]=0;}
          else
            {rez[ind]='~';
              ind++;
              rez[ind]='B';
              for(pp=1;pp<=4;pp++)
                x[2][pp]=0;
              }
            ind++;
            rez[ind]='+';}
    }
  for(i=1;i<=3;i++)
  {
    if(x[1][i]==1&&x[1][i+1]==1&&x[2][i]==1&&x[2][i+1]==1)
      {ind++;

```

```

x[1][i]=0;
x[1][i+1]=0;
x[2][i]=0;
x[2][i+1]=0;
if(i==1)
    {rez[ind]='A';}
else
    if(i==2)
        rez[ind]='C';
    else
        {rez[ind]='~';
        ind++;
        rez[ind]='A';}
ind++;
rez[ind]='+';}}
if(x[1][1]==1&& x[1][4]==1&& x[2][1]==1&& x[2][4]==1)
    {ind++;
    rez[ind]='\0';
    strcat(rez,"~C+");
    ind+=2;
    x[1][1]=0;
    x[1][4]=0;
    x[2][1]=0;
    x[2][4]=0;}
for(i=1;i<=2;i++)
    for(j=1;j<=3;j++)
        if(x[i][j]==1&& x[i][j+1]==1)
            { x[i][j]=0;
            x[i][j+1]=0;
            if(j==1 || j==3)
                {if(j==3)
                {ind++;
                rez[ind]='~';}
                ind++;
                rez[ind]=lin[j-1];}
            if(i==1)
                {ind++;
                rez[ind]='B';}
            else
                {ind++;
                rez[ind]='~';
                ind++;
                rez[ind]='B';}
            if(j==2)
                {ind++;
                rez[ind]=lin[j-1];}
            ind++;
            rez[ind]='+';}
for(i=1;i<=4;i++)
    if(x[1][i]==1&& x[2][i]==1)
        {x[1][i]=0;
        x[2][i]=0;}

```

```

switch(i){
    case 1:{ind++;rez[ind]='A';ind++;rez[ind]='~';rez[ind]='C';}break;
    case 2:{ind++;rez[ind]='A';ind++;rez[ind]='C';}break;
    case 3:{ind++;rez[ind]='~';ind++;rez[ind]='A';ind++;rez[ind]='C';}break;
    case 4:{ind++;rez[ind]='~';ind++;rez[ind]='A';ind++;rez[ind]='~';ind++;rez[ind]='C';}break;}
ind++;
rez[ind]='+';}
for(i=1;i<=2;i++)
if(x[i][1]==1&&x[i][4]==1)
{ x[i][1]=0;
x[i][4]=0;
if(i==1)
{ind++;
rez[ind]='\0';
strcat(rez,"B~C");
ind+=2;}
else
{ind++;
rez[ind]='\0';
strcat(rez,"~B~C");
ind+=3;}
ind++;
rez[ind]='+';}
for(i=1;i<=2;i++)
for(j=1;j<=4;j++)
if(x[i][j]==1)
{if(j>=3)
{ind++;
rez[ind]='~';}
ind++;
rez[ind]='A';
if(i==1)
{ind++;
rez[ind]='B';}
else
{ind++;
rez[ind]='~';
ind++;
rez[ind]='B';}
if(j==1 || j==4)
{ind++;
rez[ind]='~';}
ind++;
rez[ind]='C';
ind++;
rez[ind]='+';
}
rez[ind]='\0';
g<<rez<<endl;
for(i=1;i<=2;i++)
for(j=1;j<=4;j++)
x[i][j]=0;}}

```