

```

#include <iostream>
#include "wrapper.h"
#include "StaticArray\StaticArray1.hpp"

class roomContainer{
    public:
        int array [4];
};

typedef StaticArray1<roomContainer, 0, 16> arrayN;

Boolean solutions [4][4];
arrayN rooms;

void print(){
    for(int i = 0; i < 4; i++){
        for(int j = 0; j < 4; j++){
            if (solutions[i][j]){
                cout << "(" << i << ", " << j << ") ";
            }
        }
    }
    cout << endl;
}

void direction(int &i,int &x,int &y){

    if(i == 0){
        y = y - 1;
    }else if(i == 1){

```

```
        x = x - 1;
    }else if(i == 2){
        y = y + 1;
    }else if(i == 3){
        x = x + 1;
    }
}
```

```
void backTrack(int x, int y){
    int i,a,b;
    if(x < 0 || x > 3 || y < 0 || y > 3){
        print();
    }else{
        i = ((x * 4) + y);
        for(int j = 0; j < 4; j++){
            if(rooms[i].array[j] == 1){
                a = x;
                b = y;
                direction(j,a,b);
            }
            if(rooms[i].array[j] == 1 && !solutions[a][b]){
                solutions[x][y] = true;
                backTrack(a,b);
            }
        }
        solutions[x][y] = false;
    }
}
```

```
void main (int argc, char* argv[])
```

```
{
```

```
    int w = 0, d = 1;
```

```
    rooms[0].array[0] = w;
```

```
    rooms[0].array[1] = w;
```

```
    rooms[0].array[2] = d;
```

```
    rooms[0].array[3] = w;
```

```
    rooms[1].array[0] = d;
```

```
    rooms[1].array[1] = w;
```

```
    rooms[1].array[2] = d;
```

```
    rooms[1].array[3] = d;
```

```
    rooms[2].array[0] = d;
```

```
    rooms[2].array[1] = w;
```

```
    rooms[2].array[2] = d;
```

```
    rooms[2].array[3] = d;
```

```
    rooms[3].array[0] = d;
```

```
    rooms[3].array[1] = w;
```

```
    rooms[3].array[2] = w;
```

```
    rooms[3].array[3] = d;
```

```
    rooms[4].array[0] = w;
```

```
    rooms[4].array[1] = w;
```

```
    rooms[4].array[2] = d;
```

```
    rooms[4].array[3] = w;
```

```
    rooms[5].array[0] = d;
```

```
rooms[5].array[1] = d;  
rooms[5].array[2] = w;  
rooms[5].array[3] = d;
```

```
rooms[6].array[0] = w;  
rooms[6].array[1] = d;  
rooms[6].array[2] = w;  
rooms[6].array[3] = d;
```

```
rooms[7].array[0] = w;  
rooms[7].array[1] = d;  
rooms[7].array[2] = w;  
rooms[7].array[3] = d;
```

```
rooms[8].array[0] = w;  
rooms[8].array[1] = w;  
rooms[8].array[2] = w;  
rooms[8].array[3] = w;
```

```
rooms[9].array[0] = w;  
rooms[9].array[1] = d;  
rooms[9].array[2] = d;  
rooms[9].array[3] = d;
```

```
rooms[10].array[0] = d;  
rooms[10].array[1] = d;  
rooms[10].array[2] = w;  
rooms[10].array[3] = w;
```

```
rooms[11].array[0] = w;  
rooms[11].array[1] = d;  
rooms[11].array[2] = w;  
rooms[11].array[3] = w;
```

```
rooms[12].array[0] = d;  
rooms[12].array[1] = w;  
rooms[12].array[2] = d;  
rooms[12].array[3] = w;
```

```
rooms[13].array[0] = d;  
rooms[13].array[1] = d;  
rooms[13].array[2] = w;  
rooms[13].array[3] = w;
```

```
rooms[14].array[0] = w;  
rooms[14].array[1] = w;  
rooms[14].array[2] = w;  
rooms[14].array[3] = w;
```

```
rooms[15].array[0] = w;  
rooms[15].array[1] = w;  
rooms[15].array[2] = w;  
rooms[15].array[3] = w;  
backTrack(0,0);
```

```
}
```