

Program:

```
#include <iostream>
#include <cstdlib>
using namespace std;

int N;

void Solution(int arr[N]) {

    for(int i = 0; i < N; i++) {

        for(int j = 0; j < N; j++) {

            if(arr[i] == j)
                cout<<"Q"<<i+1<<" ";
            else
                cout<<" * ";
        }
        cout<<endl;
    }
}

bool Place(int arr[N], int Qi, int Qj) {

    for(int i = 0; i < Qi ; i++) {
        if(arr[i] == Qj || abs(arr[i] - Qj) == abs(i - Qi)) {
            return false;
        }
    }
    return true;
}

int NQueens(int arr[N], int i) {

    static int count = 0;
    for(int j = 0; j < N; j++) {

        if(Place(arr, i, j)) {

            arr[i] = j;
            if(i == N-1) {
                cout<<endl<<"*****"*><>endl;
                cout<<"\nFinal Solution:\n\n";
                Solution(arr);
                cout<<endl<<"*****"*><>endl<<endl;
                count++;
            }
        }
    }
}
```

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    }
    else {
        NQueens(arr, i + 1);
        for(int m = 0; m < N; m++) {
            cout<<m+1<<, "<<arr[m]+1<<"; ";
        }
        cout<<endl;
    }
}
return count;
}

int main() {
    cout<<"\nHow many Queens troubling the King? ";
    cin>>N;

    int arr[N];

    for(int i = 0; i < N; i++) {
        arr[i] = -1;
    }

    if(N >= 3) {
        cout<<endl;
        int count = NQueens(arr, 0);
        cout<<endl<<"*****"*<<endl;
        if(!count) {
            cout<<"\nSorry King, No Solution\n";
        }
        else if(count > 0) {
            cout<<"\nPossible Solutions: "<<count<<endl;
        }
        cout<<endl<<"*****"*<<endl<<endl;
    }
    cout<<endl;
}

```

Output:

How many Queens troubling the King? 3

1, 1; 2, 3; 3, 0;
 1, 1; 2, 3; 3, 0;
 1, 2; 2, 3; 3, 0;

```
1, 3; 2, 1; 3, 0;  
1, 3; 2, 1; 3, 0;
```

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Sorry King, No Solution

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```
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```

How many Queens troubling the King? 4

```
1, 1; 2, 3; 3, 0; 4, 0;  
1, 1; 2, 4; 3, 2; 4, 0;  
1, 1; 2, 4; 3, 2; 4, 0;  
1, 1; 2, 4; 3, 2; 4, 0;
```

```
*****
```

Final Solution:

```
* Q1 * *  
* * * Q2  
Q3 * * *  
* * Q4 *
```

```
*****
```

```
1, 2; 2, 4; 3, 1; 4, 3;  
1, 2; 2, 4; 3, 1; 4, 3;  
1, 2; 2, 4; 3, 1; 4, 3;
```

```
*****
```

Final Solution:

```
* * Q1 *  
Q2 * * *  
* * * Q3  
* Q4 * *
```

```
*****
```

```
1, 3; 2, 1; 3, 4; 4, 2;  
1, 3; 2, 1; 3, 4; 4, 2;  
1, 3; 2, 1; 3, 4; 4, 2;
```

```
1, 4; 2, 1; 3, 3; 4, 2;  
1, 4; 2, 1; 3, 3; 4, 2;  
1, 4; 2, 2; 3, 3; 4, 2;  
1, 4; 2, 2; 3, 3; 4, 2;
```

```
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Possible Solutions: 2

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```
Someshwars-MacBook-Pro:practice someshwargaikwad$
```