

N-Queens Problem using hill climbing approach

Enter the number of queens

8

Enter the number of trials you want to want to try the algorithms

4

#Trail 1

```
Q Q * * * * *
* * Q Q * Q Q *
* * * * * * *
* * * * * * *
* * * * * * *
* * * * * * Q
* * * * Q * * *
* * * * * * *
* * * * * * *
```

The heuristic value of the original board is : 9

Better board found at column 0 with heuristic : 9

```
* Q * * * * *
* * Q Q * Q Q *
Q * * * * * *
* * * * * * *
* * * * * * *
* * * * * * Q
* * * * Q * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 9

```
* Q * * * * *
* * Q Q * Q Q *
* * * * * * *
Q * * * * * *
* * * * * * *
* * * * * * Q
* * * * Q * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 9

```
* Q * * * * *
* * Q Q * Q Q *
* * * * * * *
* * * * * * *
Q * * * * * *
* * * * * * Q
* * * * Q * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 9

```
* Q * * * * *
* * Q Q * Q Q *
* * * * * * *
* * * * * * *
Q * * * * * Q
* * * * Q * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 9

```
* Q * * * * *
* * Q Q * Q Q *
* * * * *
* * * * *
* * * * *
* * * * * Q
* * * * Q * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 9

```
* * * * *
* * Q Q * Q Q *
* Q * * * * *
* * * * *
* * * * *
* * * * * Q
* * * * Q * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 8

```
* * * * *
* * Q Q * Q Q *
* * * * *
* * * * *
* Q * * * * *
* * * * * Q
* * * * Q * *
Q * * * * * *
```

Better board found at column 2 with heuristic : 7

```
* * Q * * * *
* * * Q * Q Q *
* * * * *
* * * * *
* Q * * * * *
* * * * * Q
* * * * Q * *
Q * * * * * *
```

Better board found at column 2 with heuristic : 6

```
* * * * *
* * * Q * Q Q *
* * Q * * * *
* * * * *
* Q * * * * *
* * * * * Q
* * * * Q * *
Q * * * * * *
```

Better board found at column 2 with heuristic : 6

```
* * * * *
* * * Q * Q Q *
* * * * *
* * Q * * * *
* Q * * * * *
* * * * * Q
* * * * Q * * *
```

Q * * * * *

Better board found at column 2 with heuristic : 6

* * * * *

* * * Q * Q *

* * * * *

* * * * *

* Q * * * *

* * * * *

* * Q * Q * *

Q * * * * *

Better board found at column 2 with heuristic : 6

* * * * *

* * * Q * Q *

* * * * *

* * * * *

* Q * * * *

* * * * *

* * * * Q * *

Q * Q * * *

Better board found at column 3 with heuristic : 3

* * * Q * * *

* * * * Q Q *

* * * * *

* * * * *

* Q * * * *

* * * * *

* * * * Q * *

Q * Q * * *

Better board found at column 4 with heuristic : 3

* * * Q * * *

* * * * Q Q *

* * * * *

* * * * *

* Q * * * *

* * * * *

* * * * Q * *

Q * Q * * *

Better board found at column 5 with heuristic : 3

* * * Q * * *

* * * * Q Q *

* * * * *

* * * * *

* Q * * * *

* * * * *

* * * * Q * *

Q * Q * * *

Better board found at column 5 with heuristic : 3

* * * Q * * *

* * * * Q *

* * * * *

* * * * Q *

* Q * * * *

```

* * * * * * * Q
* * * * Q * * *
Q * Q * * * *
Better board found at column 5 with heuristic : 3
* * * Q * * *
* * * * * * Q *
* * * * * * *
* * * * * * *
* Q * * * * *
* * * * * * Q
* * * * Q Q *
Q * Q * * * *
Better board found at column 6 with heuristic : 3
* * * Q * * Q *
* * * * * * *
* * * * * * *
* * * * * * *
* Q * * * * *
* * * * * * Q
* * * * Q Q *
Q * Q * * * *
Better board found at column 6 with heuristic : 3
* * * Q * * *
* * * * * * Q *
* * * * * * *
* * * * * * *
* Q * * * * *
* * * * * * Q
* * * * Q Q *
Q * Q * * * *
Better board found at column 6 with heuristic : 2
* * * Q * * *
* * * * * * *
* * * * * * Q *
* * * * * * *
* Q * * * * *
* * * * * * Q
* * * * Q Q *
Q * Q * * * *
Better board found at column 7 with heuristic : 2
* * * Q * * *
* * * * * * *
* * * * * * Q *
* * * * * * *
* Q * * * * *
* * * * * * Q
* * * * Q Q *
Q * Q * * * *
Soultion Not found...
#Trail 2
* Q * * * * *
Q * * * * Q *

```

```
* * * * * * * Q
* * * Q * * * *
* * * * Q * * *
* * Q * * * Q *
* * * * * * *
* * * * * * *
* * * * * * *
```

The heuristic value of the original board is : 6

Better board found at column 0 with heuristic : 6

```
* Q * * * * *
Q * * * * Q *
* * * * * * Q
* * * Q * * *
* * * * Q * *
* * Q * * * Q *
* * * * * *
* * * * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 5

```
* Q * * * * *
* * * * * Q *
Q * * * * * Q
* * * Q * * *
* * * * Q * *
* * Q * * * Q *
* * * * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 5

```
* Q * * * * *
* * * * * Q *
* * * * * * Q
* * * Q * * *
Q * * * Q * *
* * Q * * * Q *
* * * * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 5

```
* Q * * * * *
* * * * * Q *
* * * * * * Q
* * * Q * * *
* * * * Q * *
* * Q * * * Q *
* * * * * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 5

```
* * * * * * *
* * * * * Q *
* Q * * * * Q
* * * Q * * *
* * * * Q * *
* * Q * * * Q *
* * * * * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 5

```
* * * * * * * *
* * * * * Q * *
* * * * * * * Q
* Q * Q * * * *
* * * * Q * * *
* * Q * * * Q *
* * * * * * * *
Q * * * * * * *
```

Better board found at column 2 with heuristic : 3

```
* * Q * * * * *
* * * * * Q * *
* * * * * * * Q
* Q * Q * * * *
* * * * Q * * *
* * * * * * Q *
* * * * * * * *
Q * * * * * * *
```

Better board found at column 3 with heuristic : 1

```
* * Q Q * * * *
* * * * * Q * *
* * * * * * * Q
* Q * * * * * *
* * * * Q * * *
* * * * * * Q *
* * * * * * * *
Q * * * * * * *
```

Better board found at column 3 with heuristic : 1

```
* * Q * * * * *
* * * * * Q * *
* * * * * * * Q
* Q * * * * * *
* * * * Q * * *
* * * * * * Q *
* * * Q * * * *
Q * * * * * * *
```

Better board found at column 3 with heuristic : 1

```
* * Q * * * * *
* * * * * Q * *
* * * * * * * Q
* Q * * * * * *
* * * * Q * * *
* * * * * * Q *
* * * * * * * *
Q * * Q * * * *
```

Better board found at column 4 with heuristic : 1

```
* * Q * * * * *
* * * * * Q * *
* * * * * * * Q
* Q * * * * * *
* * * * Q * * *
* * * * * * Q *
```

* * * * *
Q * * Q * * *
Better board found at column 5 with heuristic : 1

* * Q * * * *
* * * * * Q * *
* * * * * * Q
* Q * * * * *
* * * * Q * * *
* * * * * Q *
* * * * * * *
Q * * Q * * * *

Better board found at column 6 with heuristic : 1

* * Q * * * *
* * * * * Q * *
* * * * * * Q
* Q * * * * *
* * * * Q * * *
* * * * * Q *
* * * * * * *
Q * * Q * * * *

Better board found at column 7 with heuristic : 1

* * Q * * * *
* * * * * Q * *
* * * * * * Q
* Q * * * * *
* * * * Q * * *
* * * * * Q *
* * * * * * *
Q * * Q * * * *

Soulution Not found...

#Trail 3

* * Q * * * *
* * * * * Q Q
* Q * Q * * *
Q * * * * *
* * * * * Q * *
* * * * * * *
* * * * Q * * *
* * * * * * *

The heuristic value of the original board is : 4

Better board found at column 0 with heuristic : 4

Q * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * * *
* * * * * Q * *
* * * * * * *
* * * * Q * * *
* * * * * * *

Better board found at column 0 with heuristic : 4

* * Q * * * *
* * * * * Q Q

```
* Q * Q * * * *
Q * * * * * *
* * * * * Q * *
* * * * * * *
* * * * Q * * *
* * * * * * * *
```

Better board found at column 0 with heuristic : 4

```
* * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * *
Q * * * * Q *
* * * * * *
* * * * Q * *
* * * * * * *
```

Better board found at column 0 with heuristic : 4

```
* * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * *
* * * * * Q *
Q * * * * *
* * * * Q * *
* * * * * * *
```

Better board found at column 0 with heuristic : 4

```
* * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * *
* * * * * Q *
* * * * * *
Q * * * Q * *
* * * * * * *
```

Better board found at column 0 with heuristic : 4

```
* * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * *
* * * * * Q *
* * * * * *
* * * * Q * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 4

```
* * Q * * * *
* * * * * Q Q
* Q * Q * * *
* * * * * *
* * * * * Q *
* * * * * *
* * * * Q * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 4


```
* * Q * * * * *
* * * * * Q Q
* * * Q * * * *
* Q * * * * *
* * * * * Q * *
* * * * * * *
* * * * Q * * *
Q * * * * * *
```

Better board found at column 1 with heuristic : 3

```
* * Q * * * * *
* * * * * Q Q
* * * Q * * * *
* * * * * * *
* * * * * Q * *
* Q * * * * *
* * * * Q * * *
Q * * * * * *
```

Better board found at column 3 with heuristic : 3

```
* * Q Q * * * *
* * * * * Q Q
* * * * * * *
* * * * * * *
* * * * * Q * *
* Q * * * * *
* * * * Q * * *
Q * * * * * *
```

Better board found at column 3 with heuristic : 3

```
* * Q * * * * *
* * * * * Q Q
* * * Q * * * *
* * * * * * *
* * * * * Q * *
* Q * * * * *
* * * * Q * * *
Q * * * * * *
```

Better board found at column 3 with heuristic : 3

```
* * Q * * * * *
* * * * * Q Q
* * * * * * *
* * * Q * * * *
* * * * * Q * *
* Q * * * * *
* * * * Q * * *
Q * * * * * *
```

Better board found at column 4 with heuristic : 3

```
* * Q * * * * *
* * * * * Q Q
* * * * * * *
* * * Q * * * *
* * * * * Q * *
* Q * * * * *
* * * * Q * * *
```

```

Q * * * * *
Better board found at column 5 with heuristic : 3
* * Q * * * *
* * * * * Q Q
* * * * *
* * * Q * * *
* * * * * Q *
* Q * * * *
* * * * Q * *
Q * * * *
Better board found at column 6 with heuristic : 3
* * Q * * * *
* * * * * Q Q
* * * * *
* * * Q * * *
* * * * * Q *
* Q * * * *
* * * * Q * *
Q * * * *
Better board found at column 6 with heuristic : 2
* * Q * * * *
* * * * * Q
* * * * * Q *
* * * Q * * *
* * * * * Q *
* Q * * * *
* * * * Q * *
Q * * * *
Better board found at column 6 with heuristic : 2
* * Q * * * *
* * * * * Q
* * * * *
* * * Q * * *
* * * * * Q *
* Q * * * *
* * * * Q * *
Q * * * * Q *
Better board found at column 7 with heuristic : 2
* * Q * * * *
* * * * * Q
* * * * *
* * * Q * * *
* * * * * Q *
* Q * * * *
* * * * Q * *
Q * * * * Q *
Soulution Not found...
#Trail 4
* * * Q * * Q *
* * * * * Q *
* * * * Q * * Q
* * * * *

```

```
* * * * *
* * Q * * *
Q Q * * * *
* * * * *
```

The heuristic value of the original board is : 10
Better board found at column 0 with heuristic : 8

```
Q * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* * * * * * *
* * * * * * *
* * Q * * * *
* Q * * * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 7

```
* * * Q * * Q *
Q * * * * Q * *
* * * * Q * * Q
* * * * * * *
* * * * * * *
* * Q * * * *
* Q * * * * *
* * * * * * *
```

Better board found at column 0 with heuristic : 6

```
* * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* * * * * * *
Q * * * * * *
* * Q * * * *
* Q * * * * *
* * * * * * *
```

Better board found at column 1 with heuristic : 6

```
* * * Q * * Q *
* Q * * * Q * *
* * * * Q * * Q
* * * * * * *
Q * * * * * *
* * Q * * * *
* * * * * * *
* * * * * * *
```

Better board found at column 1 with heuristic : 6

```
* * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* Q * * * * *
Q * * * * * *
* * Q * * * *
* * * * * * *
* * * * * * *
```

Better board found at column 1 with heuristic : 6

```
* * * Q * * Q *
```

```
* * * * * Q * *
* * * * Q * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* Q * * * * * *
* * * * * * * *
```

Better board found at column 1 with heuristic : 5

```
* * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
```

Better board found at column 2 with heuristic : 5

```
* * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* Q * * * * * *
```

Better board found at column 2 with heuristic : 5

```
* * * Q * * Q *
* * * * * Q * *
* * * * Q * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
```

Better board found at column 4 with heuristic : 4

```
* * * Q * * Q *
* * * * Q Q * *
* * * * * * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
```

Better board found at column 4 with heuristic : 3

```
* * * Q * * Q *
* * * * * Q * *
* * * * * * * Q
* * * * Q * * *
Q * * * * * * *
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
```

Better board found at column 4 with heuristic : 2

```
* * * Q * * Q *
* * * * * Q * *
* * * * * * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * Q * * *
* Q * * * * * *
```

Better board found at column 5 with heuristic : 2

```
* * * Q * * Q *
* * * * * Q * *
* * * * * * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * Q * * *
* Q * * * * * *
```

Better board found at column 5 with heuristic : 2

```
* * * Q * * Q *
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
Q * * * * * * *
* * Q * * * * *
* * * * Q * * *
* Q * * * * * *
```

Better board found at column 5 with heuristic : 2

```
* * * Q * * Q *
* * * * * * * *
* * * * * * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * Q Q * *
* Q * * * * * *
```

Better board found at column 7 with heuristic : 2

```
* * * Q * * Q *
* * * * * * * *
* * * * * * * Q
* * * * * * * *
Q * * * * * * *
* * Q * * * * *
* * * * Q Q * *
* Q * * * * * *
```

Soulution Not found...