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# N-Queens Problem

## Code

#include <stdio.h>

#include <stdlib.h>

int NoSoln(int k, int col[])

{

int i;

for(i=1;i<=k-1;i++)

{

if(col[k]==col[i] || (abs(i-k)==abs(col[i] - col[k])))

return 1;

}

return 0;

}

int NQueen(int n)

{

int k = 1;

int count=0;

int i,j,col[n+1];

col[k]=0;

while(k!=0)

{

col[k] += 1;

while(col[k]<=n && NoSoln(k,col))

col[k]=col[k]+1;

if(col[k]<=n)

{

if(k==n)

{

count++;

printf("\nSolution - %d : \n",count);

for(i=1;i<=n;i++)

{

for(j=1;j<=n;j++)

if(col[i] == j)

printf(" Q%d",i);

else

printf(" \* ");

printf("\n\n");

}

}

else

{

k++;

col[k]=0;

}

}

else

k--;

}

return count;

}

int main()

{

int n,solutions;

printf("\tN-Queens Problem");

printf("\nEnter the number of queens : ");

scanf("%d",&n);

solutions=NQueen(n);

if(solutions==0)

printf("No solution!!");

return 0;

}

## Output

A screenshot of a computer

Description automatically generated with medium confidence Text

Description automatically generated with low confidence

Calendar

Description automatically generated