N-Queens Problem” using Backtracking.

PROGRAM:-

```
#include<stdio.h>
#include<conio.h>
void nqueens(int n)
{
int k,x[20];
k=1;
x[k]=0;
while(k!=0)
 {
     x[k]++;
   while(place(x, k)!=1 && x[k]<=n)
    x[k]++;
    if(x[k]<=n)
      {
         if(k==n)
          {
         printf("\nSolution is\n");
         printf("Queen\t\tPosition\n");
         for(k=1;k<=n;k++)
         printf("%d\t\t%d\n", k,x[k]);
         }
        else
        {
         k++;
```

```
        x[k]=0;
        }
       }
       else
    k--;
   }
}
int place(int x[], int k)
{
int i;
for(i=1;i<=k-1;i++)
{
    if(i+x[i]==k+x[k]||i-x[i]==k-x[k]||x[i]==x[k])
    return 0;
}
    return 1;
}
void main()
{
    int n;

    printf("Enter the number of Queens\n");
    scanf("%d", &n);
    nqueens(n);
    getch();
}
```

OUTPUT:-

```
Enter the number of Queens
4

Solution is
Queen           Position
1               2
2               4
3               1
4               3

Solution is
Queen           Position
1               3
2               1
3               4
4               2


...Program finished with exit code 0
Press ENTER to exit console.
```