```c
#include <stdio.h>
#include <conio.h>
int NN, i, count=0,p[100], pi[100],dir[100];
void P_Perm(){
    int i;
    count = count + 1;
    printf("[%2d] ",count );
    for (i=1; i <= NN; ++i)
       printf( "%d", p[i] );
}
void P_Trans( int x, int y ){
    printf( " (%d %d)", x, y );
    printf( "\n" );
}
void Move( int x, int d ){
    int z;
    P_Trans( pi[x], pi[x]+d );
    z = p[pi[x]+d];
    p[pi[x]] = z;
    p[pi[x]+d] = x;
    pi[z] = pi[x];
    pi[x] = pi[x]+d;
}
void Perm(int n){
    int i;
    if (n > NN)
       P_Perm();
    else{
       Perm( n+1 );
       for (i=1; i<=n-1; ++i){
          Move( n, dir[n] );
          Perm( n+1 );
       }
       dir[n] = -dir[n];
    }
}
int main(){
    printf("Enter the Value of n : ");
    scanf("%d", &NN);
    printf("\n");
    for (i=1; i<=NN; ++i){
```

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```
10  }
11  void P_Trans( int x, int y ){
12      printf( " (%d %d)", x, y );
13      printf( "\n" );
14  }
15  void Move( int x, int d ){
16      int z;
17      P_Trans( pi[x], pi[x]+d );
18      z = p[pi[x]+d];
19      p[pi[x]] = z;
20      p[pi[x]+d] = x;
21      pi[z] = pi[x];
22      pi[x] = pi[x]+d;
23  }
24  void Perm(int n){
25      int i;
26      if (n > NN)
27          P_Perm();
28      else{
29          Perm( n+1 );
30          for (i=1; i<=n-1; ++i){
31              Move( n, dir[n] );
32              Perm( n+1 );
33          }
34          dir[n] = -dir[n];
35      }
36  }
37  int main(){
38      printf("Enter the Value of n : ");
39      scanf("%d", &NN);
40      printf("\n");
41      for (i=1; i<=NN; ++i){
42          dir[i] = -1; p[i] = i;
43          pi[i] = i;
44      }
45      Perm(1);
46      printf("\n");
47      return 0;
48  }
49
50
```

```
"C:\web developement(html.css.js)\johnsontroter.exe"
Enter the Value of n : 4

[ 1] 1234 (4 3)
[ 2] 1243 (3 2)
[ 3] 1423 (2 1)
[ 4] 4123 (4 3)
[ 5] 4132 (1 2)
[ 6] 1432 (2 3)
[ 7] 1342 (3 4)
[ 8] 1324 (2 1)
[ 9] 3124 (4 3)
[10] 3142 (3 2)
[11] 3412 (2 1)
[12] 4312 (4 3)
[13] 4321 (1 2)
[14] 3421 (2 3)
[15] 3241 (3 4)
[16] 3214 (1 2)
[17] 2314 (4 3)
[18] 2341 (3 2)
[19] 2431 (2 1)
[20] 4231 (3 4)
[21] 4213 (1 2)
[22] 2413 (2 3)
[23] 2143 (3 4)
[24] 2134

Process returned 0 (0x0)   execution time : 18.966 s
Press any key to continue.
```