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main.c

```
7  ********************************************************************************/
8  #include <stdio.h>
9  #include <conio.h>
10 int NN, i, count=0;
11 int p[100], pi[100];
12 int dir[100];
13 void PrintPerm(){
14    int i;
15    count = count + 1;
16    printf( "[%2d] ", count );
17    for (i=1; i <= NN; ++i)
18       printf( "%d", p[i] );
19 }
20 void PrintTrans( int x, int y ){
21    printf( " (%d %d)", x, y );
22    printf( "\n" );
23 }
24 void Move( int x, int d ){
25    int z;
26    PrintTrans( pi[x], pi[x]+d );
27    z = p[pi[x]+d];
28    p[pi[x]] = z;
29    p[pi[x]+d] = x;
30    pi[z] = pi[x];
31    pi[x] = pi[x]+d;
32 }
33 void Perm ( int n ){
34    int i;
35    if (n > NN)
36       PrintPerm();
```

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main.c

```
    pi[z] = pi[x];
    pi[x] = pi[x]+d;
}
void Perm ( int n ){
    int i;
    if (n > NN)
        PrintPerm();
    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){
        dir[i] = -1; p[i] = i;
        pi[i] = i;
    }
    Perm ( 1 );
    printf( "\n" );
    return 0;
}
```

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input

```
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


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