Day 88 coding Statement:

Solution:

```java
import java.util.*;
import java.lang.*;
import java.io.*;
class Day88 {
    static int[] A = new int[100010];
    static int[] tmp = new int[100010];
    static int[] pos = new int[100010];
    static int[] ans = new int[100010];
    static int n;
    static void add(int cnt){
        for(int i = 1; i <= n; i ++) pos[tmp[i]] = i;
        for(int i = 1; i <= n; i ++){
            if(cnt == 0) break;
            if(tmp[i] == i) continue;
            int id = pos[i];
            pos[tmp[i]] = id;
            tmp[id] = tmp[i];
            tmp[i] = i;
            cnt --;
        }
    }
    static int ok(){
        for(int i = 1; i <= n; i ++) {
            if(tmp[i] > ans[i]) return 0;
            else if(tmp[i] < ans[i]) return 1;
```

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        }
        return 0;
    }
    static void change(){
        if(ok() == 0) return;
        for(int i = 1; i <= n; i ++) ans[i] = tmp[i];
    }
    public static void main(String[] args) throws IOException {
        Scanner cin = new Scanner(System.in);
        int t = cin.nextInt();
        while(t -- > 0){
            n = cin.nextInt();
            for(int i = 1; i <= n; i ++) A[i] = cin.nextInt();
            if(n <= 4){
                for(int i = 1; i <= n; i ++) System.out.print(i + " ");
                System.out.println();
                continue;
            }
            for(int i = 1; i <= n; i ++) ans[i] = A[i];
            int id = 0;
            for(int i = 1; i <= n; i ++) if(A[i] == 1) id = i;
            for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 2 + 5 * n) % n + 1];
            add(2);
            change();
            for(int i = 1; i <= n; i ++) if(A[i] == 2) id = i;
            for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 3 + 5 * n) % n + 1];
            add(2);
```

```
change();
for(int i = 1; i <= n; i ++) if(A[i] == 3) id = i;
for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 4 + 5 * n) % n + 1];
add(2);
change();
for(int i = 1; i <= n; i ++) if(A[i] == 4) id = i;
for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 5 + 5 * n) % n + 1];
add(2);
change();
id = 0;
for(int i = 1; i < n; i ++){
    if(A[i] == 2 && A[i + 1] == 1) id = i;
}
if(A[n] == 2 && A[1] == 1) id = n;
if(id != 0){
    for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 2 + 5 * n) % n + 1];
    add(2);
    change();
}
id = 0;
for(int i = 1; i < n; i ++){
    if(A[i] == 3 && A[i + 1] == 2) id = i;
}
if(A[n] == 3 && A[1] == 2) id = n;
if(id != 0){
    for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 3 + 5 * n) % n + 1];
    add(2);
```

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            change();
        }
        id = 0;
        for(int i = 1; i < n - 1; i ++){
            if(A[i] == 3 && A[i + 2] == 1) id = i;
        }
        if(A[n - 1] == 3 && A[1] == 1) id = n - 1;
        if(A[n] == 3 && A[2] == 1) id = n;
        if(id != 0){
            for(int i = 1; i <= n; i ++) tmp[i] = A[(i + id - 2 + 5 * n) % n + 1];
            add(2);
            change();
        }
        for(int i = 1; i <= n; i ++) System.out.print(ans[i] + " ");

        System.out.println();
    }
  }
}
```