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import java.util.*;
import java.lang.*;
import java.io.*;
class Main
{
    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;
        }
    }
    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)
        {

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    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;
    }

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    }
    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);
        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();
}
}
}

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