

Problem:7

Sort the array of 0s, 1s and 2s.

Ans:

Code:

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#include <stdio.h>

void sort012(int arr[], int n) {
    int low = 0, mid = 0, high = n - 1;
    while (mid <= high) {
        if (arr[mid] == 0) {
            arr[low++] = arr[mid];
            arr[mid++] = 0; // Moving mid pointer forward
        }
        else if (arr[mid] == 1) {
            mid++; // If it's 1, just move the mid pointer
        }
        else {
            arr[mid] = arr[high];
            arr[high--] = 2; // Moving high pointer backward
        }
    }
}

int main() {
    int n;
    printf("Enter the number of elements (0s, 1s, and 2s): ");
    scanf("%d", &n);
    int arr[n];
    printf("Enter %d elements (only 0s, 1s, and 2s):\n", n);
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }

    sort012(arr, n);
    printf("Sorted array: ");
    for (int i = 0; i < n; i++)
        printf("%d ", arr[i]);
    printf("\n");
    return 0;
}
```