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1 // ITMANIA 2023 -- 28th Jan'23
2 //Q.1 Write a program to find the median of the array obtained after merging the A and B arrays. Suppose that 2
  sorted arrays A and B of size n each. Input must be taken from the user.
3 #include <stdio.h>
4 int main()
5 {
6     int n;
7     printf("-->> Enter the size of arrays A and B: ");
8     scanf("%d", &n);
9
10    int A[n], B[n];
11    printf("-->> Enter elements of array A in sorted order:\n");
12    for (int i = 0; i < n; i++)
13    {
14        scanf("%d", &A[i]);
15    }
16    printf("-->> Enter elements of array B in sorted order:\n");
17    for (int i = 0; i < n; i++)
18    {
19        scanf("%d", &B[i]);
20    }
21
22    int merged[2 * n];
23    int i = 0, j = 0, k = 0;
24    while (i < n && j < n)
25    {
26        if (A[i] <= B[j])
27        {
28            merged[k++] = A[i++];
29        }
30        else
31        {
32            merged[k++] = B[j++];
33        }
34    }
35    while (i < n)
36    {
37        merged[k++] = A[i++];
38    }
39    while (j < n)
40    {
41        merged[k++] = B[j++];
42    }
43
44    double median;
45    if (2 * n % 2 == 0)
46    {
47        median = (merged[n - 1] + merged[n]) / 2.0;
48    }
49    else
50    {
51        median = merged[n];
52    }
53    printf("Median of merged array --> %.2f", median);
54    return 0;
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55 }
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57
58
59 //Q.2 Write a program to find the number occurring odd number of times from the array. For array values can be
    taken from the user.
60 #include <stdio.h>
61 int main()
62 {
63     int arr[100];
64     int n, i, j, count;
65     printf("-->> Enter the number of elements in the array: ");
66     scanf("%d", &n);
67     printf("-->> Enter the elements of the array:\n");
68     for(i=0; i<n; i++)
69     {
70         scanf("%d", &arr[i]);
71     }
72
73     for(i=0; i<n; i++)
74     {
75         count = 0;
76         for(j=0; j<n; j++)
77         {
78             if(arr[j] == arr[i])
79             {
80                 count++;
81             }
82         }
83         if(count % 2 != 0)
84         {
85             printf("The number occurring odd number of times --> %d\n", arr[i]);
86             break;
87         }
88     }
89     return 0;
90 }
91
92
93
94 //Q.3 Write a program to find a peak element from an array which is not smaller than its neighbors.
95 #include<stdio.h>
96 int main()
97 {
98     int i,a[7];
99     for(i=0;i<7;i++)
100     {
101         printf("-->> Enter the %d element: ",i+1);
102         scanf("%d",&a[i]);
103     }
104     for(i=0;i<5;i++)
105     {
106         if(a[i] < a[i+1])
107         {
108             if(a[i+1] < a[i+2])

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108         if(a[i+1] < a[i+2])
109         {
110             printf("%d ",a[i+1]);
111         }
112     }
113 }
114 printf("\n");
115 return 0;
116 }
117
118
119
120 //Q.4 Write a program to find all Armstrong number in the given range of 100 and 999.
121 #include <stdio.h>
122 int main()
123 {
124     int num, i, sum, cube, rem;
125     for (i = 100; i <= 999; i++)
126     {
127         num = i;
128         sum = 0;
129         while (num != 0)
130         {
131             rem = num % 10;
132             cube = rem * rem * rem;
133             sum = sum + cube;
134             num = num / 10;
135         }
136         if (sum == i)
137         {
138             printf("%d ", i);
139         }
140     }
141     return 0;
142 }
```