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#include <stdio.h>
void main()
{

    int a1[10], a2[10], a3[20], m, n, i, j, k = 0;
    printf("\n Enter size of array 1: ");
    scanf("%d", &m);

    printf("\n Enter sorted elements of array 1: \n");
    for (i = 0; i < m; i++)
    {
        scanf("%d", &a1[i]);
    }

    printf("\n Enter size of array 2: ");
    scanf("%d", &n);

    printf("\n Enter sorted elements of array 2: \n");
    for (i = 0; i < n; i++)
    {
        scanf("%d", &a2[i]);
    }

    i = 0, j = 0;

    while (i < m && j < n)
    {
        if (a1[i] < a2[j])
        {
            a3[k] = a1[i];
            i++;
        }
        else
        {
            a3[k] = a2[j];
            j++;
        }
        k++;
    }

    if (i >= m)
    {
        while (j < n)
        {
            a3[k] = a2[j];
            j++;
            k++;
        }
    }
}

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    if (j >= n)
    {
        while (i < m)
        {
            a3[k] = a1[i];
            i++;
            k++;
        }
    }

    printf("\n After merging: \n");
    for (i = 0; i < m + n; i++)
    {
        printf("\n%d", a3[i]);
    }
}

```

OUTPUT

Enter size of array 1: 2

Enter sorted elements of array 1:

1

3

Enter size of array 2: 3

Enter sorted elements of array 2:

2

4

6

After merging:

1

2

3

4

6