

3. Implement a C Program to Merge two Arrays

Code

```
#include <stdio.h>
```

```
int main() {
```

```
    int a[] = {1, 2, 3};    // First array
```

```
    int b[] = {3, 5, 6};    // Second array
```

```
    int merged[10];
```

```
    int n1 = 3, n2 = 3;
```

```
    int i, j, k = 0;
```

```
    // Merge first array
```

```
    for (i = 0; i < n1; i++) {
```

```
        merged[k] = a[i];
```

```
        k++;
```

```
    }
```

```
    // Merge second array
```

```
    for (j = 0; j < n2; j++) {
```

```
        merged[k] = b[j];
```

```
        k++;
```

```
    }
```

```
    // Display merged array
```

```
    printf("First array: ");
```

```
    for (i = 0; i < n1; i++)
```

```
        printf("%d ", a[i]);
```

```

printf("\nSecond array: ");

for (j = 0; j < n2; j++)

    printf("%d ", b[j]);


printf("\nMerged array: ");

for (i = 0; i < n1 + n2; i++)

    printf("%d ", merged[i]);


printf("\n");


return 0;

}

```

Output

The screenshot shows a C program in a code editor on the left and its output in a terminal on the right. The program defines two arrays: 'a' with values {1, 2, 3} and 'b' with values {3, 5, 6}. It then merges these into a new array 'merged' of size 10. The output displays the first array, the second array, and the merged array, followed by a success message.

```

1 #include <stdio.h>
2
3 int main() {
4     int a[] = {1, 2, 3};    // First array
5     int b[] = {3, 5, 6};    // Second array
6     int merged[10];
7     int n1 = 3, n2 = 3;
8     int i, j, k = 0;
9
10    // Merge first array
11    for (i = 0; i < n1; i++) {
12        merged[k] = a[i];
13        k++;
14    }
15
16    // Merge second array
17    for (j = 0; j < n2; j++) {
18        merged[k] = b[j];
19        k++;
20    }
21
22    // Display merged array
23    printf("First array: ");
24    for (i = 0; i < n1; i++)
25        printf("%d ", a[i]);
26
27    printf("\nSecond array: ");
28    for (j = 0; j < n2; j++)
29        printf("%d ", b[j]);
30
31    printf("\nMerged array: ");
32    for (i = 0; i < n1 + n2; i++)
33        printf("%d ", merged[i]);
34
35    printf("\n");
36
37    return 0;
38 }

```

First array: 1 2 3
 Second array: 3 5 6
 Merged array: 1 2 3 3 5 6

=== Code Execution Successful ===