

```

1 #include <stdio.h>
2 #define MAX 100
3 int main() {
4     int arr[MAX], n = 0, choice, pos, value;
5
6     printf("Enter number of elements: ");
7     scanf("%d", &n);
8
9     printf("Enter %d elements:\n", n);
10    for (int i = 0; i < n; i++)
11        scanf("%d", &arr[i]);
12
13    do {
14        printf("\n--- Array Operations Menu ---\n");
15        printf("1. Insert\n2. Delete\n3. Display\n4. Exit\n");
16        printf("Enter your choice: ");
17        scanf("%d", &choice);
18        switch (choice) {
19            case 1:
20                if (n >= MAX) {
21                    printf("Array is full!\n");
22                    break;
23                }
24                printf("Enter position to insert (0 to %d): ", n);
25                scanf("%d", &pos);
26                if (pos < 0 || pos > n) {
27                    printf("Invalid position!\n");
28                    break;
29                }
30                printf("Enter value to insert: ");
31                scanf("%d", &value);
32                for (int i = n; i > pos; i--)
33                    arr[i] = arr[i - 1];
34                arr[pos] = value;
35                n++;
36                printf("Element inserted.\n");
37                break;
38            case 2:
39                if (n <= 0) {
40                    printf("Array is empty!\n");
41                    break;
42                }
43                printf("Enter position to delete (0 to %d): ", n - 1);
44                scanf("%d", &pos);
45                if (pos < 0 || pos >= n) {
46                    printf("Invalid position!\n");
47                    break;
48                }
49                for (int i = pos; i < n - 1; i++)
50                    arr[i] = arr[i + 1];
51                n--;
52                printf("Element deleted.\n");
53                break;
54            case 3:
55                if (n == 0)
56                    printf("Array is empty.\n");
57                else {
58                    printf("Array elements: ");
59                    for (int i = 0; i < n; i++)
60                        printf("%d ", arr[i]);
61                    printf("\n");
62                }
63                break;
64            case 4:
65                printf("Exiting program.\n");
66                break;
67            default:
68                printf("Invalid choice!\n");
69        }
70    } while (choice != 4);
71
72    return 0;
73 }

```

```

Enter number of elements: 4
Enter 4 elements:
10
20
30
40

--- Array Operations Menu ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter position to insert (0 to 4): 2
Enter value to insert: 30
Element inserted.

--- Array Operations Menu ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 3
Array elements: 10 20 30 40

--- Array Operations Menu ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 2
Enter position to delete (0 to 4): 2
Element deleted.

--- Array Operations Menu ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 3
Array elements: 10 20 30 40

--- Array Operations Menu ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice:

```