

7. Write a C program to implement Array operations such as Insert, Delete and Display.

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#include <stdio.h>

#define SIZE 100

int arr[SIZE];

int n = 0;

void display() {
    if (n == 0) {
        printf("Array is empty.\n");
        return;
    }
    printf("Array elements are: ");
    for (int i = 0; i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
}

void insert(int element, int pos) {
    if (n == SIZE) {
        printf("Array is full. Insertion not possible.\n");
        return;
    }
    if (pos < 0 || pos > n) {
        printf("Invalid position!\n");
        return;
    }
    for (int i = n; i > pos; i--) {
        arr[i] = arr[i - 1];
    }
    arr[pos] = element;
    n++;
    printf("Element inserted successfully.\n");
}
```

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}

void delete(int pos) {
    if (n == 0) {
        printf("Array is empty. Deletion not possible.\n");
        return;
    }
    if (pos < 0 || pos >= n) {
        printf("Invalid position!\n");
        return;
    }
    printf("Deleted element: %d\n", arr[pos]);
    // Shift elements to the left
    for (int i = pos; i < n - 1; i++) {
        arr[i] = arr[i + 1];
    }
    n--;
}

int main() {
    int choice, element, pos;
    while (1) {
        printf("\n--- Array Operations Menu ---\n");
        printf("1. Insert\n");
        printf("2. Delete\n");
        printf("3. Display\n");
        printf("4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);
        switch (choice) {
            case 1:
                printf("Enter element to insert: ");
                scanf("%d", &element);

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        printf("Enter position (0 to %d): ", n);

        scanf("%d", &pos);

        insert(element, pos);

        break;

case 2:

    printf("Enter position to delete (0 to %d): ", n - 1);

    scanf("%d", &pos);

    delete(pos);

    break;

case 3:

    display();

    break;

case 4:

    printf("Exiting program.\n");

    return 0;

default:

    printf("Invalid choice! Please try again.\n");

}

}

}

```

main.c	Output
<pre> 1 #include <stdio.h> 2 3 #define SIZE 100 // Maximum size of the array 4 5 int arr[SIZE]; 6 int n = 0; // Current number of elements 7 8 // Function to display array 9 void display() { 10 if (n == 0) { 11 printf("Array is empty.\n"); 12 return; 13 } 14 printf("Array elements are: "); 15 for (int i = 0; i < n; i++) { 16 printf("%d ", arr[i]); 17 } 18 printf("\n"); 19 } 20 21 // Function to insert element 22 void insert(int element, int pos) { 23 if (n == SIZE) { 24 printf("Array is full. Insertion not possible.\n"); 25 return; 26 } 27 if (pos < 0 pos > n) { 28 printf("Invalid position!\n"); 29 return; </pre>	<pre> --- Array Operations Menu --- 1. Insert 2. Delete 3. Display 4. Exit Enter your choice: 1 Enter element to insert: 10 Enter position (0 to 0): 0 Element inserted successfully. --- Array Operations Menu --- 1. Insert 2. Delete 3. Display 4. Exit Enter your choice: 2 Enter position to delete (0 to 0): 0 Deleted element: 10 --- Array Operations Menu --- 1. Insert 2. Delete 3. Display 4. Exit Enter your choice: </pre>