

Program: Implementation of Insertion and deletion in a specific position in an Array using Function.

```
#include <stdio.h>
#define MAX_SIZE 100
void insertAtPosition(int arr[], int *size, int element, int position) {
    if (*size >= MAX_SIZE) {
        printf("Error: Array is full. Cannot insert element.\n");
        return;
    }
    if (position < 1 || position > *size + 1) {
        printf("Error: Invalid position.\n");
        return;
    }
    for (int i = *size; i >= position; i--) {
        arr[i] = arr[i - 1];
    }
    arr[position - 1] = element;
    (*size)++;
    printf("Element inserted successfully.\n");
}
void deleteAtPosition(int arr[], int *size, int position) {
    if (*size == 0) {
        printf("Error: Array is empty. Cannot delete element.\n");
        return;
    }
    if (position < 1 || position > *size) {
        printf("Error: Invalid position.\n");
        return;
    }
    for (int i = position - 1; i < *size - 1; i++) {
        arr[i] = arr[i + 1];
    }
    (*size)--;
    printf("Element deleted successfully.\n");
}
void displayArray(int arr[], int size) {
    if (size == 0) {
        printf("Array is empty.\n");
        return;
    }
    printf("Array elements: ");
    for (int i = 0; i < size; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");
}
int main() {
    int arr[MAX_SIZE];
```

```

int size = 0;
int choice, element, position;
while (1) {
    printf("\nMenu:\n");
    printf("1. Insert element\n");
    printf("2. Delete element\n");
    printf("3. Display array\n");
    printf("4. Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);
    switch (choice) {
        case 1:
            printf("Enter the element to insert: ");
            scanf("%d", &element);
            printf("Enter the position to insert the element: ");
            scanf("%d", &position);
            insertAtPosition(arr, &size, element, position);
            break;
        case 2:
            printf("Enter the position to delete the element: ");
            scanf("%d", &position);
            deleteAtPosition(arr, &size, position);
            break;
        case 3:
            displayArray(arr, size);
            break;
        case 4:
            printf("Exiting the program.\n");
            return 0;
        default:
            printf("Invalid choice. Please try again.\n");
    }
}
return 0;
}

```

Input & Output:

Conclusion: Successfully we learnt about insertion and deletion of array.

Sign and Remark:

R1	R2	R3	R4	Total Marks	Signature
(3)	(5)	(4)	(3)	(15)	