CSA0317-DATA STRUCTURES

Program 7- Write a c program to implement Array operations such as insert delete and display

```c
#include <stdio.h>
#define SIZE 100
int main() {
    int arr[SIZE], n, choice, pos, val, i;
    printf("Enter number of elements: ");
    scanf("%d", &n);
    printf("Enter %d elements:\n", n);
    for(i = 0; i < n; i++)
        scanf("%d", &arr[i]);
    while(1) {
        printf("\n--- Array Operations ---\n");
        printf("1. Insert\n2. Delete\n3. Display\n4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);
        switch(choice) {
            case 1: // Insert
                if(n == SIZE) {
                    printf("Array is full! Cannot insert.\n");
                    break;
                }
                printf("Enter position (1 to %d): ", n+1);
                scanf("%d", &pos);
                printf("Enter value: ");
                scanf("%d", &val);
                if(pos < 1 || pos > n+1) {
                    printf("Invalid position!\n");
```

```c
        } else {
            for(i = n; i >= pos; i--)
                arr[i] = arr[i-1];
            arr[pos-1] = val;
            n++;
            printf("Element inserted.\n");
        }
        break;
case 2: // Delete
    if(n == 0) {
        printf("Array is empty! Cannot delete.\n");
        break;
    }
    printf("Enter position (1 to %d): ", n);
    scanf("%d", &pos);

    if(pos < 1 || pos > n) {
        printf("Invalid position!\n");
    } else {
        for(i = pos-1; i < n-1; i++)
            arr[i] = arr[i+1];
        n--;
        printf("Element deleted.\n");
    }
    break;
case 3: // Display
    if(n == 0)
        printf("Array is empty!\n");
    else {
```

```c
            printf("Array elements: ");
            for(i = 0; i < n; i++)
                printf("%d ", arr[i]);
            printf("\n");
        }
        break;
    case 4: // Exit
        return 0;


    default:
        printf("Invalid choice!\n");
    }
}
return 0;
}
```

Output:

```
Enter number of elements: 3
Enter 3 elements:
10 24 35

--- Array Operations ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 1
Enter position (1 to 4): 2
Enter value: 18
Element inserted.

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

--- Array Operations ---
1. Insert
2. Delete
3. Display
4. Exit
Enter your choice: 3
Array elements: 10 18 35

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