Aim:

To write a C program to implement array operations.

Algorithm:

1. **Initialize array and size.**
2. **For insertion → shift elements right, place new element.**
3. **For deletion → shift elements left from deleted position.**
4. **Display → print array elements.**

Code:

```
#include <stdio.h>


int main() {
    int a[20], n=0, i, pos, val, choice;
    while (1) {
        printf("\n1.Insert 2.Delete 3.Display 4.Exit\nChoice: ");
        scanf("%d", &choice);
        if (choice==1) {
            printf("Enter position and value: ");
            scanf("%d%d", &pos, &val);
            for (i=n; i>pos; i--) a[i]=a[i-1];
            a[pos]=val; n++;
        } else if (choice==2) {
            printf("Enter position: ");
            scanf("%d", &pos);
            for (i=pos; i<n-1; i++) a[i]=a[i+1];
```

```
            n--;
        } else if (choice==3) {
            for (i=0; i<n; i++) printf("%d ", a[i]);
        } else break;
    }
    return 0;
}
```

Input & Output:

```
1.Insert 2.Delete 3.Display 4.Exit
Choice: 1
Enter position and value: 0 10
Choice: 1
Enter position and value: 1 20
Choice: 3
10 20
Choice: 2
Enter position: 0
Choice: 3
20
```

Result:

Array insertion, deletion, and display operations performed successfully.