Aim:

To implement basic operations on a **singly linked list** in C.

Algorithm:

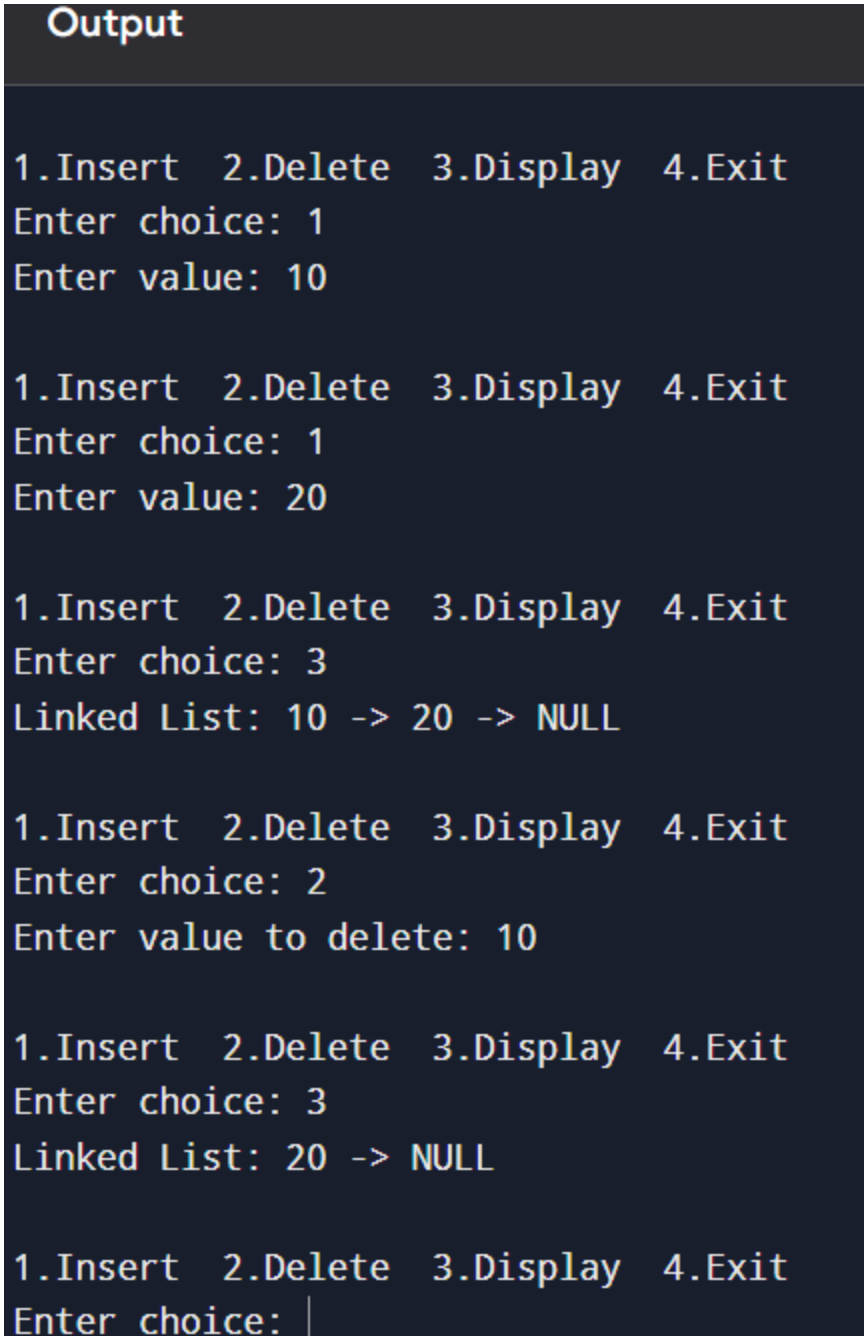
1. Start
2. Define a `struct node` with `data` and `next`.
3. Provide menu with choices:
    - **Insert**: Create a new node and add it at the end.
    - **Delete**: Search node by value and remove it.
    - **Display**: Traverse and print all nodes.
4. Repeat until exit.
5. Stop

CODE:

```
#include <stdio.h>
#include <stdlib.h>

struct Node {
    int data;
    struct Node* next;
};

struct Node* head = NULL;

// Insert at end
```

```
void insert(int val) {
   struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
   newNode->data = val;
   newNode->next = NULL;

   if (head == NULL)
      head = newNode;
   else {
      struct Node* temp = head;
      while (temp->next != NULL)
         temp = temp->next;
      temp->next = newNode;
   }
}

// Delete by value
void delete(int val) {
   struct Node *temp = head, *prev = NULL;

   if (temp != NULL && temp->data == val) {
      head = temp->next;
      free(temp);
      return;
   }
   while (temp != NULL && temp->data != val) {
      prev = temp;
      temp = temp->next;
   }
   if (temp == NULL) {
      printf("Value %d not found\n", val);
      return;
   }
   prev->next = temp->next;
   free(temp);
}

// Display list
void display() {
   struct Node* temp = head;
   if (temp == NULL) {
      printf("List is empty\n");
      return;
   }
   printf("Linked List: ");
```

```
    while (temp != NULL) {
        printf("%d -> ", temp->data);
        temp = temp->next;
    }
    printf("NULL\n");
}

int main() {
    int choice, val;

    while (1) {
        printf("\n1.Insert  2.Delete  3.Display  4.Exit\n");
        printf("Enter choice: ");
        scanf("%d", &choice);

        if (choice == 1) {
            printf("Enter value: ");
            scanf("%d", &val);
            insert(val);
        }
        else if (choice == 2) {
            printf("Enter value to delete: ");
            scanf("%d", &val);
            delete(val);
        }
        else if (choice == 3)
            display();
        else if (choice == 4)
            break;
        else
            printf("Invalid choice!\n");
    }
    return 0;
}
```



RESULT:

The program successfully executed and displayed the operations of singly linked list.