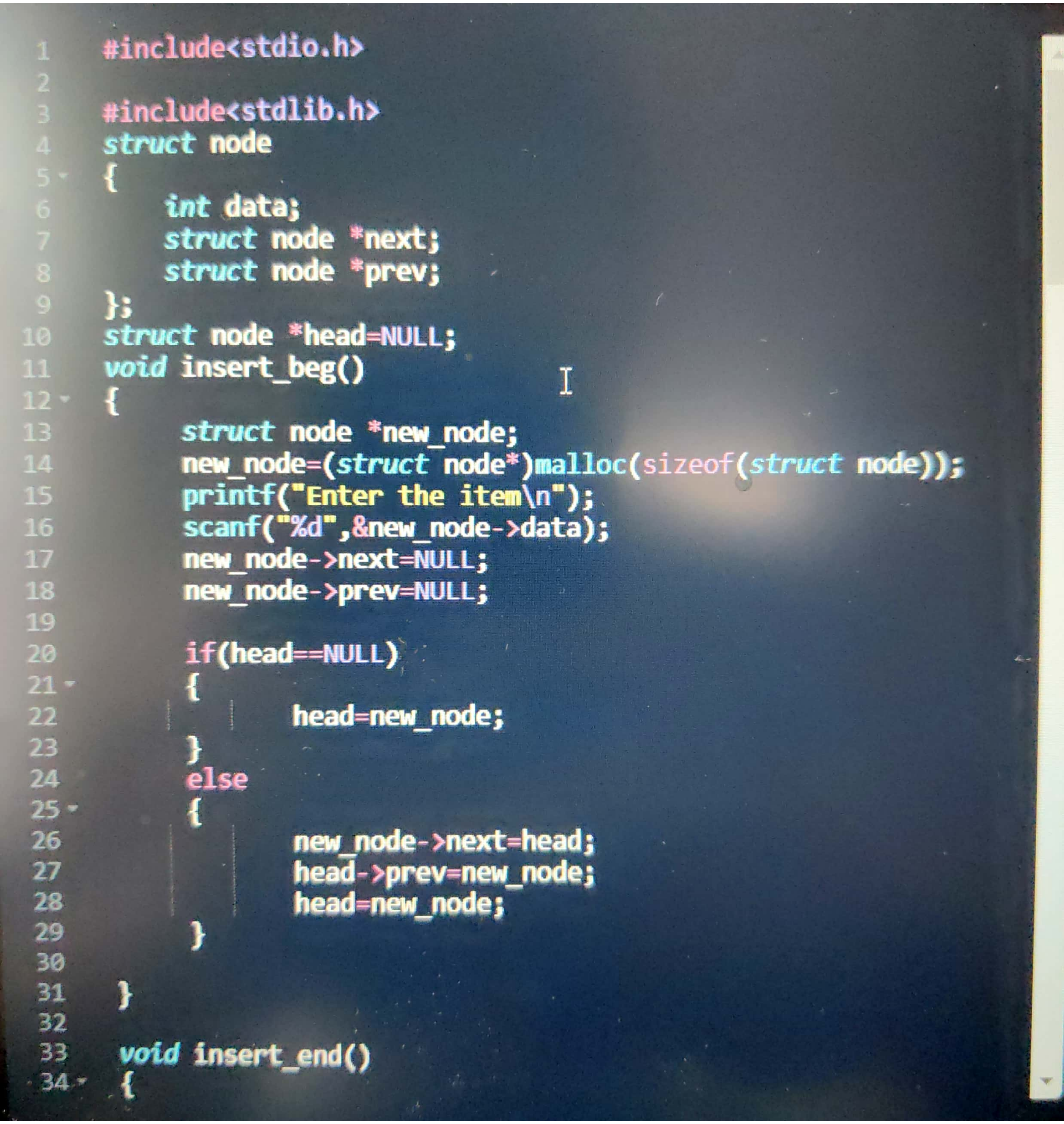
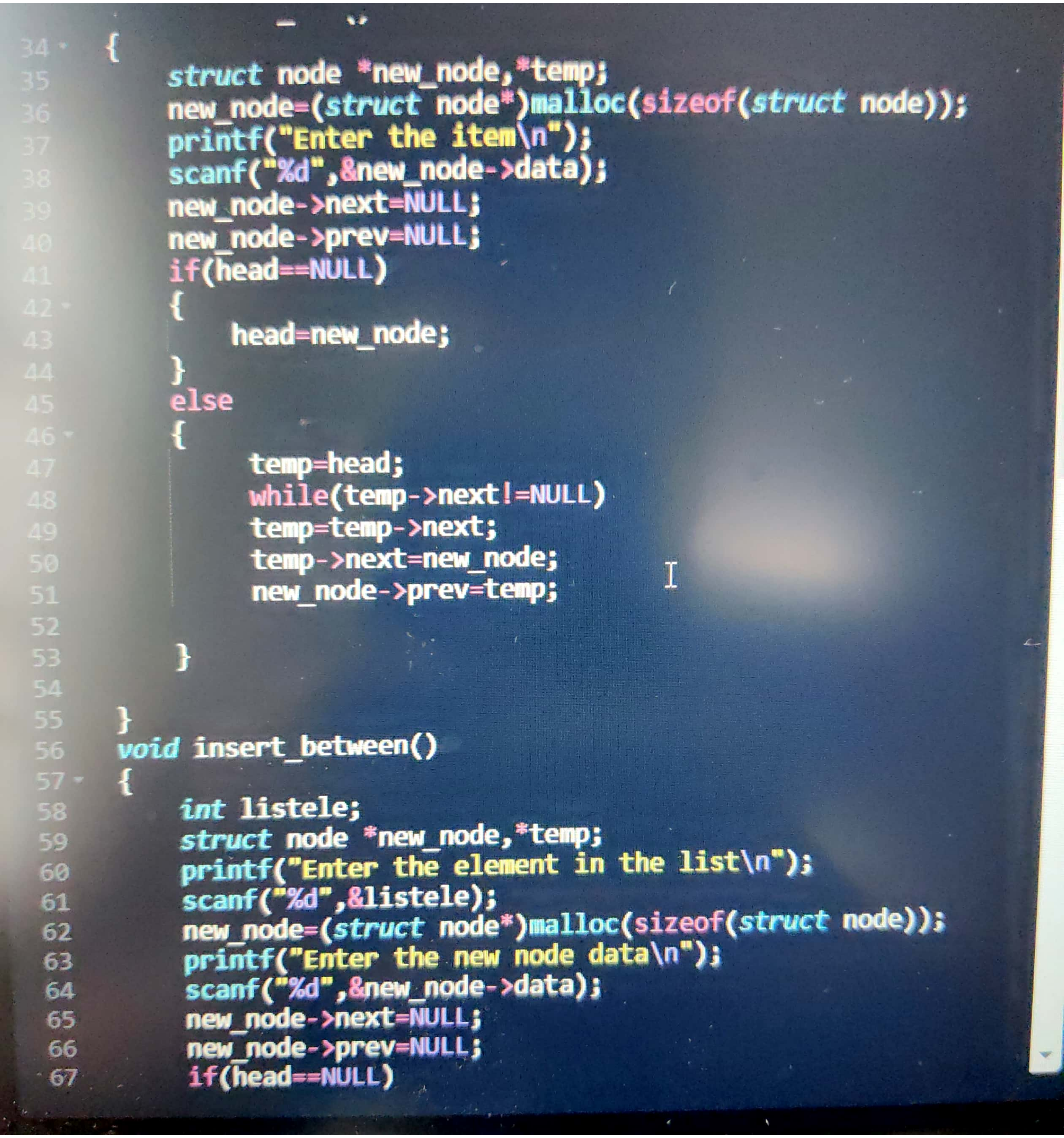
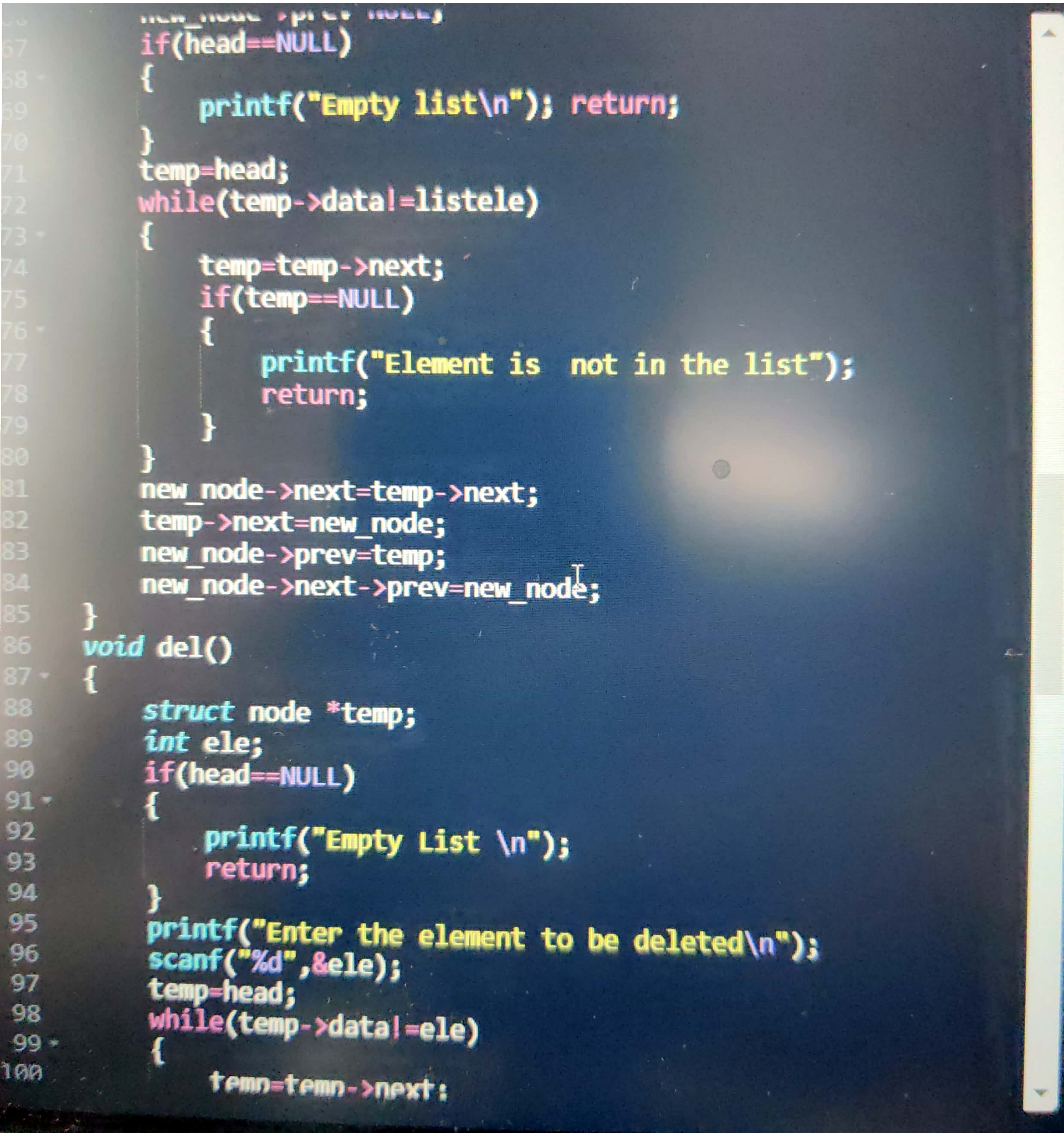


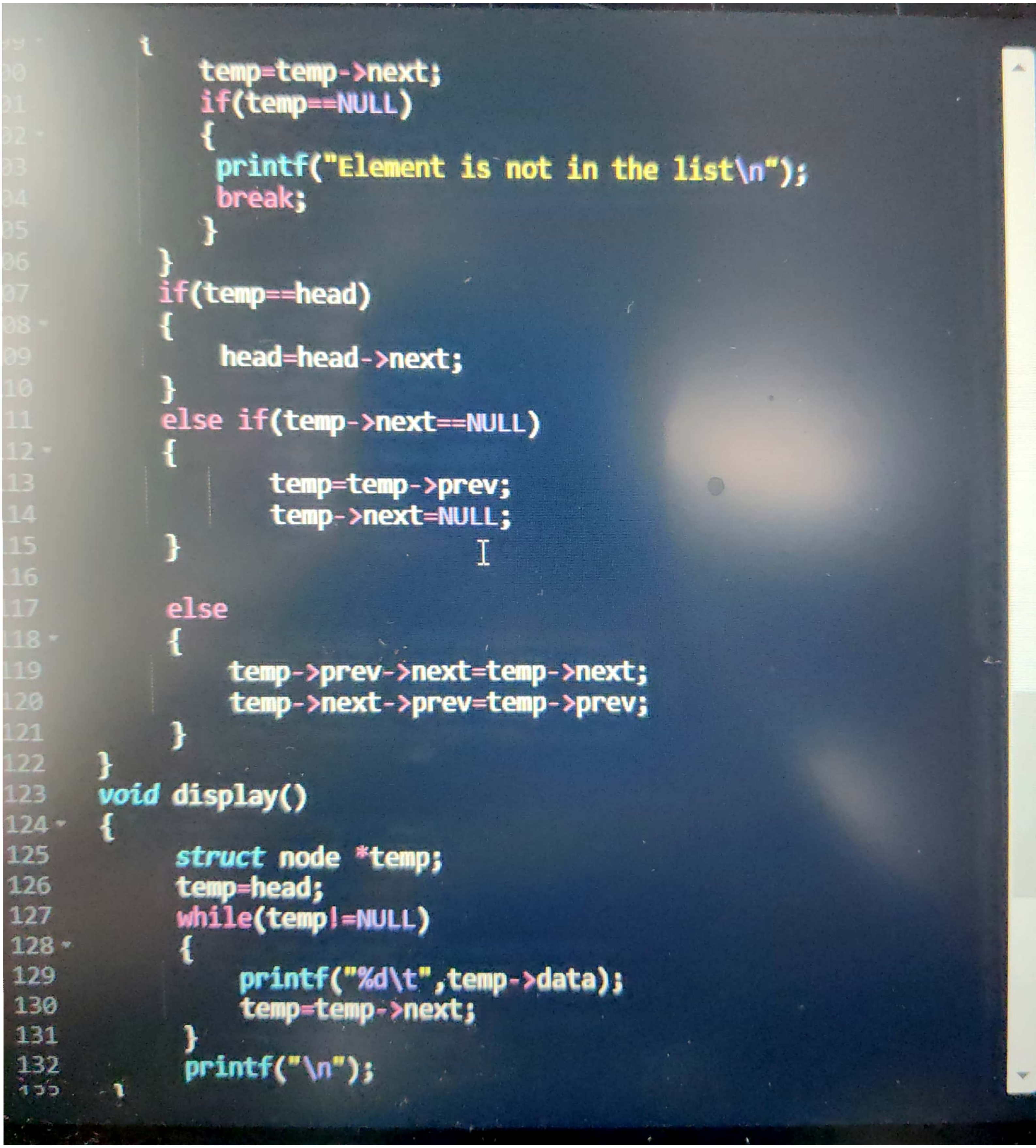
```
#include<stdio.h>

#include<stdlib.h>
struct node
{
    int data;
    struct node *next;
    struct node *prev;
};
struct node *head=NULL;
void insert_beg()
{
     struct node *new_node;
     new_node=(struct node*)malloc(sizeof(struct node));
     printf("Enter the item\n");
     scanf("%d",&new_node->data);
     new_node->next=NULL;
     new_node->prev=NULL;

     if(head==NULL)
     {
             head=new_node;
     }
     else
     {
             new_node->next=head;
             head->prev=new_node;
             head=new_node;
     }

 }

 void insert_end()
 {
```



```c
{
    struct node *new_node,*temp;
    new_node=(struct node*)malloc(sizeof(struct node));
    printf("Enter the item\n");
    scanf("%d",&new_node->data);
    new_node->next=NULL;
    new_node->prev=NULL;
    if(head==NULL)
    {
        head=new_node;
    }
    else
    {
         temp=head;
         while(temp->next!=NULL)
         temp=temp->next;
         temp->next=new_node;
         new_node->prev=temp;

    }

}
void insert_between()
{
    int listele;
    struct node *new_node,*temp;
    printf("Enter the element in the list\n");
    scanf("%d",&listele);
    new_node=(struct node*)malloc(sizeof(struct node));
    printf("Enter the new node data\n");
    scanf("%d",&new_node->data);
    new_node->next=NULL;
    new_node->prev=NULL;
    if(head==NULL)
```

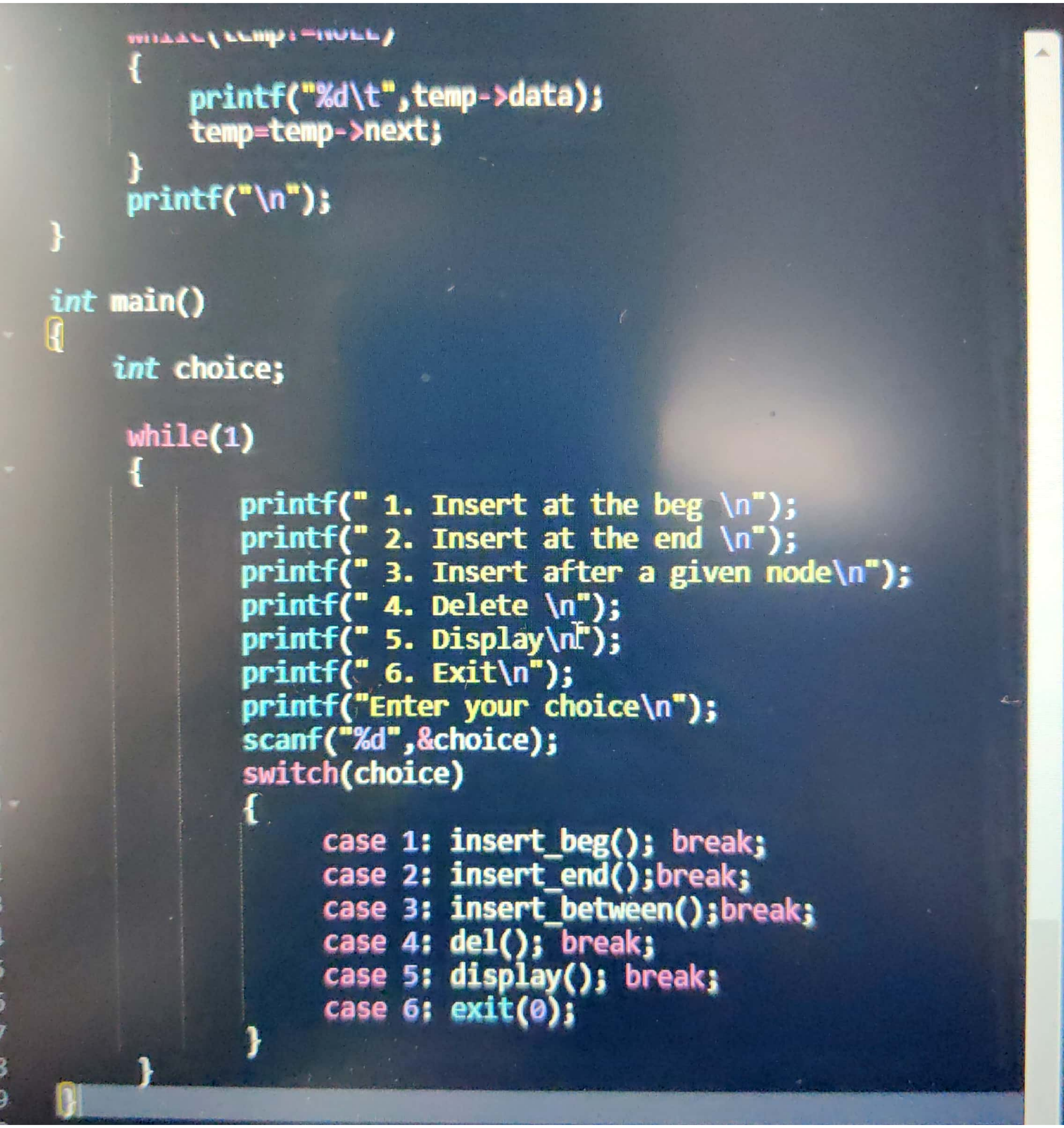


```
    new_node->prev=NULL;
    if(head==NULL)
    {
        printf("Empty list\n"); return;
    }
    temp=head;
    while(temp->data!=listele)
    {
        temp=temp->next;
        if(temp==NULL)
        {
            printf("Element is  not in the list");
            return;
        }
    }
    new_node->next=temp->next;
    temp->next=new_node;
    new_node->prev=temp;
    new_node->next->prev=new_node;
}
void del()
{
    struct node *temp;
    int ele;
    if(head==NULL)
    {
        printf("Empty List \n");
        return;
    }
    printf("Enter the element to be deleted\n");
    scanf("%d",&ele);
    temp=head;
    while(temp->data!=ele)
    {
        temp=temp->next;
```



```
    {
        temp=temp->next;
        if(temp==NULL)
        {
         printf("Element is not in the list\n");
         break;
        }
     }
     if(temp==head)
     {
         head=head->next;
     }
     else if(temp->next==NULL)
     {
             temp=temp->prev;
             temp->next=NULL;
     }

     else
     {
         temp->prev->next=temp->next;
         temp->next->prev=temp->prev;
     }
}
void display()
{
     struct node *temp;
     temp=head;
     while(temp!=NULL)
     {
         printf("%d\t",temp->data);
         temp=temp->next;
     }
     printf("\n");
 }
```

Scanned with CamScanner



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

int main()
{
    int choice;

     while(1)
     {
            printf(" 1. Insert at the beg \n");
            printf(" 2. Insert at the end \n");
            printf(" 3. Insert after a given node\n");
            printf(" 4. Delete \n");
            printf(" 5. Display\n");
            printf(" 6. Exit\n");
            printf("Enter your choice\n");
            scanf("%d",&choice);
            switch(choice)
            {
                case 1: insert_beg(); break;
                case 2: insert_end();break;
                case 3: insert_between();break;
                case 4: del(); break;
                case 5: display(); break;
                case 6: exit(0);
            }
     }
}
```