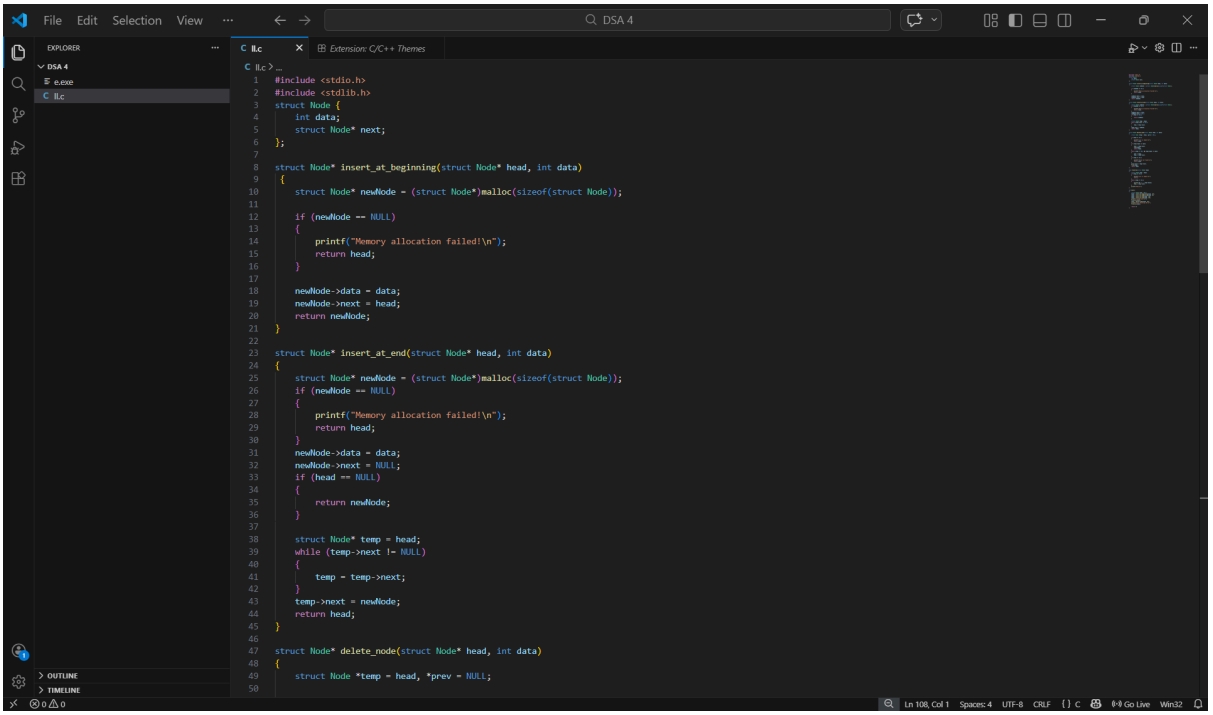
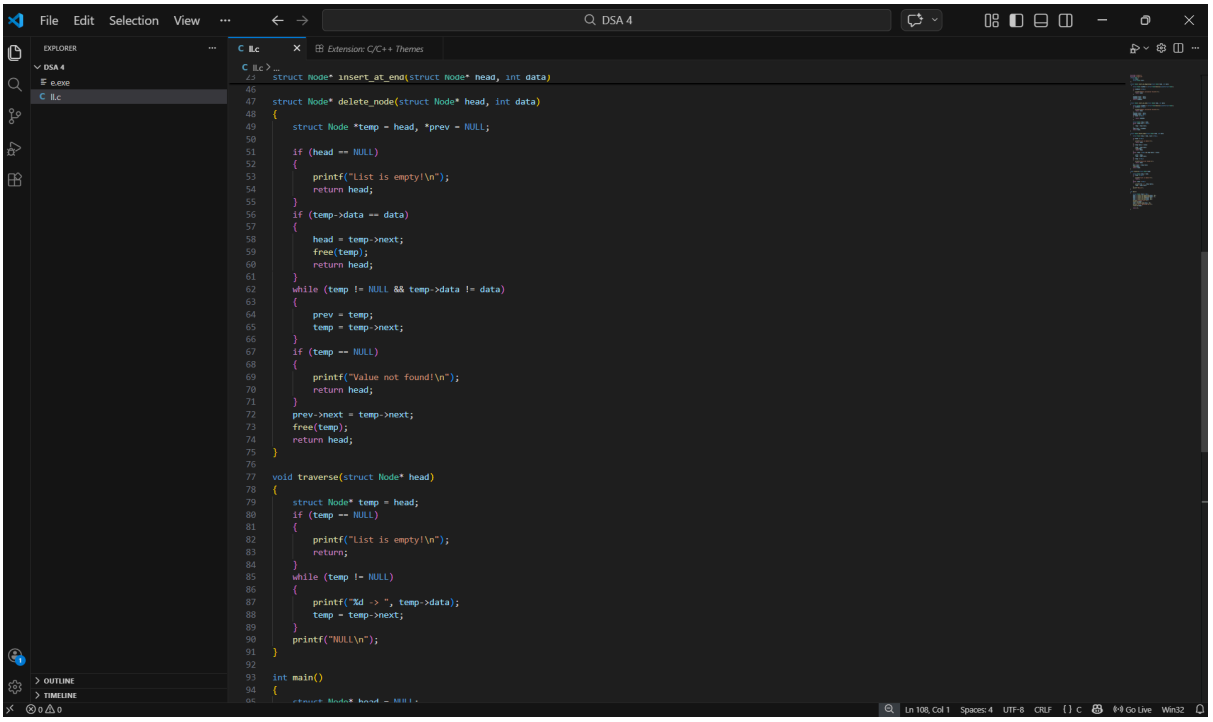
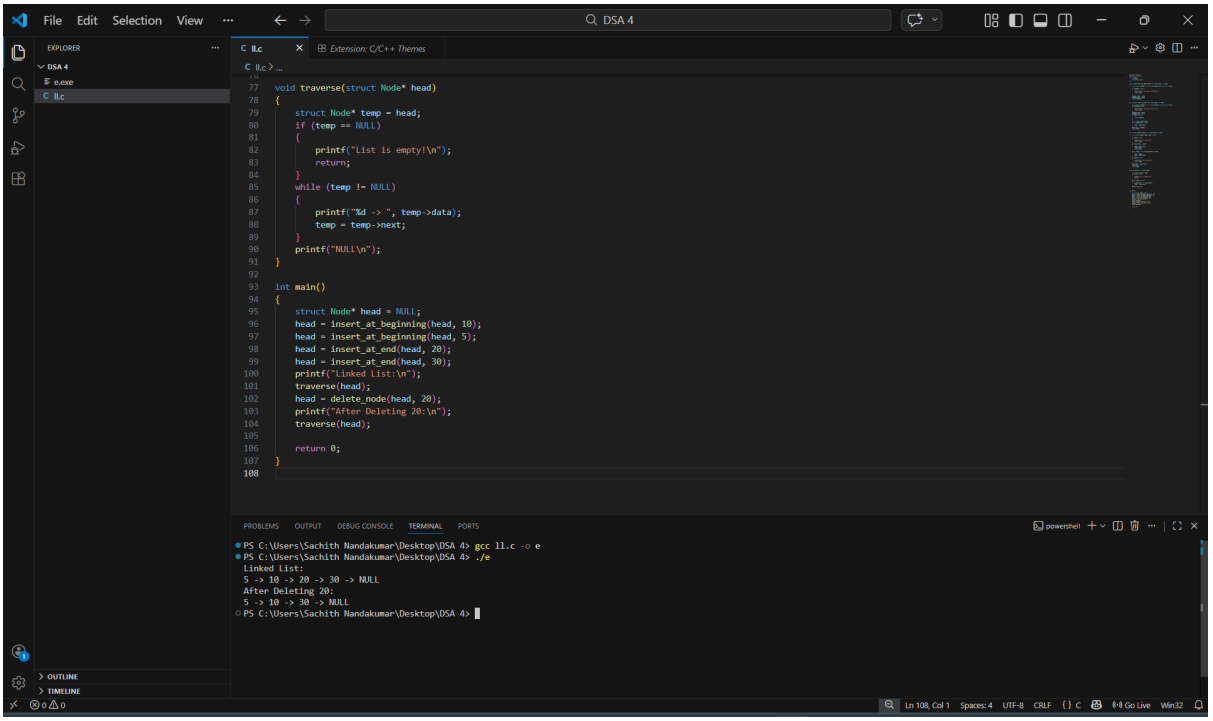


```c
#include <stdio.h>
#include <stdlib.h>
struct Node {
    int data;
    struct Node* next;
};

struct Node* insert_at_beginning(struct Node* head, int data)
 {
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));

    if (newNode == NULL)
    {
        printf("Memory allocation failed!\n");
        return head;
    }

    newNode->data = data;
    newNode->next = head;
    return newNode;
}

struct Node* insert_at_end(struct Node* head, int data)
{
    struct Node* newNode = (struct Node*)malloc(sizeof(struct Node));
    if (newNode == NULL)
    {
        printf("Memory allocation failed!\n");
        return head;
    }
    newNode->data = data;
    newNode->next = NULL;
    if (head == NULL)
    {
        return newNode;
    }

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

struct Node* delete_node(struct Node* head, int data)
{
    struct Node *temp = head, *prev = NULL;

```



```c
struct Node* insert_at_end(struct Node* head, int data)

struct Node* delete_node(struct Node* head, int data)
{
    struct Node *temp = head, *prev = NULL;

    if (head == NULL)
    {
        printf("List is empty!\n");
        return head;
    }
    if (temp->data == data)
    {
        head = temp->next;
        free(temp);
        return head;
    }
    while (temp != NULL && temp->data != data)
    {
        prev = temp;
        temp = temp->next;
    }
    if (temp == NULL)
    {
        printf("Value not found!\n");
        return head;
    }
    prev->next = temp->next;
    free(temp);
    return head;
}

void traverse(struct Node* head)
{
    struct Node* temp = head;
    if (temp == NULL)
    {
        printf("List is empty!\n");
        return;
    }
    while (temp != NULL)
    {
        printf("%d -> ", temp->data);
        temp = temp->next;
    }
    printf("NULL\n");
}

int main()
{
```


File Edit Selection View
DSA 4
EXPLORER
DSA 4
e.exe
ll.c
ll.c
Extension: C/C++ Themes
void traverse(struct Node* head)
{
struct Node* temp = head;
if (temp == NULL)
{
printf("List is empty!\n");
return;
}
while (temp != NULL)
{
printf("%d -> ", temp->data);
temp = temp->next;
}
printf("NULL\n");
}
int main()
{
struct Node* head = NULL;
head = insert_at_beginning(head, 10);
head = insert_at_beginning(head, 5);
head = insert_at_end(head, 20);
head = insert_at_end(head, 30);
printf("Linked List:\n");
traverse(head);
head = delete_node(head, 20);
printf("After Deleting 20:\n");
traverse(head);
return 0;
}
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
powershell
PS C:\Users\Sachith Nandakumar\Desktop\DSA 4> gcc ll.c -o e
PS C:\Users\Sachith Nandakumar\Desktop\DSA 4> ./e
Linked List:
5 -> 10 -> 20 -> 30 -> NULL
After Deleting 20:
5 -> 10 -> 30 -> NULL
PS C:\Users\Sachith Nandakumar\Desktop\DSA 4>
OUTLINE
TIMELINE
Ln 108, Col 1 Spaces: 4 UTF-8 CRLF C Go Live Win32