Write a program to implement Singly linked list with following operations a. Create a linked list b. Deletion of first element, specified element and last element in the list c. Display the contents of the linked list

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

struct node {
   int info;
   struct node *next;
};

struct node* createlk() {
   struct node *p;
   struct node *start = NULL;
   int item;
   printf("Enter -999 to exit\n");
   scanf("%d", &item);

   while (item != -999) {
      p = (struct node*)malloc(sizeof(struct node));
      p->info = item;
      p->next = start;
      start = p;

      scanf("%d", &item);
   }
   return start;
}
```

```
struct node* deleteBeginning(struct node *start) {
   if (start == NULL) {
      printf("List is already empty\n");
      return start;
   }

   struct node *temp = start;
   start = start->next;
   free(temp);

   printf("First element deleted successfully\n");
   return start;
}

struct node* deleteGiven(struct node *start, int item) {
   struct node *temp = start;
   struct node *prev = NULL;

   if (start == NULL) {
      printf("List is empty\n");
      return start;
   }

   if (start->info == item) {
      temp = start;
      start = start->next;
      free(temp);
      printf("Element %d deleted successfully\n", item);
      return start;
   }
```

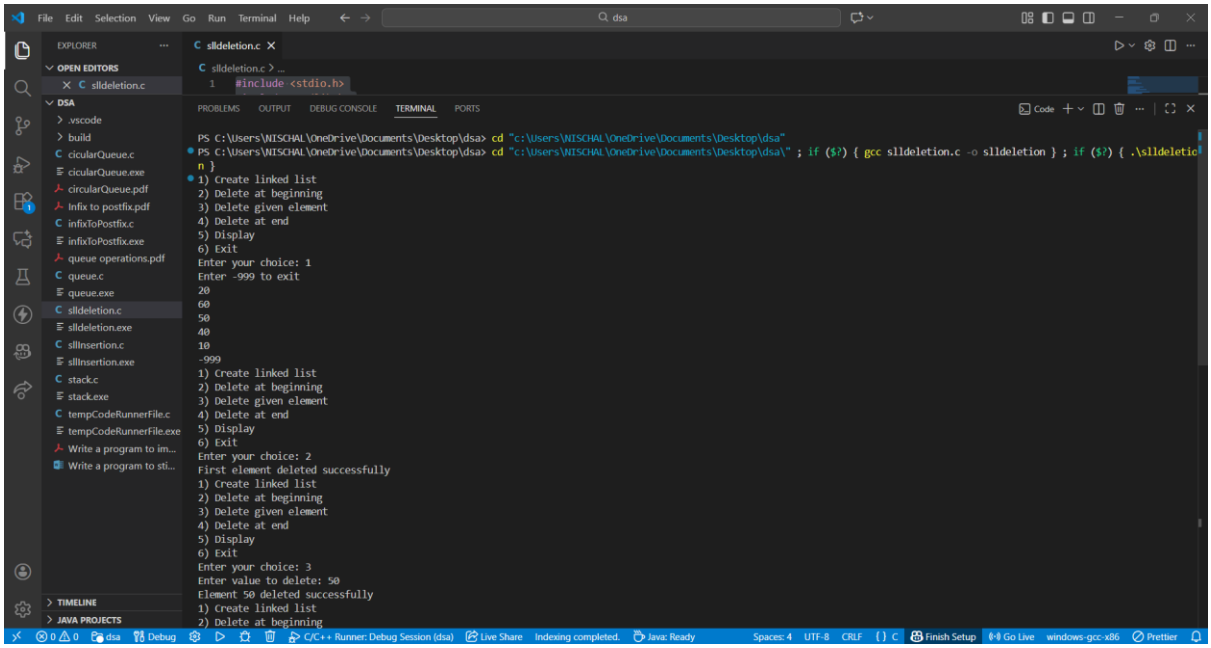
```
    while (temp != NULL && temp->info != item) {
        prev = temp;
        temp = temp->next;
    }

    if (temp == NULL) {
        printf("Element not found\n");
        return start;
    }

    prev->next = temp->next;
    free(temp);

    printf("Element %d deleted successfully\n", item);
    return start;
}

struct node* deleteEnd(struct node *start) {
    if (start == NULL) {
        printf("List is empty\n");
        return start;
    }

    struct node *temp = start;
    struct node *prev = NULL;

    if (start->next == NULL) {
        free(start);
        printf("Last element deleted successfully\n");
```

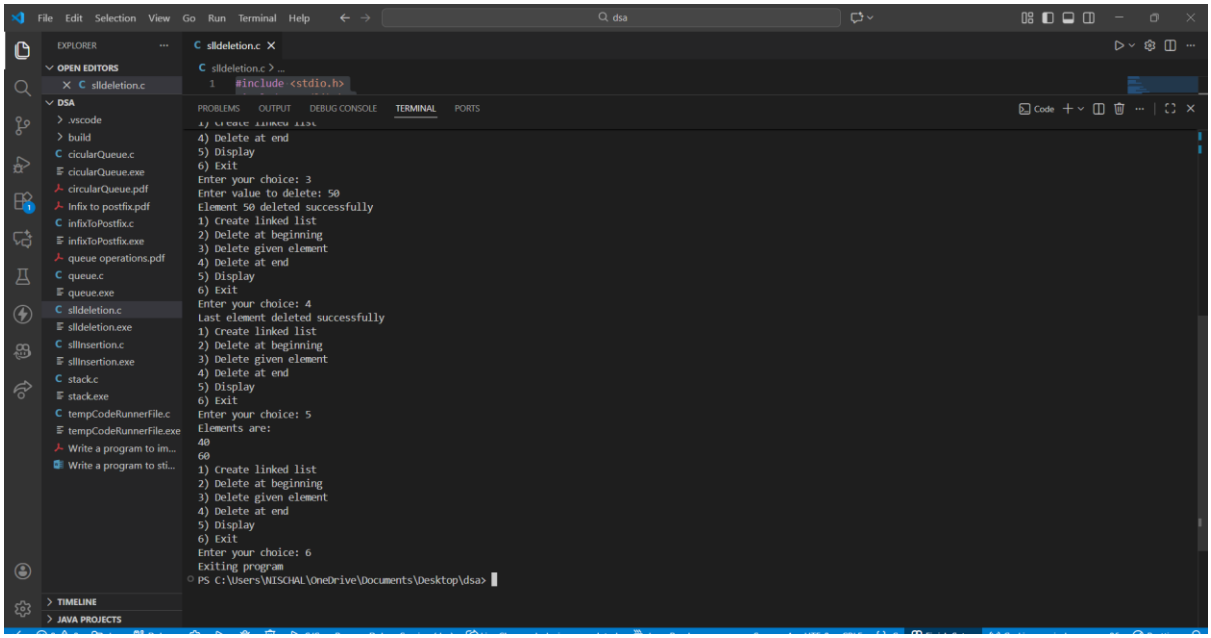
```
        return NULL;
    }

    while (temp->next != NULL) {
        prev = temp;
        temp = temp->next;
    }

    prev->next = NULL;
    free(temp);

    printf("Last element deleted successfully\n");
    return start;
}

void display(struct node *start) {
    if (start == NULL) {
        printf("Linked list is empty\n");
        return;
    }

    struct node *temp = start;
    printf("Elements are:\n");

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

```
int main() {
    struct node *head = NULL;
    int choice, val;

    while (1) {
        printf("1) Create linked list\n");
        printf("2) Delete at beginning\n");
        printf("3) Delete given element\n");
        printf("4) Delete at end\n");
        printf("5) Display\n");
        printf("6) Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                head = createlk();
                break;

            case 2:
                head = deleteBeginning(head);
                break;

            case 3:
                printf("Enter value to delete: ");
                scanf("%d", &val);
                head = deleteGiven(head, val);
                break;

            case 4:
```

```
            head = deleteEnd(head);
            break;

        case 5:
            display(head);
            break;

        case 6:
            printf("Exiting program");
            return 0;

        default:
            printf("Invalid choice :");
      }
   }
}
```

OUTPUT: -


File Edit Selection View Go Run Terminal Help
dsa
EXPLORER
OPEN EDITORS
slldeletion.c
DSA
.vscode
build
cicularQueue.c
cicularQueue.exe
circularQueue.pdf
Infix to postfix.pdf
infixToPostfix.c
infixToPostfix.exe
queue operations.pdf
queue.c
queue.exe
slldeletion.c
slldeletion.exe
sllInsertion.c
sllInsertion.exe
stack.c
stack.exe
tempCodeRunnerFile.c
tempCodeRunnerFile.exe
Write a program to im...
Write a program to sti...
TIMELINE
JAVA PROJECTS
slldeletion.c
slldeletion.c > ...
1 #include <stdio.h>
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
PS C:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa> cd "c:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa"
PS C:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa> cd "c:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa\" ; if ($?) { gcc slldeletion.c -o slldeletion } ; if ($?) { .\slldeletion }
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 1
Enter -999 to exit
20
60
50
40
10
-999
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 2
First element deleted successfully
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 3
Enter value to delete: 50
Element 50 deleted successfully
1) Create linked list
2) Delete at beginning
0 0 dsa Debug C/C++ Runner: Debug Session (dsa) Live Share Indexing completed. Java: Ready Spaces: 4 UTF-8 CRLF C Finish Setup Go Live windows-gcc-x86 Prettier


File Edit Selection View Go Run Terminal Help
dsa
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slldeletion.c
DSA
.vscode
build
cicularQueue.c
cicularQueue.exe
circularQueue.pdf
Infix to postfix.pdf
infixToPostfix.c
infixToPostfix.exe
queue operations.pdf
queue.c
queue.exe
slldeletion.c
slldeletion.exe
sllInsertion.c
sllInsertion.exe
stack.c
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tempCodeRunnerFile.c
tempCodeRunnerFile.exe
Write a program to im...
Write a program to sti...
TIMELINE
JAVA PROJECTS
slldeletion.c
slldeletion.c > ...
1 #include <stdio.h>
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Code
4) Delete at end
5) Display
6) Exit
Enter your choice: 3
Enter value to delete: 50
Element 50 deleted successfully
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 4
Last element deleted successfully
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 5
Elements are:
40
60
1) Create linked list
2) Delete at beginning
3) Delete given element
4) Delete at end
5) Display
6) Exit
Enter your choice: 6
Exiting program
PS C:\Users\NISCHAL\OneDrive\Documents\Desktop\dsa>