

Ex. No. 2b Stack Using Linked
ListDate:

Aim

To implement stack operations using linked list.

Algorithm

1. Start
2. Define a singly linked list node for stack
3. Create Head node
4. Display a menu listing stack operations
5. Accept choice
6. If choice = 1 then
 - Create a new node with data
 - Make new node point to first node
 - Make head node point to new node
- Else If choice = 2 then
 - Make temp node point to first node
 - Make head node point to next of temp node
 - Release memory
- Else If choice = 3 then
 - Display stack elements starting from head node till null
7. Stop

Program

```
/* Stack using Single Linked List */#include

<stdio.h>
#include <conio.h> #include
<process.h>#include <alloc.h>
struct node
{
    int label;
    struct node *next;
};

main()
{
    int ch = 0;int k;
    struct node *h, *temp, *head;

    /* Head node construction */
    head = (struct node*) malloc(sizeof(struct node));head->next =
    NULL;

    while(1)
    {
```

```

printf("\n Stack using Linked List \n");printf("1->Push
");
printf("2->Pop ");
printf("3->View ");printf("4
->Exit \n");
printf("Enter your choice : ");scanf("%d",
&ch);

switch(ch)
{
    case 1:
        /* Create a new node */
        temp=(struct node *) (malloc(sizeof(struct node)));printf("Enter
label for new node : "); scanf("%d", &temp->label);
        h = head;
        temp->next = h->next;h
        ->next = temp; break;

    case 2:
        /* Delink the first node */h = head
        ->next;
        head->next = h->next;

        printf("Node %s deleted\n", h->label);free(h);
        break;

    case 3:
        printf("\n HEAD ->");h = head;
        /* Loop till last node */while(h
        ->next != NULL)
        {
            h = h->next;
            printf("%d ->",h->label);
        }
        printf("NULL \n");break;

    case 4:
        exit(0);
}
}
}
}

```

Output

```

Stack using Linked List
1->Push 2->Pop 3->View 4->ExitEnter
your choice : 1
Enter label for new node : 23New node

```



added

Stack using Linked List

1->Push 2->Pop 3->View 4->ExitEnter

your choice : 1

Enter label for new node : 34

Stack using Linked List

1->Push 2->Pop 3->View 4->ExitEnter

your choice : 3

HEAD -> 34 -> 23 -> NULL

Result

Thus push and pop operations of a stack was demonstrated using linked list.

Ex. No. 3

Queue Using Linked

