**Practical 5B**

Q. Implement a Stack using linked list and perform the stack operations: Push, Pop and Print using Menu Driver Program such as  1.Push, 2.Pop and 3. Print and 4. Exit.

Program:

//stack implementation using linked list

#include <stdio.h>

#include <stdlib.h>

void push();

void pop();

void display();

struct node

{

int val;

struct node \*next;

};

struct node \*head;

void main ()

{

int choice=0;

print f("\nStack operations using linked list\n");

while(choice != 4)

{

Print f ("\n\nChose one from the below options...\n");

print f ("\n1.Push\n2.Pop\n3.Show\n4.Exit");

print f ("\n Enter your choice \n");

scanf("%d",&choice);

switch(choice)

{

case 1:

{

push();

break;

}

case 2:

{

pop();

break;

}

case 3:

{

display();

break;

}

case 4:

{

Print f ("Exit code");

break;

}

default:

{

Print f ("Please Enter valid choice ");

}

};

}

}

void push ()

{

int val;

struct node \*ptr = (struct node\*)malloc(sizeof(struct node));

if(ptr == NULL)

{

Print f ("not able to push the element");

}

else

{

Print f ("Enter the value");

scanf("%d",&val);

if(head==NULL)

{

ptr->val = val;

ptr -> next = NULL;

head=ptr;

}

else

{

ptr->val = val;

ptr->next = head;

head=ptr;

}

Print f ("Item pushed");

}

}

void pop()

{

int item;

struct node \*ptr;

if (head == NULL)

{

Print f (" Stack Underflow");

}

else

{

item = head->val;

ptr = head;

head = head->next;

free(ptr);

print f ("Item popped");

}

}

void display()

{

int i;

struct node \*ptr;

ptr=head;

if(ptr == NULL)

{

prin ("Stack is empty\n");

}

else

{

Print f("Printing Stack elements \n");

while(ptr!=NULL)

{

Print f ("%d\n",ptr->val);

ptr = ptr->next;

}

}

}

Output: