LAB PROGRAM

1.PROGRAM TO SHOW PUSH,POP,DISPLAY OPERATIONS ON STACKS

```
#include <stdio.h>
#include <stdlib.h>
#define n 5
int stack[n];
int top=-1;
void push();
void pop();
void display();

void push()
{
   int item;
      if(top==n-1)
      {
         printf("stack is full,overflow condition");
         return;
      }
      else
      {
          printf("enter the number to be inserted");
          scanf("%d",&item);
          top++;
          stack[top]=item;
      }
```

```
}

void pop()
{
   int item;
   if(top==-1)
   {
      printf("stack is empty,underflow condition");
      return;
   }
   else
   {
      printf("enter the number to be deleted\n");
      scanf("%d",&item);
       item=stack[top];
       top=top-1;
   }
}

void display()
{
   int i;
   printf("elements of stack are\t");
   for(i=top;i>=0;i--)
      {
         printf("%d\t",stack[i]);
```

```
    }
  if(top==-1)
  {
    printf("stack is empty");
  }
}
void main()
{
  int choice;
  printf("print the choices 1.push 2.pop 3.display 4.exits\n");
  printf("read choice");
  scanf("%d",&choice);
  do
  {
    switch(choice)
   {
    case 1:push();
          break;
    case 2:pop();
          break;
    case 3:display();
          break;
    case 4:exit(0);
    default:printf("invalid choice");
          break;
   }
```

```
      printf("\nread choice");
      scanf("%d",&choice);
   }while(choice!=5);
}
```

OUTPUT:

```
print the choices 1.push 2.pop 3.display 4.exits
read choice1
enter the number to be inserted10

read choice1
enter the number to be inserted20

read choice1
enter the number to be inserted30

read choice1
enter the number to be inserted40

read choice1
enter the number to be inserted50

read choice1
stack is full,overflow condition
read choice3
elements of stack are   50      40      30      20      10
read choice2
enter the number to be deleted
50

read choice3
elements of stack are   40      30      20      10
read choice2
enter the number to be deleted
40

read choice2
enter the number to be deleted
30

read choice2
enter the number to be deleted
20

read choice2
enter the number to be deleted
10

read choice2
stack is empty,underflow condition
read choice3
elements of stack are   stack is empty
read choice5

Process returned 5 (0x5)   execution time : 76.110 s
Press any key to continue.
```