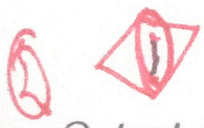
EXAMPLE 4.1. *This program demonstrates the operations performed on stack.*

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>                          /* for exit ( ) function */
#define MAXSIZE 10
void push( ) ;
int pop( ) ;
void traverse( ) ;
int stack[MAXSIZE] ;
int Top = –1 ;
void main( )
{
      int choice ;
      char ch ;
      do
      {
            clrscr( ) ;
            printf ("\n1. PUSH") ;
```

```
                printf ("\n2.POP") ;
                printf ("\n3. TRAVERSE") ;
                printf ("\nEnter your choice") ;
                scanf ("%d", &choice) ;
                switch (choice)
            {
                case 1 : push( ) ;
                         break ;
                case 2 : printf ("\n The deleted element is %d", pop( )) ;
                         break ;
                case 3 : traverse( ) ;
                         break ;
                default :  printf("\n You Entered Wrong Choice") ;
            }
            printf ("\n Do You Wish To Continue (Y/N)") ;
            fflush (stdin) ;
            scanf("%c", &ch) ;
        }
        while (ch = 'Y' II ch = 'y') ;
}
void push( )
{
        int item ;
        if(Top = = MAXSIZE – 1)
        {
            printf ("\n The Stack Is Full") ;
            getch( ) ;
            exit(0) ;
        }
        else
        {
            printf ("Enter the element to be inserted") ;
            scanf ("%d", &item) ;
            Top = Top + 1 ;
            stack [Top] = item ;
        }
}
int pop( )
{
        int item ;
        if (Top = = – 1)
        {
            printf("The stack is Empty") ;
            getch( ) ;
            exit(0) ;
        }
```

```
        else
        {
                item = stack [Top] ;
                Top = Top – 1 ;
        }
        return (item) ;
}
void traverse( )
{
        int i ;
        if (Top = = – 1)
        {
                printf ("The Stack is Empty") ;
                getch( ) ;
                exit(0) ;
        }
        else
        {
                for (i = Top ; i >= 0 ; i – –)
                {
                        printf ("traverse the element") ;
                        printf ("\n %d", stack[ i ]) ;
                }
        }
```



Output of the program

```
        1.  PUSH
        2.  POP
        3.  TRAVERSE
Enter your choice 1
Enter the element to be inserted 3

Do You Wish To Continue (Y/N)y
        1.  PUSH
        2.  POP
        3.  TRAVERSE
Enter your choice 1
Enter the element to be inserted 7

Do You Wish To Continue (Y/N) y
        1.  PUSH
        2.  POP
```