TITLE 34

Write a C program to implement the STACK operation using array as a data structure.

OBJECTIVE:

Implementation of the stack.

PROBLEM STATEMENT:

In this problem we use STACK as an array. Including

a. Push an element on to the STACK.

b. Pop and element from the STACK.

c. Peek the STACK.

d. Display the STACK.

e. Exit the program.

ALGORITHM:

START

INPUT: Read from the keyboard

COMPUTATION: Compute stack as an array

DISPLAY: Displaying the choices the user wants to perform

STOP

PROGRAM:

#include <stdio.h>

int stack[100],i,j,choice=0,n,top=-1;

void push();

void pop();

void show();

void main ()

{

printf("Enter the number of elements in the stack:");

scanf("%d",&n);

printf("\*\*\*\*\*\*\*\*\*Stack operations using array\*\*\*\*\*\*\*\*\*");

printf("\n ‘’ \n");

while(choice != 4)

{

printf("Choose one from the below options...\n");

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

printf("\n Enter your choice \n");

scanf("%d",&choice);

switch(choice)

{

case 1:

{

push();

break;

}

case 2:

{

pop();

break;

}

case 3:

{

show();

break;

}

case 4:

{

printf("Exiting....");

break;

}

default:

{

printf("Please Enter valid choice ");

}

};

}

}

void push ()

{

int val;

if (top == n )

printf("\n Overflow");

else

{

printf("Enter the value:");

scanf("%d",&val);

top = top +1;

stack[top] = val;

}

}

void pop ()

{

if(top == -1)

printf("Underflow");

else

top = top -1;

}

void show()

{

for (i=top;i>=0;i--)

{

printf("%d\n",stack[i]);

}

if(top == -1)

{

printf("Stack is empty");

}

}

CONCLUSION:

For the understanding the concept of the stacks.

OUTPUT:

Enter the number of elements in the stack:3

Choose one from the below options…

1.Push

2.Pop

3.Show

4.Exit

Enter your choice

1

Enter the value:5

Choose one from the below options…

1.Push

2.Pop

3.Show

4.Exit

Enter your choice

1

Enter the value:6

Choose one from the below options…

1.Push

2.Pop

3.Show

4.Exit

Enter your choice

1

Enter the value:7

Choose one from the below options…

1.Push

2.Pop

3.Show

4.Exit

Enter your choice

3

5

6

7

Choose one from the below options…

1.Push

2.Pop

3.Show

4.Exit

Enter your choice

4

Exiting….