STACK OPERATIONS

PUSH , POP , PEEK

#include <stdio.h>

#include <stdlib.h>

#define SIZE 4

int top = -1, n=4,inp\_array[SIZE];

void push();

void pop();

void peek();

void show();

int main()

{

int choice;

while (1)

{

printf("\nPerform operations on the stack:");

printf("\n1.Push the element\n2.Pop the element\n3.Peek\n4.Show\n5.End");

printf("\n\nEnter the choice: ");

scanf("%d", &choice);

switch (choice)

{

case 1:

push();

break;

case 2:

pop();

break;

case 3:

peek();

break;

case 4:

show();

break;

case 5:

exit(0);

default:

printf("\nInvalid choice!!");

}

}

}

void push()

{

int x;

if (top == SIZE- 1)

{

printf("\nOverflow!!");

}

else

{

printf("\nEnter the element to be added onto the stack: ");

scanf("%d", &x);

top = top + 1;

inp\_array[top] = x;

}

}

void pop()

{

if (top == -1)

{

printf("\nUnderflow!!");

}

else

{

printf("\nPopped element: %d", inp\_array[top]);

top = top - 1;

}

}

void peek()

{

if (top == -1)

{

printf("\nUnderflow!!");

}

else

{

printf("\nTop element:%d\n",inp\_array[top]);

}

}

void show()

{

if (top == -1)

{

printf("\nUnderflow!!");

}

else

{

printf("\nElements present in the stack: \n");

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

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

}

}

OUTPUT

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 1

Enter the element to be added onto the stack: 33

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 1

Enter the element to be added onto the stack: 55

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 1

Enter the element to be added onto the stack: 43

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 2

Popped element: 43

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 3

Top element:55

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 4

Elements present in the stack:

55

33

Perform operations on the stack:

1.Push the element

2.Pop the element

3.Peek

4.Show

5.End

Enter the choice: 5