//stacks using array

#include <stdio.h>

int stack[50],i,j,option=0,n,top=-1;

void push (){

    int value;

    if (top == n )

    printf("\n Overflow\n");

    else

    {

        printf("Enter the value?");

        scanf("%d",&value);

        top++;

        stack[top] = value;

    }

}

void pop (){

    if(top == -1)

    printf("Underflow\n");

    else

    top--;

}

void peek(){

    for (i=top;i>=0;i--)

    {

        printf("%d\n",stack[i]);

    }

    if(top == -1)

    {

        printf("Stack is empty\n");

    }

}

int main (){

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

    scanf("%d",&n);

    printf("Stack implementation using array\n");

    while(option != 4)

    {

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

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

        printf("\n Enter your option ");

        scanf("%d",&option);

        switch(option)

        {

            case 1:

                push();

                break;

            case 2:

                pop();

                break;

            case 3:

                peek();

                break;

            case 4:

                printf("Exiting");

                break;

            default:

                printf("Please Enter valid option");

        }

    }

    return 0;

}

OUTPUT-->

PS E:\Programs> cd "e:\Programs\programs-c\" ; if ($?) { gcc stacks-array.c -o stacks-array } ; if ($?) { .\stacks-array }

Enter the number of elements in the stack 5

Stack implementation using array

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?22

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?33

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?44

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?55

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Enter the value?66

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 1

Overflow

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 77

Please Enter valid optionChose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

66

55

44

33

22

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

55

44

33

22

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

44

33

22

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

33

22

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

22

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

11

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 2

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 3

Stack is empty

Chose one from the below options...

1.Push

2.Pop

3.Peek

4.Exit

Enter your option 4

Exiting