



NEW ERA UNIVERSITY COLLEGE OF COMPUTER STUDIES

NO. 9 CENTRAL AVE., NEW ERA, QUEZON CITY, PHILIPPINES
(02) 981-4221 | computerstudies@neu.edu.ph | www.neu.edu.ph



Marasigan, Vem Aiensi A. –BSCS2

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SOURCE CODE

```
package stack;
import javax.swing.*;
import java.awt.event.*;
import java.util.*;
public class BSCS_2_Marasigan_Stack
{
    static Scanner in = new Scanner(System.in);
    static int size = 0;
    static int limit = 0;
    static int choice = 0;
    static int push = 0;
    static JTextField scope = new JTextField();

    public static void main(String[] args)
    {
        boolean repeat = true;
        do {
            try
            {
                System.out.println("[1] Console Mode\t[2] GUI-Beta");
                System.out.print("Choose mode: ");
                choice = in.nextInt();
                switch (choice)
                {
                    case 1: consoleMode(); break;
                    case 2: System.out.println("Stack (Beta) is now launched...");
                        stackGUIbeta(); break;
                    default: System.out.println("Wrong input, Please try again\n"); break;
                }
                if ((choice == 1) || (choice == 2))
                    repeat = false;
            }
            catch (Exception e)
            {
                in.next();
                System.out.println("Wrong input, Please try again\n");
            }
        }while (repeat);
    }

    static void consoleMode()
    {
        boolean repeat=true;
        while (repeat)
        {
            try{
                System.out.print("How many elements will the stack have: ");
                limit = in.nextInt();
            }
            catch (Exception e){
                limit = 0; in.next();
                System.out.println("Wrong input, Please try again\n");
            }
            if (limit > 0)
                repeat = false;
        }

        int [] stack = new int[limit];
        int choice = 0;
        System.out.println("Stack Created!");
        do {
```



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```
try {
    System.out.println("MENU\n1. PUSH\n2. POP\n3. TOP\n4."
        + " SIZE\n5. EMPTY\n6. DISPLAY STACK\n7. EXIT");
    System.out.print("Enter Choice [1..7]: ");
    choice = in.nextInt();

    switch (choice)
    {
        case 1: System.out.print("Enter number to add to the stack: ");
            push = in.nextInt();
            pusher(stack, limit, push); displayStack(stack); break;
        case 2: poper(stack); break;
        case 3: showTop(stack); break;
        case 4: stackSize(); break;
        case 5: stackChecker(stack); break;
        case 6: displayStack(stack); break;
        case 7: System.out.println("Thank you po for using my program\n"
            + "-by Vem Aiensi A. Marasigan"); break;
        default: System.out.println("Wrong input, Please try again\n"); break;
    }
}
catch (Exception e)
{
    choice = 0; in.next();
    System.out.println("Wrong input, Please try again\n");
}
}while (choice != 7);
}
```



```
static void stackGUIbeta()
{
    //Note: I learned some of GUI from Alex Lee and Bro Code's Java GUI tutorial
    //All credits to them ^ _ ^;
    //And I am very Grateful >v< to our Very Kind Professor for extending the deadline
    JFrame createStack = new JFrame();

    scope.setBounds(50, 80, 100, 25);

    JLabel elements = new JLabel("How many elements will the stack have?");
    elements.setBounds(45, 40, 400, 25);

    JButton insert = new JButton("CREATE");
    insert.setBounds(170, 80, 100, 25);
    ActionListener make = new ActionListener()
    {
        public void actionPerformed(ActionEvent e)
        {
            limit = Integer.parseInt(scope.getText());
            System.out.println("Stack Created!\n" +
                limit + " elements can be stored in the stack.\n");

            int [] stack = new int[limit];
            JLabel ask = new JLabel("Please type number here:");
            ask.setBounds(50, 45, 220, 25);

            JTextField input = new JTextField();
            input.setBounds(220, 45, 170, 25);

            JButton button1 = new JButton("PUSH");
            button1.setBounds(50, 90, 100, 25);
            ActionListener one = new ActionListener() {
                public void actionPerformed(ActionEvent e)
                {
                    push = Integer.parseInt(input.getText());
                    pusher(stack, limit, push); displayStack(stack);
                }
            }
        }
    }
}
```



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```
};
button1.addActionListener(one);

JButton button2 = new JButton("POP");
button2.setBounds(170, 90, 100, 25);
ActionListener two = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        poper(stack);
    }
};
button2.addActionListener(two);

JButton button3 = new JButton("TOP");
button3.setBounds(290, 90, 100, 25);
ActionListener three = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        showTop(stack);
    }
};
button3.addActionListener(three);

JButton button4 = new JButton("SIZE");
button4.setBounds(50, 135, 100, 25);
ActionListener four = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        stackSize();
    }
};
button4.addActionListener(four);

JButton button5 = new JButton("EMPTY");
button5.setBounds(170, 135, 100, 25);
ActionListener five = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        stackChecker(stack);
    }
};
button5.addActionListener(five);

JButton button6 = new JButton("DISPLAY");
button6.setBounds(290, 135, 100, 25);
ActionListener six = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        displayStack(stack);
    }
};
button6.addActionListener(six);

JButton button7 = new JButton("END");
button7.setBounds(170, 180, 100, 25);
ActionListener seven = new ActionListener() {
    public void actionPerformed(ActionEvent e)
    {
        System.out.println("\t\t==StackGUI-Beta==\n"
            + "\t by Vem Aiensi Marasigan >.<\n\n"
            + "\n Note: I'm new po to GUI and it may lack features");
        System.exit(0);
    }
};
button7.addActionListener(seven);
```



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```
createStack.setVisible(false);

JPanel panel = new JPanel();
panel.setLayout(null);
panel.add(button1);
panel.add(button2);
panel.add(button3);
panel.add(button4);
panel.add(button5);
panel.add(button6);
panel.add(button7);
panel.add(input);
panel.add(ask);

JFrame mainWindow = new JFrame();
mainWindow.setTitle("Stack -Beta");
//mainWindow.setDefaultCloseOperation(1);
mainWindow.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
mainWindow.setSize(450, 300);
mainWindow.setVisible(true);
mainWindow.setResizable(false);
mainWindow.add(panel);
    }
};
insert.addActionListener(make);

JPanel firstPanel = new JPanel();
firstPanel.setLayout(null);
firstPanel.add(insert);
firstPanel.add(elements);
firstPanel.add(scope);

createStack.setTitle("Stack -Beta");
//createStack.setDefaultCloseOperation(1);
createStack.setSize(350, 200);
createStack.setVisible(true);
createStack.setResizable(false);
createStack.add(firstPanel);
}

//Methods Here
static void pusher(int[] stack, int limit, int push)
{
    if (size==limit)
    {
        System.out.println("Stack Overflow");
    }
    else
    {
        System.out.println("Stack data: " + push + " successfully pushed\n");
        stack[size]=push;
        size++;
    }
}
static void poper(int[] stack)
{
    if (size > 0)
    {
        System.out.println(stack[size-1] + " is removed from the stack.\n");
        size--;
    }
    else
    {
        System.out.println("Stack is Empty\n");
    }
}
```



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```
}  
}  
static void showTop(int[] stack)  
{  
    if (size > 0)  
    {  
        System.out.println(stack[size-1] + " is the top value of the stack.\n");  
    }  
    else  
    {  
        System.out.println("Stack is Empty\n");  
    }  
}  
static void stackSize()  
{  
    if (size>0)  
    {  
        System.out.println("The stack has a size of "+size + ".\n");  
    }  
    else  
    {  
        System.out.println("Size is 0: Stack is Empty.\n");  
    }  
}  
static void stackChecker(int[] stack)  
{  
    if (size==0){  
        System.out.println("TRUE: The Stack is Empty\n");  
    }  
    else  
        System.out.println("FALSE: The Stack contains " + size + " elements.\n");  
}  
static void displayStack(int[] stack)  
{  
    if(size==0)  
    {  
        System.out.println("Stack is Empty\n");  
    }  
    else  
    {  
        System.out.println("The stack contains: ");  
        for (int n=0; n<size; n++)  
        {  
            System.out.print("+-----");  
        }  
        System.out.println("+");  
        for (int n=0; n<size; n++)  
        {  
            System.out.print("|"+stack[n]+"|");  
        }  
        System.out.println("|");  
        for (int n=0; n<size; n++)  
        {  
            System.out.print("+-----");  
        }  
        System.out.println("+");  
    }  
}  
}
```




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SCREENSHOTS

```
BSCS_2_Marasigan_Stack [Java Application] C:\Program | BSCS_2_Marasigan_Stack [Java Application] C:\Program Fi

[1] Console Mode      [2] GUI-Beta
Choose mode: 1
How many elements will the stack have: 3
Stack Created!
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 45
Stack data: 45 successfully pushed

The stack contains:
+-----+
|45      |
+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 6
Stack data: 6 successfully pushed

The stack contains:
+-----+-----+
|45      |6      |
+-----+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 23
Stack data: 23 successfully pushed

The stack contains:
+-----+-----+-----+
|45      |6      |23     |
+-----+-----+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 2
23 is removed from the stack.

MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 6
The stack contains:
+-----+-----+
|45      |6      |
+-----+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 4
The stack has a size of 2.

MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 99
Stack data: 99 successfully pushed

The stack contains:
+-----+-----+-----+
|45      |6      |99     |
+-----+-----+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 12
Stack Overflow
The stack contains:
+-----+-----+-----+
|45      |6      |99     |
+-----+-----+-----+
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
```



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BSCS_2_Marasigan_Stack [Java Application] C:\Program F<terminated> BSCS_2_Marasigan_Stack [Java Applicat

```
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 3
99 is the top value of the stack.
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]:
5
FALSE: The Stack contains 3 elements.
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 2
99 is removed from the stack.
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 2
6 is removed from the stack.
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 2
45 is removed from the stack.
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 5
TRUE: The Stack is Empty
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 6
Stack is Empty
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 1
Stack data: 1 successfully pushed
```

```
The stack contains:
+-----+
| 1      |
+-----+
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 1
Enter number to add to the stack: 2
Stack data: 2 successfully pushed
```

```
The stack contains:
+-----+-----+
| 1      | 2      |
+-----+-----+
```

```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 4
The stack has a size of 2.
```

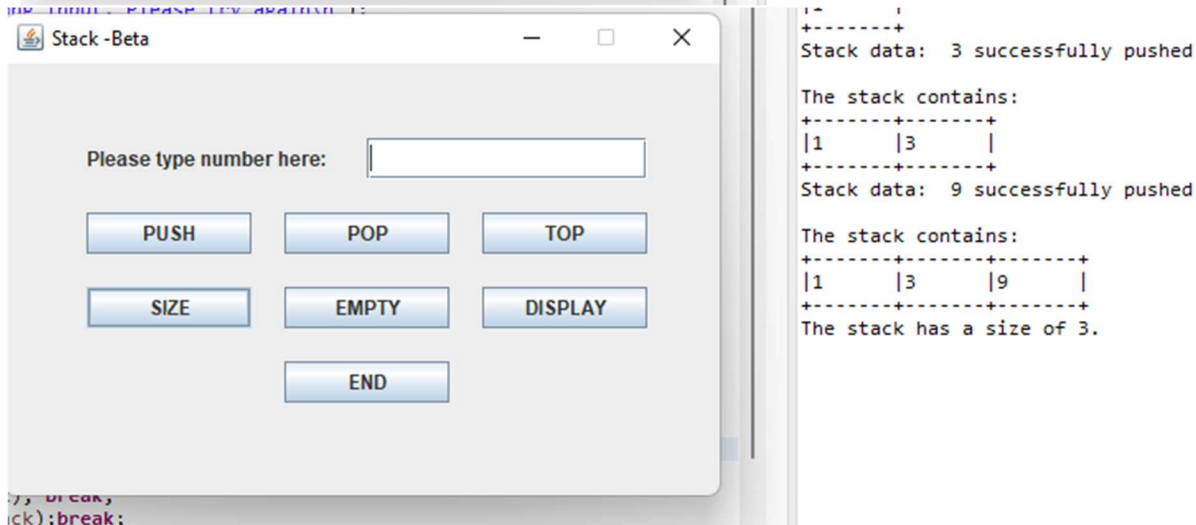
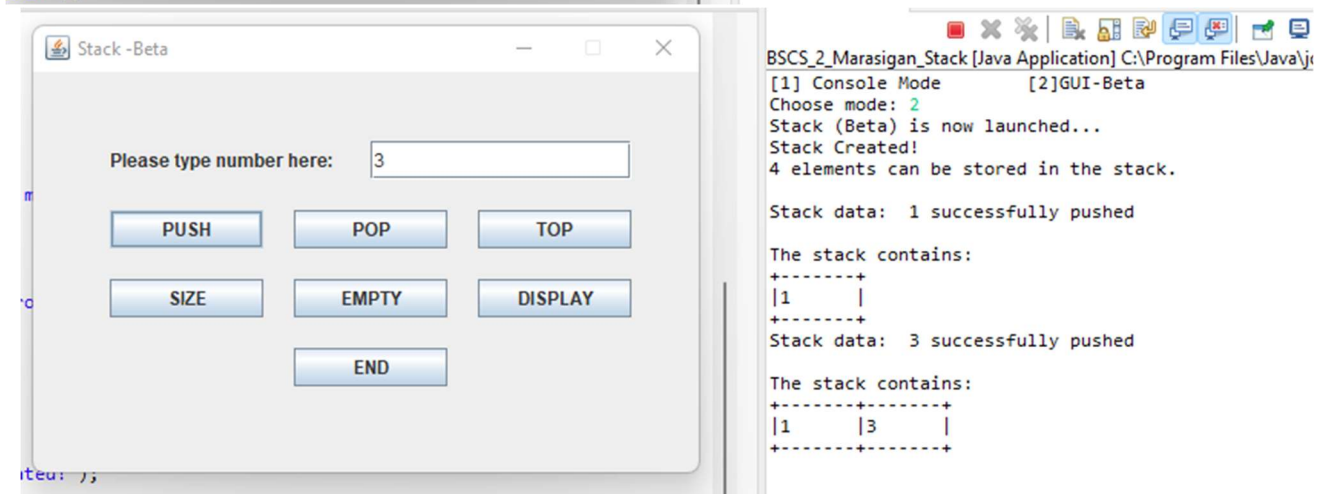
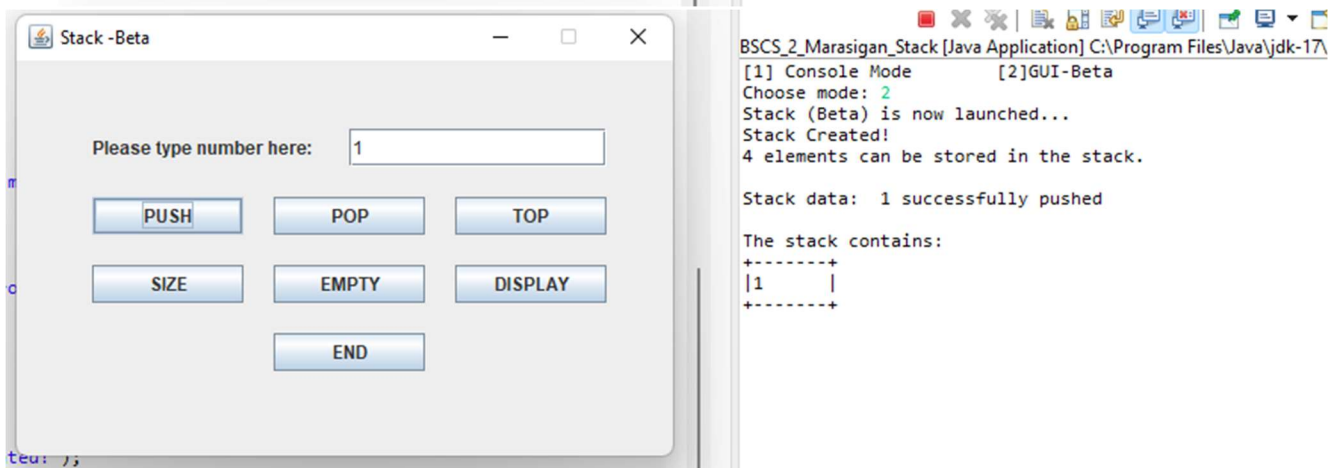
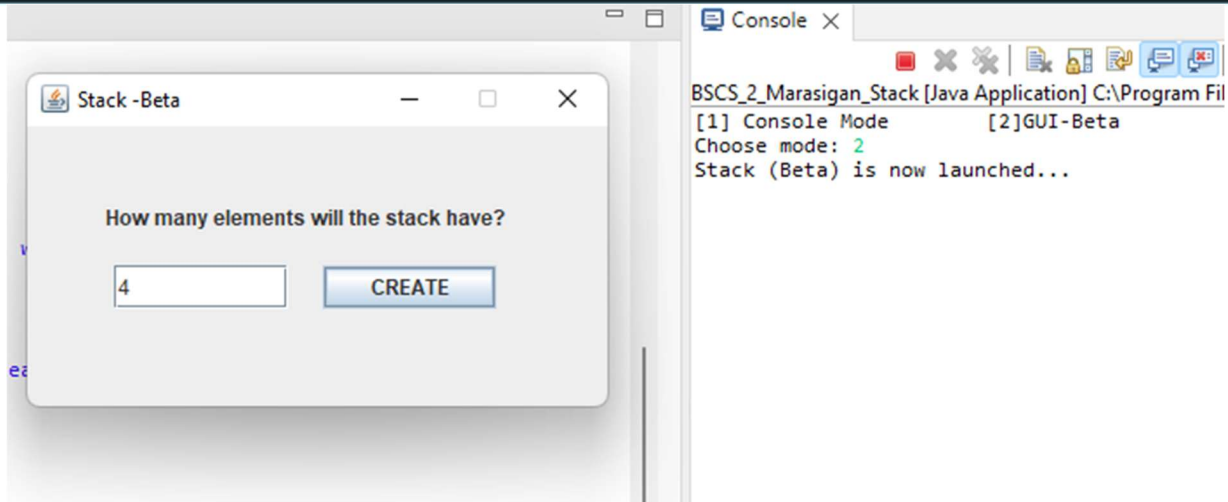
```
MENU
1. PUSH
2. POP
3. TOP
4. SIZE
5. EMPTY
6. DISPLAY STACK
7. EXIT
Enter Choice [1..7]: 7
```

Thank you po for using my program
-by Vem Aiensi A. Marasigan



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Stack -Beta

Please type number here:

PUSH POP TOP

SIZE EMPTY DISPLAY

END

```
+-----+
|1      |3      |
+-----+
Stack data: 3 successfully pushed

The stack contains:
+-----+
|1      |3      |
+-----+
Stack data: 9 successfully pushed

The stack contains:
+-----+
|1      |3      |9      |
+-----+
The stack has a size of 3.

9 is removed from the stack.

3 is the top value of the stack.
```

Stack -Beta

Please type number here:

PUSH POP TOP

SIZE EMPTY DISPLAY

END

```
The stack contains:
+-----+
|1      |3      |
+-----+
Stack data: 9 successfully pushed

The stack contains:
+-----+
|1      |3      |9      |
+-----+
The stack has a size of 3.

9 is removed from the stack.

3 is the top value of the stack.

The stack contains:
+-----+
|1      |3      |
+-----+
```

Stack -Beta

Please type number here:

PUSH POP TOP

SIZE EMPTY DISPLAY

END

```
The stack has a size of 3.

9 is removed from the stack.

3 is the top value of the stack.

The stack contains:
+-----+
|1      |3      |
+-----+
3 is removed from the stack.

1 is removed from the stack.

Stack is Empty
```



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Stack -Beta

Please type number here:

PUSH

POP

TOP

SIZE

EMPTY

DISPLAY

END

The stack has a size of 3.
9 is removed from the stack.
3 is the top value of the stack.
The stack contains:
+-----+
| 1 | 3 |
+-----+
3 is removed from the stack.
1 is removed from the stack.
Stack is Empty
TRUE: The Stack is Empty

Stack -Beta

Please type number here:

3

PUSH

POP

TOP

SIZE

EMPTY

DISPLAY

END

+-----+
| 1 | 1 |
+-----+
Stack data: 1 successfully pushed
The stack contains:
+-----+
| 1 | 1 | 1 |
+-----+
Stack data: 1 successfully pushed
The stack contains:
+-----+
| 1 | 1 | 1 | 1 |
+-----+
Stack Overflow
The stack contains:
+-----+
| 1 | 1 | 1 | 1 |
+-----+
Stack Overflow
The stack contains:
+-----+
| 1 | 1 | 1 | 1 |
+-----+

-=StackGUI-Beta=-
by Vem Aiensi Marasigan >.<

Note: I'm new po to GUI and it may lack features

^//Executed when END button is pressed^

(I'm very sorry po for using GUI because it's the only thing I had in mind to make inputs without pressing the keyboard's ENTER button)