

LABORATORY WORK BOOK

Name of the Student: N. Ravi Chandolka						Dall Marshar			
lass	CSD-B Semester And Semester					Roll Number			
		e: ACSDII Course				2 3 9	5 1 A 6	7	B 3
		Course Faculty					Faculty ID :	AREIC	652
xer	cise Nu	mber :5	Week	Number :	5		Date : 05/1	coclo	y
						S AWARDE	ř.	3	
s.	Exercise Number	EXERCISE NAME	Aim/	Algorithm / Procedure		200 000 000 000 000 000 000	Program Execution	Viva - Voce	Total
No.			Preparation	Performance in the Lab		Calculations and Graphs	Results and Error Analysis		
			4	4		4	- 4	4	20
1	5-1	amplementation of 2 Stack	7			ng :	1 /1		
2	5-2	Balanced paranthele Checking			nation () Noticed	rog d			
3	5.3	Evaluation of postlix expression	A	2	2	4	4	4	20
4	5-4	Infin to possifix expression		ngar 1	alte v	de s		1	
5	5-5	Reverse a Stack	1 1			· taray	o figul:		
6			11.5		को तेनको क	1401	40.7		
7			-	-		Ŀ	(* 4 .		
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12				. #	210		T	-	2

Signature of the Student

Signature of the Faculty

5.1

Apm: A stack is a linear data structure that stores item in a last-in, first-out (IIIO) or first-in, Last-out (IIIO) manner. In a stack a new element is added at one end of an element is added at one end of an element is aremoved from another end.

code:

import java. util. Stack;

public class Implementation _ g - Stack &

public Static void main (String args[])

Stack Lobjects > Stack = new stacks();

Stack · push (10);

stack. push ("Chandrika");

Stack · push (30);

System. out. prend (" popped Element: " 1 Stack. popci);

System-out println (" Top Element: " + Stack peck();

System. out. println (" Is stack Empty?" + Stack. is Empty(");

System. Out. println ("Stark is size:" + Slack. Size(0);

y

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Obotout:

Popped climent: 30

Top Element: Chardista

2 stack Empty? False

Stack size : 0.

```
Aim: Given an expression strong write a java program to
find whether a given string has balanced parantheses & not.
Code:
                            The ended of both upon the control of the
import java. cutil. *;
class Balanced Paranthesexhecter &
     public Static void main (string args[]) ?
           String empression = "{(a16)*[c-d)}";
           Stack & Character > Stack = new stacker();
           boolean is Balanced = True;
          tor (charch: enpression, to characters) &
            8+ (ch == '€' || ch == 'C' || ch == 'E') €
                               s consider without the state of the same
            3 else ij (ch == '3' || ch == '3' || ch == '3') {
     Stack push (ch);
             il(Stack is Empty()) }
               is Balanced = False;
                                            it diluntar lagger
               break;
                                     d Shimulas star mi
                        I there prock better but, while when I
           Char tem = Stack popc)
           if(! (fem == ! (' le ch == ')) ke! (tem == '[' le ch == ']')
                                  Per Falmus Slock
            isBalanced = Palse;
            break
          4 Menous Here me many days and 117
                      Charles the chartest his
                      Complete - Manual by
```

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if(!stack.isEmpty()){
           is Balanced = Fals;
        3
       System. Out · point In (is Balanced);
                                    Parished in the Physical Philippens in
3
Input: {(a+b)*[c-d)}
Output: False.
Aim: Given a postion expression, the task is to evaluate the
postfin cappession. Postfin expression: The empression of the Jam
*ab operator * (ab+ >i.e when a pair of operands is followed
Juy an operator.
Code:
 import java. util. *;
                                               Mary.
class Postfix Evaluator &
      public Static void moin (String args ()) of
           String empression = " 2 3 1 * + 9 = ";
           Stack (2nleger> Stack = new Stack 27();
           String[] tokens = expression. split (regex;");
          for (string token: tokens) §
              it (token. equal (anobject("+") 11 token-equals (anobject:"-")
                int operand = Stack-pop();
               Port operand = Stack popc);
```

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switch Ctoken) {
                                                                      COPC . + 1: completely appropriately suppression of the new section of the sectio
                                                                                        Stack-push (operand) + operandas;
                                                                                         break;
                                                                   Case " -":
                                                                                        Stack. push (operand) - operands); It different to get
                                                                                                                                                                                                                         Prolowni William Com
                                                                            break;
                                                                                                                           point assic in precedence (char of
                                                                                       Stack · publoperand = operand a);
                                                                                      break;
                                                                Case " 1 ";
                                                                                      Star. push Coperand / operand 2);
                                                                                         break;
                                                                                                                                                                                                                                                                 I TO STATE
                                                                    dejoutt:
                                                                                       System. Out. println (n: "Invalid Operata");
                                                                               3
                                                     else g
                                                                            Stock. push (Integer. parse Int (token));
                                                   3
                                                                                                                                                   pur principalism bire site? The of
                     Sylum-oul. print-in Cstack. pop();
                                                                                                                  and the property of the state o
                                                                                                                                  the forest state substitute of
                                                                                                                                       ACTION OF THE TOTAL
Input: 231*+9-
                                                                                it of trapper thing is all ad
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Min: Por a given infix empression, convert il to possion expression.
     This expression: The expression of the form "a operator b" carb) he
5.4
    when an operator in blu every path of operands.
    (odes
     impost java-util. *; colorer - House
    Class InjintoPostjia Convertes &
          polivate static int precedence (char operator) {
            switch Coperator) & 1
                cose't':
                (92(,-);
                   ordun Bernof I was don't to
               Case 'x':
               Cax 11:
               sichun?;
                                             things pla
               Case , v ,:
                   return 3;
              dejout :
                   ordan - Varian granatary and any
       public Static void main (string angle 1)
          String Infin = "((D-10) 161+(n/H))-R";
         String Builda postfin = new String Builder Co;
         Stak = Character > Stack = new Stak => 5);
```

for Cchar C: "nfix-toCharArray (>) { it (Charactu: isletta Or Digit (c))) { postlin append co. append co: ');

```
che & Cc = 'c') {
                                           Stact. push (c);
                              clx & (c==')'){
                       while (!Statk. is Empty () & & Stark-peck () != '(') {
                                          postfr. append (stack · pop()) . append (c: ');
                                                                                                                                                                 and well as the house
                                                                                                                                              THE PART OF METERS
                                     Stack-popcy;
                                                                                                                                                     1×111 c==1/111 c==11) {
                     else is cc==1+111 c==1-111 c==
                                   While (!stack-isEmpty ()&& precedence (stack-peek ())) &
                                                   postfir-append (Stack-pop()). append (c: 1);
                                               Stack purh (c);
                                                                                                The state of the s
                                 3
                   while (! Stack is Empty ()) &
                                      postfix-append (Stack-pop())-append (c: 1.1);
                   System.out.printin(postfix.tostring().frim());
                                                                                              Here's Art of the Miles
Input: ((D-Q)*G+(AIH))-R
                                                                                                              7/16
```

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Output: 0 9 - 61* 1 11/1 R -.
-nim: The slack is a Jonean dala structure which works on the
 LIFO corcept. LITO Siands for last -Tn, It's -out - In-the stock,
the Toscalton & detection are possible, at the one end is called
App of the stack of the state o
                                                                   hate pro-th had right and the
 code:
    import Java. with *;
    public static void main (string ange (2))?
      Scannes Scannes a new Lannes (System in);
                                 Strings I appul & scanner nontling (). split Gregen:" ");
                                gack ight egens stack & new Stack 27 ();
                               Slack / Integer > result = new Stack / >();
                              for (Siring s: Inpul) }
                                             Stack push Canteger parse ant (5));
                             101 ns Slack Sizeco;
                            for (int Pao; 12 15, 117) 3.
                                 seaul push Cslack popcos;
                                                                                 interplant to the property
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System. Ow. print Cresult- gel(1)1" ");

dos (Int 1.0; 1/1) PHOS

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