**UNIVERSIDADE ESTADUAL DE SANTA CRUZ**

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**Projeto 2 a – Logical balanced expression to Pcode**

Ilhéus – BA

2016

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**Projeto 2 a – Logical balanced expression to Pcode**

Implementação em linguagem C que converte uma expressão lógica corretamente balanceada em instruções pcode.

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# Compilação

gcc -o teste ada2asa.c pcode.c rpn2pci.c btree2rpn.c pushdown.c main.c

# Entrada

O programa recebe como entrada uma expressão lógica corretamente balanceada. Os valores considerados válidos como entrada são:

|  |  |  |
| --- | --- | --- |
| Símbolo Lógico | Nosso programa | Significado |
| ^ | & | AND |
| V | | | OR |
| ¬ | ! | NOT |
| -> | : | IMPLICATION |
| <-> | - | BICONDITIONAL |
| F | 0 | FALSE |
| T | 1 | TRUE |

# Execução

./teste “expressão”

# Exemplo

Run: ./teste ((0&(0|1)):((1|0)&1))

Pushdown Automata

Step .w Stack T P

0 . ((0&(0|1)):((1|0)&1)) - -

1 . ((0&(0|1)):((1|0)&1)) E T0 -

2 . ((0&(0|1)):((1|0)&1)) (EAEB T6 P5

3 (.(0&(0|1)):((1|0)&1)) EAEB T12+ -

4 (.(0&(0|1)):((1|0)&1)) (EAEBAEB T6 P5

5 ((.0&(0|1)):((1|0)&1)) EAEBAEB T12+ -

6 ((.0&(0|1)):((1|0)&1)) 0AEBAEB T1 P0

7 ((0.&(0|1)):((1|0)&1)) AEBAEB T12+ -

8 ((0.&(0|1)):((1|0)&1)) &EBAEB T7 P6

9 ((0&.(0|1)):((1|0)&1)) EBAEB T12+ -

10 ((0&.(0|1)):((1|0)&1)) (EAEBBAEB T6 P5

11 ((0&(.0|1)):((1|0)&1)) EAEBBAEB T12+ -

12 ((0&(.0|1)):((1|0)&1)) 0AEBBAEB T1 P0

13 ((0&(0.|1)):((1|0)&1)) AEBBAEB T12+ -

14 ((0&(0.|1)):((1|0)&1)) |EBBAEB T8 P7

15 ((0&(0|.1)):((1|0)&1)) EBBAEB T12+ -

16 ((0&(0|.1)):((1|0)&1)) 1BBAEB T2 P1

17 ((0&(0|1.)):((1|0)&1)) BBAEB T12+ -

18 ((0&(0|1.)):((1|0)&1)) )BAEB T11 P10

19 ((0&(0|1).):((1|0)&1)) BAEB T12+ -

20 ((0&(0|1).):((1|0)&1)) )AEB T11 P10

21 ((0&(0|1)).:((1|0)&1)) AEB T12+ -

22 ((0&(0|1)).:((1|0)&1)) :EB T9 P8

23 ((0&(0|1)):.((1|0)&1)) EB T12+ -

24 ((0&(0|1)):.((1|0)&1)) (EAEBB T6 P5

25 ((0&(0|1)):(.(1|0)&1)) EAEBB T12+ -

26 ((0&(0|1)):(.(1|0)&1)) (EAEBAEBB T6 P5

27 ((0&(0|1)):((.1|0)&1)) EAEBAEBB T12+ -

28 ((0&(0|1)):((.1|0)&1)) 1AEBAEBB T2 P1

29 ((0&(0|1)):((1.|0)&1)) AEBAEBB T12+ -

30 ((0&(0|1)):((1.|0)&1)) |EBAEBB T8 P7

31 ((0&(0|1)):((1|.0)&1)) EBAEBB T12+ -

32 ((0&(0|1)):((1|.0)&1)) 0BAEBB T1 P0

33 ((0&(0|1)):((1|0.)&1)) BAEBB T12+ -

34 ((0&(0|1)):((1|0.)&1)) )AEBB T11 P10

35 ((0&(0|1)):((1|0).&1)) AEBB T12+ -

36 ((0&(0|1)):((1|0).&1)) &EBB T7 P6

37 ((0&(0|1)):((1|0)&.1)) EBB T12+ -

38 ((0&(0|1)):((1|0)&.1)) 1BB T2 P1

39 ((0&(0|1)):((1|0)&1.)) BB T12+ -

40 ((0&(0|1)):((1|0)&1.)) )B T11 P10

41 ((0&(0|1)):((1|0)&1).) B T12+ -

42 ((0&(0|1)):((1|0)&1).) ) T11 P10

43 ((0&(0|1)):((1|0)&1)). T12+ -

Btree: :&&0||1\_\_0110

Reverse polish notation: 0 0 1 | & 1 0 | 1 & :

Output:

Inst Level Arg Top Counter Base Stack

INT 0 5 5 1 1 \_ \_ \_ \_ \_

LIT 0 0 6 2 1 \_ \_ \_ \_ \_ 0

STO 0 0 5 3 1 0 \_ \_ \_ \_

LIT 0 0 6 4 1 0 \_ \_ \_ \_ 0

STO 0 1 5 5 1 0 0 \_ \_ \_

LIT 0 1 6 6 1 0 0 \_ \_ \_ 1

STO 0 2 5 7 1 0 0 1 \_ \_

LOD 0 2 6 8 1 0 0 \_ \_ \_ 1

LOD 0 1 7 9 1 0 \_ \_ \_ \_ 1 0

OPR 0 2 6 10 1 0 \_ \_ \_ \_ 1

STO 0 1 5 11 1 0 1 \_ \_ \_

LOD 0 1 6 12 1 0 \_ \_ \_ \_ 1

LOD 0 0 7 13 1 \_ \_ \_ \_ \_ 1 0

OPR 0 1 6 14 1 \_ \_ \_ \_ \_ 0

STO 0 0 5 15 1 0 \_ \_ \_ \_

LIT 0 1 6 16 1 0 \_ \_ \_ \_ 1

STO 0 1 5 17 1 0 1 \_ \_ \_

LIT 0 0 6 18 1 0 1 \_ \_ \_ 0

STO 0 2 5 19 1 0 1 0 \_ \_

LOD 0 2 6 20 1 0 1 \_ \_ \_ 0

LOD 0 1 7 21 1 0 \_ \_ \_ \_ 0 1

OPR 0 2 6 22 1 0 \_ \_ \_ \_ 1

STO 0 1 5 23 1 0 1 \_ \_ \_

LIT 0 1 6 24 1 0 1 \_ \_ \_ 1

STO 0 2 5 25 1 0 1 1 \_ \_

LOD 0 2 6 26 1 0 1 \_ \_ \_ 1

LOD 0 1 7 27 1 0 \_ \_ \_ \_ 1 1

OPR 0 1 6 28 1 0 \_ \_ \_ \_ 1

STO 0 1 5 29 1 0 1 \_ \_ \_

LOD 0 1 6 30 1 0 \_ \_ \_ \_ 1

LOD 0 0 7 31 1 \_ \_ \_ \_ \_ 1 0

OPR 0 4 6 32 1 \_ \_ \_ \_ \_ 0

STO 0 0 5 33 1 0 \_ \_ \_ \_

OPR 0 0 0 3 3

# Download

https://github.com/gbfragoso/Logical2pci