UNIVERSIDADE FEDERAL DE RORAIMA
DISCIPLINA CONSTRUÇÃO DE COMPILADORES
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LISTA 6

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6.1) ① $X = (a+b+c) * (b+c) - d;$

② $\Pi = a * b + pow(c, 2)$

③ $b[i] = a[i] + a[i-1]$

a)

③
$\Pi_0 := a + b;$ #$(a+b)$;
$\Pi_0 := \Pi_0 + c;$ #$((a+b)+c)$;
$\Pi_1 := b + c;$ #$(b+c)$;
$\Pi_2 := \Pi_0 * \Pi_1;$ #$((a+b+c)*(b+c))$;
$X := \Pi_2 - d;$ #$(a+b+c)*(b+c)-d;$

②
$\Pi_0 := a * b;$ #$(a*b)$;
$\Pi_1 := c * c;$ #$(pow(c,2) = c*c)$;
$\Pi := \Pi_0 + \Pi_1;$ #$(a*b + pow(c,2))$;

③
$i_0 := i - 1;$ #$(i-1)$;
$b[i] := a[i] + a[i_0];$ #$(b[i] = a[i] + a[i-1])$;

b)

①
$\Pi_0 := a + b;$
$\Pi_0 := \Pi_0 + c;$
$\Pi_1 := b + c;$
$\Pi_2 := \Pi_0 * \Pi_1;$
$X := \Pi_2 - d;$

②
$\Pi_0 := a * b;$
$\Pi_1 := c * c;$
$\Pi := \Pi_0 + \Pi_1;$

③
$i_0 = i - 1;$
$b[i] := a[i] + a[i_0];$

6.1)

c) ①

op	arg1	arg2	res
+	a	b	n0
+	n0	c	n0
+	b	c	n1
*	n0	n1	n2
-	n2	d	X

②

op	arg1	arg2	res
+	a	b	n0
*	c	c	n1
+	n0	n1	n

③

op	arg1	arg2	res
-	i	1	_To
+	a[i]	a[_To]	b[i]

d) ①

	operador	arg1	arg2
1	+	a	b
2	+	c	①
3	+	b	c
4	*	③	②
5	-	4	d

②

	operador	arg1	arg2
1	*	a	b
2	*	c	c
3	+	③	②

③

	operador	arg1	arg2
1	-	i	1
2	+	a[i]	a[①]

6.2) a) 3 endereços

① ADD no a b;
ADD no no c;
ADD n1 b c;
MUL n2 no n1;
SUB x n2 d;

② MUL no a b;
MUL n1 c c;
ADD n no n1;

③ SUB _T0 i 1;
ADD b[i] a[i] a[_T0];

b)

① MOVE a _T0
MOVE b _T1
ADD _T0 _T1
MOVE c _T2
ADD _T0 _T2
ADD _T1 _T2
MUL _T0 _T1
MOVE d _T3
SUB _T0 _T3

② MOVE a _T0
MOVE b _T1
MOVE c _T2
MUL T0 _T1
MUL T2 _T2
ADD _T0 _T2

③ MOVE i _T0
SUB _T0 1
MOVE a[i] _T1
MOVE a[_T0] _T2
ADD _T1 _T2

6.3) notação Polonesa:

a) (a+b+c) * (b+c) - d ⇒ abc++ * bc+ d-

b) a - (b - a * (c + b / d)) ⇒ bd/c+a*b-a-

c) (a+b) - (a - (c - d) * (e - f) + g) / h ⇒ ab+ cd- ef- * a- g+ - h/

6.4) i = 0
_L1: If i > 10 goto _L2
_T2 := i * 4
a[_T2] := 0
i := i + 1
goto L1
_L2: ...

6.5)

a) i := 0

_L1: If i > 100 goto _L2

_T0 := 0.001 # EPS

_T1 := i * 4 # calculo da posição

_L3: If a[_T1] == 0 goto _L4

c[_T1] := b[_T1] / a[_T1]

_L4:

c[_T1] = _T0

_L2: ...

b)

i := 0

_L1: IF i > 100 goto _L2

_T0 := 0.001

_T1 := i * 4

_L3: IF a[_T1] == 0 goto _L4

c[_T1] := b[_T1] / a[_T1]

_L4:

c[_T1] = _T0

_L2: ...