LAB ASSIGNMENT-09

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CS 52

Q. Implement Intermediate code generation for simple expression.

expression - (a+b) * (c+d) + (a+b+c)

Three address code

1. $t_1 = a+b$
2. $t_2 = c+d$
3. $t_3 = t_1 * t_2$
4. $t_4 = t_1 + c$
5. $t_5 = t_3 + t_4$

=> Triples representation

Location	Operator	Arg1	Arg2
(0)	+	a	b
(1)	+	c	d
(2)	*	(0)	(1)
(3)	+	(0)	c
(4)	+	(2)	(3)

=> Quadruple representation

Location	Operator	Arg1	Arg2	Result
(0)	+	a	b	t_1
(1)	+	c	d	t_2
(2)	*	(0)	(1)	t_3
(3)	+	c	(0)	t_4
(4)	+	(2)	(3)	t_5

=> Indirect representation

Location	Arg 1	Arg2	Operator
(0)	a	b	+
(1)	c	d	+
(2)	(0)	(1)	*
(3)	(0)	c	+
(4)	(3)	(2)	*

Location	Statement
(14)	(0)
(15)	(1)
(16)	(2)
(17)	(3)
(18)	(4)