CS6109 - COMPILER DESIGN – LAB

Week 13 – 06.12.2022

(Observations)

1. Generate a Three Address code for the given expression (Addressing array reference translation rules).

S. No.	Input	Output
1.	c + a[i][j]	t1 = i * 12 t2 = j * 4 t3 = t1 + t2 t4 = a[t3] t5 = c + t4
2.	a := b[i] + c [j]	t1 = i*8 t2 = b[t1] t3 = j*8 t4 = c[t3] t5 = t2 + t4 a = t5
3.	a[i] := b * c + b * d	t1 = b * c t2 = b * d t3 = t1 + t2 t4 = i * 8 a[t4] = t3

2. Generate the Quadruple and Triple three address Code (TAC) for the given expression.

S. No.	Input	Output							
		Quadruple				**Triple**			
		op	arg1	arg2	result		op	arg1	arg2
1.	x[i] = y	[]=	x	i	t1	(0)	[]=	x	i
		=	y		t1	(1)	=	(0)	y
2.	x = a *-(b+c)	op	arg1	arg2	result		op	arg1	arg2
		+	b	c	t1	(0)	+	b	c
		uminus	t1		t2	(1)	uminus	(0)	
		*	a	t2	t3	(2)	*	a	(1)
		=	t3		x	(3)	=	x	(2)