

3-02-23

Analytical day - 10

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S.No = 33

1. quadruples for expression

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

(A)  $-(a * b) + (c + d) - (a + b + c + d)$

$$t_1 = a + b$$

$$t_2 = -t_1$$

$$t_3 = c + d$$

$$t_4 = t_2 * t_3$$

$$t_5 = t_1 + t_3$$

$$t_6 = t_4 - t_5$$

quadruples :-

	operator	arg1	arg2	Result
(0)	+	a	b	$t_1$
(1)	-	$t_1$		$t_2$
(2)	+	c	d	$t_3$
(3)	*	$t_2$	$t_3$	$t_4$
(4)	+	$t_1$	$t_3$	$t_5$
(5)	-	$t_4$	$t_5$	$t_6$

2. Construct three Address code following Exmp.

if  $A < B$  and  $C < D$  then  $t = 1$  else  $t = 0$ .

(A) if  $A < B$  and  $C < D$

$$t = 1$$

else

$$t = 0$$

Three address code

(1) if ( $a < b$ ) goto (3)

(2) goto (4)

(3) if ( $c < 0$ ) goto (6)

(4)  $t = 0$

(5) goto (7)

(6)  $t = 1$

(7)

### 3. Generator three address code

$c = 0$

do

if ( $a \geq b$ ) then

$x++$ ;

else

$x--$ ;

$c++$ ;

while ( $c < 5$ )

### (A) Three address code

1.  $c = 0$

2. if ( $a < b$ ) goto (4)

3. goto (7)

4.  $T_1 = x + 1$

5.  $x = T_1$

6. goto (9)

7.  $T_2 = x - 1$

8.  $x = T_2$

9.  $c = c + 1$

1. if ( $c < 5$ ) goto (12)

12.



4. Generate three address code.

```
int a[10], b[10], i, dp=0;
for (i=0; i<10; i++)
{
    dp += a[i] * b[i];
}
```

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(A)

1.  $i = 0$
2.  $t_1 = i < 10$
3. if not  $t_1$  goto 9
4.  $t_2 = i * 4$
5.  $t_3 = a[t_2]$
6.  $t_4 = i * 4$
7.  $t_5 = b[t_4]$
8.  $t_6 = t_3 * t_5$
9.  $t_7 = dp + t_6$
10.  $dp = t_7$
11.  $i = i + 1$
12. goto 2