

25/07/23

Analytical day - 5

10/05/21

S: 10 = 33

R. praveen ganesh.

(1)

DAG for following three address code:

1. $a = b + c$

2. $t_1 = a \times a$

3. $b = t_1 + a$

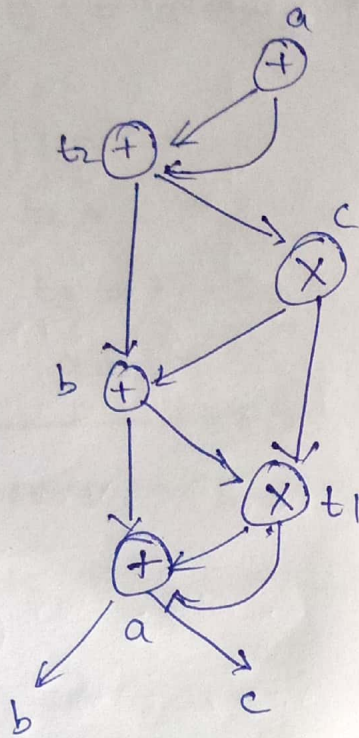
4. $c = t_1 \times b$

5. $t_2 = c + b$

6. $a = t_2 + t_2$

Directed acyclic graph :-

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② basic blocks

(1) $PROD = 0$

(2) $I = 1$

(3) $T_2 = \text{addr}(A) - 4$

(4) $T_4 = \text{addr}(B) - 4$

(5) $T_1 = 4 \times I$

(6) $T_3 = T_2[T_1]$

(7) $T_5 = T_4[T_1]$

(8) $T_6 = T_3 \times T_5$

(9) $PROD = PROD + T_6$

(10) $I = I + 1$

(11) $IF\ I \neq 20\ GOTO\ (5)$

(A) $\text{PROD} = 0$

$T1 = 4 \times T2$

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(1) $\text{PROD} = 0$

(2) $i = 1$

(3) $T2 = \text{addr}(A) - 4$

(4) $T4 = \text{addr}(B) - 4$

Block B1

(5) $T1 = 4 \times i$

(6) $T3 = T2[T1]$

(7) $T5 = T4[T1]$

(8) $T6 = T3 \times T5$

(9) $\text{PROD} = \text{PROD} + T6$

(10) $i = i + 1$

(11) IF $i \leq 20$ goto (5)

Block B2

(3) $w = (A+B) + (A+C) + (A+C)$

$t1 = A+C$

$t2 = A+C$

$t3 = A+B$

$t4 = t1 + t2 + t3$

$w = t4$

code :-

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Move A, R0

ADD B, R0

ADD A, R0

ADD C, R0

ADD A, R0

AND C, RO

 $\mu_0 v \quad R_0, \omega$

④ basic block. and flow graph.

for $i \geq 1$ to n)

2

5 f 1;

while ($j \leq n$)

9

$$A = B * (C \cap D),$$
$$j = j + 1;$$

3

3

A

PROD = 0
I = 1 } → Block 1

$$T_2 = \text{add}_2(A) - 4$$
$$T_u = \text{addr}(B) - 4$$
$$T_1 = u \times T$$
$$T_3 = T_2 [T_1]$$
$$T_5 = T_4 (T)$$
$$T_6 = T_3 \times 15$$
$$PR_{n+1} = PR_n + T_6$$
$$I = I + 1$$

Black - 31