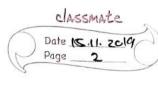
classmate

Date 15 (1. 2019

Page 1

I NTRODUCTION TO MACHINE INDEPENDENT monscon 2011 CODE OPTIMIZATIONS H-TILL Suresh purini LOCAL COMMON SUB-EXPRESSION ELIMINATION 35: to = hai > te = 4\*i x = a[+6] x = a [ta] +7 = 4米1 + t7 = t6 +8 = 4 x j t8 = 4\*i t9 = 9[+8] ta = a[+8] G [+7] = 4a a[t7] = ta > to = +8 t10 = 4\*i a[+10] = x altio] = x apto Bo goto B2 COPY PROPAGATION Bs; t6 = 4\*i to = 4 x i x = a [+6] or = a Ital t1 = 16 t7 = +6 18 = 4 Ki ts = 4\*1 t9 = a [ +8] fa = acts] a[t7] = t9 7 acts] = ta to = te a [to] = x= tco = te goto B2 ra [te] = 2

goto Br



DEAD CODE FLIMINATION  $t_6 = 4 \times i$   $t_7 = 4 \times i$   $t_8 = 4 \times j$   $t_{8} = 4 \times j$   $t_{1} = 4 \times j$ 

tg = 4\*j

tq = a[tg]

tq = a[tg]

a[t] = tq

a[tg] = tq

 $t_{10} = t_{2}$   $a[t_{9}] = x$   $a[t_{8}] = x$   $goto B_{2}$   $goto B_{2}$ 

GLOBAL COMMON SUBEXPRESSION ELIMINATION

Se the control flow graph (CFG) please in the slides.

(2) copy propagation (P)
(3) dead code elimination DE

Gress audn't uncover the common Sub-expressions carlier.

OGCSE OP BOCE 2

G GCSE Q CP Q DCE

the live range of variable 12 got increased in the uptimized program. That could translate to increased register pressure.