

编译原理作业 16

23.12.20

9.1.1

- (1) {B3, B4}, {B2, B3, B4, B5}.
- (2) B2, B3, B4, B5 中对 a 的使用可以替换为常数 1, 并消除指令 (1).
- (3) {B3, B4} 无全局公共子表达式, {B2, B3, B4, B5} 有 a+b 和 c-a.
- (4) {B3, B4} 有归纳变量 e, {B2, B3, B4, B5} 有 b 和 c.
- (5) {B3, B4} 有循环不变计算 a+b, {B2, B3, B4, B5} 无.

9.1.4

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1      dp = 0
2      lim = 8 * n
3      idx = 0
4  L:
5      t1 = A[idx]
6      t2 = B[idx]
7      t3 = t1 * t2
8      dp = dp + t3
9      idx = idx + 8
10     if idx < lim goto L
```

9.2.3

基本块	def	use	IN	OUT
B1	a, b	none	e	a, b, e
B2	c, d	a, b	a, b, e	a, b, c, d, e
B3	none	b, d	a, b, c, d, e	a, b, c, d, e
B4	d	a, b, e	a, b, c, e	a, b, c, d, e
B5	e	a, b, c	a, b, c, d	a, b, d, e
B6	a	b, d	b, d	none

另一道作业题

基本块	def	use	IN	OUT
BB1	R1, R2	none	none	R1, R2
BB2	R3, R4	R1	R1, R2	R1, R2, R3, R4
BB3	R5, R6, R7	R3	R1, R2, R3	R1, R2, R7

基本块	def	use	IN	OUT
BB4	R7, R8	R2, R4	R1, R2, R4	R1, R2, R7
BB5	none	R1, R7	R1, R2, R7	R1, R2