

代码优化作业2

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11.3

```
1  t1 = a
2  t2 = a*2
3  a = t2*t2
4  b = a+t2
```

11.4

初始值:

$gen[B1] = \{d1, d2\}$
 $kill[B1] = \{\}$
 $gen[B2] = \{\}$
 $kill[B2] = \{\}$
 $gen[B3] = \{d3, d4\}$
 $kill[B3] = \{d1, d2, d6, d8\}$
 $gen[B4] = \{d5, d6\}$
 $kill[B4] = \{d1, d3\}$
 $gen[B5] = \{\}$
 $kill[B5] = \{\}$
 $gen[B6] = \{d7, d8\}$
 $kill[B6] = \{d2, d4, d5, d6\}$

第一趟:

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{d1, d2\} \\
in[B2] &= \{d1, d2\} \\
out[B2] &= \{d1, d2\} \\
in[B3] &= \{d1, d2\} \\
out[B3] &= \{d3, d4\} \\
in[B4] &= \{d2, d5, d6\} \\
out[B4] &= \{d2, d5, d6\} \\
in[B5] &= \{d2, d5, d6\} \\
out[B5] &= \{d2, d5, d6\} \\
in[B6] &= \{d2, d5, d6\} \\
out[B6] &= \{d7, d8\}
\end{aligned}$$

第二趟:

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{d1, d2\} \\
in[B2] &= \{d1, d2, d3, d4\} \\
out[B2] &= \{d1, d2, d3, d4\} \\
in[B3] &= \{d1, d2, d3, d4\} \\
out[B3] &= \{d3, d4\} \\
in[B4] &= \{d1, d2, d3, d4, d5, d6\} \\
out[B4] &= \{d2, d4, d5, d6\} \\
in[B5] &= \{d2, d4, d5, d6\} \\
out[B5] &= \{d2, d4, d5, d6\} \\
in[B6] &= \{d2, d4, d5, d6\} \\
out[B6] &= \{d7, d8\}
\end{aligned}$$

第三趟:

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{d1, d2\} \\
in[B2] &= \{d1, d2, d3, d4\} \\
out[B2] &= \{d1, d2, d3, d4\} \\
in[B3] &= \{d1, d2, d3, d4\} \\
out[B3] &= \{d3, d4\} \\
in[B4] &= \{d1, d2, d3, d4, d5, d6\} \\
out[B4] &= \{d2, d4, d5, d6\} \\
in[B5] &= \{d2, d4, d5, d6\} \\
out[B5] &= \{d2, d4, d5, d6\} \\
in[B6] &= \{d2, d4, d5, d6\} \\
out[B6] &= \{d7, d8\}
\end{aligned}$$

不再发生变化。

14.5

初始值：

$$\begin{aligned}
def[B1] &= \{a, i\} \\
use[B1] &= \{\} \\
def[B2] &= \{\} \\
use[B2] &= \{i\} \\
def[B3] &= \{\} \\
use[B3] &= \{a, i\} \\
def[B4] &= \{b, i\} \\
use[B4] &= \{a\} \\
def[B5] &= \{\} \\
use[B5] &= \{i\} \\
def[B6] &= \{\} \\
use[B6] &= \{b, i\}
\end{aligned}$$

第一趟：

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{a, i\} \\
in[B2] &= \{a, i\} \\
out[B2] &= \{a, i\} \\
in[B3] &= \{a, i\} \\
out[B3] &= \{\} \\
in[B4] &= \{a\} \\
out[B4] &= \{b\} \\
in[B5] &= \{b\} \\
out[B5] &= \{b, i\} \\
in[B6] &= \{b, i\} \\
out[B6] &= \{\}
\end{aligned}$$

第二趟:

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{a, i\} \\
in[B2] &= \{a, i\} \\
out[B2] &= \{a, i\} \\
in[B3] &= \{a, i\} \\
out[B3] &= \{a, i\} \\
in[B4] &= \{a\} \\
out[B4] &= \{b\} \\
in[B5] &= \{b\} \\
out[B5] &= \{b, i\} \\
in[B6] &= \{b, i\} \\
out[B6] &= \{b\}
\end{aligned}$$

第三趟:

$$\begin{aligned}
in[B1] &= \{\} \\
out[B1] &= \{a, i\} \\
in[B2] &= \{a, i\} \\
out[B2] &= \{a, i\} \\
in[B3] &= \{a, i\} \\
out[B3] &= \{a, i\} \\
in[B4] &= \{a\} \\
out[B4] &= \{b\} \\
in[B5] &= \{b\} \\
out[B5] &= \{b, i\} \\
in[B6] &= \{b, i\} \\
out[B6] &= \{b\}
\end{aligned}$$

不再变化。