
Algorithm 1: Inserting ϕ nodes (minimal SSA)

```
for each  $t \in \text{vars}$  do
   $S \leftarrow \{n | t \in \text{Defs}(n)\}$ ;
  Comupters  $DF^+$ ;
  for each  $n \in DF^+$  do
    Insert a  $\phi$  node for  $t$  at  $n$ ;
```

只计算“局部”变量；“全局”变量是指那些在此基本块中没被赋值而被使用的，即其 liveness 穿过了 Basic Block 的边界

Algorithm 2: Inserting ϕ nodes for globals (semi-pruned SSA)

```
for each  $t \in \text{vars}$  do
  if  $t \in \text{globals}$  then
     $S \leftarrow \{n | t \in \text{Defs}(n)\}$ ;
    Comupters  $DF^+$ ;
    for each  $n \in DF^+$  do
      Insert a  $\phi$  node for  $t$  at  $n$ ;
```

Algorithm 3: Inserting fewest ϕ nodes (pruned SSA)

```
for each  $t \in \text{vars}$  do
  if  $t \in \text{globals}$  then
     $S \leftarrow \{n | t \in \text{Defs}(n)\}$ ;
    Comupters  $DF^+$ ;
    for each  $n \in DF^+$  do
      if  $t$  live-in at  $n$  then
        Insert a  $\phi$  node for  $t$  at  $n$ ;
```
