

---

**Algorithm 1** Transfer function for Phi *bnode*, *anode*, and *state*

---

```
rr  $\leftarrow$  getDefRealRegister anode
vrs  $\leftarrow$  getOpVirtualRegisters bnode
for vr in vrs do
  rrss  $\leftarrow$  getRealRegisterKeysFor rr state
  for rrs in rrs do
    if notEmpty rrs and rr not in rrs then
      return MALFORMED_PHI
    end if
  end for
end for
vr  $\leftarrow$  getDefVirtualRegister bnode
return insert rr (asSet vr) state
```

---

---

**Algorithm 2** Transfer function for Move *anode*, and *state*

---

```
newState  $\leftarrow$  state
for (from, to) in getMoves anode do
  if from in state then
    vrs  $\leftarrow$  lookup from state
    newState  $\leftarrow$  insert to vrs newState
  else
    newState  $\leftarrow$  delete to newState
  end if
end for
return newState
```

---

---

**Algorithm 3** Transfer function for all other *bnode*, *anode*, and *state*

---

```
vrs  $\leftarrow$  getOpVirtualRegisters bnode
rrs  $\leftarrow$  getOpRealRegisters anode
for vr in vrs, rr in rrs do
  vrs'  $\leftarrow$  lookup rr state
  if notEmpty vrs' and not member vr vrs' then
    return CONFLICT ERROR
  end if
end for
rrs'  $\leftarrow$  getDefRealRegisters anode
rrs''  $\leftarrow$  getTempRealRegisters anode
vrs'  $\leftarrow$  getDefVirtualRegisters bnode
vrs''  $\leftarrow$  getTempVirtualRegisters bnode
for rr in join rrs' rrs'', vr in join vrs' vrs'' do
  insert rr (asSet vr) state
end for
return state
```

---