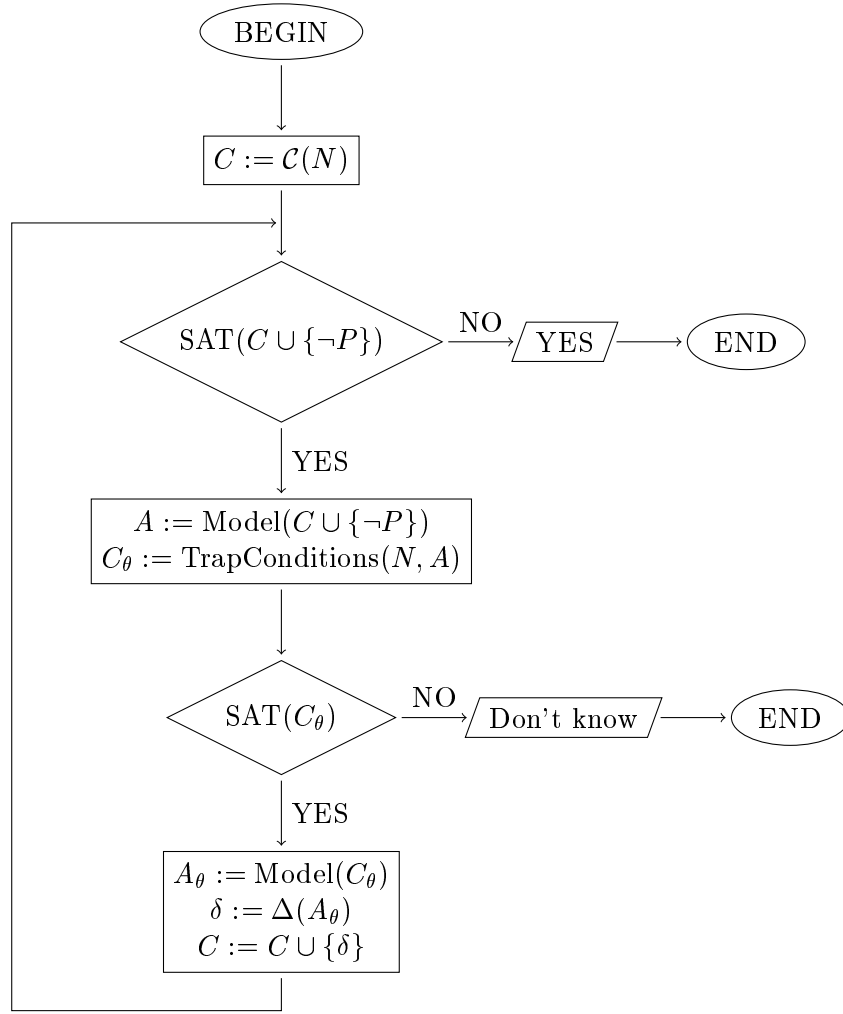


1 Method



2 Constraints C_0

$$\begin{array}{llll}
p_1 = 1 - u_1 & & + u_6 & \\
p_2 = 0 + u_1 - u_2 - u_3 & & & \\
p_3 = 0 & + u_2 + u_3 - u_4 - u_5 & & \\
p_4 = 0 & + u_4 + u_5 - u_6 & & \\
q_1 = 1 & & - v_1 & + v_6 \\
q_2 = 0 & & + v_1 - v_2 - v_3 & \\
q_3 = 0 & & + v_2 + v_3 - v_4 - v_5 & \\
q_4 = 0 & & + v_4 + v_5 - v_6 & \\
(m_1 = f) = 1 - u_1 & + u_6 & & \\
(m_1 = t) = 0 + u_1 & - u_6 & & \\
(m_2 = f) = 1 & & - v_1 & + v_6 \\
(m_2 = t) = 0 & & + v_1 & - v_6 \\
(hold = 1) = 1 & + u_2 & & - v_3 \\
(hold = 2) = 0 & - u_2 & & + v_3 \\
p_4 \geq 1 & & & \\
q_4 \geq 1 & & & \\
\forall p \in S \cup T : & p \geq 0 & &
\end{array}$$

$$\delta_1 = p_3 \vee q_2 \vee (m_2 = f) \vee (hold = 2)$$

$$\delta_2 = p_2 \vee q_3 \vee (m_1 = f) \vee (hold = 1)$$

3 A_1

$$\begin{aligned}p_1 &= 0 \\p_2 &= 0 \\p_3 &= 0 \\p_4 &= 1 \\q_1 &= 0 \\q_2 &= 0 \\q_3 &= 0 \\q_4 &= 1 \\(m_1 = f) &= 0 \\(m_1 = t) &= 1 \\(m_2 = f) &= 0 \\(m_2 = t) &= 1 \\(hold = 1) &= 1 \\(hold = 2) &= 0 \\u_1 &= 1 \\u_2 &= 0 \\u_3 &= 1 \\u_4 &= 0 \\u_5 &= 1 \\u_6 &= 0 \\v_1 &= 1 \\v_2 &= 1 \\v_3 &= 0 \\v_4 &= 1 \\v_5 &= 0 \\v_6 &= 0\end{aligned}$$

4 A_2

$$\begin{aligned}p_1 &= 0 \\p_2 &= 0 \\p_3 &= 0 \\p_4 &= 1 \\q_1 &= 0 \\q_2 &= 0 \\q_3 &= 0 \\q_4 &= 1 \\(m_1 = f) &= 0 \\(m_1 = t) &= 1 \\(m_2 = f) &= 0 \\(m_2 = t) &= 1 \\(hold = 1) &= 0 \\(hold = 2) &= 1 \\u_1 &= 1 \\u_2 &= 0 \\u_3 &= 1 \\u_4 &= 1 \\u_5 &= 0 \\u_6 &= 0 \\v_1 &= 1 \\v_2 &= 0 \\v_3 &= 1 \\v_4 &= 1 \\v_5 &= 0 \\v_6 &= 0\end{aligned}$$

5 $A_{\theta 1}$

$$bp_1 = 0$$

$$bp_2 = 0$$

$$bp_3 = 1$$

$$bp_4 = 0$$

$$bq_1 = 0$$

$$bq_2 = 1$$

$$bq_3 = 0$$

$$bq_4 = 0$$

$$b(m_1 = f) = 0$$

$$b(m_1 = t) = 0$$

$$b(m_2 = f) = 1$$

$$b(m_2 = t) = 0$$

$$b(hold = 1) = 0$$

$$b(hold = 2) = 1$$

6 $A_{\theta 2}$

$$bp_1 = 0$$

$$bp_2 = 1$$

$$bp_3 = 0$$

$$bp_4 = 0$$

$$bq_1 = 0$$

$$bq_2 = 0$$

$$bq_3 = 1$$

$$bq_4 = 0$$

$$b(m_1 = f) = 1$$

$$b(m_1 = t) = 0$$

$$b(m_2 = f) = 0$$

$$b(m_2 = t) = 0$$

$$b(hold = 1) = 1$$

$$b(hold = 2) = 0$$

7 C_θ

①

$$\begin{aligned}
bp_1 &\implies (bp_2 \vee b(m_1 = t)) \\
bp_2 &\implies (bp_3 \vee b(hold = 1)) \wedge (bp_3 \vee b(hold = 1)) \\
bp_3 &\implies (bp_4 \vee b(m_2 = f)) \wedge (bp_4 \vee b(hold = 2)) \\
bp_4 &\implies (bp_1 \vee b(m_1 = f)) \\
bq_1 &\implies (bq_2 \vee b(m_2 = t)) \\
bq_2 &\implies (bq_3 \vee b(hold = 2)) \wedge (bq_3 \vee b(hold = 2)) \\
bq_3 &\implies (bq_4 \vee b(m_1 = f)) \wedge (bp_4 \vee b(hold = 1)) \\
bq_4 &\implies (bq_1 \vee b(m_2 = f)) \\
b(m_1 = f) &\implies (bp_2 \vee b(m_1 = t)) \wedge (bq_4 \vee b(m_1 = f)) \\
b(m_1 = t) &\implies (bp_1 \vee b(m_1 = f)) \\
b(m_2 = f) &\implies (bq_2 \vee b(m_2 = t)) \wedge (bp_4 \vee b(m_2 = f)) \\
b(m_2 = t) &\implies (bq_1 \vee b(m_2 = f)) \\
b(hold = 1) &\implies (bq_3 \vee b(hold = 2)) \wedge (bq_4 \vee b(hold = 1)) \wedge (bp_3 \vee b(hold = 1)) \\
b(hold = 2) &\implies (bp_3 \vee b(hold = 1)) \wedge (bp_4 \vee b(hold = 2)) \wedge (bq_3 \vee b(hold = 2))
\end{aligned}$$

②

$$bp_1 \vee bq_1 \vee b(m_1 = f) \vee b(m_2 = f) \vee b(hold = 1)$$

③₁

$$\neg bp_4 \wedge \neg bq_4 \wedge \neg b(m_1 = t) \wedge \neg b(m_2 = t) \wedge \neg b(hold = 1)$$

③₂

$$\neg bp_4 \wedge \neg bq_4 \wedge \neg b(m_1 = t) \wedge \neg b(m_2 = t) \wedge \neg b(hold = 2)$$