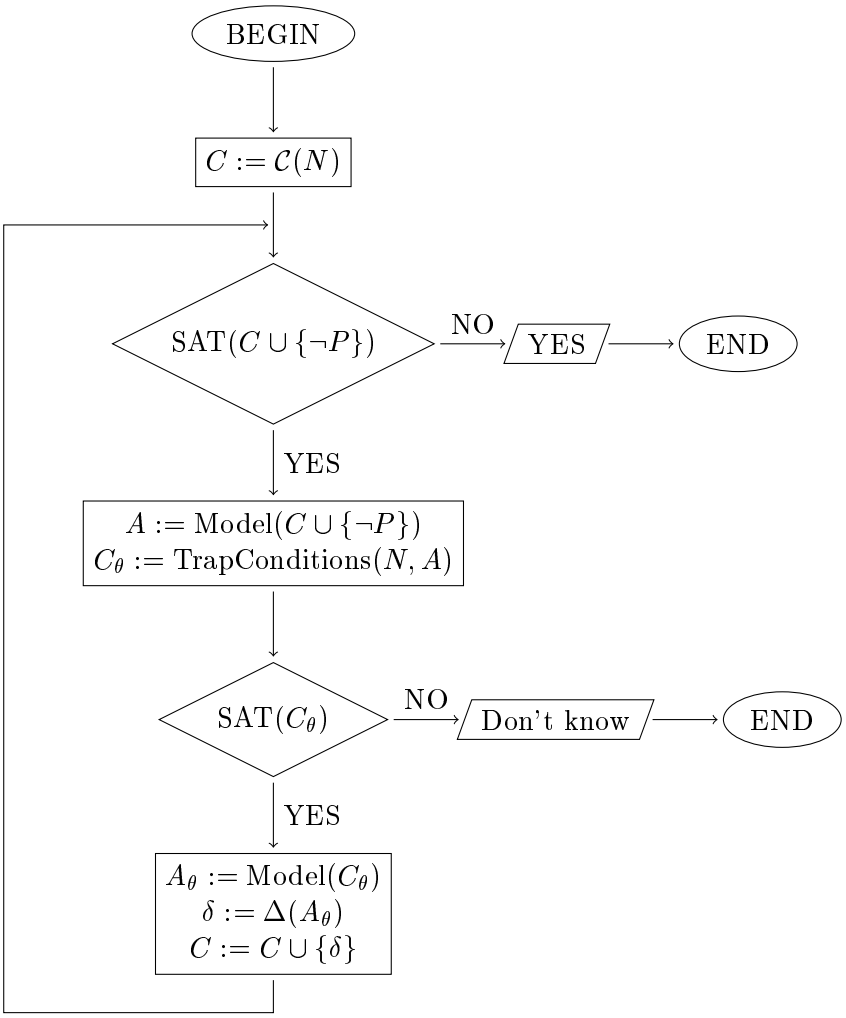
Method


BEGIN
$C := \mathcal{C}(N)$
SAT($C \cup \{\neg P\}$)
NO
YES
END
YES
$A := \text{Model}(C \cup \{\neg P\})$
$C_\theta := \text{TrapConditions}(N, A)$
SAT(C_θ)
NO
Don't know
END
YES
$A_\theta := \text{Model}(C_\theta)$
$\delta := \Delta(A_\theta)$
$C := C \cup \{\delta\}$

Constraints C_0

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

$$
\begin{aligned}
\delta_1 &= p_3 \vee q_2 \vee (m_2 = f) \vee (hold = 1) \\
\delta_2 &= p_2 \vee q_3 \vee (m_1 = f) \vee (hold = 2)
\end{aligned}
$$

A_1

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

A_2

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

$A_{\theta 1}$

$$
\begin{aligned}
bp_1 &= 0 \\
bp_2 &= 0 \\
bp_3 &= 1 \\
bp_4 &= 0 \\
bq_1 &= 0 \\
bq_2 &= 1 \\
bq_3 &= 0 \\
bq_4 &= 0 \\
b(m_1 = f) &= 0 \\
b(m_1 = t) &= 0 \\
b(m_2 = f) &= 1 \\
b(m_2 = t) &= 0 \\
b(hold = 1) &= 0 \\
b(hold = 2) &= 1
\end{aligned}
$$

$A_{\theta 2}$

$$
\begin{aligned}
bp_1 &= 0 \\
bp_2 &= 1 \\
bp_3 &= 0 \\
bp_4 &= 0 \\
bq_1 &= 0 \\
bq_2 &= 0 \\
bq_3 &= 1 \\
bq_4 &= 0 \\
b(m_1 = f) &= 1 \\
b(m_1 = t) &= 0 \\
b(m_2 = f) &= 0 \\
b(m_2 = t) &= 0 \\
b(hold = 1) &= 1 \\
b(hold = 2) &= 0
\end{aligned}
$$

C_θ

①

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

②

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

③$_1$

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

③$_2$

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