مبرא לאימוח חכבי — 236342
הורח תש"ע — מביא סופי — מערז ב'
10.3.2010

הנתניה:

• משך הביווח: שלוש שעות. המגיעה לכלל 4 שאלות.
• השזור על השאלות במחזורות הביווח ולו על גבי נופס.
• הביווחים עם זכר פיתוח.
• השאלות אינן כלל שיווק-קשי.
• קריאת את כל הביווחים לوفق שאותה מתיחלים על זה.
• השموافقة לא ימיוך את מבית בקפודות.

הصحة!

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1. Let $\mathcal{X}$ be an interpretation of the program $P_1$ in the context of the monitor $\mathcal{M}$.

Let $n \in \mathbb{N}$ be the number of iterations of the loop in $P_1$. Then:

$$[q(\mathcal{X})](P_1 = P_2)$$

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**Diagram Description:**

**P1:**
- **Start**
- $x := x \times 3$
- $x := x - 5$
- **Even**$(x)$:
  - **F**
  - $x := x / 2$
  - **T**
  - **Monitor**$(\mathcal{X})$
  - $x := x + 10$
- **Halt**

**P2:**
- **Start**
- $x := x + x$
- $x > 3$
  - **F**
  - **Monitor**$(\mathcal{X})$
  - $x := x + x$
- **T**
  - **Halt**

---

In the context of the monitor, $\mathcal{M}$, the executions of $P_1$ and $P_2$ are equivalent. The loop in $P_1$ is equivalent to the update of $x$ in $P_2$. The monitor ensures that the shared variable $x$ is updated correctly after each iteration of the loop.
2. (25 נקודות) הגדר את שפת המפרשים CTL2stawית הבאה: ווירית הקצה של CTL.*

בנוסף, מצולול ווטרייד בידור שגרそうで TTLים.

ב. לכל אתר מנופתותיottie CTL את משטח מתוח CTL, הכותב מתוח TTL של משטח השקולה. שבה יי p,q המ

נופתותיottie תוקף את השקולה ובר נופתותיottie שארשותיון, (EFp), שמקי את

השקלות עזרו להנופה את האורחות.

EFp
ApUq
AXq

ב. עבורי p,q הנופתותיottie, חוכם אלגוריתם פוריש לטין כל המבצעים המפסקים.

.EG(pUq)
3. Two-player games, the game tree is CTL, the game tree has CTL final nodes.

An infinite path in a game tree is called an infinite edge. To win, a player must ensure that the game tree continues forever. The winning condition for the player is that the game tree continues forever.

In other words, the game tree is infinite.

For the player to win, the game tree must continue forever.

If the game tree continues forever, the player wins.

If the game tree does not continue forever, the player loses.

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\[ M \in \text{SAT} \]

\[ p \in AP \]

\[ \exists \overline{s}_0 \quad \text{such that} \quad s_0 \lnot F_{\text{m}0} \]

\[ E(pWq) \]

\[ (Gp) \lor (pUq) \]

\[ s_0 \lnot F_{\text{m}0} \]