Correction to ‘Technology for Testing Nondeterministic Client/Server Database Applications’

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In the article cited above, Fig. 19 (p. 69) was erroneously omitted from the final publication which appeared in TSE, vol. 30, no. 1, Jan. 2004. The textual reference to the figure is as follows:

In Step 3 of Algorithm 4 (see Fig. 19), it first adds a T-event \( e \) and its edges to \( G_{MCFP} \) if \( e \) is a not-happened-before node in both \( RG_1 \) and \( RG_2 \). Then, it removes \( e \) from \( RG_1 \) and \( RG_2 \). This process continues until there does not exist any T-event which is a not-happened-before node in both \( RG_1 \) and \( RG_2 \). The algorithm shows one method of deriving the MCFP from two T-sequences, from which we can easily know that the MCFP of two T-sequences is unique. Fig. 16 shows an example for the definition of the MCFP. In the example, the MCFP has three T-events. In the extreme case, the MCFP of two T-sequences has no T-event.

REFERENCES


Algorithm 4: Derive the MCFP of two T-sequences \( T_1 \) and \( T_2 \)
Input: T-sequences \( T_1 \) and \( T_2 \)
Output: The race graph \( G_{MCFP} \) of the MCFP of \( T_1 \) and \( T_2 \)
1. Invoke Algorithm 1 to generate the race graph of \( T_1 \) and \( T_2 \). Let \( RG_1 = \text{Original}_1 \cdot \text{Race-graph}(T_1) \) and \( RG_2 = \text{Original}_2 \cdot \text{Race-graph}(T_2) \).
2. Let \( G_{MCFP} \) be a graph with no node and no edge (a null graph).
3. WHILE (there exists a T-event \( e \) which is a not-happened-before node in both \( RG_1 \) and \( RG_2 \)) DO
   Add \( e \) to \( G_{MCFP} \)
   FOR each pair of node \( (e_i, e_j) \) in \( G_{MCFP} \)
     IF \( (e_i, e_j) \) is an edge in \( \text{Original}_1 \cdot \text{Original}_2 \), THEN add it to \( G_{MCFP} \)
   END FOR
   Remove \( e \) and all its out-edges from \( RG_1 \) and \( RG_2 \)
END WHILE
4. Return \( G_{MCFP} \)

Fig. 19. Algorithm 4.