在半結構性質資料庫中實體化的視窗維護之研究

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摘 要

隨著網際網路的發展，半結構性資料(Semi-structured Data)已廣泛的被應用於資訊的交換和存取上。在關聯式資料庫的技術中，經由使用實體化的視窗(Materialized View)可加速資料查詢的速度。但是由於半結構性資料不像關聯式資料般的有固定的結構，因此在關聯式資料庫中所使用的視窗維護的技術，無法直接套用於半結構性資料庫(Semi-structured Database)中。我們提出了一個維護半結構性資料庫中實體化視窗的方法，可以在時間與空間的需求間取得一個較好的平衡。在我們所提出的方法中，首先將XML文件中的文件類型定義(Document Type Definition, DTD)轉換成一關聯式結構S(Relational Schema)。當使用者透過一個半結構性資料庫的查詢定義SQ1產生實體化的視窗時，SQ1以S為依據轉換成關聯式查詢語定義RQ1並記錄下來。當使用者使用SQ2更新半結構性資料庫時，SQ2依相同的方法轉換成關聯式更新語法定義RQ2。轉換後得到的RQ1與RQ2則透過現有維護關聯式資料庫中實體化視窗的方法來判斷是否需要更新。如果RQ2會影響RQ1的完整性時，即進行在半結構性資料庫中維護實體化視窗的更新。若RQ2與RQ1互不影響時，則代表半結構性資料庫中實體化的視窗不需要更新。

關鍵詞 : 半結構性資料 ; 文件類型定義 ; 實體化視窗

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