

SUMMARY OF Ph.D. DISSERTATION

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Title Generation and Optimization of Adaptive Web View Using SuperSQL		
Abstract <p>In this thesis, we propose <i>ACTIVIEW</i> to achieve dynamic adjustment to the terminal display size when database information is displayed as a view using SuperSQL, a query language which connects relational database to WWW. In addition, the criterion for the layout is proposed to offer the Web view with the optimized layout for the user environment by using <i>ACTIVIEW</i>. The restrictions and objective functions are proposed for achievement of the optimized layout conversion.</p> <p><i>ACTIVIEW</i> proposes the adaptation technology for Web access environment which is different for each user using SuperSQL, a middleware system between the relational database and WWW. In this paper, adapting means making layout suitable to display size by converting the layout structures. The adaptation is not limited to personal computers. It is attracting attention with an explosive increase in the number of small portable terminal and mobile phones.</p> <p>For the Web View generated by <i>ACTIVIEW</i> to be the optimized for user environment and structurally consistent layout, we propose two restrictions and three objective functions.</p> <p><i>ACTIVIEW</i>, first, generates the candidate layouts according to width restriction that judges whether the generated layout is narrower than the user display width, and developer restrictions that determines the structure information which is specified by developer in original query. These two restrictions are the conditions that must be satisfied when <i>ACTIVIEW</i> generates the result layout. The candidate layouts meeting with the restrictions are tested to maximize three objective functions: the width rate objective function that determines how efficiently the width is used for the user display size, the filling rate objective function that judges how efficiently the space is used for the user display space, and the length objective function that prevents length of the candidate layout.</p> <p>We have shown the efficiency of our proposed method in comparison to simple order search and exhaustive search on computation time, number of converted connect operators and layout structural consistency.</p>		