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A JAVA ENVIRONMENT FOR A SEMANTIC QUERY INTERFACE FOR RELATIONAL DATABASES

As advances in computer technology allow for the efficient storage of information in databases, equally efficient methods for extracting this data become necessary. Database querying is commonly performed using Structured Query Language (SQL). SQL queries often become long and complicated as the size of the database increases and the relationships grow in number and complexity. Additionally, writing SQL queries requires a significant knowledge of the database structure. Unity is a system for semantic querying that simplifies query formulation compared to SQL. It uses dictionary terms instead of database structure to build SQL queries. This allows users to generate relatively complex SQL queries with minimal knowledge of database concepts, such as relationships, or even SQL itself. The application was written using Microsoft's Foundation Classes (MFC) library and ODBC, and is thus limited in the number of platforms for which it is available. The purpose of this project is to begin the process of porting the application to a more universal environment, such as Java, by creating a Graphical User Interface (GUI) that resembles the GUI of the original Unity application. This GUI is made up of two tree views. Fields are selected from the right-side tree to be part of the query built in the left-side tree. The contents of the right-side tree, which incorporates the semantic naming aspects of the Unity application, are determined by a separate, yet to be written, application that uses the Unity dictionary to build the semantic names and relationship view. This information is passed to the applet through parameters at initialization time. New options are available to the user that were not available in the GUI of Unity, such as Order By and exclusion from the query results. Besides the operational GUI it is next necessary to implement a working database interface in Java using Java Database Connectivity (JDBC). This GUI will then serve as a front-end for another Java application that will handle Unity's advanced features.