Report for Solution of Recursive File Structure

The report demonstrates the design and solution used for storing recursive file structure in MySQL and evaluates the solution against other existing solutions.

To store the recursive file structure which is hierarchical data in a MySQL database relational database, a tree table structure appropriate has been implemented. In recursive file structure, every folder is the parent and files contained inside the folder are the children.

Taking the parent and child appreciation, tables have been creating to store parent nodes and another table to store the child nodes with their unique id number.

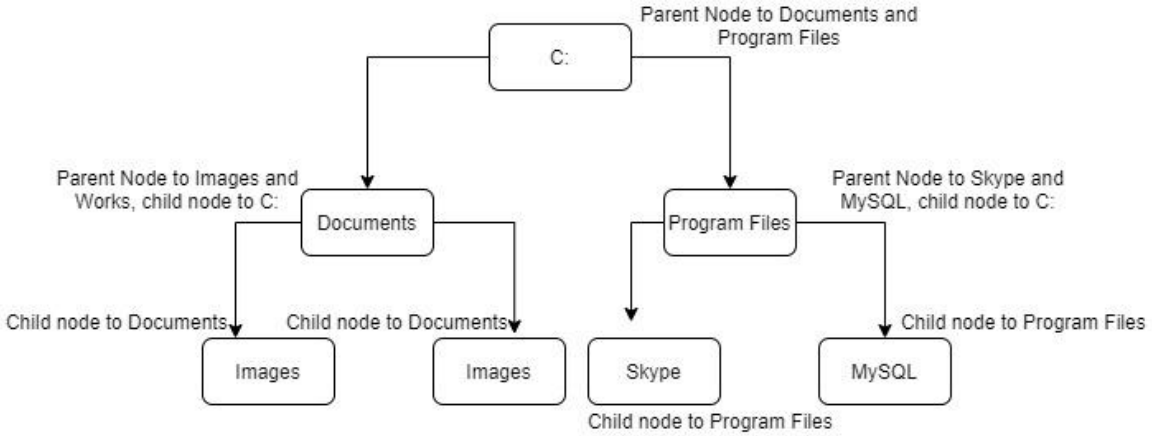

Figure 1: Recursive File Structure Tree Diagram

The parent id from the parent table is the primary key and unique identifier for the parent nodes and the child table also contain a row that stores the parent id. One to many relationships has been created between the parent and child table where the parent id is the foreign key in the child table and has many children. To ease the process find the path to the child node, the child table also stores the path for each child node in the recursive file structure.

Alternative solutions have taken the approach of storing all the data regarding the recursive file structure in one table. A limitation of this approach is that more data have to be stored in the primary table to establish the relationship between parent and child nodes for the hierarchical data structure which leads to extensive insertion, deletion and space overhead.
Another solution is using non relational database such as Dynamodb which is well suitabed for hierarchical datasets.

The advantages the solution created using relational database includes easy retrieval of data due to the links between parent and child table, any changes made to the parent table will concurrently update the child table, higher query data retrieval performance and effortless data sharing.