Database Management System

Create database
(ruanko.db file)

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Function

For the core function of DBMS, we need to implement "Create database" function first.

Database management system will create a default database, named "Ruanko".

Input:

In the OnNewDocument() of document class, the hard coded database name is "Ruanko" which will be transferred to CreateDatabase() function of database logic class CDBLogic for handling.

Process:

Read the system file "ruanko.db" to judge if database is existed or not.

If not exists, then create file and folder according to database name, and save database information to "ruanko.db" file.

Output:

Create database directory structure and save database file. The database name is displayed in the interface tree view CDBView.

Design

Iterative development based on the “exception handling”

Combined with MFC SDI frame, develop the “create database” function by three layer structure.

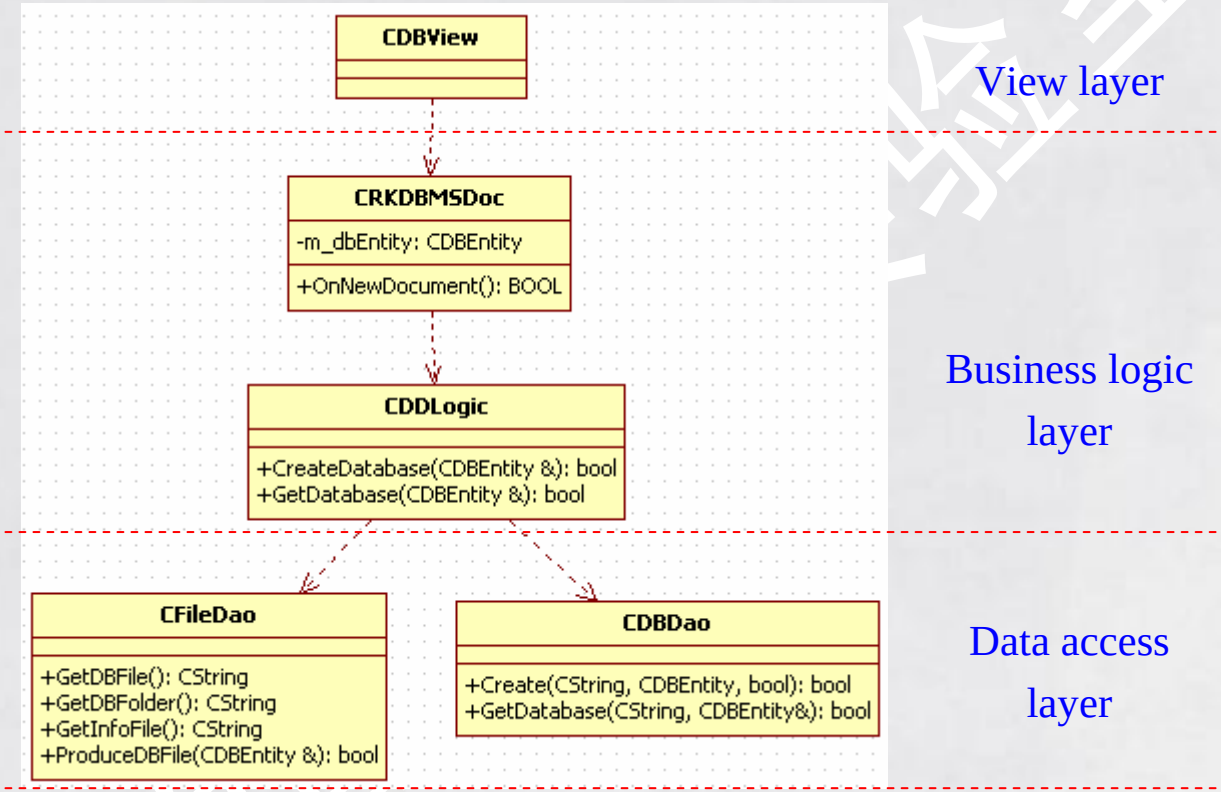
When program starts, it will call OnNewDocument() of document class RKDBMSDoc to create a document object, then create tree view CDBView, and call CDBView::OnInitialUpdate() to initialize the tree.

In the CRKDBMSDoc::OnNewDocument() of document class, the **hard coded** database name is "Ruanko” which will be transferred to CreateaDatabase() function of logic class CDBLogic to create database.

After success of creating database, create entity object of database class CDBEntity in the CRKDBMSDoc class, and save database information. The tree view class CDBView get database information from document class CRKDBMSDoc by OnInitialUpdate() function, and display in the interface.

1. Three layer structure

The relationship among each layer in the program is as follows:



2. Data structure design

When create database, need to save database name, type, folder path, creation date and other basic information into a system file. The basic information of database are:

Field	Data type	Description
name	VARCHAR	database name
type	BOOL	database type: false is system database, true is user database
filename	VARCHAR	full path of database data folder
crtime	DATETIME	creation date

Define the structure DatabaseBlock to represent database basic information for storing data to binary file ruanko.db. By reading this document, we can judge the existence of the database and be able to find the database folder.

Implementation

Iterative development based on the “exception handling”. In the document class of CRKDBMSDoc::OnNewDocument() function, the hard coded database name is transferred to business logic class of CDBLogic::CreateDatabase() function. CDBLogic calls data access class of CFileDao and CDBDao to implement the function of creation database. At last get database information in the tree view CDBView::OnInitialUpdate(), and display to the interface.

The implementation steps are as follows:

Step 1: define data structure

Step 2: implement database creation in data access layer

Step 3: implement database creation in business logic layer

Step 4: display results of database creation in tree view class CDBView

www.ruanko.com

Thanks

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