
Subject: How to use multiple schemas and databases?
Posted by [jarchalex](#) on Sun, 06 Nov 2011 16:50:53 GMT
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Hello!

I'm just studying U++, and cannot figure out how to use multiple databases at once (and possibly multiple schemas). I want application to use several dbs with static info and one to actually write project data.

Probably there is something in the way i should include files to define All_Tables() correctly. But how?..

Please help!

N.B.Attached package is for studying purposes only.

Code that does not work:

```
#include <CtrlLib/CtrlLib.h>
#include <GridCtrl/GridCtrl.h>
#include <Painter/Painter.h>
#include <SqlCtrl/SqlCtrl.h>
#include <plugin/sqlite3/Sqlite3.h>
using namespace Upp;

#define MODEL <studyDraw_01/db.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"
#include "Sql/sch_schema.h"
/*
#define MODEL <studyDraw_01/db_info.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"
#include "Sql/sch_schema.h"
*/
#define MODEL <studyDraw_01/db_info.sch>
//#include "Sql/sch_schema.h"

#define LAYOUTFILE <studyDraw_01/gui.lay>
#include <CtrlCore/lay.h>

struct MyDraw: Ctrl {
    virtual void Paint(Draw& w) {
        Size sz = GetSize();
```

```

ImageBuffer ib(sz);
BufferPainter sw(ib);
DoPaint(sw);
w.DrawImage(0, 0, ib);
}
void DoPaint(Painter& sw) {
Size sz = GetSize();
sw.DrawRect(0, 0, sz.cx, sz.cy, White());
}
};

struct MyWindow: TopWindow {
MenuBar menu;
StatusBar status;
SqlArray table1;
SqlArray tab_settings;
GridCtrl table2;
GridCtrl table3;
TabCtrl tabs;
Splitter spl, set;
EditString name;
EditInt val;
EditDouble valD;
EditString parameter;
EditString value;
MyDraw draw;
Sqlite3Session sqlite3, sqlite3_2;

void InitDB() {
if(!sqlite3.Open(ConfigFile("settings.conf"))) {
Exclamation("Can't create or open database file\n");
return;
}
SQL = sqlite3;
SqlSchema sch(SQLITE3);
sqlite3.SetTrace();
All_Tables(sch);
if(sch.ScriptChanged(SqlSchema::UPGRADE))
Sqlite3PerformScript(sch.Upgrade());
if(sch.ScriptChanged(SqlSchema::ATTRIBUTES))
Sqlite3PerformScript(sch.Attributes());
if(sch.ScriptChanged(SqlSchema::CONFIG)) {
Sqlite3PerformScript(sch.ConfigDrop());
Sqlite3PerformScript(sch.Config());
}
sqlite3.SetTrace();

if(!sqlite3_2.Open(ConfigFile("settings_2.conf"))) {
Exclamation("Can't create or open database file\n");
}
}

```

```

return;
}
//SQL = sqlite3_2;

SqlSchema sch_2(SQLITE3);
sqlite3_2.SetTrace();
All_Tables(sch_2);
if(sch_2.ScriptChanged(SqlSchema::UPGRADE))
    Sqlite3PerformScript(sch_2.Upgrade());
if(sch_2.ScriptChanged(SqlSchema::ATTRIBUTES))
    Sqlite3PerformScript(sch_2.Attributes());
if(sch_2.ScriptChanged(SqlSchema::CONFIG)) {
    Sqlite3PerformScript(sch_2.ConfigDrop());
    Sqlite3PerformScript(sch_2.Config());
}
sqlite3.SetTrace();
}

void Exit() {
if(PromptOKCancel("Exit?"))
    Break();
}

void SubMenu(Bar& bar) {
bar.Add("Exit", THISBACK(Exit))
.Help("Exit application");
}

void MainMenu(Bar& bar) {
bar.Add("Menu", THISBACK(Submenu));
}

typedef MyWindow CLASSNAME;

MyWindow() {
InitDB();

AddFrame(menu);
AddFrame(status);

table1.SetSession(sqlite3_2);
table1.SetTable(FLOWCONVERSIONUNITS);
table1.AddKey(ID);
table1.AddColumn(UNIT, t_("Units")).Edit(parameter);
table1.AddColumn(FACTOR, t_("Conversion factor")).Edit(value);
table1Appending().Removing();
table1.SetOrderBy(ID, UNIT);
}

```

```

table2.AddIndex();
table2.AddColumn(0, t_("One"));
table2.AddColumn(t_("Two"));
table2.AddColumn(t_("Three"));
table2Appending().Removing().Editing().Accepting().Canceling();
table2RejectNullRow();
table2SetToolBar();
table3.AddColumn(0, t_("One"));
table3SetToolBar();

tabs.Add(table1.SizePos(), "table1");

tabs.Add(table2.SizePos(), "table2");
tabs.Add(table3.SizePos(), "table3");
tabs.Set(0);

tab_settings.SetSession(sqlite3);
tab_settings.SetTable(SETTINGS);
tab_settings.AddKey(ID);
tab_settings.AddColumn(PARAMETER, t_("Parameter")).Edit(parameter);
tab_settings.AddColumn(VALUE, t_("Value")).Edit(value);
tab_settingsAppending().Removing();
tab_settingsSetOrderBy(ID, PARAMETER);

spl.Vert();
spl.Add(tab_settings);
spl.Add(draw);
spl.Add(tabs);
spl.SetPos(0,0);
Add(spl);
menu.Set(THISBACK(MainMenu));
menu.WhenHelp = status;
tab_settings.Query();
}

};

GUI_APP_MAIN
{
MyWindow w;
w.Sizeable().MinimizeBox().MaximizeBox();
w.SetRect(0, 0, 600, 500);
w.Run();
}

```

File Attachments

1) [studyDraw_01.zip](#), downloaded 294 times

Subject: Re: How to use multiple schemas and databases?

Posted by [jarchalex](#) on Mon, 07 Nov 2011 16:39:22 GMT

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Now this code is already compilable)) But causes SQL error "no such table:
FLOWCONVERSIONUNITS"

```
#include <CtrlLib/CtrlLib.h>
#include <GridCtrl/GridCtrl.h>
#include <Painter/Painter.h>
#include <SqlCtrl/SqlCtrl.h>
#include <plugin/sqlite3/Sqlite3.h>
using namespace Upp;

#define MODEL <studyDraw_01/db.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_schema.h"
#include "Sql/sch_source.h"

#define LAYOUTFILE <studyDraw_01/gui.lay>
#include <CtrlCore/lay.h>

struct Tab_Settings {
    Sqlite3Session sqlite3;

    Tab_Settings() { Init(); }
    void Init() {
        if(!sqlite3.Open(ConfigFile("settings.conf"))) {
            Exclamation("Can't create or open database file\n");
            return;
        }
        SQL = sqlite3;
        SqlSchema sch(SQLITE3);
        sqlite3.SetTrace();
        All_Tables(sch);
        if(sch.ScriptChanged(SqlSchema::UPGRADE))
            Sqlite3PerformScript(sch.Upgrade());
        if(sch.ScriptChanged(SqlSchema::ATTRIBUTES))
            Sqlite3PerformScript(sch.Attributes());
        if(sch.ScriptChanged(SqlSchema::CONFIG)) {
            Sqlite3PerformScript(sch.ConfigDrop());
            Sqlite3PerformScript(sch.Config());
        }
        sqlite3.SetTrace();
    }
};

#define MODEL <studyDraw_01/db_info.sch>
```

```

#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"

struct Tab_FlowConversionUnits {
    Sqlite3Session sqlite3;

    Tab_FlowConversionUnits() { Init(); }
    void Init() {
        if(!sqlite3.Open(ConfigFile("settings_2.conf"))) {
            Exclamation("Can't create or open database file\n");
            return;
        }
        SqlSchema sch(SQLITE3);
        sqlite3.SetTrace();
        All_Tables(sch);
        if(sch.ScriptChanged(SqlSchema::UPGRADE))
            Sqlite3PerformScript(sch.Upgrade());
        if(sch.ScriptChanged(SqlSchema::ATTRIBUTES))
            Sqlite3PerformScript(sch.Attributes());
        if(sch.ScriptChanged(SqlSchema::CONFIG)) {
            Sqlite3PerformScript(sch.ConfigDrop());
            Sqlite3PerformScript(sch.Config());
        }
        sqlite3.SetTrace();
    }
};

struct MyDraw: Ctrl {
    virtual void Paint(Draw& w) {

        Size sz = GetSize();
        ImageBuffer ib(sz);
        BufferPainter sw(ib);
        DoPaint(sw);
        w.DrawImage(0, 0, ib);

    }
    void DoPaint(Painter& sw) {
        Size sz = GetSize();
        sw.DrawRect(0, 0, sz.cx, sz.cy, White());
        sw.Rectangle(sz.cx*0.05,sz.cy*0.05,sz.cx*0.9,sz.cy*0.9);
        sw.Fill(LtBlue());

        sw.Scale(0.5);
        sw.Translate(0, 50);

        const char *txt = "GRADIENT TEXT";
    }
};

```

```

Font fnt = Arial(100).Bold();
Size tsz = GetTextSize(txt, fnt);
sw.Text(100, 100, txt, fnt)
    .Stroke(4, 100, 100, Blue(), 100 + tsz.cx, 100, LtRed());
}

void RightDown(Point, dword) {
    CallbackArgTarget<int> result;
    MenuBar rMenu;
    for(int i = 0; i < 10; i++)
        rMenu.Add(AsString(i), result[i]);
    rMenu.Execute();
    if(!IsNull(result))
        PromptOK("You have selected " + AsString((int)result));
}
};

struct MyWindow: TopWindow {
    MenuBar menu;
    StatusBar status;
    SqlArray table1;
    SqlArray tab_settings;
    GridCtrl table2;
    GridCtrl table3;
    TabCtrl tabs;
    Splitter spl, set;
    EditString name;
    EditInt val;
    EditDouble valD;
    EditString parameter;
    EditString value;
    MyDraw draw;
    Tab_Settings tab_set;
    Tab_FlowConversionUnits tab_flow;

    void Exit() {
        if(PromptOKCancel("Exit?"))
            Break();
    }
}

void SubMenu(Bar& bar) {
    bar.Add("Exit", THISBACK(Exit))
        .Help("Exit application");
}

void MainMenu(Bar& bar) {
    bar.Add("Menu", THISBACK(SubMenu));
}

```

```

typedef MyWindow CLASSNAME;

MyWindow() {
    Title("DB test");
    AddFrame(menu);
    AddFrame(status);

    table1.SetSession(tab_flow.sqlite3);
    table1.SetTable(FLOWCONVERSIONUNITS);
    table1.AddKey(ID);
    table1.AddColumn(UNIT, t_("Units")).Edit(parameter);
    table1.AddColumn(FACTOR, t_("Conversion factor")).Edit(value);
    table1Appending().Removing();
    table1.SetOrderBy(ID, UNIT);

    table2.AddIndex();
    table2.AddColumn(0, t_("One"));
    table2.AddColumn(t_("Two"));
    table2.AddColumn(t_("Three"));
    table2Appending().Removing().Editing().Accepting().Canceling();
    table2.RejectNullRow();
    table2.SetToolBar();
    table3.AddColumn(0, t_("One"));
    table3.SetToolBar();

    tabs.Add(table1.SizePos(), "table1");

    tabs.Add(table2.SizePos(), "table2");
    tabs.Add(table3.SizePos(), "table3");
    tabs.Set(0);

    tab_settings.SetSession(tab_set.sqlite3);
    tab_settings.SetTable(SETTINGS);
    tab_settings.AddKey(ID);
    tab_settings.AddColumn(PARAMETER, t_("Parameter")).Edit(parameter);
    tab_settings.AddColumn(VALUE, t_("Value")).Edit(value);
    tab_settingsAppending().Removing();
    tab_settings.SetOrderBy(ID, PARAMETER);

    spl.Vert();
    spl.Add(tab_settings);
    spl.Add(draw);
    spl.Add(tabs);
    spl.SetPos(0,0);
}

```

```
Add(spl);
menu.Set(THISBACK(MainMenu));
menu.WhenHelp = status;
tab_settings.Query();
}
};

GUI_APP_MAIN
{
MyWindow w;
w.Sizeable().MinimizeBox().MaximizeBox();
w.SetRect(0, 0, 600, 500);
w.Run();
}
```

Subject: Re: How to use multiple schemas and databases?

Posted by [jarchalex](#) on Mon, 07 Nov 2011 19:13:26 GMT

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Now it almost works!

I've made an ugly workaround - copied "Sql/sch_schema.h" to "sql_schema2.h" and changed there "All_Tables" to "All_Tables2".

At least it allows me to create two databases and work with them.

And added NOAPPSQL to build config.

The problem arised in GUI. When i insert record to the first declared table everything works fine, but when i insert record to second table - cursor moves to the first table, and if i click in the empty field there it will create new record in first db, but if i click in empty space in the second table it will create record in the second db (as it should).

File Attachments

1) [studyDraw_01.zip](#), downloaded 281 times

Subject: Re: How to use multiple schemas and databases?

Posted by [jarchalex](#) on Mon, 07 Nov 2011 19:27:23 GMT

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Ok! My mistake was using same EditStrings for two tables. After adding new EditStrings for second table everything works!

Ultimate++ is great!

File Attachments

1) [studyDraw_01.zip](#), downloaded 308 times

Subject: Re: How to use multiple schemas and databases?

Posted by [jarchalex](#) on Tue, 08 Nov 2011 13:23:39 GMT

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Moved "All_Tables()" definition out.

```
#define MODEL <studyDraw_01/db.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"
///#include "Sql/sch_schema.h"
#include "sql_schema2.h" //All_Tables() commented out
static void All_Tables1(SqlSchema& schema) {
#include SCHEMADIALECT
}
#define MODEL <studyDraw_01/db_info.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"
#include "sql_schema2.h"
static void All_Tables2(SqlSchema& schema) {
#include SCHEMADIALECT
}
```

This way i can use as many databases as application needs. Hopefully.

Subject: Re: How to use multiple schemas and databases?

Posted by [omari](#) on Sat, 14 Nov 2015 23:44:28 GMT

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Interesting,

i think that can be acheived by adding a macro ALL_TABLES_NAME :

```
#define MODEL <studyDraw_01/db.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
```

```
#include "Sql/sch_source.h"
#include "Sql/sch_schema.h"

#define MODEL <studyDraw_01/db_info.sch>
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#include "Sql/sch_header.h"
#include "Sql/sch_source.h"
#define ALL_TABLES_NAME AllTables2
#include "Sql/sch_schema.h"
```

then in the file "Sql/sch_schema.h" :

- use ALL_TABLES_NAME instead of AllTables
- add this macro before :

```
#ifndef ALL_TABLES_NAME
#define ALL_TABLES_NAME AllTables
#endif
```

- add this one at the end of file

```
#undef ALL_TABLES_NAME
```

Subject: Re: How to use multiple schemas and databases?
Posted by [sergeynikitin](#) on Thu, 26 Nov 2015 22:55:26 GMT
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Something like this:

```
#define NOAPPSQL

...
#include <plugin/sqlite3/Sqlite3.h>
#include <Sql/sch_schema.h>

Sqlite3Session db1;
Sqlite3Session db2;
{
#define MODEL <MySuperApp/db1.sch>
#include "Sql/sch_source.h"
```

```
db1.Open("db1.db");

SqlSchema sch1(SQLITE3);
All_Tables(sch1);
sch1.SaveNormal();
SqlPerformScript(sch1.Upgrade());
SqlPerformScript(sch1.Attributes());
}

#define MODEL <MySuperApp/db2.sch>
#include "Sql/sch_source.h"
db2.Open("db2.db");

SqlSchema sch2(SQLITE3);
All_Tables(sch2);
sch2.SaveNormal();
SqlPerformScript(sch2.Upgrade());
SqlPerformScript(sch2.Attributes());
}

...

Sql sql1(db1);
sql1 * Select ....

Sql sql2(db2);
sql2 * Insert ....
```
