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);
 table1.Appending().Removing();
 table1.SetOrderBy(ID, UNIT);
```

```
  table2.AddIndex();
  table2.AddColumn(0, t_("One"));
  table2.AddColumn(t_("Two"));
  table2.AddColumn(t_("Three"));
  table2.Appending().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(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_settings.Appending().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();
}
```

File Attachments

1) studyDraw_01.zip, downloaded 332 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);
 table1.Appending().Removing();
 table1.SetOrderBy(ID, UNIT);


 table2.AddIndex();
 table2.AddColumn(0, t_("One"));
 table2.AddColumn(t_("Two"));
 table2.AddColumn(t_("Three"));
 table2.Appending().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_settings.Appending().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" an 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 329 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 353 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 befor :

```
#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());
}
#undef MODEL
{
#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 .....
```