Subject: sqlarray and sqlite
Posted by jimlef on Fri, 18 Sep 2020 20:49:14 GMT
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Hi everyone,

I've been looking over the example for sqlite and these forums, and basically I want to bind my table to the array... When I try to code this, I get "not defined" errors, and I am not seeing where in the example these things were defined other than the schema. I'm lost as to where to move forward here, before adding query functions etc.

My schema:

```
TABLE (tbl_customers)
 INT (id) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING (name, 150) NOT_NULL
 STRING (email, 150)
 STRING (contact, 150)
 STRING (address, 150)
 STRING (city, 50)
 STRING (state, 20)
 STRING (zip, 10)
 INT (taxable) NOT_NULL
END_TABLE
```

My include file:

sqlinclude.h:

```
#ifndef _Invoices_sqlinclude_h_
#define _Invoices_sqlinclude_h_
#include <SqlCtrl/SqlCtrl.h>
#include <plugin/sqlite3/Sqlite3.h>

#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h>
#define MODEL "Invoices/Tables/Invoices.sch"
#include <Sql/sch_header.h>

#endif
```

customers.h:

```
#ifndef _Invoices_customers_h_
#define _Invoices_customers_h_
#include "Invoices/sqlinclude.h"
struct CustomersWindow : WithCustomersWindowLayout<TopWindow> {
public:
 CustomersWindow();
 void Paint(Draw& w) {
       w.DrawRect(GetSize(), Color(204, 255, 255)); // <= enter your background color here
    }
};


#endif
```

In my layout I have ITEM(SqlArray, CustArray, LeftPosZ(436, 656).TopPosZ(28, 420))

And my cpp code:

```
#include "Invoices.h"
#include "customers.h"

CustomersWindow::CustomersWindow() {
 CtrlLayout(*this, "Customers");

 CustArray.SetTable(tbl_customers);

 CustArray.AddKey(id);
 // CustArray.Join(BOOK_ID, book); // joins id from other db to this id
 CustArray.AddColumn(name, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(email, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(contact, "Phone");
 CustArray.AddColumn(address, "Address");
 CustArray.AddColumn(city, "City");
 CustArray.AddColumn(state, "State");
 CustArray.AddColumn(zip, "Zip");
 CustArray.AddColumn(taxable, "Taxable?");
 CustArray.ColumnWidths("50 50 20 50 20 15 10 2");
 CustArray.SetOrderBy(id);
 // CustArray.WhenBar = THISBACK(BorrowMenu);
 // CustArray.WhenLeftDouble = THISBACK(EditBorrow);
 CustArray.GoEndPostQuery();
}
```

None of the ids from the schema are recognized, so I have to declare the table another way?
Thank you all for the guidance...

Jim

Subject: Re: sqlarray and sqlite

Posted by jimlef on Sat, 19 Sep 2020 03:50:56 GMT
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Additional info: My original app has a customerstable.cs definition file (converted to c):

```
struct customersTable
{
 int id;
 String name;
 String email;
 String contact;
 String address;
 String city;
 String state;
 String zip;
 int taxable;
};
```

Do I need something like this here?
Thanks.

Subject: Re: sqlarray and sqlite
Posted by jimlef on Sat, 19 Sep 2020 04:57:29 GMT
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Ok - In the upper left of Upp, I right click and add packages Sql, SqlCtrl, and plugin/sqlite3... and in customers I add this line:

```
 SqlId tbl_customers("tbl_customers"), id("id"), name("name"), email("email"), contact("contact"), address("address"), city("city"), state("state"), zip("zip"), taxable("taxable");
```

That replaces my table structure, and the code compiles without a problem. Next up, getting the table to show up in the sql array with a query I think...

Subject: Re: sqlarray and sqlite
Posted by jimlef on Sat, 19 Sep 2020 06:04:03 GMT
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Last post of the evening, I promise ;)

I now have my table populated with values, not sure if this is the best way (I'm a newb at this after all) but here's the working code:

```
#include "Invoices.h"
#include "customers.h"

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


CustomersWindow::CustomersWindow() {
 String DBFile;
 String configfile = ConfigFile();
 CtrlLayout(*this, "Customers");

 if(FileExists(configfile))
 {
	VectorMap<String, String> cfg = LoadIniFile(configfile);
	DBFile = cfg.Get("DBFile", Null);
 }
 else
 {
  Exclamation("Can't find DB");
 }
 SQL;
 Sqlite3Session sqlite3;
 if(!sqlite3.Open(DBFile)) {
  Exclamation("Can't create or open database file\n");
  return;
 }
 SQL = sqlite3;
 SqlId tbl_customers("tbl_customers"), id("id"), name("name"), email("email"), contact("contact"), address("address"), city("city"), state("state"), zip("zip"), taxable("taxable");

 CustArray.SetTable(tbl_customers);

 CustArray.AddKey(id);
 // CustArray.Join(BOOK_ID, book); // joins id from other db to this id
 CustArray.AddColumn(name, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(email, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(contact, "Phone");
 CustArray.AddColumn(address, "Address");
 CustArray.AddColumn(city, "City");
 CustArray.AddColumn(state, "State");
 CustArray.AddColumn(zip, "Zip");
 CustArray.AddColumn(taxable, "Taxable?");
 CustArray.ColumnWidths("40 40 20 50 20 15 10 5");
 CustArray.SetOrderBy(id);

 Sql sql(sqlite3);
 sql.Execute("select * from tbl_customers");
 while(sql.Fetch())
  CustArray.Add(sql);
 // CustArray.WhenBar = THISBACK(BorrowMenu);
 // CustArray.WhenLeftDouble = THISBACK(EditBorrow);
 CustArray.GoEndPostQuery();
}
```

Good night all ...

Subject: Re: sqlarray and sqlite
Posted by mirek on Mon, 21 Sep 2020 06:19:18 GMT
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If you add '_' to .sch definition

```
TABLE_ (tbl_customers)
 INT_ (id) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING_ (name, 150) NOT_NULL
```

it will make it produce SqlId constants that you are defining in the constructor. However, populating global namespace with such variables would not be a good idea, that is why standard in U++ is upppercase for sql constants to minimize name clashes.

Also struct customersTable is in fact produced by .sch mechanism as S_customersTable too and you can fetch it from the table, insert it etc... It is not needed, but sometimes handy.

Subject: Re: sqlarray and sqlite
Posted by jimlef on Mon, 21 Sep 2020 20:54:35 GMT
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Hello Mirek, And thank you - both for this very helpful information, and for this amazing effort!

Subject: Re: sqlarray and sqlite
Posted by jimlef on Tue, 22 Sep 2020 01:05:37 GMT
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Ok, I've modded the files per Mirek's suggestions, but I keep hitting a wall here :(I get the error:
/home/james/upp/MyApps/Invoices/UI/customers.cpp (33): error: use of undeclared identifier

'CUSTOMERS'; did you mean 'CUSTOMERID'?

So, I change:

```
CustArray.SetTable(CUSTOMERS, CUST_ID);

CustArray.SetTable(S_CUSTOMERS, CUST_ID);
```

And I get:

```
/home/james/upp/MyApps/Invoices/UI/customers.cpp (33): error: 'S_CUSTOMERS' does not refer
to a value
```

My header info:

```
#ifndef _Invoices_customers_h_
#define _Invoices_customers_h_
#include <Invoices/UI/sqlincludes.h>


struct CustomersWindow : WithCustomersWindowLayout<TopWindow> {
 String DBFile;
 String configfile = ConfigFile();
 String cfg;

 FileSel selectdbwin;
public:
   CustomersWindow();
 virtual void Paint(Draw& w) {
      w.DrawRect(GetSize(), Color(204, 255, 255)); // <= enter your background color here
   }
   void btnAddCustomerClick();
 void btnUpdateCustomerClick();
 void btnSearchCustomerClick();
 void EditRow();
 String SelectDB();
 void FakeStub();
};

#endif
```

AND

```
#ifndef _Invoices_sqlincludes_h_
#define _Invoices_sqlincludes_h_
#include <SqlCtrl/SqlCtrl.h>

#include <plugin/sqlite3/Sqlite3.h>

using namespace Upp;
#define LAYOUTFILE <Invoices/UI/Invoices.lay>
#include <CtrlCore/lay.h>
```

```
#define SCHEMADIALECT <plugin/sqlite3/Sqlite3Schema.h> // <-- Mirek informed needed in header for sql schema use
#define MODEL "Invoices/Tables/Invoices.sch"
#include <Sql/sch_header.h>
#undef MODEL

#endif
```

CPP File:

```
#include "customers.h"
#define MODEL <Invoices/Tables/Invoices.sch>
#include <Sql/sch_source.h>

#undef MODEL

CustomersWindow::CustomersWindow() {
 CtrlLayout(*this, "Customers");

 btnAddCustomer << [=] { btnAddCustomerClick(); }; // THISBACK is not needed in c++11 world and could be replaced with lambda.
 btnSearchCustomer << [=] { btnSearchCustomerClick(); }; // assisted by forum user Klugier
 btnUpdateCustomer << [=] { btnUpdateCustomerClick(); };

 btnFake << [=] { FakeStub(); };

 if(FileExists(configfile))
 {
        VectorMap<String, String> cfg = LoadIniFile(configfile);
        DBFile = cfg.Get("DBFile", Null);
 }
 else {
  DBFile = SelectDB();
 }
 SQL;
 Sqlite3Session sqlite3;
 if(!sqlite3.Open(DBFile)) {
  Exclamation("Can't create or open database file\n");
  return;
 }
 SQL = sqlite3; // switching to using schema instead of sqlid, per Mirek
 // SqlId Customers("Customers"), id("id"), name("name"), email("email"), contact("contact"), address("address"), city("city"), state("state"), zip("zip"), taxable("taxable");

 CustArray.SetTable(S_CUSTOMERS, CUST_ID);
 CustArray.AddColumn(CUSTNAME, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(EMAIL, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(CONTACT, "Phone");
 CustArray.AddColumn(ADDRESS, "Address");
 CustArray.AddColumn(CITY, "City");
 CustArray.AddColumn(STATE, "State");
 CustArray.AddColumn(ZIP, "Zip");
 CustArray.AddColumn(TAXABLE, "Taxable?");
 CustArray.ColumnWidths("40 40 20 50 20 15 10 5");
 CustArray.SetOrderBy(CUST_ID);

 Sql sql(sqlite3);
 sql.Execute("select * from CUSTOMERS");


 while(sql.Fetch())
  CustArray.Add(sql);
 // CustArray.WhenBar
 CustArray.WhenLeftDouble = [=] { EditRow(); };

 CustArray.GoEndPostQuery();
}

void CustomersWindow::btnAddCustomerClick()
{

 PromptOK(__func__);
}

void CustomersWindow::btnUpdateCustomerClick()
{
 PromptOK(__func__);
}

void CustomersWindow::btnSearchCustomerClick()
{
 PromptOK(__func__);
}

void CustomersWindow::EditRow()
{
 PromptOK(__func__);
}

void CustomersWindow::FakeStub()
{
}
```

```
String CustomersWindow::SelectDB()
{
 selectdbwin.Type(t_("Invoices DB"), "*.jts");
 if(!selectdbwin.ExecuteOpen(t_("Select DB File")))
 {
       return "";
 }
 /*
 from http://leonardoce.interfree.it/leowiki.html "simple configfile"
 */
 cfg << "DBFile=" << selectdbwin.Get() << "\n";
 if(!SaveFile(ConfigFile(), cfg))
 {
    Exclamation("Error saving configuration!");
 }
 return selectdbwin.Get();
}
```

My customers table in schema:

```
TABLE (CUSTOMERS)
 INT_ (CUST_ID) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING_ (CUSTNAME, 150) NOT_NULL
 STRING_ (EMAIL, 150)
 STRING_ (CONTACT, 150)
 STRING_ (ADDRESS, 150)
 STRING_ (CITY, 50)
 STRING_ (STATE, 20)
 STRING_ (ZIP, 10)
 INT_ (TAXABLE) NOT_NULL
END_TABLE
```

All caps, as suggested, and changed some ids to make all unique.

Obviously I have a mistake (mistakes?) here somewhere but I can't seem to find them? Any (more) help would be appreciated :)

Thanks y'all :)

EDIT: I just realized that I didn't add _ to TABLE... Fixed it :)

Subject: Re: sqlarray and sqlite
Posted by mirek on Tue, 22 Sep 2020 07:08:00 GMT
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Your .sch creates

```
SqlId CUSTOMERS("CUSTOMERS");

struct S_CUSTOMER {
.....
};
```

SetTable obviously needs CUSTOMERS as parameter....

Additional suggestion: CustArray is SqlArray, right? In that case it is better to leave fetching the data to

```
CustArray.Query();
```

You can also add where condition e.g.:

```
CustArray.Query(EMAIL == "smith@email.com");
```

```
Sql sql(sqlite3);
```

You do need to specify the session here, as you have assigned a global default session by

```
SQL = sqlite3;
```

And it is better to avoid text SQL commands with SqlExp:

```
 sql.Execute("select * from CUSTOMERS");
```

```
sql * SelectAll().From(CUSTOMERS);
```

see https://www.ultimatepp.org/src$Sql$SqlExp_en-us.html

This way your commands get at least partially checked by C++ compiler and more importantly it avoids SQL injection problem.

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Tue, 22 Sep 2020 15:43:23 GMT
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mirek wrote on Tue, 22 September 2020 03:08Your .sch creates

SqlId CUSTOMERS("CUSTOMERS");

struct S_CUSTOMER {
.....
};

SetTable obviously needs CUSTOMERS as parameter....

Yes, I caught that and had corrected it, thank you...

Quote:

Additional suggestion: CustArray is SqlArray, right? In that case it is better to leave fetching the data to

CustArray.Query();

You can also add where condition e.g.:

CustArray.Query(EMAIL == "smith@email.com");

Sql sql(sqlite3);

You do need to specify the session here, as you have assigned a global default session by

SQL = sqlite3;

And it is better to avoid text SQL commands with SqlExp:

```
 sql.Execute("select * from CUSTOMERS");
```

```
sql * SelectAll().From(CUSTOMERS);
```

see https://www.ultimatepp.org/src$Sql$SqlExp_en-us.html

This way your commands get at least partially checked by C++ compiler and more importantly it avoids SQL injection problem.

Mirek

That URL is perfect - I missed that in my searches obviously... I was wondering how to do more as in my c#:

```
        public bool Delete(customersTable dc)
        { ...
                //SQL Query to Delete Data from database
                string sql = "DELETE FROM CUSTOMERS WHERE CUST_ID=@id";

                //SQL command to pass the value
                SQLiteCommand cmd = new SQLiteCommand(sql, conn);
                //Passing the value
                cmd.Parameters.AddWithValue("@id", dc.CUST_ID);
                //Open DB Connection
                conn.Open();
                //integer variable
                int rows = cmd.ExecuteNonQuery();
                if(rows>0) //Success
                {
...
```

Thank you again :)

Subject: Re: sqlarray and sqlite
Posted by mirek on Tue, 22 Sep 2020 15:54:55 GMT

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```
        public bool Delete(customersTable dc)
```

```
    { ...
        //SQL Query to Delete Data from database
        string sql = "DELETE FROM CUSTOMERS WHERE CUST_ID=@id";

        //SQL command to pass the value
        SQLiteCommand cmd = new SQLiteCommand(sql, conn);
        //Passing the value
        cmd.Parameters.AddWithValue("@id", dc.CUST_ID);
        //Open DB Connection
        conn.Open();
        //integer variable
        int rows = cmd.ExecuteNonQuery();
        if(rows>0) //Success
        {
```

Yeah, thats crazy, compared to

```
SQL * Delete(CUSTOMERS).Where(CUST_ID == id);
```

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Tue, 22 Sep 2020 16:07:57 GMT
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I see that now LOL but I keep getting an xmessage fatal error, invalid memory access when I change

```
 sql.Execute("select * from CUSTOMERS");
```

to

```
 sql * SelectAll().From(CUSTOMERS);
```

And then run the program...

Subject: Re: sqlarray and sqlite
Posted by mirek on Tue, 22 Sep 2020 16:47:53 GMT
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Not enough context to figure that out.

However, in case of crashes, usually the fastest route is to run it in debugger (just press F5), then investigate backtrace. You can even copy it (in Debug/Copy backtrace of all threads) and send here.

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Tue, 22 Sep 2020 18:41:03 GMT

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```
----------------------------------
Thread: 1



----------------------------------
Thread: 2

../sysdeps/unix/sysv/linux/poll.c:29
/usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
g_main_context_iteration () from /usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
/usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
/usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

----------------------------------
Thread: 3

../sysdeps/unix/sysv/linux/poll.c:29
/usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
g_main_loop_run () from /usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
/usr/lib/x86_64-linux-gnu/libgio-2.0.so.0
/usr/lib/x86_64-linux-gnu/libglib-2.0.so.0
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

----------------------------------
Thread: 4

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60 <Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=..., timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=0) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de58ec) at
```

```
CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute()
(this=0x7ffff4de58e0) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de5920) at
/home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de5920) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

----------------------------------
Thread: 5

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60
<Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=...,
timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=1) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de59ac) at
CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute()
(this=0x7ffff4de59a0) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de59e0) at
/home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de59e0) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

----------------------------------
Thread: 6

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60
<Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=...,
timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=2) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de5a6c) at
CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute()
(this=0x7ffff4de5a60) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de5aa0) at
/home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de5aa0) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95
```

```
-----------------------------------
Thread: 7

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60
<Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=...,
timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=3) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de58ac) at
CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute()
(this=0x7ffff4de58a0) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de5b20) at
/home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de5b20) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

-----------------------------------
Thread: 8

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60
<Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=...,
timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=4) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de5bac) at
CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute()
(this=0x7ffff4de5ba0) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de5be0) at
/home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de5be0) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95

-----------------------------------
Thread: 9

futex_wait_cancelable (private=<optimized out>, expected=0, futex_word=0xe82d60
<Upp::CoWork::GetPool()::pool+114848>) at ../sysdeps/nptl/futex-internal.h:183
pthread_cond_wait.c:508
pthread_cond_wait.c:638
```

```
Upp::ConditionVariable::Wait (this=0xe82d38 <Upp::CoWork::GetPool()::pool+114808>, m=..., timeout_ms=-1) at Mt.cpp:624
Upp::CoWork::Pool::ThreadRun (tno=5) at CoWork.cpp:155
Upp::CoWork::Pool::InitThreads(int)::$_21::operator()() const (this=0x7ffff4de5c6c) at CoWork.cpp:31
Upp::Function<void ()>::Wrapper<Upp::CoWork::Pool::InitThreads(int)::$_21>::Execute() (this=0x7ffff4de5c60) at Function.h:17
Upp::Function<void ()>::operator()() const (this=0x7ffff4de5ca0) at /home/james/upp/uppsrc/Core/Function.h:76
Upp::sThreadRoutine (arg=0x7ffff4de5ca0) at Mt.cpp:91
start_thread (arg=<optimized out>) at pthread_create.c:477
clone () at ../sysdeps/unix/sysv/linux/x86_64/clone.S:95
```

The code:

```
CustomersWindow::CustomersWindow() {


 CtrlLayout(*this, "Customers");

 btnAddCustomer << [=] { btnAddCustomerClick(); }; // THISBACK is not needed in c++11 world and could be replaced with lambda.
 btnSearchCustomer << [=] { btnSearchCustomerClick(); }; // assisted by forum user Klugier
 btnUpdateCustomer << [=] { btnUpdateCustomerClick(); };

 btnFake << [=] { FakeStub(); };

 if(FileExists(configfile))
 {
        VectorMap<String, String> cfg = LoadIniFile(configfile);
        DBFile = cfg.Get("DBFile", Null);
 }
 else {
  DBFile = SelectDB();
 }
 SQL;
 Sqlite3Session sqlite3;
 if(!sqlite3.Open(DBFile)) {
  Exclamation("Can't create or open database file\n");
  return;
 }
 SQL = sqlite3;
 Sql sql;
 CustArray.SetTable(CUSTOMERS, CUST_ID);

 // CustArray.Join(BOOK_ID, book); // joins id from other db to this id
 CustArray.AddColumn(CUSTNAME, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(EMAIL, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(CONTACT, "Phone");
 CustArray.AddColumn(ADDRESS, "Address");
 CustArray.AddColumn(CITY, "City");
 CustArray.AddColumn(STATE, "State");
 CustArray.AddColumn(ZIP, "Zip");
 CustArray.AddColumn(TAXABLE, "Taxable?");
 CustArray.ColumnWidths("40 40 20 50 20 15 10 5");
 CustArray.SetOrderBy(CUST_ID);

 // sql.Execute("select * from CUSTOMERS");
 sql * SelectAll().From(CUSTOMERS);

 // while(sql.Fetch())  CustArray.Add(sql);
 CustArray.Query();

 // CustArray.WhenBar
 CustArray.WhenLeftDouble = [=] { EditRow(); };

 // CustArray.GoEndPostQuery();

}
```

Subject: Re: sqlarray and sqlite
Posted by mirek on Wed, 23 Sep 2020 14:32:19 GMT

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I do not see apparent reason in the code posted. One suspicios line is

SQL;

which should normally do nothing, but would crash if you have assigned a session prior to constructor and that session was meanwhile destroyed.

If you can .zip the whole package and post here, I am glad to investigate further.

BTW, you do not need to do that SelectAll query here if you are using SqlArray::Query (that one does its own select).

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Wed, 23 Sep 2020 15:14:13 GMT

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Thank you for looking at this and for all your help, Mirek...

I've stripped things down to the main and one (customers) module, with a few support files, and everything is compiling and running without error now.

For curiosity's sake, I'm putting the current zip here. And again, I wish I'd found this site a long time ago!

File Attachments

1) Invoices.zip, downloaded 241 times

Subject: Re: sqlarray and sqlite

Posted by jimlef on Wed, 23 Sep 2020 17:57:01 GMT

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I realize that I've been going about this all wrong...
I've been trying to do a 1 - 1 conversion from my c# code to the c++ and U++... That's wrong thinking.

I need to embrace the U++, so I went back to the examples, and am using the book borrowing app. I've come up with the following code:

```
#include "customers.h"
#define MODEL <Invoices/Tables/Invoices.sch>
#include <Sql/sch_source.h>

#undef MODEL
class AddCustomer : public WithCustomerAddLayout<TopWindow> {
 public:
  SqlCtrls ctrls;
  typedef AddCustomer CLASSNAME;
  AddCustomer();
};

/*
 ITEM(Option, chkTaxable, SetLabel(t_("Taxable?")).SetFont(SansSerifZ(16)).LeftPosZ(228, 108).TopPosZ(36, 16))
 ITEM(EditString, txtCustSearch, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136, 256).TopPosZ(404, 19))
 ITEM(EditString, txtCustName, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136, 256).TopPosZ(76, 19))
 ITEM(EditString, txtCustEmail, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136, 256).TopPosZ(116, 19))
 ITEM(EditString, txtCustPhone, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(156, 19))
 ITEM(EditString, txtCustAddress,
SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136, 256).TopPosZ(196, 19))
 ITEM(EditString, txtCustCity, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(232, 19))
 ITEM(EditString, txtCustState, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(272, 19))
 ITEM(EditString, txtCustZip,
MaxChars(10).SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
64).TopPosZ(308, 19))

 STRING_ (CUSTNAME, 150) NOT_NULL
 STRING_ (EMAIL, 150)
 STRING_ (CONTACT, 150)
 STRING_ (ADDRESS, 150)
 STRING_ (CITY, 50)
 STRING_ (STATE, 20)
 STRING_ (ZIP, 10)
 INT_ (TAXABLE) NOT_NULL
*/

AddCustomer::AddCustomer()
{
 CtrlLayoutOKCancel(*this, "Add Customer");
 ctrls
  (CUSTNAME, txtCustName)
  (EMAIL, txtCustEmail)
  (CONTACT, txtCustPhone)
  (ADDRESS, txtCustAddress)
  (CITY, txtCustCity)
  (STATE, txtCustState)
  (ZIP, txtCustZip)
  // (TAXABLE, chkTaxable)
 ;
}


CustomersWindow::CustomersWindow() {


 CtrlLayout(*this, "Customers");
 /*
 btnAddCustomer << [=] { btnAddCustomerClick(); }; // THISBACK is not needed in c++11 world
and could be replaced with lambda.
 btnSearchCustomer << [=] { btnSearchCustomerClick(); }; // assisted by forum user Klugier
 btnUpdateCustomer << [=] { btnUpdateCustomerClick(); };
 */
 if(FileExists(myConfig.configfile))
 {
       VectorMap<String, String> cfg = LoadIniFile(myConfig.configfile);
       myConfig.DBFile = cfg.Get("DBFile", Null);
 }
 else {
  myConfig.DBFile = myConfig.SelectDB();
 }

 Sqlite3Session sqlite3;
 if(!sqlite3.Open(myConfig.DBFile)) {
  Exclamation("Can't create or open database file\n");
  return;
 }

 SQL = sqlite3;
 /*
 Sql sql;
 */

 CustArray.SetTable(CUSTOMERS, CUST_ID);

 // CustArray.Join(BOOK_ID, book); // joins id from other db to this id
 CustArray.AddColumn(CUSTNAME, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(EMAIL, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(CONTACT, "Phone");
 CustArray.AddColumn(ADDRESS, "Address");
 CustArray.AddColumn(CITY, "City");
 CustArray.AddColumn(STATE, "State");
 CustArray.AddColumn(ZIP, "Zip");
 CustArray.AddColumn(TAXABLE, "Taxable?");
 CustArray.ColumnWidths("40 40 20 50 20 15 10 5");
 CustArray.Appending().NoRemoving();
 CustArray.SetOrderBy(CUST_ID);

 CustArray.Query();

 CustArray.WhenLeftDouble = [=] { EditRow(); };

}

void CustomersWindow::EditRow()
{
 int idNum;
 if(!CustArray.IsCursor())
  return;
 idNum = CustArray.GetKey();
 AddCustomer dlg;
 SQL * Select(CUST_ID).From(CUSTOMERS).Where(CUST_ID == idNum);
 if(!dlg.ctrls.Fetch(SQL))
  return;
 if(dlg.Run() != IDOK)
  return;
 SQL * dlg.ctrls.Update(CUSTOMERS).Where(CUST_ID == idNum);
 CustArray.Query();
 CustArray.FindSetCursor(idNum);
}
/*
void CustomersWindow::btnAddCustomerClick()
{

 PromptOK(__func__);
}

void CustomersWindow::btnUpdateCustomerClick()
{
 PromptOK(__func__);
}

void CustomersWindow::btnSearchCustomerClick()
{
 PromptOK(__func__);
}
*/
```

Now, when I run this, it gets to line 109:
SQL * Select(CUST_ID).From(CUSTOMERS).Where(CUST_ID == idNum);

And gives me an invalid memory access with:

:?:

File Attachments

1) latest.png, downloaded 711 times

Subject: Re: sqlarray and sqlite
Posted by jimlef on Thu, 24 Sep 2020 04:08:03 GMT
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I may have fixed my own problem, and found my mistake... in my code, I was using sql statements to generate the global SQL in the customers module. I needed to move those to the main line. So here's tne new code for anyone looking:

```
#main.cpp
#include "Invoices.h"

#define MODEL "Invoices/Tables/Invoices.sch"
#include <Sql/sch_schema.h>
#undef MODEL

void Invoices::MainMenu(Bar& bar)
{
 bar.Add(t_("Customers"),  [=]{ if(!cwin.IsOpen()) cwin.Open(this); });

//    bar.Add(t_("Products"), [=]{ if(!prodwin.IsOpen()) prodwin.Open(this); });

// bar.Sub(t_("Transactions"), THISFN(TransactionsMenu));
// bar.Sub(t_("Reports"), THISFN(ReportsMenu));
 bar.Sub(t_("Management"), THISFN(ManagementMenu));
 bar.Add(t_("Exit"), THISFN(Close));
}
/*
void Invoices::TransactionsMenu(Bar& bar)
{
 bar.Add(t_("Create Invoice"), [=]{ if(!createinvoicewin.IsOpen())
 createinvoicewin.Open(this); });
 bar.Add(t_("List Invoices"), [=]{ if(!listinvoiceswin.IsOpen())
 listinvoiceswin.Open(this); });
 bar.Add(t_("List Line Items"), [=]{ if(!listlineitemswin.IsOpen())
 listlineitemswin.Open(this); });
}

void Invoices::ReportsMenu(Bar& bar)
{
 bar.Add(t_("Income / Sales Tax"), [=]{ if(!taxreportwin.IsOpen()) taxreportwin.Open(this); });
 bar.Add(t_("Income / Sales Tax by Customer"), [=]{ if(!taxbycustomerwin.IsOpen())
taxbycustomerwin.Open(this); });
 bar.Add(t_("Income by Customer"), [=]{ if(!incomewin.IsOpen()) incomewin.Open(this); });
 bar.Add(t_("Profit / Loss"), [=]{ if(!profitwin.IsOpen()) profitwin.Open(this); });
}
*/
void Invoices::ManagementMenu(Bar& bar)
{
 bar.Add(t_("Select Database File"), [=]{myConfig.DBFile = myConfig.SelectDB(); });
 bar.Add(t_("Show Current Database File"), [=]{PromptOK(DeQtf("Current Database file is: \n" +
myConfig.DBFile));});
// bar.Add(t_("Set Company Info"), [=]{if(!setcompanywin.IsOpen()) setcompanywin.Open(this); });
 bar.Add(t_("Select Output Directory"), [=]{ myConfig.OutputDirectory =
myConfig.GetOutputDirectory(); });
```

```
}

Invoices::Invoices()
{
 CtrlLayout(*this, "Invoices");
 AddFrame(mainmenu);
 mainmenu.Set(THISFN(MainMenu));

 // from http://leonardoce.interfree.it/leowiki.html "simple configfile"

 if(FileExists(myConfig.configfile))
 {
	VectorMap<String, String> cfg = LoadIniFile(myConfig.configfile);
	myConfig.DBFile = cfg.Get("DBFile", Null);
 }
 else {
  myConfig.GetOutputDirectory();
  myConfig.DBFile = myConfig.SelectDB();
 }
}

// Shortcut keys defined
/*
bool Invoices::Key(dword key, int count)
{
 if(key == K_CTRL_E && !ewin.IsOpen())
  ewin.Open(this);
 else
 if(key == K_CTRL_F && !fwin.IsOpen())
  fwin.Open(this);
 return false;
}
*/

GUI_APP_MAIN
{
 Configs myConfig;
 if(FileExists(myConfig.configfile))
 {
	VectorMap<String, String> cfg = LoadIniFile(myConfig.configfile);
	myConfig.DBFile = cfg.Get("DBFile", Null);
 }
 else {
  myConfig.DBFile = myConfig.SelectDB();
 }

 Sqlite3Session sqlite3;
 if(!sqlite3.Open("/home/james/upp/MyApps/Customers/sample.db")) {
  Exclamation("Can't create or open database file\n");
  return;
 }

 SQL = sqlite3;

 Invoices().Run();
}

#Invoices.h
#ifndef __Invoices__Invoices_h_
#define __Invoices__Invoices_h_

#include <CtrlLib/CtrlLib.h>

using namespace Upp;

#include <Invoices/UI/sqlincludes.h>
#include "customers.h"
#include "../configs.h"

// Just a quick info dialog showing currently selected file
struct ShowDBWindow : WithShowDBWindowLayout<TopWindow> {
 ShowDBWindow() { CtrlLayout(*this, "Show Current Database File"); }
};

class Invoices : public WithInvoicesLayout<TopWindow> {
 CustomersWindow cwin;
 MenuBar  mainmenu;

public:
 typedef Invoices CLASSNAME;
 Configs myConfig;

 Invoices();

 // Menu definition
 void  MainMenu(Bar& bar);

 // void  TransactionsMenu(Bar& bar);
 // void  ReportsMenu(Bar& bar);
 void  ManagementMenu(Bar& bar);

 // Keys for shortcuts
 // bool Key(dword key, int count) override;
};
#endif
```

```
#customers.cpp
#include "customers.h"
#define MODEL <Invoices/Tables/Invoices.sch>
#include <Sql/sch_source.h>

#undef MODEL
class AddCustomer : public WithCustomerAddLayout<TopWindow> {
 public:
  SqlCtrls ctrls;
  typedef AddCustomer CLASSNAME;
  AddCustomer();
};

/*
 ITEM(Option, chkTaxable, SetLabel(t_("Taxable?")).SetFont(SansSerifZ(16)).LeftPosZ(228,
108).TopPosZ(36, 16))
 ITEM(EditString, txtCustSearch, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(404, 19))
 ITEM(EditString, txtCustName, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(76, 19))
 ITEM(EditString, txtCustEmail, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(116, 19))
 ITEM(EditString, txtCustPhone, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(156, 19))
 ITEM(EditString, txtCustAddress,
SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136, 256).TopPosZ(196, 19))
 ITEM(EditString, txtCustCity, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(232, 19))
 ITEM(EditString, txtCustState, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
256).TopPosZ(272, 19))
 ITEM(EditString, txtCustZip,
MaxChars(10).SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(136,
64).TopPosZ(308, 19))

 STRING_ (CUSTNAME, 150) NOT_NULL
 STRING_ (EMAIL, 150)
 STRING_ (CONTACT, 150)
 STRING_ (ADDRESS, 150)
 STRING_ (CITY, 50)
 STRING_ (STATE, 20)
 STRING_ (ZIP, 10)
 INT_ (TAXABLE) NOT_NULL
*/

AddCustomer::AddCustomer()
{
 CtrlLayoutOKCancel(*this, "Add Customer");
 ctrls
```

```
  (CUSTNAME, txtCustName)
  (EMAIL, txtCustEmail)
  (CONTACT, txtCustPhone)
  (ADDRESS, txtCustAddress)
  (CITY, txtCustCity)
  (STATE, txtCustState)
  (ZIP, txtCustZip)
  (TAXABLE, chkTaxable)
 ;
}


CustomersWindow::CustomersWindow() {
 CtrlLayout(*this, "Customers");
 // Major assistance on the following code from
 btnNewCustomer << [=] { AddNewCustomer(); }; // THISBACK is not needed in c++11 world and could be replaced with lambda.
 /*
 btnSearchCustomer << [=] { btnSearchCustomerClick(); }; // assisted by forum user Klugier
 btnUpdateCustomer << [=] { btnUpdateCustomerClick(); };
 */

 CustArray.SetTable(CUSTOMERS, CUST_ID);

 // CustArray.Join(BOOK_ID, book); // joins id from other db to this id
 CustArray.AddColumn(CUSTNAME, "Name"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(EMAIL, "Email"); // .SetConvert(DateIntConvert());
 CustArray.AddColumn(CONTACT, "Phone");
 CustArray.AddColumn(ADDRESS, "Address");
 CustArray.AddColumn(CITY, "City");
 CustArray.AddColumn(STATE, "State");
 CustArray.AddColumn(ZIP, "Zip");
 CustArray.AddColumn(TAXABLE, "Taxable?");
 CustArray.ColumnWidths("40 40 20 50 20 15 10 5");
 CustArray.NoRemoving();
 CustArray.SetOrderBy(CUST_ID);

 CustArray.Query();

 CustArray.WhenLeftDouble = [=] { EditRow(); };

}

void CustomersWindow::EditRow()
{
 int idNum;
 if(!CustArray.IsCursor())
  return;
 idNum = CustArray.GetKey();
 if (IsNull(idNum))
  return;
 AddCustomer dlg;
 dlg.Title("Edit Customer");

 //if(!dlg.ctrls.Load(CUSTOMERS, CUST_ID == idNum))
 // return;
 SQL * Select(dlg.ctrls).From(CUSTOMERS).Where(CUST_ID == idNum);
 if(!dlg.ctrls.Fetch(SQL))
  return;
 if(dlg.Run() != IDOK)
  return;
 SQL * dlg.ctrls.Update(CUSTOMERS).Where(CUST_ID == idNum);
 CustArray.ReQuery();
 CustArray.FindSetCursor(idNum);
}
void CustomersWindow::AddNewCustomer()
{
    AddCustomer dlg;
    dlg.Title("New Customer");
    if(dlg.Execute() != IDOK)
        return;
    SQL * dlg.ctrls.Insert(CUSTOMERS);
    int id = SQL.GetInsertedId();
    CustArray.ReQuery();
    CustArray.FindSetCursor(id);
}
/*
void CustomersWindow::btnUpdateCustomerClick()
{
 PromptOK(__func__);
}

void CustomersWindow::btnSearchCustomerClick()
{
 PromptOK(__func__);
}
*/

#customers.h
#ifndef _Invoices_customers_h_
#define _Invoices_customers_h_
#include <Invoices/UI/sqlincludes.h>
#include "../configs.h"

struct CustomersWindow : WithCustomersWindowLayout<TopWindow> {
 Configs myConfig;
 // EditString name;

public:
    CustomersWindow();
 virtual void Paint(Draw& w) {
        w.DrawRect(GetSize(), Color(204, 255, 255)); // <= enter your background color here
    }
 void AddNewCustomer();
 // void btnUpdateCustomerClick();
 // void btnSearchCustomerClick();
 void EditRow();

 // void FakeStub();
};


#endif
#Invoices.Lay
LAYOUT(InvoicesLayout, 460, 116)
END_LAYOUT

LAYOUT(TaxWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(TaxByCustomerWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(IncomeByCustomerWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(ProfitLossWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(SelectDBWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(ShowDBWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(SetCompanyWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(SelectOutputDirWindowLayout, 400, 200)
END_LAYOUT

LAYOUT(CustomersWindowLayout, 664, 460)
 ITEM(Button, btnNewCustomer, SetLabel(t_("Add New Customer")).SetFrame(ThinInsetFrame()).LeftPosZ(272, 120).TopPosZ(436, 15))
 ITEM(SqlArray, CustArray, AutoHideSb(true).LeftPosZ(4, 656).TopPosZ(4, 420))
END_LAYOUT

LAYOUT(CustomerAddLayout, 436, 368)
 ITEM(Label, dv___0, SetLabel(t_("Name")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).VSizePosZ(16, 332))
 ITEM(Label, dv___1, SetLabel(t_("Email")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(56, 19))
 ITEM(Label, dv___2, SetLabel(t_("Contact")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(96, 19))
 ITEM(Label, dv___3, SetLabel(t_("Address")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(136, 19))
 ITEM(Label, dv___4, SetLabel(t_("City")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(172, 19))
 ITEM(Label, dv___5, SetLabel(t_("State")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(212, 19))
 ITEM(Label, dv___6, SetLabel(t_("Zip")).SetFont(SansSerifZ(16)).LeftPosZ(36,
100).TopPosZ(248, 19))
 ITEM(Option, chkTaxable, SetLabel(t_("Taxable?")).SetFont(SansSerifZ(16)).LeftPosZ(152,
108).TopPosZ(300, 16))
 ITEM(EditString, txtCustName, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
256).TopPosZ(16, 19))
 ITEM(EditString, txtCustEmail, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
256).TopPosZ(56, 19))
 ITEM(EditString, txtCustPhone, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
256).TopPosZ(96, 19))
 ITEM(EditString, txtCustAddress,
SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152, 256).TopPosZ(136, 19))
 ITEM(EditString, txtCustCity, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
256).TopPosZ(172, 19))
 ITEM(EditString, txtCustState, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
256).TopPosZ(212, 19))
 ITEM(EditString, txtCustZip,
MaxChars(10).SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(152,
64).TopPosZ(248, 19))
 ITEM(Button, ok, SetLabel(t_("OK")).LeftPosZ(68, 64).TopPosZ(332, 24))
 ITEM(Button, cancel, SetLabel(t_("Cancel")).LeftPosZ(292, 64).TopPosZ(332, 24))
END_LAYOUT

LAYOUT(ProductsWindowLayout, 960, 464)
 ITEM(SqlArray, ProductArray, SetFrame(ThinInsetFrame()).LeftPosZ(384, 572).TopPosZ(20,
440))
 ITEM(Label, dv___1, SetLabel(t_("Product ID")).SetFont(SansSerifZ(16)).LeftPosZ(8,
88).TopPosZ(28, 32))
 ITEM(Label, dv___2, SetLabel(t_("Date Purchased")).SetFont(SansSerifZ(16)).LeftPosZ(8,
132).TopPosZ(116, 32))
 ITEM(Label, dv___3, SetLabel(t_("Description")).SetFont(SansSerifZ(16)).LeftPosZ(8,
88).TopPosZ(160, 32))
```

```
 ITEM(Label, dv___4, SetLabel(t_("Cost")).SetFont(SansSerifZ(16)).LeftPosZ(8,
88).TopPosZ(304, 32))
 ITEM(Label, dv___5, SetLabel(t_("Invoice")).SetFont(SansSerifZ(16)).LeftPosZ(188,
72).TopPosZ(28, 32))
 ITEM(EditIntSpin, txtInvoiceNo, Min(-1).NotNull(true).SetFrame(FieldFrame()).LeftPosZ(268,
80).TopPosZ(32, 19))
 ITEM(EditString, txtProductName,
SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(104, 248).TopPosZ(76, 19))
 ITEM(EditString, txtProductCost,
SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(108, 244).TopPosZ(312, 19))
 ITEM(Label, dv___9, SetLabel(t_("Name")).SetFont(SansSerifZ(16)).LeftPosZ(8,
88).TopPosZ(72, 32))
 ITEM(EditInt, txtProductID,
Min(1).NotNull(true).SetEditable(false).SetFrame(FieldFrame()).LeftPosZ(104, 64).TopPosZ(32,
19))
 ITEM(DropDate, dtpDatePurchased, SetFrame(FieldFrame()).LeftPosZ(152,
104).VSizePosZ(120, 325))
 ITEM(Button, btnUpdateProduct,
SetLabel(t_("Update")).SetFont(SansSerifZ(16)).SetFrame(ButtonFrame()).LeftPosZ(108,
84).TopPosZ(352, 28))
 ITEM(Button, btnAddProduct,
SetLabel(t_("Add")).SetFont(SansSerifZ(16)).SetFrame(ButtonFrame()).LeftPosZ(16,
84).TopPosZ(352, 28))
 ITEM(Button, btnShowAllProduct, SetLabel(t_("Show
All")).SetFont(SansSerifZ(16)).SetFrame(ButtonFrame()).LeftPosZ(16, 84).TopPosZ(408, 28))
 ITEM(Button, btnProductRange,
SetLabel(t_("Show")).SetFont(SansSerifZ(16)).SetFrame(ButtonFrame()).LeftPosZ(108,
84).TopPosZ(408, 28))
 ITEM(DropDate, dtpDateStart, SetFrame(FieldFrame()).LeftPosZ(248, 104).TopPosZ(384, 19))
 ITEM(DropDate, dtpDateEnd, SetFrame(FieldFrame()).LeftPosZ(248, 104).TopPosZ(412, 19))
 ITEM(DocEdit, txtDesctription, SetFont(SansSerifZ(16)).SetFrame(FieldFrame()).LeftPosZ(108,
244).TopPosZ(168, 128))
END_LAYOUT

LAYOUT(CreateInvoiceWindowLayout, 1100, 728)
END_LAYOUT

LAYOUT(ListInvoicesWindowLayout, 1128, 584)
 ITEM(SqlArray, ListInvoicesArray, MultiSelect(true).SetFrame(ThinInsetFrame()).RightPosZ(8,
928).VSizePosZ(8, 12))
 ITEM(Button, btnPrint, SetLabel(t_("Print Selected")).LeftPosZ(4, 80).TopPosZ(12, 15))
 ITEM(Button, btnApplyPayment, SetLabel(t_("Apply Payment")).LeftPosZ(4, 80).TopPosZ(32,
15))
 ITEM(Button, btnEdit, SetLabel(t_("Edit Selected")).LeftPosZ(96, 80).TopPosZ(12, 15))
 ITEM(Button, btnVoid, SetLabel(t_("Void Selected")).LeftPosZ(4, 80).TopPosZ(52, 15))
 ITEM(Button, btnPaidInFull, SetLabel(t_("Mark PIF")).LeftPosZ(96, 80).TopPosZ(52, 15))
 ITEM(Button, btnFixDate, SetLabel(t_("Fix Dates")).LeftPosZ(4, 80).TopPosZ(72, 15))
 ITEM(Button, btnByPaid, SetLabel(t_("All Paid")).LeftPosZ(8, 80).TopPosZ(112, 15))
 ITEM(Button, btnByBalanceDue, SetLabel(t_("Balance Due")).LeftPosZ(100, 76).TopPosZ(112,
15))
 ITEM(LabelBox, dv___9, SetLabel(t_("Show:")).LeftPosZ(4, 180).TopPosZ(92, 124))
 ITEM(EditDouble, edbPayment, AlignRight(true).LeftPosZ(96, 80).TopPosZ(32, 19))
 ITEM(Button, btnByDates, SetLabel(t_("Date Range")).LeftPosZ(8, 80).TopPosZ(196, 15))
 ITEM(Button, btnByCustomer, SetLabel(t_("By Customer")).LeftPosZ(52, 80).TopPosZ(132, 15))
 ITEM(Button, btnByVoided, SetLabel(t_("All Voided")).LeftPosZ(8, 80).TopPosZ(172, 15))
 ITEM(DropDate, ddRange2, LeftPosZ(92, 88).TopPosZ(192, 19))
 ITEM(DropDate, ddRange1, LeftPosZ(92, 88).TopPosZ(168, 19))
 ITEM(DropDate, ddFixDate, LeftPosZ(96, 88).TopPosZ(72, 19))
 ITEM(DropList, dlCustomers, LeftPosZ(8, 172).TopPosZ(148, 19))
END_LAYOUT

LAYOUT(ListLineItemsWindowLayout, 1044, 540)
 ITEM(SqlArray, ListLineItemsArray, SetFrame(ThinInsetFrame()).LeftPosZ(188, 848).TopPosZ(4,
528))
 ITEM(Button, btnFake, LeftPosZ(168, 56).TopPosZ(632, 15))
END_LAYOUT

#invoices.sch
TABLE_ (CUSTOMERS)
 INT_ (CUST_ID) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING_ (CUSTNAME, 150) NOT_NULL
 STRING_ (EMAIL, 150)
 STRING_ (CONTACT, 150)
 STRING_ (ADDRESS, 150)
 STRING_ (CITY, 50)
 STRING_ (STATE, 20)
 STRING_ (ZIP, 10)
 INT_ (TAXABLE) NOT_NULL
END_TABLE

TABLE_ (INVOICES)
 INT_ (INVOICE_ID)    NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 INT_ (INVOICENUMBER)    NOT_NULL
 INT_ (CUSTOMERID)
 INT_ (TRANSACTIONDATE)
 STRING_ (TERMS, 20) NOT_NULL
 DOUBLE_ (NONTAXABLESUB)
 DOUBLE_ (TAXABLESUB)
 DOUBLE_ (TAX)
 DOUBLE_ (GRANDTOTAL)
 DOUBLE_ (AMTPAID)
 INT_ (DATEPAID)
 INT_ (STATUS)
END_TABLE

TABLE_ (PRODUCTS)
```

```
 INT_ (PROD_ID) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING_ (PRODNAME, 150) NOT_NULL
 STRING_ (PRODDESCRIPTION, 200)
 INT_ (DATEPURCHASED)
 DOUBLE_ (COST) NOT_NULL
 INT_ (INVOICEID) NOT_NULL
END_TABLE

TABLE_ (LINEITEMS)
 INT_ (LINEITEM_ID) NOT_NULL PRIMARY_KEY AUTO_INCREMENT
 STRING_ (PRODUCTNAME, 200) NOT_NULL
 STRING_ (DESCRIPTION, 200)
 DOUBLE_ (PRICE)  NOT_NULL
 DOUBLE_ (QTY)  NOT_NULL
 DOUBLE_ (TOTAL)  NOT_NULL
 INT64_ (INVOICEIDNUMBER)  NOT_NULL
 INT_ (ISTAXABLE)  NOT_NULL
END_TABLE
```

The remaining support files are in the attached zip... Now I should make much more rapid progress until I get to the printing/reporting stage...

Thanks again for all the help :)
Jim

File Attachments

1) support_files.zip, downloaded 257 times

Subject: Re: sqlarray and sqlite
Posted by mirek on Thu, 24 Sep 2020 11:46:29 GMT
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> jimlef wrote on Thu, 24 September 2020 06:08
> Now I should make much more rapid progress until I get to the printing/reporting stage...

In advance:

https://www.ultimatepp.org/srcdoc$RichText$QTF$en-us.html
https://www.ultimatepp.org/reference$Reports$en-us.html

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Thu, 24 Sep 2020 14:40:09 GMT
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mirek wrote on Thu, 24 September 2020 07:46jimlef wrote on Thu, 24 September 2020 06:08
Now I should make much more rapid progress until I get to the printing/reporting stage...

In advance:

https://www.ultimatepp.org/srcdoc$RichText$QTF$en-us.html
https://www.ultimatepp.org/reference$Reports$en-us.html

Mirek

Bookmarked - and Thanks again :)

Subject: Re: sqlarray and sqlite
Posted by jimlef on Thu, 24 Sep 2020 17:28:02 GMT
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And for your amuse... er info, here's the c# code I'm converting:

File Attachments
1) Invoices.7z, downloaded 242 times

Subject: Re: sqlarray and sqlite
Posted by mirek on Fri, 02 Oct 2020 09:40:01 GMT
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I have looked through the code and I am impressed, you got it almost all right in really record time!

Some tidbits:

```
 SQL * Select(dlg.ctrls).From(LINEITEMS).Where(LINEITEM_ID == idNum);
```

Using SQL for Select with Fetch loop is possible but not quite recommended (mostly on past experience, I have shoot my leg several times here :). The problem is that very often your Fetch loop will call some routine and that routine will use SQL for something else (e.g. Update or another Select) and that will erase the current resultset... Better declare Sql sql and fetch from this.

Note that usage like SQL % Select ... (selecting single value from single line, no fetching) is still fine.

Value ConvLineItemCls::Scan (const Value &q) const

I see that you have not used it afterwards, but anyway... Scan is supposed to convert from "display" format - usually text - to Value. Your usage seems exactly opposite. I guess it should have been Format here (format from Value to usually text).

SQL & ::Insert(LINEITEMS)

Sql::operator& is deprecated. It makes the statment throw exception, but that approach was not quite as useful as it seemed. Use * and test for error aftewards...

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Fri, 02 Oct 2020 13:13:50 GMT
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Thank you again - the help I've been getting from you and the others on this forum have made this all possible :)

I have some time this afternoon to do some more work so I will take these pointers to heart.

Subject: Re: sqlarray and sqlite
Posted by jimlef on Fri, 02 Oct 2020 22:17:31 GMT
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I have eliminated the need for the line item convert functions, and cleaned up more code in lineitems & createinvoice :) Thank you!

I'm keeping github updated, https://github.com/phoenixjim/Invoices - easy access for all.

Subject: Re: sqlarray and sqlite
Posted by mirek on Sun, 04 Oct 2020 08:05:35 GMT
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I think you should get your Values right....

```
StrDbl(arrayLineItems.GetColumn(i,2).ToString())
```

This is really not how we meant it :)

In general, GetColumn returns Value and if you have put double into ArrayCtrl or SqlArray, it will return double Value back. So normally above should be something like

```
(double)arrayLineItems.GetColumn(i,2);
```

Also

```
  SQL * Select(CUST_ID, CUSTNAME).From(CUSTOMERS);
  while (SQL.Fetch())
  {
   cbCustomers.Add(~SQL[CUST_ID], ~SQL[CUSTNAME]);
  }
```

operator~ in this context converts perfectly good typed Value into String. Probably not something I would do to CUST_ID.

```
if (txtPrice.GetData().IsNull()) return;
```

You can just write IsNull(txtPrice). Instead of GetData, consider using operator~ (that in U++ has general meaning something like "other value representation").

```
arrayLineItems.AddColumn("Description", 80);
....
(DESCRIPTION, arrayLineItems.GetColumn(i,1).ToString())
```

Sometimes it is worth providing IDs even if you are not directly dealing with SQL, leads to cleaner code

```
arrayLineItems.AddColumn(DESCRIPTION, "Description", 80);
....
(DESCRIPTION, arrayLineItems.GetColumn(i,DESCRIPTION))
```

(ToString here is not needed as well as AFAIK it is already String).

```
 SQL * Select(TAXABLE).From(CUSTOMERS).Where(CUST_ID == idNum);
 SQL.Fetch();
 optCustTaxable.Set(SQL[0]);
```

As this is pretty common code, there is a shortcut:

```
 optCustTaxable.Set(SQL % Select(TAXABLE).From(CUSTOMERS).Where(CUST_ID ==
idNum));
```

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Sun, 04 Oct 2020 15:27:52 GMT

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Again, Thank you Mirek!

Quote:

> Sometimes it is worth providing IDs even if you are not directly dealing with SQL, leads to cleaner code

```
arrayLineItems.AddColumn(DESCRIPTION, "Description", 80);
....
(DESCRIPTION, arrayLineItems.GetColumn(i,DESCRIPTION))
```

Only one issue when I implement these, I keep getting:

```
102 if (optCustTaxable.Get() == true && arrayLineItems.GetColumn(i, ISTAXABLE)  == 1) {
103      taxable = round((double)arrayLineItems.GetColumn(i, PRICE) *
(double)arrayLineItems.GetColumn(i, QTY), 2);

/home/james/upp/MyApps/Invoices/UI/CreateInvoice.cpp (102): error: no viable conversion from
'Upp::SqlId' to 'int'
/home/james/upp/MyApps/Invoices/UI/CreateInvoice.cpp (103): error: no viable conversion from
'Upp::SqlId' to 'int'
...
/home/james/upp/MyApps/Invoices/UI/CreateInvoice.cpp (171): error: no viable conversion from
'Upp::SqlId' to 'int'
```

Every GetColumn call in the code generates this error?

Jim

Subject: Re: sqlarray and sqlite
Posted by mirek on Sun, 04 Oct 2020 17:56:53 GMT
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Sorry, you need to call Get(i, DESCRIPTION).

Mirek

Subject: Re: sqlarray and sqlite
Posted by jimlef on Sun, 04 Oct 2020 18:37:25 GMT
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Ahh, that's the ticket :) Thanks!