Subject: SQLite On delete cascade .sch ?
Posted by Xemuth on Wed, 26 Jun 2019 18:30:21 GMT
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Hello community,

Is it possible to set "DELETE ON CASCADE" to a foreign key on .SCH ?

I've seen the " REFERENCES_CASCADE_(table,column) " but it don't work.

Thanks in advance.

Best Regards

Subject: Re: SQLite On delete cascade .sch ?
Posted by mirek on Thu, 27 Jun 2019 06:28:57 GMT
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It looks like it was not implemented (yet?).

It is defined in plugin/sqlite3/Sqlite3Schema.h

My first guess is that definitions from PGSQL should work:

```
#ifndef REFERENCES
#define REFERENCES(x)           ATTRIBUTE("alter table @t add constraint FK_@x foreign key
"\
                                "(@c) references " #x ";",\
                                "alter table @t drop constraint FK_@x;")
#endif

#ifndef REFERENCES_CASCADE
#define REFERENCES_CASCADE(x)     ATTRIBUTE("alter table @t add constraint FK_@x
foreign key "\
                                "(@c) references " #x " on delete cascade;",\
                                "alter table @t drop constraint FK_@x;")
#endif

#ifndef REFERENCES_
#define REFERENCES_(n, x)         ATTRIBUTE("alter table @t add constraint FK_@x$" #n "
foreign key "\
                                "(@c) references " #x ";",\
                                "alter table @t drop constraint FK_@x$" #n ";")
#endif

#ifndef REFERENCES_CASCADE_
```

```
#define REFERENCES_CASCADE_(n, x)  ATTRIBUTE("alter table @t add constraint FK_@x$"
#n " foreign key "\
                                   "(@c) references " #x " on delete cascade;",\
                                   "alter table @t drop constraint FK_@x$" #n ";")
#endif
```

Can you try?

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Thu, 27 Jun 2019 08:55:38 GMT
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Hello Mirek,

I'm gonna try it
I will bring back some info soon

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Thu, 27 Jun 2019 18:55:07 GMT
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Well ,

According to stack overflow/Sqlite documentation, sqlite table cannot be altered after creation.
Since PGSQL alter table to add reference constraint, it do not work on sqlite.

Here is how we create a reference in SQLite :

```
CREATE TABLE "OW_EQUIPES_PLAYERS" (
 "EP_EQUIPE_ID" integer,
 "EP_PLAYER_ID" integer,
 FOREIGN KEY("EP_EQUIPE_ID") REFERENCES "OW_EQUIPES"("EQUIPE_ID") ON DELETE
CASCADE,
 FOREIGN KEY("EP_PLAYER_ID") REFERENCES "OW_PLAYERS"("PLAYER_ID") ON
DELETE CASCADE
);
```

So I had try something like that :

```
#ifndef REFERENCES
#define REFERENCES(x)        ATTRIBUTE("FOREIGN KEY(@c) REFERENCES (@x) ON
DELETE CASCADE","");
```

```
#endif

#ifndef REFERENCES_CASCADE
#define REFERENCES_CASCADE(x)       ATTRIBUTE("FOREIGN KEY(@c) REFERENCES
(@x) ON DELETE CASCADE,","");
#endif

#ifndef REFERENCES_
#define REFERENCES_(n, x)       ATTRIBUTE("FOREIGN KEY(@c) REFERENCES " #n "(@x)
ON DELETE CASCADE,","");
#endif

#ifndef REFERENCES_CASCADE_
#define REFERENCES_CASCADE_(n, x)    ATTRIBUTE("FOREIGN KEY(@c) REFERENCES "
#n "(@x) ON DELETE CASCADE,","");
#endif
```

But Seems not working, moreover my bad knowledge of Upp SQL does not really help.

Have you any idea ?

Thanks in advance
Best Regard

Subject: Re: SQLite On delete cascade .sch ?
Posted by mirek on Fri, 28 Jun 2019 06:02:34 GMT
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Maybe try with INLINE_ATTRIBUTE ?

Anyway, if it cannot be altered after creation, then there will be situation where doing it will be impossible, like two tables referencing each other - because one of them will not exist during creation.

Mirek

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Fri, 28 Jun 2019 10:23:19 GMT
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Quote:Maybe try with INLINE_ATTRIBUTE ?

I had try but SQLite do not accept this kind of thing :

```
CREATE TABLE "OW_EQUIPES_PLAYERS" (
 "EP_EQUIPE_ID" integer FOREIGN KEY("EP_EQUIPE_ID") REFERENCES
"OW_EQUIPES"("EQUIPE_ID") ON DELETE CASCADE,
 "EP_PLAYER_ID" integer FOREIGN KEY("EP_PLAYER_ID") REFERENCES
"OW_PLAYERS"("PLAYER_ID") ON DELETE CASCADE,
);
```

Quote:Anyway, if it cannot be altered after creation, then there will be situation where doing it will be impossible, like two tables referencing each other - because one of them will not exist during creation.

It make sense for real SGBD but SQLite seems to don't care. I have been able to create my first table with this code :

```
CREATE TABLE "OW_EQUIPES_PLAYERS" (
 "EP_EQUIPE_ID" integer,
 "EP_PLAYER_ID" integer,
 FOREIGN KEY("EP_EQUIPE_ID") REFERENCES "OW_EQUIPES"("EQUIPE_ID") ON DELETE
CASCADE,
 FOREIGN KEY("EP_PLAYER_ID") REFERENCES "OW_PLAYERS"("PLAYER_ID") ON
DELETE CASCADE
);
```

Isn't there a keyword in .sch like INLINE ATTRIBUTE/ Attribute that force the add of instruction "foreign key(..."
at the end of table definition ?
Or a way to force "free text" in sch file ?

Best Regard

Xemuth

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Fri, 28 Jun 2019 16:51:20 GMT
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Also, I have try this kind of think :

```
#ifndef REFERENCE_SUFFIX
#define REFERENCE_SUFFIX(s,n,x)     INLINE_ATTRIBUTE("FOREIGN KEY(" #s ")
REFERENCES " #n "(" #x ") ON DELETE CASCADE")
#endif

#ifndef FOREIGN_KEY
#define FOREIGN_KEY(s,n,x)          SCHEMA(",FOREIGN KEY(" #s ") REFERENCES " #n "(" #x
```

") ON DELETE CASCADE,", NULL)
#endif

Not working either.

Is there a way to see the schema stream pushed to sqlite ? I mean after sch conversion ?

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Fri, 28 Jun 2019 18:38:48 GMT
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Quote:Is there a way to see the schema stream pushed to sqlite ? I mean after sch conversion ?

Got it :

```
bool SqlSchema::UpdateNormalFile(int i, const char *dir, const char *name) const {
 String fn = NormalFileName(i, dir, name);
 if(LoadFile(fn) != Script(i)) {
  DeleteFile(fn);
  Cout() << Script(i) <<"\n"; // here we can print Schema
  SaveFile(fn, Script(i));
  return true;
 }
 return false;
}
```

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Fri, 28 Jun 2019 19:23:27 GMT
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Ok problem fixed,

SQlite3 can handle definition like that :

```
CREATE TABLE "OW_EQUIPES_PLAYERS" (
 "EP_EQUIPE_ID" integer FOREIGN KEY("EP_EQUIPE_ID") REFERENCES
"OW_EQUIPES"("EQUIPE_ID") ON DELETE CASCADE,
 "EP_PLAYER_ID" integer FOREIGN KEY("EP_PLAYER_ID") REFERENCES
"OW_PLAYERS"("PLAYER_ID") ON DELETE CASCADE,
);
```

But it need to be like that :

```
CREATE TABLE "OW_EQUIPES_PLAYERS" (
 "EP_EQUIPE_ID" integer REFERENCES "OW_EQUIPES"("EQUIPE_ID") ON DELETE
```

```
CASCADE,
 "EP_PLAYER_ID" integer REFERENCES "OW_PLAYERS"("PLAYER_ID") ON DELETE
CASCADE
);
```

Well it's logic.
Here is definition of foreign key on sqlite :

```
#ifndef REFERENCES_
#define REFERENCES_(n, x)          INLINE_ATTRIBUTE("REFERENCES " #n "(" #x ")")
#endif

#ifndef REFERENCES_CASCADE_
#define REFERENCES_CASCADE_(n, x)   INLINE_ATTRIBUTE("REFERENCES " #n "(" #x ")
ON DELETE CASCADE")
#endif
```

Also, In SQLite, for each connection you do to sqlite, you must need to enable Foreign keys :

```
Sql sql;
sql.Execute("PRAGMA foreign_keys = ON;");
```

Personaly I did it at BDD loading :

```
if(sqlite3.Open("myDB.db")) {
  SQL = sqlite3;
  #ifdef _DEBUG
   SqlSchema sch(SQLITE3);
   All_Tables(sch);

   if(sch.ScriptChanged(SqlSchema::UPGRADE)){
    SqlPerformScript(sch.Upgrade());
   }
   if(sch.ScriptChanged(SqlSchema::ATTRIBUTES)){
    SqlPerformScript(sch.Attributes());
   }
   if(sch.ScriptChanged(SqlSchema::CONFIG)) {
    SqlPerformScript(sch.ConfigDrop());
    SqlPerformScript(sch.Config());
   }
   sch.SaveNormal();

  Sql sql;
  sql.Execute("PRAGMA foreign_keys = ON;");
  #endif
 }
```

I guess, it is possible to enable it automaticly like lot of sqlite database viewer ?

Subject: Re: SQLite On delete cascade .sch ?
Posted by mirek on Sun, 30 Jun 2019 17:18:34 GMT
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Thank you. Now in trunk... (I have added also variants without the constraint name).

I can certainly enable foreign keys during connection, but why is that an option? Does enabling have any disadvantages?

(Maybe as compromise, we can just add method to Sqlite3Session that enables them?)

Mirek

Subject: Re: SQLite On delete cascade .sch ?
Posted by Xemuth on Sun, 30 Jun 2019 20:00:45 GMT
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According to Sqlite.org https://www.sqlite.org/pragma.html#pragma_foreign_keys

Quote:Changing the foreign_keys setting affects the execution of all statements prepared using the database connection...
Also
Quote:As of SQLite version 3.6.19, the default setting for foreign key enforcement is OFF. However, that might change in a future release of SQLite.

Seems like having it enable do not having disadvantages.

Quote:(Maybe as compromise, we can just add method to Sqlite3Session that enables them?)
Yeah I think it's the best compromise to do. I Will try to implement it.

Best Regard.
Xemuth
