

Project Schedule

PgXexplorer

author: Łukasz Gryglicki
MiNI, M1

<http://www.gborg.postgresql.org/projects/pgxexplorer>

1) Goals

PgXexplorer would be an application for browsing PostgreSQL databases (version 7.X.Y, should work with 6.X but I don't know because I don't have such).

Main goals are:

- create GUI for working with PostgreSQL DBs.
- adding, deleting, saving to file, restoring from file PostgreSQL DBs
- browsing local DBs (in different locations and different ports) and also remote DBS
- adding deleting, modifying tables, and table's metadata (using easy operations on visual rows)
- altering table properties (adding/removing columns, changing types)
- wizards for popular DB operations: creating table, view, trigger, query, DB
- displaying column names after executing query
- a window to write sql commands (queries)
- shortcuts to most important commands, options, fast execute control
- triggers handling, adding, removing, saving, loading, writing (in SQL and C)
- triggers written in C can be added, written, saved, loaded, some help for writing trigger in C language, "code generator"
- see entire DBs
- automatic data modification after modifying table in window
- synchronizing data between main_wnd and SQLQueryCtrl (other thread)
- user manual (quite small I think), FAQ, README, INSTALL, and other common files in OpenSource project
- configure script detecting user's environment and setup makefile to automatic compilation, so to compile PgXexplorer user must simply do: ./configure; make; make install
- a program testing user's environment

2) Methodology

I would use OpenSource (bazaar) and Personal Software Process (I will only use a part of PSP). Application would be developed using waterfall method, these would be cycles:

- plan phase (what must be done). Phase means some functionality of the system, fe. SQL control or a single function
- project phase (assign what function exactly does, what are its (function, method, class) parameters (OpenSource tends to have working application as fast as possible, so I don't store information about projecting phase anywhere, but proceeding to develop phase, open source produces working binary very fast, but it versions changes frequently, it depends on bug-releases, feature requests, and

there are many application uncompleted - devel state)

- implement (develop) phase -writing code of a function, control, class, method etc.
- testing phase -checking code, compilation, debugging, running
 - 1) checking if work for correct data.
 - 2) reaction to incorrect data.
 - 3) adding checks for function parameters, making program running even on incorrect data.
 - 4) testing integration with existing components (already tested)
 - 5) running in memory debugger.
 - 6) checking free & malloc (typical-no malloc, 2 X free, pointers freed should be zeroed)
 - 7) are there memory leaks?
 - 8) math operations: overflows, conversions, div by 0
 - 9) off By one Obi wan-s?
 - 9) multi thread, synchronizing, checking
 - 10) ending testing.
- phase PSP (it is my name)
 - 1) write down time spent on planning, projecting, developing, testing, PSP
 - 2) analyzing work, how much time per one phase (functionality)
 - 3) how much time per day
 - 4) each task can be divided on:
 - planning/projecting
 - coding
 - testing
 - learning (reading PostgreSQL & Gtk FAQs, manuals, books)
 - compilation
 - creating docs (fe. This file)
 - managing DB (creating/deleting/filling)
 - testing net (connections, servers, sockets etc.)
- OpenSource Methodology
 - creating project for myself, for fun (I need it for myself)
 - I want to learn PostgreSQL & Gtk
 - bazaar method, creating application on the net
 - website: www.gborg.postgresql.org/projects/pgxexplorer
 - BUG-reports, feature requests, Tasks etc.
 - On 25.III.2004: 24 tasks, 1 bug, 1 featureReq.
 - Version control: current 0.1 , 0.10 , 0.11 , 0.12 , 0.13 , 0.14 , 0.14b, planned 0.20 version & code control: CVS, stable & unstable releases stable: 0.12, 0.13, 0.14, devel 0.1, 0.10, 0.11, 0.14b
 - FAQ on website (short by now)
 - Mail list: pgxexplorer@gborg.postgresql.org
 - App license: Berkeley BSD License
 - Sources: PgXexplorer-X.Y-type.tar.bz2
 - free tools, commonly used in OpenSource projects
 - debuggers: njamd, efence, gdb
 - editors: vim-6.2
 - tools for creating docs:
 - OpenOffice-1.1, GV
 - network tools: telnet, OpenSSH, Sftp
 - compilers: Gcc, gnu as
 - Operating System: FreeBSD 5.1, FreeBSD 5.2, Slackware Linux 8.1
 - documentation: mozilla, opera, man, gv

- documentation GTK: gtk-tutorial.pdf
- documentation PSQL: postgresql-FAQ.pdf
postgresql-devel-FAQ.pdf
libpq-FAQ.pdf
- code generators, automatic compilation:
make,gmake,sh,bash,sed,grep,find
- compressors: tar,bzip2,gzip,gnu unzip
- version control: cvs

There wouldn't be class diagram because program is written in C programming language, which is not a objective language and doesn't support classes.

3) Schedule / PSP Table (modified)

- unfinished phases are marked red
- finished are marked black
- from 25.III.2004

<i>Phase name</i>	<i>planning</i>	<i>projectin g</i>	<i>coding</i>	<i>Testing - error det.</i>	<i>Testing - fixing</i>	<i>Learning new techs.</i>	<i>environme nt</i>	<i>Compilatio n,packages</i>	<i>Docs, faq,man</i>	<i>DB manageme nt</i>	<i>Website, tasks, mail</i>	<i>PSP docs analyze,etc</i>
Main Plan, start	3h	1h	-	-	-	6h	-	-	-	-	-	-
Project web,etc	10min	-	-	-	-	1h	30min	-	5min	-	1,5h	10min
Learning GTK	-	-	-	-	-	5h	5min	-	-	-	-	-
Install PSQL	5min	-	-	-	-	20min	1h	-	-	-	-	-
Learning PSQL	-	-	-	-	-	6h	5min	-	-	-	-	-
Cfg Env , DBs	5min	-	-	10min	5min	1h	40min	-	5min	2h	-	-
Setup Network home	5min	1min	-	30min	20min	30min	3h	-	-	25min	30min	-
Tasks, web,mails	-	-	-	-	-	20min	20min	-	-	-	30min	25min
Learning LibPQ	-	-	-	-	-	4h	5min	-	-	-	-	-
configure	1h	10min	-	5min	2min	-	35min	5min	1min	5min	-	-
README	15min	-	-	-	-	-	15min	-	15min	-	-	10min
INSTALL,TODO	10min	-	-	-	-	-	15min	-	15min	-	-	10min
Mkfile,empty .h,c	30min	-	10min	-	-	-	30min	3min	-	-	-	5min
Main wnd,menu	10min	5min	1,5h	30min	10min	15min	-	2min	-	-	-	-
Quit event, ask	-	10min	15min	5min	5min	10min	-	1min	-	-	-	-
Test program	10min	-	1h	10min	3min	-	2min	1min	-	-	-	-
Test prg in menu	-	-	10min	2min	1min	-	-	1min	-	-	-	-
Configure updt.	10min	5min	-	10min	3min	-	30min	10min	2min	-	-	-
Ver 0.1 upload	-	-	-	-	-	2min	30min	5min	2min	-	20min	-
Web working	-	-	-	-	-	5min	10min	-	-	-	-	-
Start Create DB	2h	1h	-	45min	45min	10min	20min	-	-	20min	-	-
Consoleout.c[h]	10min	10min	1h	5min	3min	-	2min	-	-	-	-	-
Query.[ch]	10min	10min	2h	15min	10min	-	2min	1min	-	10min	-	-
Testing query.c	-	-	10min	10min	10min	-	-	1min	-	5min	-	-
DB Morgoth	1h	30min	-	15min	15min	5min	2,5h	-	-	2,5h	-	-
Dbklasa tests	-	10min	-	30min	1h	-	20min	-	-	5min	-	-
Console connect	-	-	30min	10min	10min	-	15min	1min	-	5min	-	-
Integr. query.c	20min	10min	30min	5min	5min	-	2min	1min	-	-	-	-

<i>Phase name</i>	<i>planning</i>	<i>projectin g</i>	<i>coding</i>	<i>Testing – error det.</i>	<i>Testing - fixing</i>	<i>Learning new techs.</i>	<i>environme nt</i>	<i>Compilation, packages</i>	<i>Docs, faq,man</i>	<i>DB manageme nt</i>	<i>Website, tasks, mail</i>	<i>PSP docs analyze,etc</i>
Create DB	-	10min	-	10min	5min	2min	5min	-	-	5min	-	-
SQLQueryCtrl	10min	5min	1,5h	10min	5min	15min	-	1min	-	-	-	-
Release 0.10	-	-	-	-	-	-	30min	5min	1min	-	20min	-
Testing SQLQC	-	-	5min	10min	3min	-	-	1min	-	3min	-	-
Cmd line parse	5min	-	10min	5min	-	-	2min	1min	-	-	-	-
Help dummy	-	1min	1min	-	-	-	-	-	1min	-	-	-
Save to file	-	3min	15min	10min	3min	10min	2min	1min	-	-	-	-
Testing Sav2file	-	-	3min	5min	-	-	3min	1min	-	-	-	-
Create DB from F	5min	-	20min	15min	15min	5min	5min	1min	-	2min	-	-
Testing CrtfromF	-	-	5min	10min	3min	-	3min	1min	-	-	-	-
EnvDlg	10min	5min	1h	20min	20min	10min	15min	1min	-	10min	-	-
Remote setup	10min	-	15min	40min	30min	15min	1h	-	3min	20min	10min	-
EnvUpdate	5min	-	30min	10min	30min	-	5min	2min	-	-	-	-
OpenDBDlg	30min	5min	1,5h	10min	-	15min	10min	5min	-	-	-	-
Upd. Start, EnvDlg	10min	-	20min	10min	25min	-	5min	2min	-	-	-	-
Release 0.11	5min	-	-	-	-	-	30min	6min	2min	1min	-	-
Testing	-	-	10min	10min	10min	-	-	1min	-	-	-	-
Allowed no DB	10min	-	40min	-	-	-	2min	2min	-	5min	-	-
Testing	-	-	10min	10min	40min	-	-	1min	-	-	-	-
Fixing errors	5min	-	20min	10min	40min	-	-	1min	-	-	-	-
Updating SQLQE	10min	5min	30min	5min	-	-	-	1min	-	2min	-	-
openDBDlg	-	5min	25min	10min	1h	-	5min	2min	-	-	-	-
Load DB	-	-	15min	5min	15min	-	5min	1min	-	-	-	-
FileDlg	-	5min	15min	5min	-	-	3min	1min	-	-	-	-
SaveDB2File	5min	-	15min	5min	1min	-	2min	1mni	-	-	-	-
Release 0.12	-	-	-	-	-	-	40min	5min	5min	-	10min	-
SaveQuery	-	-	5min	3min	-	5min	5min	1min	-	-	-	-
LoadQuery	5min	-	15min	5min	10min	-	5min	1min	-	-	-	-
Execute on ;	30min	5min	10min	5min	-	5min	-	1min	1min	-	-	-
Testing	-	-	5min	5min	5min	-	-	1min	-	-	-	-
Constraint of QResult	-	1min	5min	10min	1min	-	-	1min	-	-	-	-
Testing	-	-	2min	5min	-	-	-	1min	-	-	-	-
Remote DB ok	-	-	15min	5min	-	-	5min	1min	-	5min	-	-
Testing	-	-	10min	15min	5min	-	-	1min	-	-	-	-
Strings Overflows Fixing	30min	-	10min	10min	10min	-	-	1min	-	-	-	-
Drop DB	5min	-	20min	5min	10min	-	3min	1min	-	2min	-	-
Release 0.13	-	-	-	-	-	-	45min	5min	5min	-	15min	-
Connect Button	10min	5min	15min	10min	30min	5min	10min	1min	-	3min	-	-
Server freezes	-	-	-	15min	-	-	25min	1min	-	15min	-	-
Alarm added	10min	3min	10min	5min	5min	1min	3min	1min	2min	-	-	-

<i>Phase name</i>	<i>planning</i>	<i>projecting</i>	<i>coding</i>	<i>Testing – error det.</i>	<i>Testing - fixing</i>	<i>Learning new techs.</i>	<i>environment</i>	<i>Compilation, packages</i>	<i>Docs, faq, man</i>	<i>DB management</i>	<i>Website, tasks, mail</i>	<i>PSP docs analyze, etc</i>
Cmd line fixing	-	-	15min	5min	15min	-	-	1min	-	-	-	-
Added simple help	-	-	5min	-	-	-	-	-	5min	-	-	-
FAQ, TODO	10min	-	-	-	-	5min	35min	-	25min	-	10min	10min
Menu ready - cosmetics	-	5min	15min	5min	3min	-	-	1min	-	-	-	-
Testing menu	-	-	2min	5min	-	-	-	-	-	-	-	-
Release 0.14	-	-	-	-	-	-	50min	5min	10min	-	30min	5min
Bug detect: prioris refuses	-	-	-	10min	-	-	20min	1min	2min	-	-	-
Planning toolbar	1h	15min	-	-	-	45min	-	-	-	-	-	-
Projecting toolbar	-	30min	-	-	-	15min	-	-	-	-	-	-
Creating headers	10min	-	20min	5min	3min	-	15min	1min	-	-	-	-
Creating icons	-	10min	1,5h	1min	5min	-	40min	-	-	-	-	-
Read GTK man	-	-	-	-	-	20min	1min	-	-	-	-	-
Connect toolbar	-	-	30min	5min	10min	-	-	1min	-	-	-	-
Testing	-	-	10min	10min	3min	-	-	1min	-	-	-	-
Enjoying toolbar	-	-	2min	-	-	-	-	-	-	-	-	-
Create aboutbox	20min	10min	30min	5min	-	-	-	1min	-	-	-	-
Read GTK man	-	-	-	-	-	20min	1min	-	-	-	-	-
Converting image	10min	-	-	-	-	10min	15min	-	-	-	-	-
Writing as XpmD	-	-	20min	5min	10min	15min	5min	1min	-	-	-	-
Testing	-	-	5min	5min	-	-	-	1min	-	-	-	-
Having fun	-	-	2min	-	-	-	-	-	-	-	-	-
Writing many TODOs	10min	5min	-	-	-	-	25min	-	40min	-	2h	2h
Contact with KK	5min	-	-	-	-	-	5min	1min	1min	-	-	15min
Updating website	5min	-	-	5min	-	5min	5min	-	5min	-	5min	15min
Creating maillist	-	-	-	-	-	5min	2min	-	2min	-	10min	10min
Receiving 1st bugrep	-	-	-	5min	-	1min	2min	-	-	-	5min	5min
Adding todo to main	2min	-	-	-	-	-	-	1min	20min	-	-	20min
Release 0.14b	-	-	-	-	-	-	25min	10min	1h	-	-	2min
Writing schedule	10min	30min	5min	1min	1min	-	10min	1min	6h	-	15min	6h

4) Planned functionality – estimated time needed to complete phase (also needed to implement each marked red phase above), new phases would me much more complex than these above, because at the moment I cannot deal with implement details and table above was created using already finished or at least started phases.

 Versions planned. Can change during development:

 0.1X – many bugfixes (too much text in SQLQueryExec,

check for lost connections, if not dbadmin, if no template1 DB -warning, overflows, constraints, string indexes, function args, control max text lengths), Filter in OpenFile, DB copy, PreExec <check if server alive>, timeout value from cmdline, metadata in query result, save query result, fast execute 3 types, more tests on remote, special functions to parse open/save dialog for extensions

0.2X – browsing tables, query wizard, wizards in menu, active only query wiz, table properties (triggers-not available, see ReadOnly metadata – combos etc), see select * from table, see entire db (ReadOnly all), drop table in cmenu, synchronize with SQLQueryeditCtrl, save table to file, and many predicted bugfixes

0.3X – wizard – create table, create view, browsing views (additional to tables in 0.2x), in table properties in cmenu – can alter table, so change type, add column, remove column etc. Still no table triggers are visible, modify visually tables, add rows/delete rows with keys Add row, Delete row, Update row, Primary key is read only, and must (!) be detected – difficult, cannot yet modify entire DB and with one click update it, drop table option in cmenu, all wizards have Load/Save/New option, asks for columns using their name and number, option to save view result to file. Many foreseen bugfixes

0.4X – wizards in cmenu, menu, toolbar, context menu should be finished?, create trigger wizard (not in C yet), options to add/delete trigger to/from a table, view tab triggers (in cmenu and in table properties) , all triggers in DB, table properties should be ready now, there is not Dbcreate wizard yet, of course bugfixes

0.5X – Visual modify table, list of modifications on list, and when Update pressed, all is updated, wizard of trigger in C, compilation to *.so, wizard: create DB, all wizards should be ready, “some code generator” for wizard of Ctrigger, inserts function header and column-references, bugfixes, final tests

0.6X – when 0.5X stable, all very hard tested, TRY TO ADD RELATIONAL VIEW, but this is not in project, it may be but I don't know, create final documentation, manuals, FAQs, all the time check for bugreports and feature requests, add screenshots to the website etc.

1.0- ?? will finally work ;-)

<i>Phase name</i>	<i>Planning/ Projecting which version</i>	<i>Coding</i>	<i>Testing</i>	<i>DB/ Environment</i>	<i>Learning</i>	<i>Website</i>	<i>Documentation / PSP</i>
Manual pages, complete FAQ, Help system	2h -0.6X	-	10min	-	2-3h	1h	1day
Wizard entry in menu, context menu, toolbar wizards are: table,view,query,trigger,DB	1h - >=0.2X,	10h	5min	-	-	-	-
Context menus, with options described below	1h - >=0.2X	3h	1h	-	1h	-	-
Query Wizard, with load/save/run option	2h - 0.2X	5h	3h	-	-	-	-
CreateView Wizard (save/load/new)	1h - 0.3X	4h	4h	10min	-	-	-
TableCreateWizard (save/load/new)	1h - 0.3X	4h	4h	10min	-	-	-
TriggerWizard (save/load/new/SQL/C)	3h - 0.4X	3days	2days	3h	6h	-	-
View current table's triggers	1h 0. 4X	3h	2h	30min	2h	-	-
Browse tables,views,triggers	1h - >=0.2X	5h	6h	45min	3h	-	-
See all trigers in DB, with tree view with tables,views, nodes: tables+, views+, triggers+	1h - 0.4X	6h	3h	1h	2h	-	-
Tree view of tables (when table clicked – table of results select * from tablename)	1h – 0.2X	3h	2h	-	2h	-	-
Tree view of views (in table when click sel *)	1h – 0.2X	3h	2h	-	2h	-	-
In all wizards save/load/new option	1h - 0.5X	6h	2h	25min	-	-	-
See entire DB on demand – (notepad control with tables on each page – read only)	1h – 0.2X	6h	3h	-	-	-	-
In treeview add option to add/delete/save/load trigger	1h – 0.4X	2h	1h	10min	2h	-	-
Modify tables visually: in created table one free row, when user add data and press apply update	2h – 0.3X	3h	4h	-	1h	-	-
Visual delete from... when user select a row or field and press delete	2h – 0.3X	2h	4h	-	1h	-	-
Also option update row, executes modify	2h – 0.3X	2h	4h	-	1h	-	-
Primary key detection, cannot be modified !!!	!! ?h - ? 0.4X ?	?? 6h ?impossib	?? 2-6h ??	? 15min ?	? 10min ? 6h	-	?howto det PK ?
Wizard button in SQLQueryExec control	1h - 0.2X	1h	40min	-	-	-	-
In openfiledlg add option filter (ex. *.sql)	15min – 0.1X	? 30min ? 3h	?? 30min ??	3min	? 10min ? 3h	-	-
Option DB copy in menu,context menu & toolbar	10min – 0.1X	2h	30min	15min	-	-	-
Save query result,table,view,query to file , with metadata or not	1h - >=0.2X	2h	1h	10min	-	-	-
Every query executed add metadata (column names) to result (if there is result)	10min – 0.1X	1,5h	1h	-	1h	-	-
Every query executes small query with alarm first, check is server alive	10min – 0.1X	40min	30min	1h	-	-	5min
Check all places when can hang because of connection lost	5min – 0.1X	? 2h ?	30min	20min	-	-	10min
Check behavior when user is not a DBadmin	5min – 0.1X	? 40 min ?	20min	20min	15min	-	20min
Visual alter (!) when user modifies table visually in many places and then press Alter all it sends all chnges to DB and modifies many rows and columns (clicked fields should be stored in list ?? FIXME)	??h – 0.5X ??	?? 1 day ??	? 8h ? 1-2days ?	1h	1h	-	10min
Synchronize SQLQueryExec <-> TreeView- >tables (when query executed, synchronize remaining controls)	1h - 0.2X	2h	5h	10min	30min	-	-
Disconnects, timeouts, setup from cmdline	5min – 0.1X	40 min	20min	5min	-	20min	10min

<i>Phase name</i>	<i>Planning/ Projecting which version</i>	<i>Coding</i>	<i>Testing</i>	<i>DB/ Environment</i>	<i>Learning</i>	<i>Website</i>	<i>Documentation / PSP</i>
Fast exec – 3 types (in menu,contextmenu,toolbar)	5min – 0.1X	1,5h	1h	-	-	-	-
1fastexec – openFileDialog (*.QUE)	5min – 0.1X	30min	20min	-	-	-	-
2fastexec – writedlg(getfilename)	5min – 0.1X	30mi	20min	-	-	-	-
3fastexec – writedlg(sqlcmd)->execute	5min – 0.1X	30min	20min	-	-	-	-
Warning when cannot connect to template1 DB, after each connect to server and on startup)	5Min – 0.1X	30min	10min	3min	-	-	-
Drop table in context menu of TreeView, also wizard (AddTable wizard) in CMenu	10min – 0.2X	30min	10min	-	25min	-	-
Alter table in context menu (modify column types, table 2XNCOLS – column name, combo with available types, warning data-will-be-lost) plus option add new column/remove column	1h – 0.3X	3h	1,5h	10min	30min	-	-
CreateDataBaseWizard(name, how much tables, N*tablewizard, which tables should have triggers, M*trigger wizard, Create view Wizard, another view?, next, create querywizard, another query, next, done, each step can be stopped, entire createdbwizard can be saved to file and then loaded and executed automatically: save/load/new)	3h – 0.5X ?	1day ??	?? 1day	1h	2h	-	30min
Wizard of trigger, option Trigger in C, user must write code, fill control with template of code, ask for table name etc and write it to control , can be saved as *.c or loaded from *.c	5h – 0.5X	1day ??	?? 1 day	5h	4h	-	2h
In each wizard asks for example which columns to view etc), always button new/save/load/close, at the end' done'	10min- >=0.2X	1h	25min	-	10min	-	-
Very hard test all in Gdb, Njamd, EFence	5min – 0.1x + any other	? 1-2 days ?	? 1-2 days ?	4h	-	-	1h
Check all sources for table overflow, string too long, all function check if they have correct parameters, watch out for writing to char[] tables, query length max must be very long, check constraints of all functions and controls	15min – 0.1X	6h	6h	-	-	-	-
Test remote environment when net-cable suddenly disconnected	15min – 0.1X	3h	4h	45min	-	30min	10min
Check if there is too much code in SQLQueryExecControl, set some reasonable maximum<MAX_QUERY_LENGTH	5min – 0.1X	15min	10min	-	-	-	-
Check all Open/Save control for extensions, SAVE: if user already written .sql do not add extension, else add, LOAD: if selected file doesn't have proper extension try to load it, if don't exists add a extension, these must be done by a special functions	5min – 0.1X	1h	20min	5min	? 10 min ? 3h	-	-
Three '!' on toolbar points to FastExecute	5min – 0.1X	45min	5min	-	-	-	-
Install Gtk on Cygwin, check how it works on MS-WindowsNT		? ever ?	2-4? if so	2-4 h if so	1-2h	-	1h if so
Read carefully examples in Gtk-tut, LibPQ-tut, read book about PostgreSQL	5min – any ver	-	-	30min	6-10h	-	-
Keep this file up-to-date	?12h – any ver?	-	-	20min	-	-	1day
Control versions, keep website up-to-date	2h – any ver	-	-	10min	1h	4h	4h

<i>Phase name</i>	<i>Planning/ Projecting which version</i>	<i>Coding</i>	<i>Testing</i>	<i>DB/ Environment</i>	<i>Learning</i>	<i>Website</i>	<i>Documentation / PSP</i>
Learn how to write manual page	0min – any ver	-	-	1h	1h	1h	6h
Produce new releases	30min	Sum above	20min	10min	-	30min	1h
Write other projects	20h - NULL	2weeks	1week	1day	1week	few days	few hours

Planning releases (very estimated!):

-0.20	~06.04.2004
-0.30	~22.04.2004
-0.40	~12.05.2004
-0.50	~30.05.2004
-0.60	~20.06.2004
-1.00pre	~01.09.2004

EOT

MorgothDBMA
morgothdbma@o2.pl
+48693582014
Łukasz Gryglicki MiNI M1 pw.edu.pl
www.prioris.mini.pw.edu.pl/~morgoth