

Application Development in TCL/TK

**A journey through some lessons learned in application development with
TCL/TK**

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<http://axn.dyndns.org>

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1 Version history

0.0 Presentation at European TCL Conference 2009 in Strasbourg

0.1 changed to text format, added planned chapters

2 Meet TCL/TK

3 A quick introduction into TCL/TK

4 CLI hacking and introspection

- using tclsh or wish
- hacking code and procs directly
- overwriting defs again and again
- not easy to save result for later use
- only works under given circumstance

=>

- we need an editor, try number 1
- using introspection from TCL, info ...
- "class browsing" in TK hierarchy
- writing tools for better development

5 Simple GUI applications

6 Complex GUI applications

7 OO frameworks in TCL/TK

8 Using databases

9 Using multimedia

10 Using extensions

11 Examples of tools and applications

- shell vs. console vs. tkcon vs. gush
- editor in 7 lines of code
- fast proc test helper
- editor with toolbar
- editor using incrTk widgets
- editor using ttk widgets
- tool using snit widgets

12 Golden rules for TCL

- note changes and versions in comments
- no catch without if and error reporting
- never use update, use update idletasks rarely
- brace all your expressions
- use spaces and empty lines
- follow local styleguide and formatting
- know your commands, e.g. regexp, string is TYPE
- use TCL ways, e.g. foreach instead of loop and lindex
- Do you really need multithreading? use the event loop!

13 Golden rules for TK

- never use absolute widget names like `.quit`
- do not mix pack and grid packers
- always frame your hierarchy in master like `$w`
- use themed widgets from `ttk::`
- build metawidgets using `snit` or `incrTk`
- create your commands for callbacks safely
- watch/set state of menu or toolbar elements (Mac ...)

- golden rules for GUI design and usage also apply ...

14 Golden rules for applications

- use defined sections of code
- use namespaces and libraries
- write procs, not flat code, at least 3 tests per procedure
- write libraries and try to re-use as often as possible
- think of I18N before/while writing code
- design persistence interface, favour DB over .dotfiles?
- carefully design CLI with switches and parameters
- deploy as starkit, tclkit, freewrapped app or .dbapp
- carefully choose license and note in all code sections

15 Packing and deployment

16 Do not do any of the following ...

Examples of pitfalls

- `set a 1` `=> 1`
- `set $[expr $a+1] 33` `=> 33`
- `puts "[incr 2][incr 2][incr 2]"` `=> 123`
- `set $2 [incr 2 -2]` `=> 1`
- `set 1 2` `=> 2`
- `set [set $1] [set $2]` `=> 2`
- `puts "[incr 2][incr 2][incr 2]"` `=> 234`
- `proc proc proc {puts $proc}`
- `proc hello` `=> hello`
- `rename set nothing`
- `nothing is real` `=> real`

17 Getting help

Links

<http://tcl.tk>

<http://wiki.tcl.tk>

<http://www.activestate.com>

<http://www.msen.com/~clif/TclTutor.html>

Main page for information about TCL/TK
wiki about TCL/TK

ActiveState

TCL Tutor

comp.lang.tcl

Very friendly and active newsgroup

/opt/ActiveTcl-8.5/demos/Tk8.5

demos included with ActiveTcl