

# Writing User Data in TCL

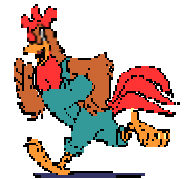
*Chung Khim Lae*

Patient: *How much time have I left?*

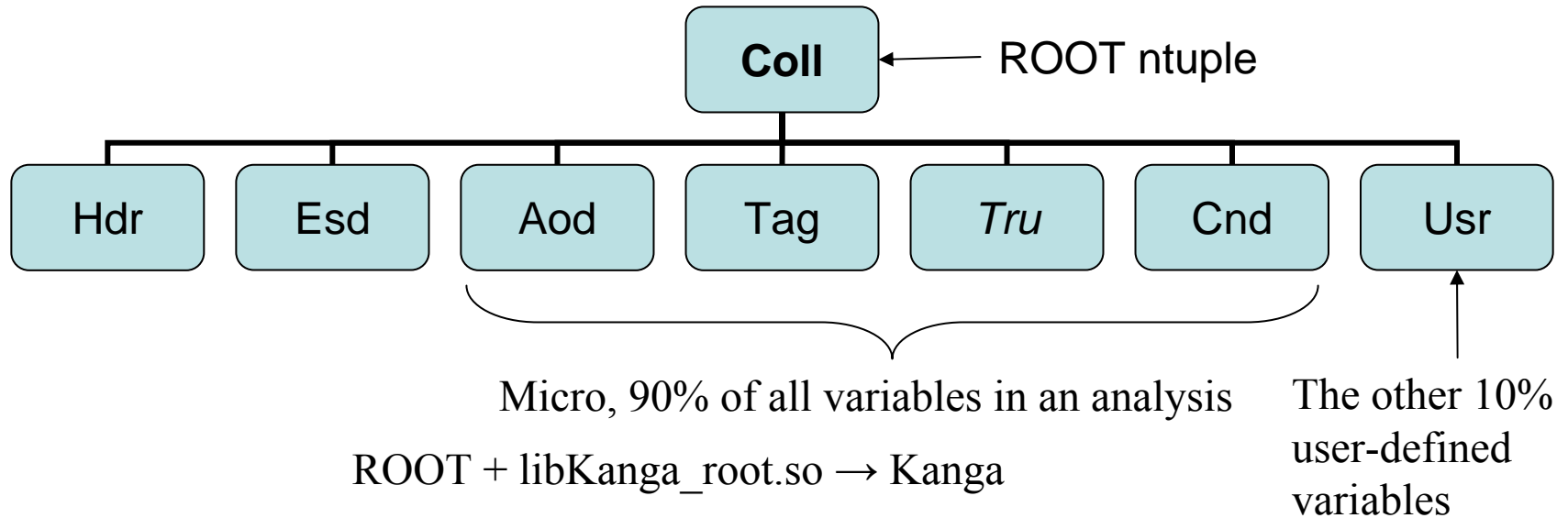
Doctor: ...*Only 5 minutes...*

# Advertisement

- *Sell you a product*
- *Lifetime warranty*
  - *As long as I live!*
- **FREE!!!**
- *“There is no such thing as a free chicken running around!”*
- *“You are wrong. There is one right now!”*



# What is a Collection?



## *Babar Standard Ntuple Format*

Configure Cnd contents ( $p_4$ , decay vertex) in TCL  
Why not make Usr TCL configurable too?  
100% TCL-configurable ntuple in framework!

# Money Back Guarantee

- Write user data in < 10 lines of tcl!
- Flexible design: write user data in any way you want
- References are taken care of automatically; natural notation: “B0\_Cands.obj().dau(0).lundID()”
- Add variables without having to rerun the existing variables—fast and simple
- Minimize C++
- Maximize reusability
- 100% satisfaction; if not, you get a full refund\*

- \* Does not guarantee to work with BtaTupleMaker™. Warranty void if used with any ntuple monster. Send questions and comments to [cklae@slac.stanford.edu](mailto:cklae@slac.stanford.edu). All emails will be answered within 24 hours. If you have a problem with transferring user data to an ntuple using BtaTupleMaker™, do not email me. Post to AnalTools Hypernews instead. Also, support will not be provided for users running SkimMiniApp. You are on your own if you encounter problems with configuring SkimMiniApp. (But if you ask in Hypernews, I may still answer.) Author is not liable for any error in your analysis due to a misuse of this product. Hey, its free! If you are not satisfied, don't use it!  
™ BtaTupleMaker is a trademark of Chih-hsiang Cheng.

# Recipe

- In release >16.1.3,  
    SmpCalculation V00-01-08  
    UsrTools V00-07-13
- Add to your AppUserBuild.cc:  
    #include "BetaMiniSequences/BetaMiniWriteSequence.hh"  
    #include "UsrTools/UsrMakerTools.hh"  
    BetaMiniWriteSequence(this); // write mini sequence  
    UsrMakerTools(this); // add modules for writing user data

# Variables

## Event-type

beamE

## Candidate-type

truth

nCT

nGTVL

nGTL

trackID

kaonID

## Candidate-type

mass

pcm

ptcm

cosPcm

mChi2

KsFlightSig

## Candidate-type

helicity

deltaM

mES

deltaE

effCorr

p4cm

Names are given in `UsrTools/UsrVarFactory.cc`.

Check their header files for definitions.

When you add to this list, others can use it too.

# User Data 123

## MySequence.tcl

```
lappend B0Lists MyB0List1 MyB0List2 MyB0List3
appendUsrCandMaker MySequence B0      $B0Lists      "mES deltaE"
appendUsrCandMaker MySequence Dsstar DsstarList "deltaM"
appendUsrCandMaker MySequence Ds      DsList        "mass pcm"
appendUsrCandMaker MySequence Phi     PhiToKK       "helicity"
appendUsrCandMaker MySequence K       KaonList      "kaonID"
appendUsrEventManager MySequence event "beamE"
lappend CandBlocks B0 Dsstar Ds Phi K
lappend EventBlocks event
```

*It's that simple!*

*Tip3:* For testing and debugging,

```
talkto B0Maker { verbose set true }
```

# Storing Candidate Lists

## MySequence.tcl

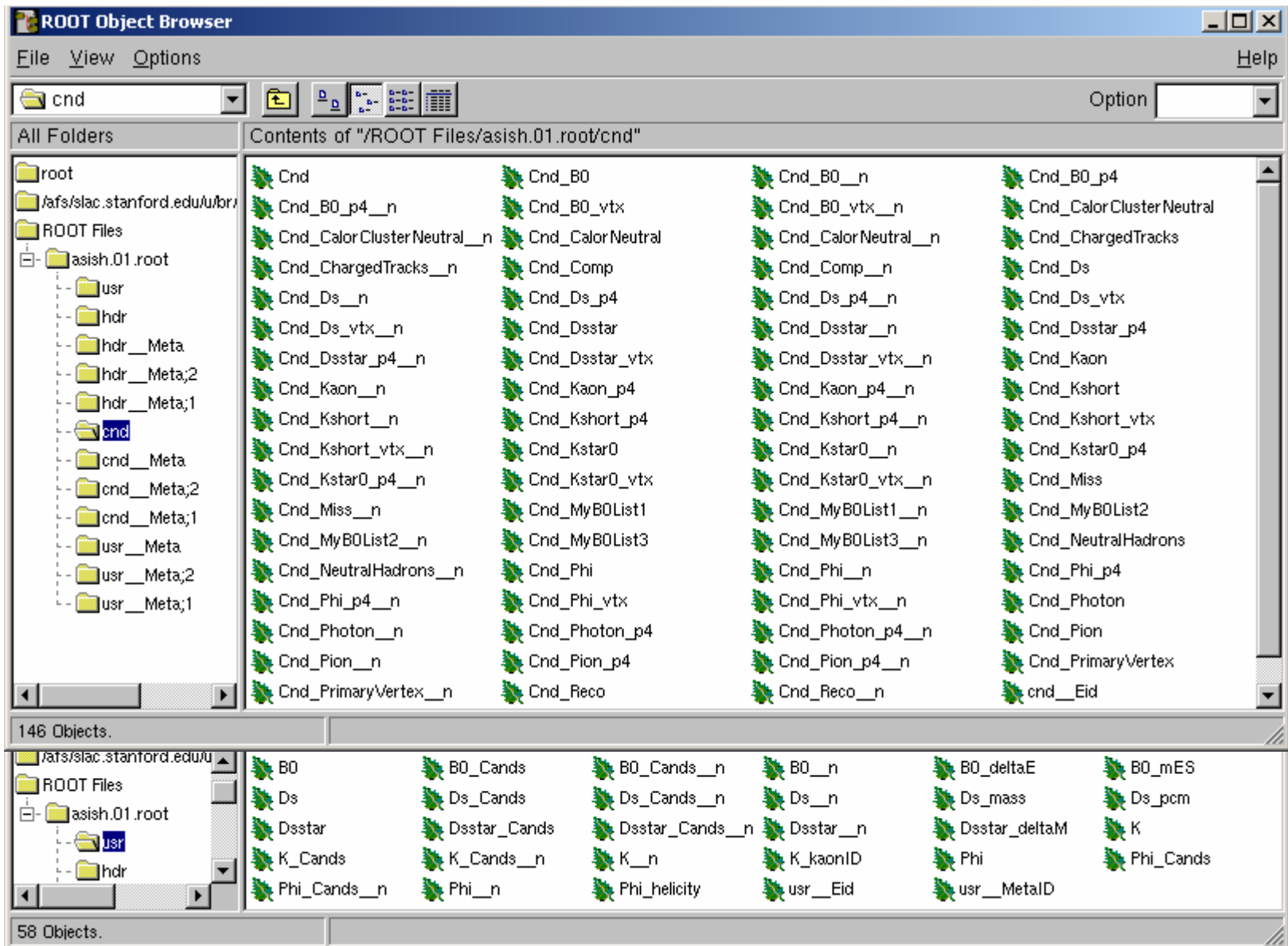
```
lappend BtaCandLists MyB0List1 MyB0List2 MyB0List3
lappend CandBranches "Photon gamma          p4"
lappend CandBranches "Pion   pi+   pi-      p4"
lappend CandBranches "Kaon   K+    K-       p4"
lappend CandBranches "Kshort K_S0                p4 vtx"
lappend CandBranches "Kstar0 K*0   anti-K*0 p4 vtx"
lappend CandBranches "Phi    phi                    p4 vtx"
lappend CandBranches "Ds     D_s+  D_s-      p4 vtx"
lappend CandBranches "Dsstar D_s*+ D_s*-    p4 vtx"
lappend CandBranches "B0     B0    anti-B0   p4 vtx"
```

# Configure Framework

## MySkim.tcl

```
set BtaCandLists ""; set CandBranches ""
set CandBlocks ""; set EventBlocks ""
sourceFoundFile BetaMiniSequences/BetaMiniSequence.tcl
sourceFoundFile MyUser/MySequence.tcl
sourceFoundFile UsrTools/UsrDataProcs.tcl
path delete AllPath
path create MyPath BetaMiniSequence MySequence
foreach branch $CandBranches { lappend opt
    cndStoreOpt=$branch }
lappend opt trkFitType=All

writeSkim MyPath MySkim $OutputColl "deepCopyMicro"
    $BtaCandLists $CandBlocks $EventBlocks "" $opt
```



# Summary

- How to add your own variable:  
<http://www.slac.stanford.edu/BFROOT/www/Computing/Offline/AnalysisTools/meetings/20050902/>
- <http://www.slac.stanford.edu/BFROOT/www/Computing/Offline/AnalysisTools/TclUserDataMaker.html>
- Questions: email me or [AnalTools](#) HN
- Kanga: [kangaAnalTools](#) HN  
<http://www.slac.stanford.edu/BFROOT/www/Computing/Documentation/Kanga/>
- Any comment, please email me
- Next version of UsrTools:
  - Allow user to remove existing variable in collection
  - Complete control to end-user at tcl level

# Don't Wait!

- *Login now and get your free copy of UsrTools!*
- *If you login within the next 10 seconds, you'll also get a free copy of SmpCalculation. A powerful tool for doing your analysis.*
- *Have fun and start writing user data now!*
- *Comments expressed herein are the sole opinions of the manufacturer, and does not reflect those of BaBar, (including this statement).*