

**A Nifty Log-book Script to
Seamlessly log what
Commands were run and
Where for Easy Organisation
of Your Various Projects**

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**My Super Hacky Logbook
Script Proof-of-principle
Tool that Might be Useful
to Others Already but is
Seriously Super Hacky**

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Introduction

- I found myself writing bigger and bigger command lines
- Commands are often only relevant if issued in the right location
- My `BASH_HISTORY` set up was already a big help:
 - `shopt -s histappend`
 - `export HISTIGNORE="ls:rm -r*:[bf]g:exit:history *[0-9]*"`
 - `export HISTCONTROL="ignoredups:erasedups"`
 - `export HISTTIMEFORMAT="%A %d/%m/%y %T "`
 - `export HISTSIZE=100000`
 - `export HISTFILESIZE=100000`

History controls in bashrc

- Enable history appending rather than over-writing
 - `shopt -s histappend`
- Ignore certain commands
 - `export HISTIGNORE="ls:rm -r*:[bf]g:exit:history * [0-9] *"`
- Only log duplicated commands once
 - `export HISTCONTROL="ignoredups:erasedups"`
- Store the time each command was executed
 - `export HISTTIMEFORMAT="%A %d/%m/%y %T "`
- Keep a lot of history
 - `export HISTSIZE=100000`
 - `export HISTFILESIZE=100000`
- But no nice way to store the working directory in bash history
 - As far as I could see

Log-book script design goals

- Stores selected commands to a log book file
 - Include the time, date and directory of execution
- Needs to be told which commands to store; not logging everything
- Specific to a given project, but works from any sub-directory of that project
 - Similar to using git
- Can print and review later on

Obtaining and Installing

- Clone from github

- `cd ~/bin`

- `git clone https://github.com/benkrikler/log_book.git`

- Make sure directory is contained in PATH

- `PATH=$HOME/bin:$PATH`

- Need to have bash write the history to the file after each command. In bashrc do one of:

- `PROMPT_COMMAND='history -w'`

- ```
prompt_cmd() {
 history -w
}
```

- ```
PROMPT_COMMAND='prompt_cmd'
```

- Make sure to source your bashrc before using

Usage

```
$ lb -h
```

```
lb: [options] [command]
```

Valid commands:

```
init           Initialise a log in the current directory
append        Append commands to the log
print         Print the contents of the log
```

Valid global options:

```
-h, --help
    Show this help and quit
--debug
    Enable debug output
-l, --log-file <filename>
    Provide the name of a log file to use
--log-file-format <filename>
    The log file format to search for
-n <number>
    The number of previous commands to append to the log
--hist-file <filename>
    The name of the history file to extract commands from
```

Usage

- Go to a project directory

- `$ cd Inane_example/`

- Initialiase the log book:

- `$ lb init`

- Initialised new log at: `/vols/comet00/users/bek07/Inane_example/.log`

- Do some magical work on the command line

- `$...`

- `$ for nfiles in 1 4 10; do`
`IcedustControl_SubmitToBatch -Q '-q heplong.q'`
`-I <(shuf -n $nfiles InputFiles) -s $(TD)-files_$nfiles`
`RunAnalysis.cfg ;done`

- Save the last command that was executed to the log book

- `$ lb append`

- (or just `lb`)

- Appending the following to log

- `(/vols/comet00/users/bek07/Inane_example/.log):`
`9860 Tuesday 01/03/16 09:32:02 for nfiles in 1 4 10; do`
`IcedustControl_SubmitToBatch -Q '-q heplong.q' ; -I <(shuf -n`
`$nfiles InputFiles) -s $(TD)-files_$nfiles RunAnalysis.cfg ;done`

Usage

- Change down into a sub-directory and run some commands

- `cd well_named_sub_directory`

- `$ max_shift=50;for shift in {030..070..10}; do for height in {600..700..20}; do echo DIO Height: $height, Shift: $shift; sed -e 's!%MAX_SHIFT%!'$max_shift'!g' -e 's!%SHIFT%!'$shift'!g' -e 's!%DIOHEIGHT%!'$height'!g' ElectronAcceptance.cfg.in > batch3/ElectronAcceptance-shiftBack_{max_shift}-shift_{shift}-DIOHeight_{height}.cfg ;done ;done`

- Append to log book:

- `lb`

- Appending the following to log

- `(/vols/comet00/users/bek07/Inane_example/.log) :`

- `99860 Tuesday 01/03/16 09:33:59 max_shift=50;for shift in {030..070..10}; do`

Usage

- Review the log:

- `$ lb print`

```
= /vols/comet00/users/bek07/Inane_example =  
99860 Tuesday 01/03/16 09:32:02 for nfiles in 1 4 10; do  
IcedustControl_SubmitToBatch -Q '-q heplong.q' ; -I <(shuf -n  
$nfiles InputFiles) -s $(TD)-files_$nfiles RunAnalysis.cfg  
;done
```

```
= ../../Inane_example/well_named_sub_directory =  
99860 Tuesday 01/03/16 09:33:59 max_shift=50;for shift in  
{030..070..10}; do for height in {600..700..20}; do echo DIO  
Height: $height, Shift: $shift; sed -e 's!%MAX_SHIFT  
%! '$max_shift'!g' -e 's!%SHIFT%! '$shift'!g' -e 's!%DIOHEIGHT  
%! '$height'!g' ElectronAcceptance.cfg.in >  
batch3/ElectronAcceptance-shiftBack_{$max_shift}-shift_{$  
shift}-DIOHeight_{$height}.cfg ;done ;done
```

- Time stamp formatting is coming from raw BASH history controls, use `HISTTIMEFORMAT` to control

Future Additions

(Making it Less Hacky)

- **Nicer printing**
- **Finer controls over command appending, Eg:**
 - Using Regex to find last command
 - Last n-th command (sort of works already)
- **Switch away from shell scripting (→ python)**
- **Append files**
 - Simple scripts and text files
 - Plots
- **Version control hooks**
 - What tag of a piece of software was in use?
 - Tag of experiment software or analysis code

Summary

- Shown a log book script that's in its early stage of development
- Feel free to use!
- Let me know if there are issues
- Welcome to contribute
 - Fix issues
 - Add features
 - Just open a pull request when ready
- Intend to develop further in the future (post-PhD)