Commandline GUI
Way to Go...

Scope

1. GUI facilities on commandline

- screen widgets, menus, ...

- colour management

- cursor handling

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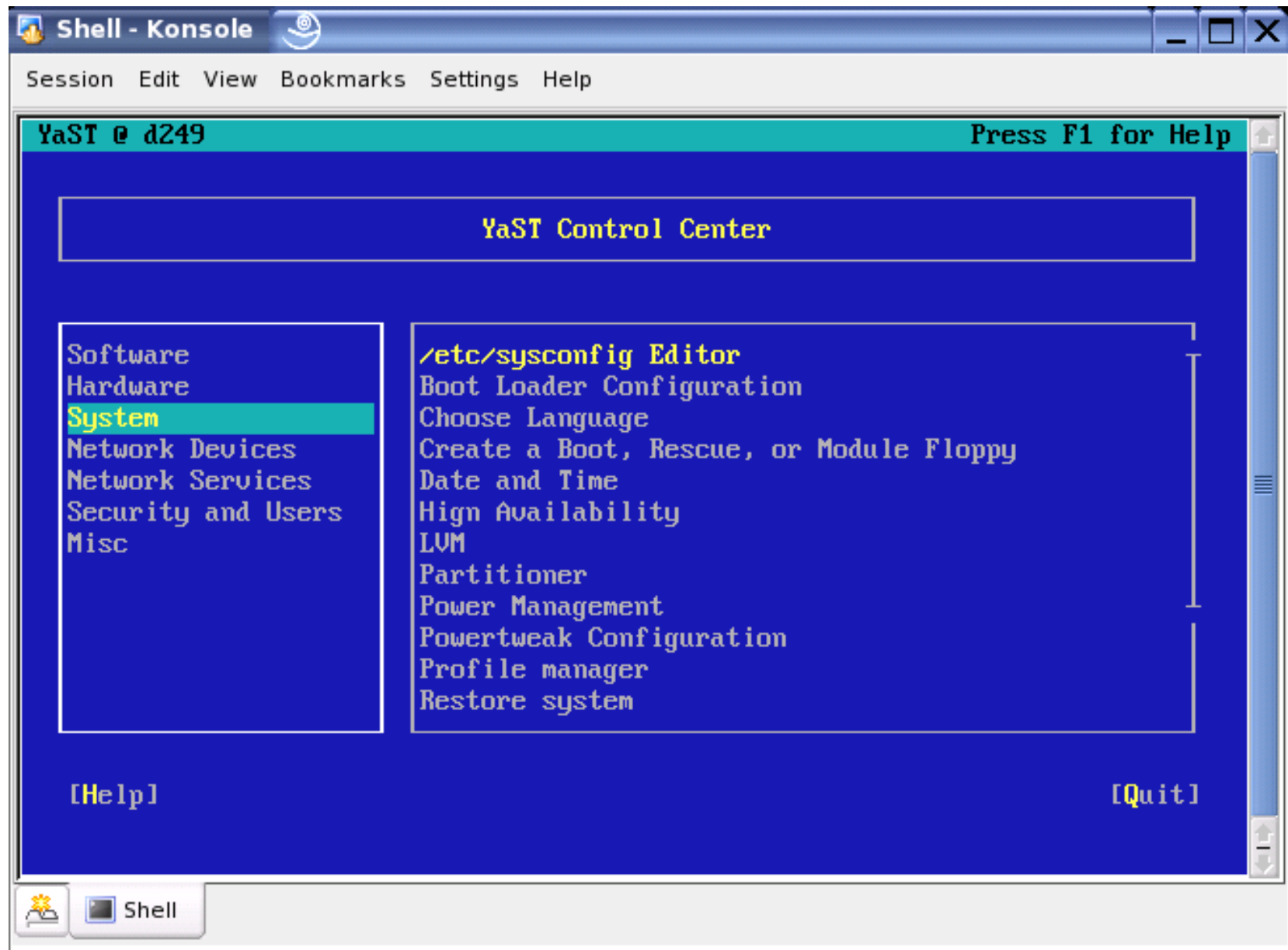   - colour management

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2. harness modern terminal capabilities

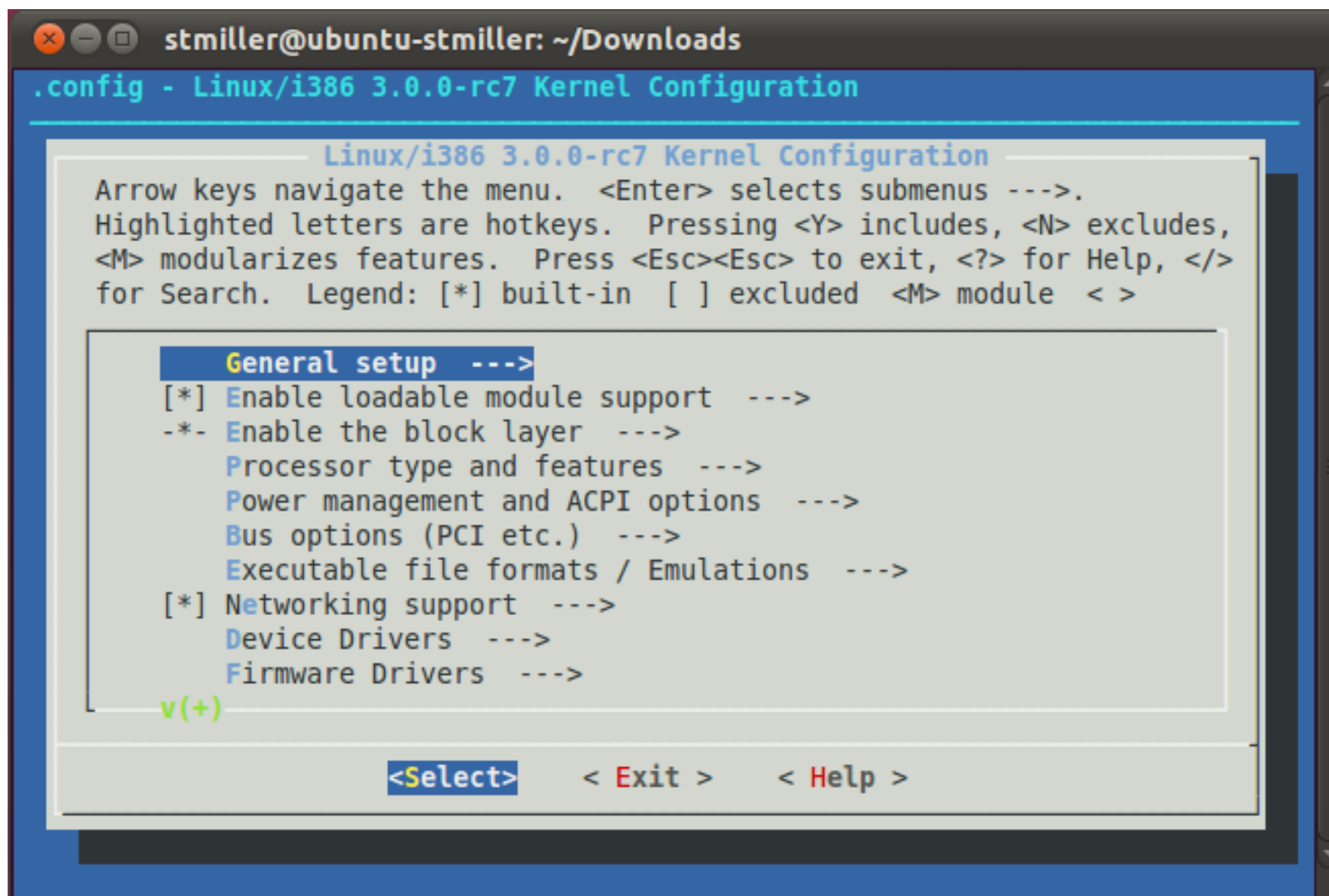3. compare terminal support in C, node.js, Go

ncurses

- old - since System V release 4 (1992)
- most commandline-installers / menus
- GNU C

ncurses - YaST

ncurses - menuconfig

ncurses - htop


```
Terminal - [screen 1: bash] jo68huc@meggy:~

File  Edit  View  Terminal  Go  Help

  1  [|||||||||||||||||100.0%]    13 [|||||||||||||||||100.0%]    25 [                        0.0%]    37 [|||||||||||||||||||100.0%]
  2  [|||||||||||||||||100.0%]    14 [|||||||||||||||||100.0%]    26 [                        0.0%]    38 [||||                17.2%]
  3  [|||||||||||||||||100.0%]    15 [|||||||||||||||||100.0%]    27 [                        0.0%]    39 [                     0.0%]
  4  [|||||||||||||||||100.0%]    16 [|||||||||||||||||100.0%]    28 [                        0.0%]    40 [                     0.0%]
  5  [|||                8.6%]    17 [|||||||||||||||||100.0%]    29 [||||||||||||||||||||100.0%]    41 [                     0.0%]
  6  [                   0.6%]    18 [|||||||||||||||||100.0%]    30 [                        0.0%]    42 [                     0.0%]
  7  [|||||||||||||||||100.0%]    19 [                    0.0%]    31 [                        0.0%]    43 [||                   6.7%]
  8  [|||||||||||||||||100.0%]    20 [|                    0.6%]    32 [                        0.0%]    44 [|||||||||||||||||||100.0%]
  9  [|                  0.6%]    21 [|||||||||||||||||82.8%]    33 [||||||||||||||||||||100.0%]    45 [|||||||||||||||||||100.0%]
 10  [|||||||||||||||||100.0%]    22 [|||||||||||||||||100.0%]    34 [                        0.0%]    46 [|||||||||||||||||||100.0%]
 11  [|||||||||||||||||100.0%]    23 [|||||||||||||||||100.0%]    35 [                        0.0%]    47 [|||||||||||||||||||100.0%]
 12  [|||||||||||||||||100.0%]    24 [                    0.0%]    36 [|||||||||||||||||||100.0%]    48 [|||||||||||||||||||100.0%]
Mem[|||||||||||||                   38453/258325MB]    Tasks: 359, 910 thr; 28 running
Swp[||||||                             407/4095MB]    Load average: 27.17 27.10 27.02
                                                        Uptime: 166 days(!), 17:02:16

  PID USER      PRI  NI  VIRT   RES   SHR S CPU% MEM%   TIME+  Command
24175 ha62gad    20   0 6354M 2220M 70908 S 101.  0.9    176h /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r run
26059 neb        39  19 15816  8152  1868 R 100.  0.0  5h01:27 dnetc    -n -1
42787 to78men    20   0 16.0G 5548M 71092 S 100.  2.1 23h35:27 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan34
21110 neb        39  19 15816  8148  1868 R 100.  0.0  6h07:19 dnetc    -n -1
43251 to78men    20   0 14.5G 3353M 71096 S 100.  1.3 23h35:09 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan78
 8095 neb        39  19 15816  8148  1868 R 100.  0.0 30:20.09 dnetc    -n -1
40647 neb        39  19 15816  8152  1868 R 100.  0.0  2h19:37 dnetc    -n -1
43783 to78men    20   0 12.6G 2303M 71092 S 100.  0.9 23h32:46 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan56
44650 neb        39  19 15816  8148  1868 R 100.  0.0  1h33:53 dnetc    -n -1
43253 to78men    20   0 17.0G 5809M 71088 S 100.  2.2 23h34:52 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan910
 7682 neb        39  19 15816  8152  1868 R 100.  0.0 33:57.49 dnetc    -n -1
42712 neb        39  19 15816  8152  1868 R 100.  0.0  1h51:09 dnetc    -n -1
46816 neb        39  19 15816  8152  1868 R 100.  0.0  1h03:36 dnetc    -n -1
12766 neb        39  19 15816  8152  1868 R 100.  0.0  8h13:10 dnetc    -n -1
 7956 neb        39  19 15816  8152  1868 R 100.  0.0 32:58.00 dnetc    -n -1
43377 to78men    20   0 14.5G 3353M 71096 R 100.  1.3 23h32:50 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan78
42910 to78men    20   0 16.0G 5548M 71092 R 100.  2.1 23h33:22 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan34
45076 neb        39  19 15816  8148  1868 R 100.  0.0  1h27:13 dnetc    -n -1
33588 neb        39  19 15816  8148  1868 R 100.  0.0  3h38:03 dnetc    -n -1
45340 neb        39  19 15816  8148  1868 R 100.  0.0  1h20:58 dnetc    -n -1
41565 mi28tup    20   0 12.7G 12.2G 13008 R 100.  4.8    112h /opt/Mathematica/8.0/SystemFiles/Kernel/Binaries/Linux-x86-64/MathK
42321 neb        39  19 15816  8148  1868 R 100.  0.0  1h56:46 dnetc    -n -1
41370 neb        39  19 15816  8152  1868 R 100.  0.0  2h14:06 dnetc    -n -1
43843 to78men    20   0 12.6G 2303M 71092 R 100.  0.9 23h30:39 /opt/matlab12a/bin/glnxa64/MATLAB -nodisplay -r mainCEPscan56
```

blessed node.js

- ncurses replacement

  - `github.com/chjj/blessed`

  - `github.com/yaronn/blessed-contrib`

- thorough (16,000 lines of JavaScript)

- high-level widget API

  - simpler than ncurses

  - Boxes, Forms, Lists, FileManager, ...
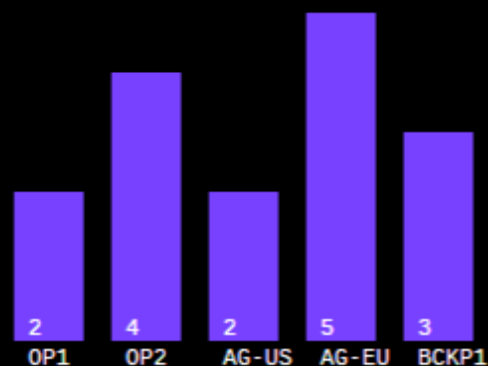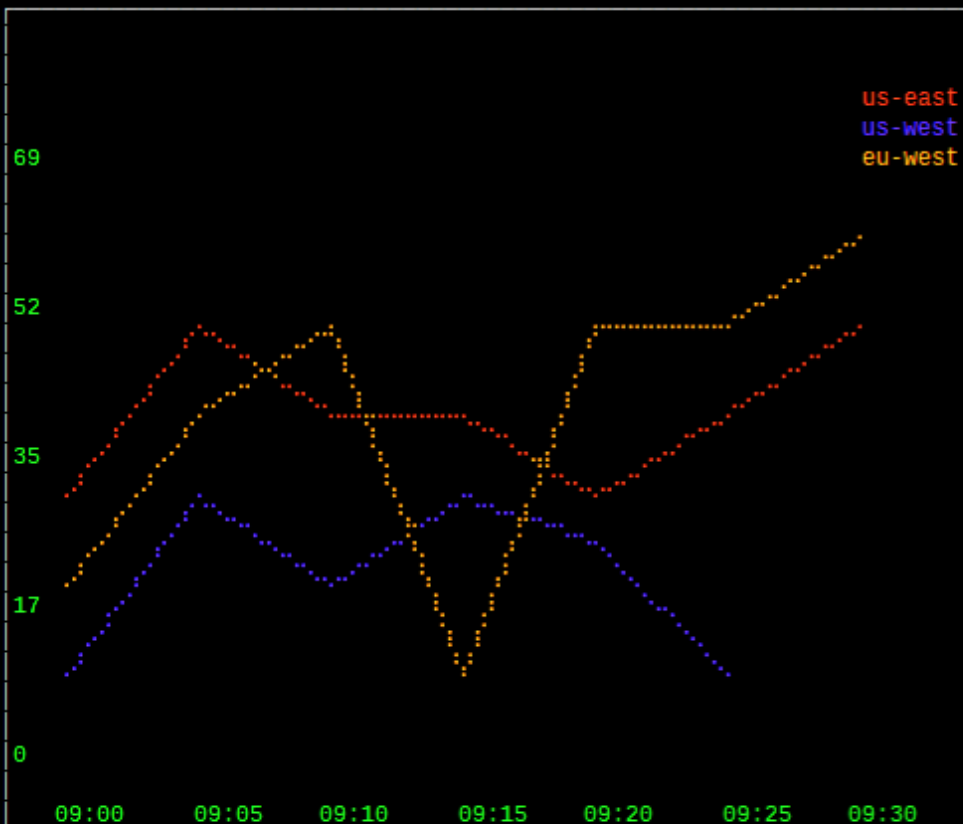
  - HTML-like (DOM)

blessed node.js

blessed-contrib WOPR

Go termbox

- cross-platform (Mac, Windows, Linux)
  - common denominator
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- `github.com/nsf/termbox-go`

Go termbox

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- antipode of blessed:
  - minimalist vs. *exceeding ncurses*
  - low-level API vs. *widget abstractions*
- `github.com/nsf/termbox-go`

termbox example

ssh tetris@104.154.80.84

- password: **tetris**

- commands:

  – s: start

  – escape: exit

limetext.org lime-termbox

zyang@dhcp-1-183:~/go/src/lime/frontend/termbox

File Edit View Search Terminal Help

```go
// Copyright 2013 The lime Authors.
// Use of this source code is governed by a 2-clause
// BSD-style license that can be found in the LICENSE file.
package main

import (
	"code.google.com/p/log4go"
	"fmt"
	. "github.com/quarnster/util/text"
	"lime/3rdparty/libs/gopy/lib"
	"lime/3rdparty/libs/termbox-go"
	"lime/backend"
	_ "lime/backend/commands"
	"lime/backend/render"
	"lime/backend/sublime"
	"lime/backend/textmate"
	"lime/backend/util"
	"runtime/debug"
	"sync"
	"time"
)

var (
	lut = map[termbox.Key]backend.KeyPress{
		// Omission of these are intentional due to map collisions
		//	termbox.KeyCtrlTilde:      backend.KeyPress{Ctrl: true, Key: '~'},
		//	termbox.KeyCtrlBackslash:  backend.KeyPress{Ctrl: true, Key: '\\'},
		//	termbox.KeyCtrlSlash:      backend.KeyPress{Ctrl: true, Key: '/'},
		//	termbox.KeyCtrlUnderscore: backend.KeyPress{Ctrl: true, Key: '_'},
		//	termbox.KeyCtrlLsqBracket: backend.KeyPress{Ctrl: true, Key: '{'},
		//	termbox.KeyCtrlRsqBracket: backend.KeyPress{Ctrl: true, Key: '}'},
		// termbox.KeyCtrl3:
		// termbox.KeyCtrl8
```

```
00003946 102 [2013/12/17 16:04:13 CST] [DEBG] (main.func·009:432) Adding colour: 34 0x00C4B14A {R:196 G:177 B:74}
00004060 101 [2013/12/17 16:04:13 CST] [DEBG] (main.func·009:432) Adding colour: 35 0x0041A83E {R:65 G:168 B:62}
00004173 138 [2013/12/17 16:04:13 CST] [INFO] (lime/backend.(*Editor).loadKeybinding:141) Loaded ../../backend/packages/Default/Default.sublime-keymap
00004324 141 [2013/12/17 16:04:14 CST] [INFO] (lime/backend.(*Editor).loadKeybinding:141) Loaded ../../3rdparty/bundles/Vintageous/Default.sublime-keymap
00004478 137 [2013/12/17 16:04:14 CST] [INFO] (lime/backend.(*Editor).loadSetting:160) Loaded ../../backend/packages/Default/Default.sublime-settings
00004628 126 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.transformers
00004767 128 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.jump_list_cmds
00004908 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.action_cmds
00005046 133 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.transformers_visual
00005192 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.motion_cmds
00005330 177 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Skipping registering irreversible_text: irreversible_text is already a registered com
00005520 125 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.test_runner
00005658 117 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.run
00005788 119 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Loading plugin Vintageous.state
00005920 177 [2013/12/17 16:04:14 CST] [INFO] (lime/backend/sublime.sublime_Console:87) Python sez: Skipping registering irreversible_text: irreversible_text is already a registered com
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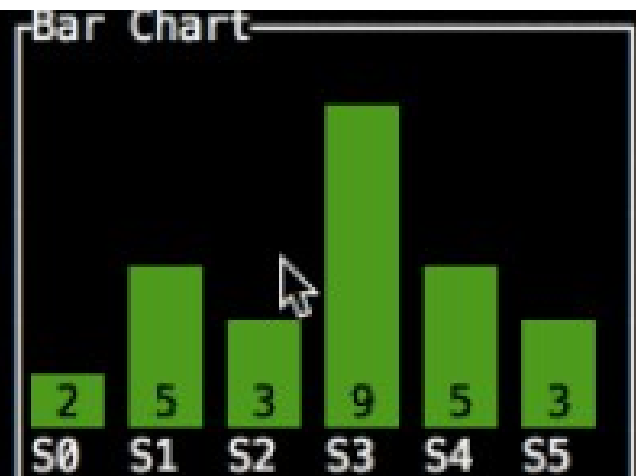
termui

- `github.com/gizak/termui`
- inspired by blessed (widgets)
- based on termbox
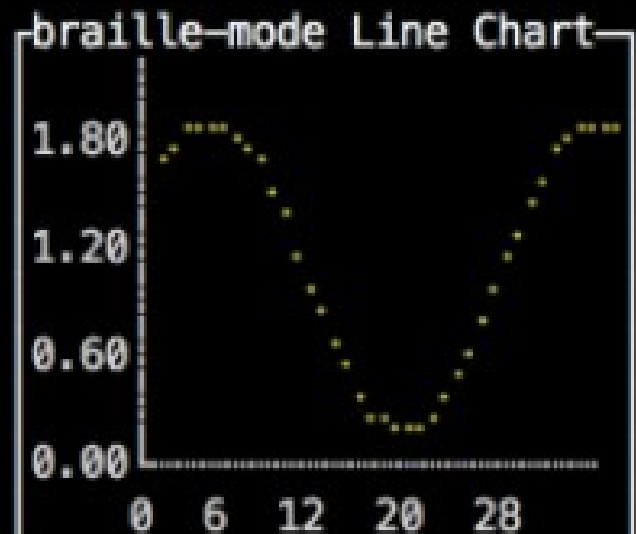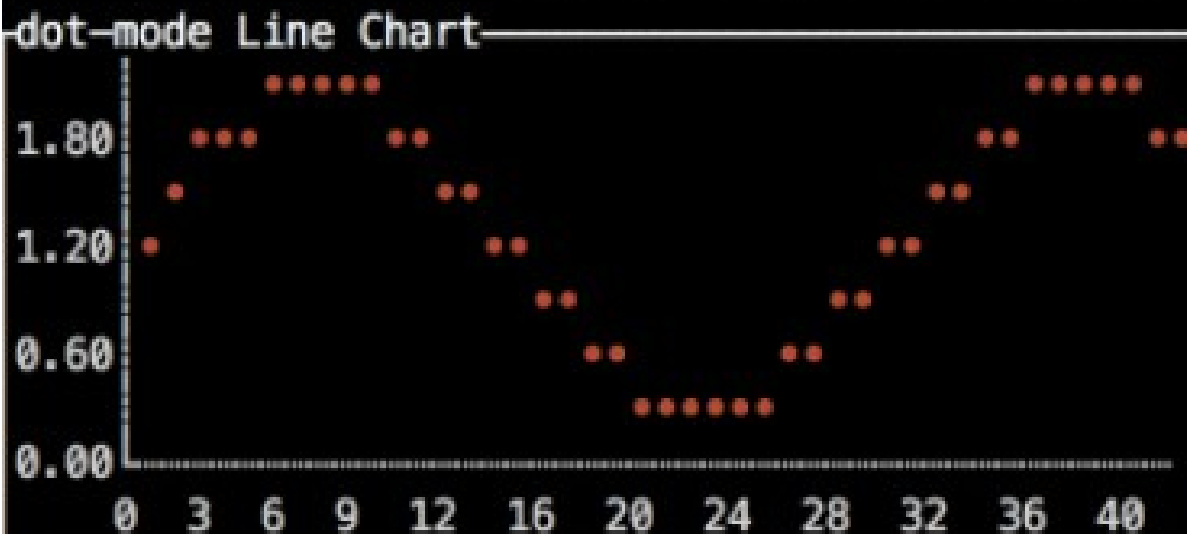- still work-in-progress

termui

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