



LP 1

Liquid Prompt

Yes, we can
drastically rethink
the design of
a shell prompt

—

nojhan

—

FOSDEM
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LP 2

Prompts



Shell Prompts

- ▶ Everyday's Command Line Interface
- ▶ Defaults (at most) to: [nojhan@fosdem:~]\$
- ▶ Purpose:
 - ▶ Indicate where you are (ex. dir)
 - ▶ Warn when problems are coming (ex. space)
 - ▶ Follow state of work (ex. git)



Where is my mind?

```
NUC-354090% sudo tail -n 10 /var/log/syslog
2024-01-29T21:30:05.921748+01:00 NUC-354090 systemd[3098]: Stopped tracker-miner-fs-3.service - Tracker
file system data miner.
2024-01-29T21:30:05.921939+01:00 NUC-354090 systemd[3098]: tracker-miner-fs-3.service: Consumed 1min 9.6
04s CPU time.
2024-01-29T21:30:05.948296+01:00 NUC-354090 systemd[3098]: Starting tracker-miner-fs-3.service - Tracker
file system data miner...
2024-01-29T21:30:14.828288+01:00 NUC-354090 tracker-extract[2632843]: Could not connect to filesystem mi
ner endpoint: Timeout was reached
2024-01-29T21:30:14.835177+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Main process exite
d, code=exited, status=1/FAILURE
2024-01-29T21:30:14.835446+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Failed with result
'exit-code'.
2024-01-29T21:30:14.835637+01:00 NUC-354090 systemd[3098]: Failed to start tracker-extract-3.service - T
racker metadata extractor.
2024-01-29T21:30:15.171227+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Scheduled restart
job, restart counter is at 1487.
2024-01-29T21:30:15.171422+01:00 NUC-354090 systemd[3098]: Stopped tracker-extract-3.service - Tracker m
etadata extractor.
2024-01-29T21:30:15.211839+01:00 NUC-354090 systemd[3098]: Starting tracker-extract-3.service - Tracker
metadata extractor...
NUC-354090% tail -n 10 /var/log/messages
tail: impossible d'ouvrir '/var/log/messages' en lecture: Aucun fichier ou dossier de ce type
NUC-354090% ifconfig
eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
      ether 54:b2:03:18:a8:fd txqueuelen 1000  (Ethernet)
      RX packets 0  bytes 0 (0.0 B)
      RX errors 0  dropped 0  overruns 0  frame 0
      TX packets 0  bytes 0 (0.0 B)
      TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
      device interrupt 16  memory 0xdc200000-dc220000
```



7 Prompts

Feature	Liquidprompt	Starship	Spaceship	Oh-My-Posh	Powerlevel10k	Powerline	Pure
Language	Shell	Rust	Zsh	Go	Zsh	Python	Zsh
License	AGPLv3	ISC	MIT	MIT	MIT	MIT	MIT
Github stars (k)	4.2	28	17.2	7.4	30.4	13.4	11.5



Features

Prompt	Essentials	Version control	Environments	Toolsets	Misc	Services
Liquid Prompt	★★★	★★★	★★★	★	★★	-
*ship	★★	★★	★★★	★★★	★	-
PowerLevel10k	★★	★	★★★	★★	★★	★
Oh-My-Posh	★	★★	★	★★	★	★★
Powerline	★	★	★	-	★★	★★★
Pure	★	★	-	-	-	-



Design axes

<https://github.com/liquidprompt/liquidprompt/wiki/Why>

- ▶ **focused**: targets states that are actually useful to the user during a work session,
- ▶ **seamless**: does not product friction with the user workflow,
- ▶ **scoped**: targets states that can change,
- ▶ **measured**: embraces the fact that some states change less often than others,
- ▶ **accentuated**: makes more visible the feedback for more important state changes,
- ▶ **configurable**.



Design

Prompt	Focused	Seamless	Scoped	Measured	Accentuated	Configurable
Liquid Prompt	★★★	★★	★★	★★★	★★★	★★★
PowerLevel10k	★★	★★★	★★	★★	★★	★★
Oh-My-Posh	★★	★★	★★	★★	★	★★
Pure	★★	★★	★★	★★	★	★★
*ship	★	★★	★	★	★	★★
Powerline	★	★★	★	★	★	★



LP 9

Example – Oh-My-Posh

```
< runner on Thursday at 4:43 PM ⌚ ⌚ main ≡ 🖊 ~1 0s 〽 MEM: 18.37% (6/7GB)  
> { └ home ↳ work ↳ oh-my-posh ↳ oh-my-posh ↳ website } 💯 _
```

```
runner ➤ website ➤ → (⌚ main) ➤ ⚡ 17.6.0 ➤ ❤ 16:43 ➤ _
```

```
> runner@fv-az713-588 ➤ ⌂ > ⌂ > ⌂ > ⌂ > website ➤ ↵main ➤ _
```

```
runner@fv-az713-588 ➤ ~ > ... > oh-my-posh > oh-my-posh > website ↵main ≡ +0 ~2 -0 ➤ _
```

```
runner@fv-az713-588 ➤ ~ / work / oh-my-posh / oh-my-posh / website ➤ ↵main ➤ _
```

```
⌚ runner on ⌂ ~ / work / oh-my-posh / oh-my-posh / website ⌚ ↵main  
# _
```

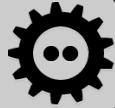
```
⌚ _ shell ➤ ⌂ → website ➤ ⌚ ⌚ main ≡ 🖊 ~2 ➤ ⏱ 0ms ➤ ⚡ 17.6.0 ➤ ⚡ kind-posh ➤ ⚡ ⌂ 9,16:43  
⌚ > _
```

```
~ / work / oh-my-posh / oh-my-posh / website ↵main
```

```
⌚
```

```
⌚ ➤ ⌂ / ... / website ➤ ↵main 🖊 ~2 ➤ ⏱ 0s ➤ runner / fv-az713-588 ➤ 16:43:31
```

```
⌚
```



LP 10

Much Information!

2.2.0 vs [2.2.0]

```
[load: [42    ]  
 | ram: [31%   ]  
snsr {batt: [↓24% ]  
 | disk: [/////]  
 | temp: [90°   ]
```

```
VCS: [git      ] remt: [ ]  
diff: [+10/-5  ] hdst: [ ]  
comit: [+3/-1   ] bkmk: [ ]  
stash: [1       ] vers: [ ]  
uttrak: [1       ] brch: [main ]
```

```
X11:○ su:○ sudo:/ proxy:/ chroot:○
```

```
[suspd: [1     ]  
jobs {bkgrd: [2     ]  
 | dtchd: [3     ]
```

```
shlvl: [2     ] ptag: [ ]  
 RSH: ●  
 mux: ○ user: [user ]  
 host: [server ]
```

```
drstk: [3     ] path: [~/code/liquidprompt/docs/theme
```

SOLID PROMPT

```
pyenv: [pyenv  
node: [/////]  
ruby: [/////]  
kube: [/////]  
trfm: [/////]  
cont: [/////]  
awsp: [/////]  
scls: [/////]  
shel: [bash] R0: ●  
rntm: [20s]
```





We Can Do Better

- **Important information first**
- **Help visual parsing**
- *Avoid list of segments*
- **Be colorblind-friendly**
- *Avoid psychedelic rainbows*
- **Avoid text overload**
- **Use logical sequences**
- **Semantic thresholds**



Liquid Prompt / DotMatrix

- ▶ <https://github.com/nojhan/lp-dotmatrix>



LP 13 LiquidPrompt / DotMatrix

Short prompt:

```
X user ~
```

```
- > >
```

Medium prompt:

```
T < user > server~ / liquidprompt >
```

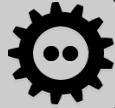
```
- ± > main > >
```

Long prompt:

```
T < user > server < ~ / code / liquidprompt / docs / theme > 3 >>
```

```
< 24% 1.68Δ/900 3d/2Δ/1z
```

```
pyenv >  
- ±/1 3 main < +10/-5 +/? 20s < 125 >> []
```



LP 14

Important information first

- ▶ Prioritize based on location on screen
 - ▶ more stability, thus easier to spot changes
- ▶ 2 colors for important states changes

The screenshot shows a terminal window with the following content:

- Top bar:
 - Who? nojhan
 - Where? ~ code / colout
 - Sensors: 780 1z
- Second line: Stable config
- Third line:
 - Branch: master
 - Stash count: +90/-1
 - File status: + 130
- Bottom navigation:
 - Remote
 - Local
 - Important



LP 15

Help visual parsing

- ▶ Consistent segments
- ▶ Section Line

```
X nojhan ➤ ~ > sudo tail -n 10 /var/log/syslog
[sudo] Mot de passe de nojhan :
2024-01-29T22:09:20.421370+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Scheduled restart job, restart counter is at 1565.
2024-01-29T22:09:20.421464+01:00 NUC-354090 systemd[3098]: Stopped tracker-extract-3.service - Tracker metadata extractor.
2024-01-29T22:09:20.451868+01:00 NUC-354090 systemd[3098]: Starting tracker-extract-3.service - Tracker metadata extractor...
2024-01-29T22:09:50.659767+01:00 NUC-354090 tracker-extract[2780283]: Could not connect to filesystem miner endpoint: Timeout was reached
2024-01-29T22:09:50.664984+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Main process exited, code=exited, status=1/FAILURE
2024-01-29T22:09:50.665317+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Failed with result 'exit-code'.
2024-01-29T22:09:50.665851+01:00 NUC-354090 systemd[3098]: Failed to start tracker-extract-3.service - Tracker metadata extractor.
2024-01-29T22:09:50.921232+01:00 NUC-354090 systemd[3098]: tracker-extract-3.service: Scheduled restart job, restart counter is at 1566.
2024-01-29T22:09:50.921441+01:00 NUC-354090 systemd[3098]: Stopped tracker-extract-3.service - Tracker metadata extractor.
2024-01-29T22:09:50.947912+01:00 NUC-354090 systemd[3098]: Starting tracker-extract-3.service - Tracker metadata extractor...

X nojhan ➤ ~ > tail -n 10 /var/log/messages
tail: impossible d'ouvrir '/var/log/messages' en lecture: Aucun fichier ou dossier de ce type

X nojhan ➤ ~ >
< 838

X nojhan ➤ ~ > ifconfig
ifconfig: error: device eno1 does not exist
eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    ether 54:b2:03:18:a8:fd  txqueuelen 1000  (Ethernet)
      RX packets 0  bytes 0 (0.0 B)
      RX errors 0  dropped 0  overruns 0  frame 0
      TX packets 0  bytes 0 (0.0 B)
      TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
    device interrupt 16  memory 0xdcc00000-dc220000
```



colorblind-friendly

X nojhan ~ / code / colout < 780 1z

· ↵ master < +90/-1 +/? < ✘ 130 > □

X nojhan ~ / code / colout < 770 1z

· ↵ master < +90/-1 +/? < ✘ 130 > □

X nojhan ~ / code / colout < 860 1z

· ↵ master < +90/-1 +/? < ✘ 130 > □



LP 17

Colors contrast

- ▶ ANSI colorspace
 - ▶ 256 colors
 - ▶ $3b_{red} \times 3b_{green} \times 2b_{blue}$
- ▶ Tool to test AAA/AA contrast
 - ▶ One color over all
 - ▶ Pair of colors

```
18:25:37 [appar@~:code/Liquidprompt/tools] refactor/default-theme(+75/-5)+ 2(usage) ± ./color-contrast.sh 255
ANSI: 235
RGB: 38 38 38
Luminance: .01938236095093572254
Perceived lightness: 15.15972013018894334972

fg1 :
  bg1: Mederig mel dead keit ur
  HC/bg1: Pempoull vro pomper lezen
  --
  Compatible level AAA: ..... 007 ..... 007 ..... 007
  ..... 010 011 ..... 014 015 ..... 010 011 ..... 014 015 ..... 010 011 ..... 014 015
  ..... 040 041 042 043 044 045 ..... 040 041 042 043 044 045 ..... 040 041 042 043 044 045
  ..... 046 047 048 049 050 051 ..... 046 047 048 049 050 051 ..... 046 047 048 049 050 051
  ..... 076 077 078 079 080 081 ..... 076 077 078 079 080 081 ..... 076 077 078 079 080 081
  ..... 082 083 084 085 086 087 ..... 082 083 084 085 086 087 ..... 082 083 084 085 086 087
  ..... 112 113 114 115 116 117 ..... 112 113 114 115 116 117 ..... 112 113 114 115 116 117
  ..... 118 119 120 121 122 123 ..... 118 119 120 121 122 123 ..... 118 119 120 121 122 123
  ..... 146 147 ..... 146 147 ..... 146 147
  ..... 148 149 150 151 152 153 ..... 148 149 150 151 152 153 ..... 148 149 150 151 152 153
  ..... 154 155 156 157 158 159 ..... 154 155 156 157 158 159 ..... 154 155 156 157 158 159
  ..... 178 179 180 181 182 183 ..... 178 179 180 181 182 183 ..... 178 179 180 181 182 183
  ..... 184 185 186 187 188 189 ..... 184 185 186 187 188 189 ..... 184 185 186 187 188 189
  ..... 198 191 192 193 194 195 ..... 198 191 192 193 194 195 ..... 198 191 192 193 194 195
  ..... 213 ..... 213 ..... 213
  ..... 214 215 216 217 218 219 ..... 214 215 216 217 218 219 ..... 214 215 216 217 218 219
  ..... 228 221 222 223 224 225 ..... 228 221 222 223 224 225 ..... 228 221 222 223 224 225
  ..... 226 227 228 229 230 231 ..... 226 227 228 229 230 231 ..... 226 227 228 229 230 231
  ..... 249 250 251 252 253 254 255 ..... 249 250 251 252 253 254 255 ..... 249 250 251 252 253 254 255
  ..... 010 011 ..... 013 014 015 ..... 010 011 ..... 013 014 015 ..... 010 011 ..... 013 014 015
  ..... 035 036 037 038 039 ..... 035 036 037 038 039 ..... 035 036 037 038 039
  ..... 040 041 042 043 044 045 ..... 040 041 042 043 044 045 ..... 040 041 042 043 044 045
  ..... 046 047 048 049 050 051 ..... 046 047 048 049 050 051 ..... 046 047 048 049 050 051
  ..... 067 068 069 ..... 067 068 069 ..... 067 068 069
  ..... 078 071 072 073 074 075 ..... 078 071 072 073 074 075 ..... 078 071 072 073 074 075
  ..... 079 077 078 079 080 081 ..... 079 077 078 079 080 081 ..... 079 077 078 079 080 081
  ..... 082 083 084 085 086 087 ..... 082 083 084 085 086 087 ..... 082 083 084 085 086 087
  ..... 101 102 103 104 105 ..... 101 102 103 104 105 ..... 101 102 103 104 105
  ..... 106 107 108 109 110 111 ..... 106 107 108 109 110 111 ..... 106 107 108 109 110 111
  ..... 112 113 114 115 116 117 ..... 112 113 114 115 116 117 ..... 112 113 114 115 116 117
  ..... 118 119 120 121 122 123 ..... 118 119 120 121 122 123 ..... 118 119 120 121 122 123
  ..... 135 ..... 135 ..... 135
  ..... 136 137 138 139 140 141 ..... 136 137 138 139 140 141 ..... 136 137 138 139 140 141
  ..... 142 143 144 145 146 147 ..... 142 143 144 145 146 147 ..... 142 143 144 145 146 147
  ..... 148 149 150 151 152 153 ..... 148 149 150 151 152 153 ..... 148 149 150 151 152 153
  ..... 154 155 156 157 158 159 ..... 154 155 156 157 158 159 ..... 154 155 156 157 158 159
  ..... 167 168 169 170 171 ..... 167 168 169 170 171 ..... 167 168 169 170 171
  ..... 172 173 174 175 176 177 ..... 172 173 174 175 176 177 ..... 172 173 174 175 176 177
  ..... 178 179 180 181 182 183 ..... 178 179 180 181 182 183 ..... 178 179 180 181 182 183
  ..... 184 185 186 187 188 189 ..... 184 185 186 187 188 189 ..... 184 185 186 187 188 189
  ..... 190 191 192 193 194 195 ..... 190 191 192 193 194 195 ..... 190 191 192 193 194 195
  ..... 199 200 201 ..... 199 200 201 ..... 199 200 201
  ..... 202 203 204 205 206 207 ..... 202 203 204 205 206 207 ..... 202 203 204 205 206 207
  ..... 208 209 210 211 212 213 ..... 208 209 210 211 212 213 ..... 208 209 210 211 212 213
  ..... 214 215 216 217 218 219 ..... 214 215 216 217 218 219 ..... 214 215 216 217 218 219
  ..... 220 221 222 223 224 225 ..... 220 221 222 223 224 225 ..... 220 221 222 223 224 225
  ..... 226 227 228 229 230 231 ..... 226 227 228 229 230 231 ..... 226 227 228 229 230 231
  ..... 245 246 247 ..... 245 246 247 ..... 245 246 247
  ..... 248 249 250 251 252 253 254 255 ..... 248 249 250 251 252 253 254 255 ..... 248 249 250 251 252 253 254 255
  ..... 248 249 250 251 252 253 254 255 ..... 248 249 250 251 252 253 254 255
```



Avoid text overload

- ▶ Use negative spaces

```
T < ➤ appart ~
```

22:23:20

```
· ➤ >  
déconnexion  
Connection to [REDACTED] closed.
```

```
X ➤ nojhan ➤ 🌐 ~ >
```

830

```
· ➤ > |
```

```
X < ➤ root ➤ 🌐 / / home / nojhan / tmp >
```

700

```
· ➤ >  
exit
```

```
X ➤ nojhan ➤ 🌐 ~ / tmp >
```

810

```
· ➤ > |
```



LP 19

Use logical sequences

- GIT:

- from right (local repo)
- to left (remote repo)

```
X ➤ ⚙ ➤ 🌴 ➤ ~ / code / dotfiles
↳ base ➔
· ➤ ±/⚠ 7 ➤ master ➤ +68/-189 ➤ ? ➤ git st
```

```
X ➤ ⚙ ➤ 🌴 ➤ ~ / code / dotfiles
↳ base ➔
· ➤ ±/⚠ 7 ➤ 1 ➤ master ➤ +36/-182 ➤ ? ➤ > |
```

```
X ➤ ⚙ ➤ 🌴 ➤ ~ / code / dotfiles
↳ base ➔
· ➤ ±/⚠ 7 ➤ 2 ➤ master ➤ +1/-173 ➤ ? ➤ > |
```

```
X ➤ ⚙ ➤ 🌴 ➤ ~ / code / dotfiles
↳ base ➔
· ➤ ±/⚠ 7 ➤ 2 ➤ master ➤ +/? ➤ >
```



Semantic thresholds

- ▶ Normal
- ▶ Note
- ▶ Warning

```
X nojhan ~ / code / lp-gitcrux ↵ 760
```

```
· ± main < +278/-1 > kak README.md
```

```
X nojhan ~ / code / lp-gitcrux ↵ 830
```

```
· ± main < +345/-1 > |
```

```
X nojhan ~ / code / lp-gitcrux ↵ 850
```

```
· ±/± < 4 > main < +0/-112 > git commit -a
```

suggestion : en attente de la fermeture du fichier par votre éditeur
[main 5964131] test

1 file changed, 112 deletions(-)

```
X nojhan ~ / code / lp-gitcrux ↵ 870
```

```
· ±/± < 5 > main > |
```



LP 21



DotMatrix

<https://github.com/nojhan/lp-dotmatrix>

@nojhan@mamot.fr

More thoughts about the design of Liquid Prompt:
<https://github.com/liquidprompt/liquidprompt/wiki/Why#design>

The screenshot shows a terminal window with the DotMatrix liquid prompt theme applied. The prompt is highly stylized with various icons and text elements. At the top, there's a banner with the text "Liquid Prompt". Below the banner, the prompt includes a gear icon, user information, and a path indicator (~). The main part of the prompt is a complex matrix of icons and text, including "localhost", "logged", "home", "no-internet", "VCS root", "dirstack", "detached", "suspended", "batt", "load", "temp", "bg", "shell", "time", "last", and "most". It also includes sections for "root", "server", "code", "liquidprompt", "theme", "dotmatrix", "sc0", "sc1", "venv", "main:feat/v0.1", "20s", "125", "VCS push!", "bookmark", "commit!", "stash", "head", "st.", "Runtime", "sudo", "error", "ssh", "txt", "guest", "FQDN", "chroot", "shorten", "rycieos", "host.fq.dn", "pyenv", "1", "pull!", "shell-level", "Tag", "telnet", "chroot + R0", "warning", "recall", "nojhan", "host", "code", "...", "here", "GIT", "devtoolset-8", "main", "20s", "proxy", "too much", and "Generic example: dotmatrix". The bottom of the prompt shows a footer with "5d 15:20:34".



LP 22



LP 23

More Git

```
X ~ code / dotfiles
```

```
base
· ±/ 7 2 master git pull
```

Auto-merging .bashrc

CONFLICT (content): Merge conflict in .bashrc

Auto-merging kak/kakrc

CONFLICT (content): Merge conflict in kak/kakrc

Automatic merge failed; fix conflicts and then commit the result.

```
X ~ code / dotfiles
```

```
base
```

```
· ±/ 7 2 master +102/-6 +/?/MERGING ✖ error > kak .
bashrc kak/kakrc
```

```
X ~ code / dotfiles
```

```
base
```

```
· ±/ 7 2 master +55/-11 +/?/MERGING > git add .bashrc
kak/kakrc
```

```
X ~ code / dotfiles
```

```
base
```

```
· ±/ 7 2 master ±0 +/?/MERGING > git commit
[master 1b07797] Merge branch 'master' of github.com:nojhan/dotfiles
```

```
X ~ code / dotfiles
```

```
base
```

```
· ±/ 3 master ±0 +/? >
```

```
X ~ code / dotfiles
```

```
base
```

```
· ± master +/? >
```



LP 24

DotVector

- One liner

```
x ~ /code/lp-dotmatrix · main +9/-11 ? pytry b 21:19:46
✖ interrupted >
```



LP ➤ 25

Themes – Liquid Prompt

```
⌚ ~24% ⚡1.68 090° 3d/2&/1z [user@server:~/code/liquidprompt/docs/theme 3] ↵2 <pyenv> main(+10/-5,+3/-1)+* 20s 125 ±  
[user@server:~/code/liquidprompt/docs/theme 3] ↵2 main(+10/-5,+3/-1)+* <pyenv> 3d/2&/1z ~24% ⚡1.68 090° ⌚  
20s 125 ± ⟳
```

The screenshot displays a terminal window with three distinct liquidprompt themes side-by-side.

- Left Theme:** A light blue theme with white text. It shows the current working directory as `user@server:~/code/liquidprompt/docs/theme`, a status bar with `20s-125±>>`, and a bottom section showing a git commit history with a green "commit" button and a red "add" button.
- Middle Theme:** A dark grey theme with light blue text. It shows the same directory and status bar information. The bottom section is a solid light blue color.
- Right Theme:** A light grey theme with black text. It shows the same directory and status bar information. The bottom section is a solid light grey color.