

\$ Term Life

\$ Neki od zabavnih programa za rad iz komandne linije

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§ Sadržaj

1. 0 komandnoj liniji

2. Terminal emulatori

- Termite

- Terminator

- Gnome terminal

- Konsole

3. Shell

- Bash

- Zsh

- Fish

4. Tmux

5. Editovanje teksta

- Vim

- Emacs

- Ostali editori

§ What if...





"You take the blue pill, the story ends. You wake up in your bed and believe whatever you want to believe. You take the red pill, you stay in Wonderland, and I show you how deep the rabbit hole goes."

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§ Nastanak terminala

- > TTY (teletypewriter) – mehanički uređaj za slanje i primanje poruka
- > Nastao iz potrebe da se izbegne potreba poznavanja Morzeove azbuke
- > Kasnije našli primenu kao I/O uređaji mainframe računara



§ Terminal emulator

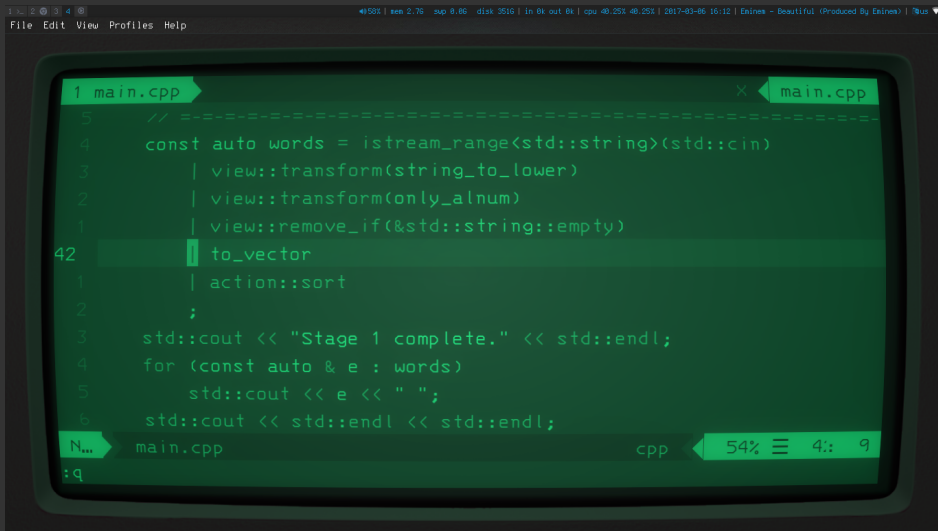
- > Predstavlja program
- > Teško precizno definisati i postaviti granicu šta je tačno
- > Omogućava korišćenje računara...
 - * naravno, iz komandne linije



§ Terminal emulator

- > I danas se izuzetno koristi
- > Jedan od glavnih alata pri radu sa serverima
- > GitHub je izuzetno doprineo popularnosti
- > U poslednjih nekoliko godina razvijeno puno alata
 - * koji su naravno otvorenog koda :)

§ Terminal emulator

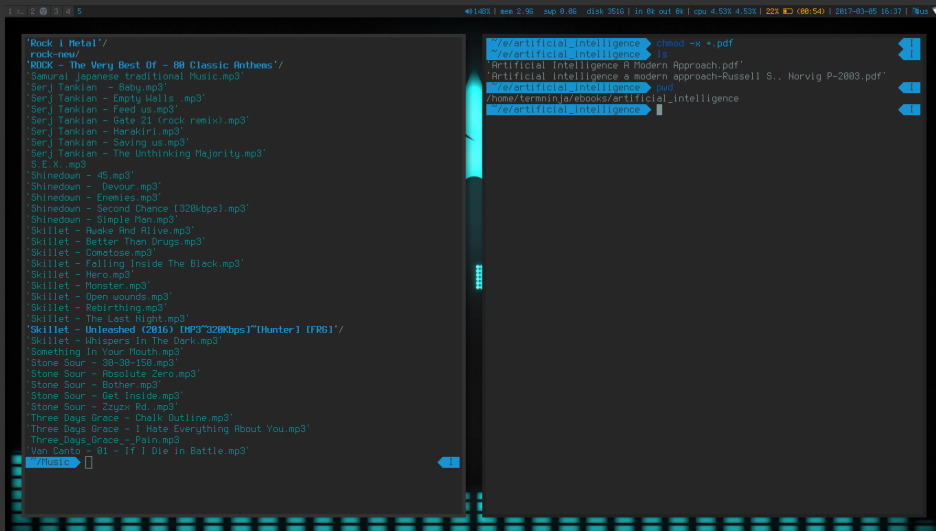


The image shows a terminal emulator window with a dark theme. At the top, there is a status bar with system information: 50% zoom, 2.76 sec, 0.86 sup, 3516 disk, 3516 in, 0k out, 8k, 40.25% cpu, 40.25% disk, 2017-03-06 16:12, Enines - Beautiful (Produced By Enines), and a user icon. Below the status bar is a menu bar with 'File', 'Edit', 'View', 'Profiles', and 'Help'. The main area is a code editor displaying a C++ file named 'main.cpp'. The code is as follows:

```
1 main.cpp
5 // =====
4 const auto words = istream_range<std::string>(std::cin)
3 | view::transform(string_to_lower)
2 | view::transform(only_alnum)
1 | view::remove_if(&std::string::empty)
42 | to_vector
1 | action::sort
2 ;
3 std::cout << "Stage 1 complete." << std::endl;
4 for (const auto & e : words)
5     std::cout << e << " ";
6 std::cout << std::endl << std::endl;
N... main.cpp cpp 54% 4: 9
:9
```

The code editor has a tab for 'main.cpp' and a search bar at the bottom right showing '54%' and '4: 9'.

§ Terminal emulator



§ Zašto savladati rad iz komandne linije?

> Zato što ćete biti brži?



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- > Zato što je dodatni kvalitet odnosu na konkurenciju?



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- > Zapravo zato što je dosta cool!
- > Kao i sve gore navedeno naravno :)

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§ Termite

- > Jednostavan terminal emulator
- > Konfigurira se iz datoteke
 - * npr. /home/USERNAME/.config/termite/config
- > Dizajniran da se koristi uz tiling wm¹
- > Donekle inspirisan i Vim-om
 - * Po startovanju, termite je u insert modu
 - * ctrl+shift+space - prelazi u command mode (inspirisan normal modom u Vim-u)
 - * escape - vraća nazad u insert mode

¹Window manager

\$ Terminate

```
1 2 3 4 5 140% | mem 2.9% sup 0.0% disk 3516 | in 0k out 0k | cpu 4.53% 4.53% | 22% (60/54) | 2017-03-05 16:37 | 8us
```

```
'Rock i Metal'/
rock-new/
'ROCK - The Very Best Of - 80 Classic Anthems'/
'Samurai Japanese traditional Music.mp3'
'Serj Tankian - Baby.mp3'
'Serj Tankian - Empty Walls .mp3'
'Serj Tankian - Feed us.mp3'
'Serj Tankian - Gate 21 (rock remix).mp3'
'Serj Tankian - Harakiri.mp3'
'Serj Tankian - Saving us.mp3'
'Serj Tankian - The Unthinking Majority.mp3'
S.E.X..mp3
'Shinedown - 45.mp3'
'Shinedown - Devour.mp3'
'Shinedown - Enemies.mp3'
'Shinedown - Second Chance [320kbps].mp3'
'Shinedown - Simple Man.mp3'
'Skillet - Awake And Alive.mp3'
'Skillet - Better Than Drugs.mp3'
'Skillet - Comatose.mp3'
'Skillet - Falling Inside The Black.mp3'
'Skillet - Hero.mp3'
'Skillet - Monster.mp3'
'Skillet - Open wounds.mp3'
'Skillet - Rebirthing.mp3'
'Skillet - The Last Night.mp3'
'Skillet - Unleashed (2016) [MP3"320Kbps"] [Hunter] [FR61]'/
Skillet - Whispers In The Dark.mp3'
Something In Your Mouth.mp3
Stone Sour - 30-30-150.mp3'
Stone Sour - Absolute Zero.mp3'
Stone Sour - Bother .mp3'
Stone Sour - Get Inside .mp3'
Stone Sour - Zyzx Rd .mp3'
Three Days Grace - Chalk Outline.mp3'
Three Days Grace - I Hate Everything About You.mp3'
Three_Days_Grace - Pain.mp3
Van Canto - 01 - If I Die In Battle.mp3'

~/Music/
```

```
~/artificial_intelligence chmod -x *.pdf
~/artificial_intelligence ls
'Artificial Intelligence A Modern Approach.pdf'
'Artificial Intelligence a modern approach-Russell S., Norvig P-2003.pdf'
~/artificial_intelligence pud
/home/terminin[a]/ebooks/artificial_intelligence
~/artificial_intelligence
```

§ Terminator

- > Omogućava da se više terminala pokrene unutar jednog prozora
- > Možete sačuvati pozicije terminala
- > Posедује pravljenje tabova
- > Puno prečica
- > Može se konfigurisati kroz grafički korisnički interfejs

§ Terminator

Activities

Terminator

Mon 10:59 PM

Michael Findlater

linuxcs@loft4610: ~/sbsbuild/0.0.3-2/pkgcs - Terminator

michael@nighthaven: ~ - 80x30

```

michael@nighthaven:~$ ssh linuxcs@phirwall.net
linuxcs@phirwall:~$ ssh linuxcs@phirwall.net
linuxcs@phirwall:~$ ssh linuxcs@phirwall.net
Linux loft4610.serverloft.com 2.6.26-2-686s4 #1 SMP Thu Nov 5 02:23:12 UTC 2009
Dear customer,

Important information regarding kernel updates:

If you want to use your own kernel, please make sure you don't touch the
kernel boot parameters (append) as some of our hardware requires the
parameters apci=ht and/or noapic.

Last login: Mon Jan 11 03:07:23 2010 from 60.234.145.247
linuxcs@loft4610:~$ ls
archive  logs  public_html  sbsbuild
linuxcs@loft4610:~$ cd sbsbuild/0.0.3-2/
linuxcs@loft4610:~/sbsbuild/0.0.3-2/pkgcs$ ls -l
total 768
-rw-r--r-- 1 linuxcs linuxcs 772834 2010-01-10 06:51 sphirewall_0.9.4-5-1_1386.d
ch
linuxcs@loft4610:~/sbsbuild/0.0.3-2/pkgcs$

```

linuxcs@loft4610: ~/sbsbuild/0.0.3-2/pkgcs 80x29

```

# /bin/bash
if [ -f /update/no_update ]
then
    echo 'SOS Updater: /update/no_update exists - will not perform any SphireOS system updates'
    exit 0;
else
    # perform system updates
    echo -e 'SOS Updater: Performing system updates...'
    cd /update/
    wget http://mirror.sphirewall.net/updates/current-update.tar.gz -O /current-update.tar.gz
    if [ -f /current-update.tar.gz ]
    then
        cd /
        echo 'SOS Updater: Extracting updates to / ...'
        tar xvf /current-update.tar.gz
        echo 'SOS Updater: Removing update gzip...'
        rm -rf /current-update.tar.gz
    else
        echo 'SOS Updater: Failed to get current-updates.tar.gz, please check your internet connection.'
        exit 1;
    fi
fi

/etc/cron.hourly/foo.sh [noel] 22L, 693C

```

linuxcs@loft4610: ~/sbsbuild/0.0.3-2/pkgcs 80x29

```

printit "downloading...";
//gps_query(GPS, "v\n");
GPS_Stream(GPS, WATCH_ENABLE, NULL);
printf("Ready to poll!\n");
long double a[2];
long double b[2];
int i;
char x;
while (i-->2)
{
    cout << "\nReady for point " << i+1 << " ? y/n: ";
    cin >> x;
    if (x=='y') { i = 0; }
    {
        gps_poll(GPS);
        a[i] = GPS->fix.latitude;
        cout << GPS->fix.latitude << endl;
        b[i] = GPS->fix.longitude;
        i++;
    }
    else if (x=='y') { i = 1; }
    {
        gps_poll(GPS);
        b[i] = GPS->fix.longitude;
        i++;
    }
}

```

michael@flux: /home/michael/code/gps 73x29

```

top - 22:59:33 up 12:10, 0 users, load average
tasks: 101 total, 1 running, 179 sleeping, 1
cpus: 5.0%us, 2.0%sy, 0.0%ni, 92.0%id, 0.0
Mem: 2058356k total, 2017400k used, 40876k
Swap: 1951888k total, 18444k used, 1933444k

```

michael@nighthaven: ~ - 48x29

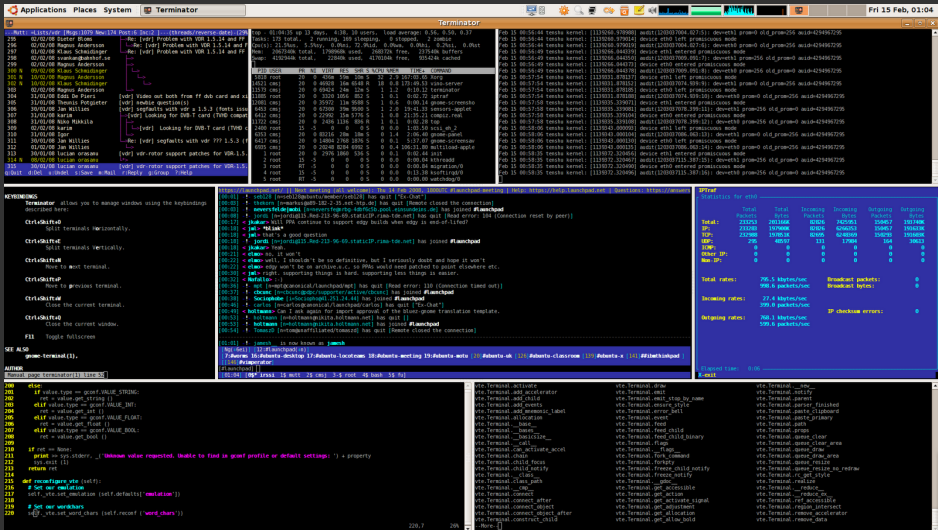
```

PID USER PR NI VIRT RES SHR S CPU%
15286 michael 20 0 963m 151m 23m S 3.7
32547 michael 20 0 1288m 162m 46m S 3.7
32185 michael 20 0 624m 11m 6352 S 2.0
1459 root 20 0 678m 59m 28m S 1.3
2389 michael 20 0 868m 187m 28m S 1.0
1723 michael 9 -11 649m 8412 6536 S 0.7
2746 michael 20 0 201m 32m 19m S 0.7
6785 michael 20 0 718m 21m 12m S 0.3
1 root 20 0 4055 732 576 S 0.0
2 root 15 -5 0 0 0 S 0.0
3 root RT -5 0 0 0 S 0.0
4 root 15 -5 0 0 0 S 0.0
5 root RT -5 0 0 0 S 0.0
6 root RT -5 0 0 0 S 0.0
7 root 15 -5 0 0 0 S 0.0
8 root RT -5 0 0 0 S 0.0
9 root 15 -5 0 0 0 S 0.0
10 root 15 -5 0 0 0 S 0.0
11 root 15 -5 0 0 0 S 0.0
12 root 15 -5 0 0 0 S 0.0
13 root 15 -5 0 0 0 S 0.0
14 root 15 -5 0 0 0 S 0.0

```

[2. Terminal emulator]\$ -

[16/61]



§ Gnome terminal

- > Terminal emulator koji razvija Gnome
- > Dolazi preinstaliran uz Gnome Shell

james@debian: ~

File Edit View Search Terminal Help

```

      ,met$$$$$gg.
    ,g$$$$$$$$$$$$P.
  ,g$$P""         """"Y$$$.
, $$P'            `$$$'.
'$,$$P          ,ggs.  `$$b:
`d$$'          , $P""   $$$
$$P           d$'      $$P
$$:           $$:      -   ,d$$'
$$\;          Y$b.     ,dP'
Y$$$.         `Y$$$$P""
`$$b          "-. _
`Y$$
`Y$$$.
`$$b.
`Y$$b.
`Y$b.
  """"

```

james@debian

OS: Debian 8.5 jessie

Kernel: x86_64 Linux 3.16.0-4-amd64

Uptime: 3h 22m

Packages: 1891

Shell: zsh 5.0.7

Resolution: 1920x1080

WM: GNOME Shell

WM Theme: Arc-Darker

james@debian:~ \$ █

- > Terminal emulator koji razvija organizacija KDE
- > Dolazi preinstaliran uz grafičko okruženje KDE Plasma

```
manjaro: bash — Konsole
File Edit View Bookmarks Settings Help
-rwxr--r-- 1 manjaro manjaro 165 Mar  6 12:24 .bash_profile
-rwxr--r-- 1 manjaro manjaro 4030 Mar  6 12:24 .bashrc
drwxr-xr-x 4 manjaro manjaro 240 Mar 22 16:45 .cache
drwxr-xr-x 1 manjaro manjaro 1000 Mar 22 16:49 .config
drwxr-xr-x 2 manjaro manjaro 120 Mar 22 16:32 Desktop
-rwxr--r-- 1 manjaro manjaro 4855 Mar  6 08:42 .dir_colors
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Documents
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Downloads
-rw----- 1 manjaro manjaro 16 Mar 22 16:32 .esd_auth
-rwxr--r-- 1 manjaro manjaro 3740 Mar  4 11:05 .face
lrwxrwxrwx 1 manjaro manjaro 5 Mar  4 11:05 .face.icon -> .face
-rwxr--r-- 1 manjaro manjaro 395 Mar 22 16:32 .gtkrc-2.0
drwxr-xr-x 3 manjaro manjaro 60 Mar 22 16:32 .kde4
drwxr-xr-x 1 manjaro manjaro 60 Mar  4 11:05 .local
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Music
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Pictures
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Public
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Templates
-rw----- 1 manjaro manjaro 5 Mar 22 16:32 .vboxclient-clipboard.pid
-rw----- 1 manjaro manjaro 5 Mar 22 16:32 .vboxclient-display.pid
-rw----- 1 manjaro manjaro 5 Mar 22 16:32 .vboxclient-draganddrop.pid
-rw----- 1 manjaro manjaro 5 Mar 22 16:32 .vboxclient-seamless.pid
drwxr-xr-x 2 manjaro manjaro 40 Mar 22 16:32 Videos
-rw----- 1 manjaro manjaro 52 Mar 22 16:32 .Xauthority
-rwxr-xr-x 1 manjaro manjaro 100 Mar  6 08:42 .Xclients
-rwxr-xr-x 1 manjaro manjaro 233 Mar  4 11:05 .xinitrc
-rwxr--r-- 1 manjaro manjaro 258 Mar  6 08:42 .xprofile
[manjaro@manjaro ~]$
```

manjaro: bash

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Ostali editori

- > Bourne Again SHell
- > Standardni shell koji je preinstaliran na GNU/Linux sistemu
- > Nalazi se na /bin/bash ili /usr/bin/bash
- > Konfiguriše se iz datoteke /home/USER/.bashrc

- > Skraćeno od Z shell
- > Inspiracija - Bash
- > Predstavlja proširenje Bash shell-a
- > Postoji dodatni paket koji se zove oh-my-zsh koji dodaje plugin menadžer, teme i slično
- > Konfiguriše se iz datoteke /home/USER/.zshrc



```
~ ➤ cd testproject
```

```
~/testproject ➤ master ➤ gco detached-head-state -q
```

```
~/testproject ➤ fdffaf6 ➤ touch dirty-working-directory
```

```
~/testproject ➤ fdffaf6± ➤ cd
```

```
~ ➤ ssh milly
```

Welcome to Ubuntu 11.04 (GNU/Linux 2.6.18-308.8.2.el5.028stab101.1 x86_64)

Last login: Wed Sep 26 03:42:49 2012 from 71-215-222-90.mpls.qwest.net

```
agnoster@milly ➤ ~
```

Connection to milly.agnoster.net closed.

```
~ ➤ sudo -s
```

Password:

```
✂ root@Arya ➤ ~ ➤ top &
```

```
[1] 34523
```

```
[1] + 34523 suspended (tty output) top
```

```
✂ root@Arya ➤ ~ ➤ rm no-such-file
```

rm: no-such-file: No such file or directory

```
✂ root@Arya ➤ ~ ➤ kill %%
```

```
[1] + 34523 terminated top
```

```
✂ root@Arya ➤ ~
```

```
~
```

```

X ..war.github.io
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master ✓ % git commit -m "changed post name"
[master 6d439f1] changed post name
1 file changed, 0 insertions(+), 0 deletions(-)
rename _posts/{2014-3-3-Hello-World.md => 2014-3-3-VSDropdown.md} (100%)
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master ↑ % git push origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 328 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To https://github.com/Vishal-Singh-Panwar/Vishal-Singh-Panwar.github.io.git
c659735..6d439f1 master -> master
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master % git add .
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master ✓ % git commit -m "changed post date"
[master 1176e29] changed post date
1 file changed, 0 insertions(+), 0 deletions(-)
rename _posts/{2014-3-3-VSDropdown.md => 2014-6-27-VSDropdown.md} (100%)
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master ↑ % git push origin master
Counting objects: 3, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 330 bytes | 0 bytes/s, done.
Total 3 (delta 1), reused 0 (delta 0)
To https://github.com/Vishal-Singh-Panwar/Vishal-Singh-Panwar.github.io.git
6d439f1..1176e29 master -> master
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master %
~ Desktop > Github_Page > Vishal-Singh-Panwar.github.io master % █

```

§ Fish

- > Shell poput Bash-a
- > Dolazi uz sopstveni skript jezik
- > Izuzetno jednostavan za upotrebu
- > Posедуje odličan autocomplete
- > Pamti istorijat prethodnih komandi
 - * Koje izuzetno kulturno sugeriše :)
- > Postoji dodatni paket oh-my-fish (inspirisan sa oh-my-zsh)
- > Novije verzije poseduju Vim mode (modalni rad u terminalu)
- > Konfigurise se iz datoteke
/home/USER/.config/fish/config.fish



NAPOMENA

- > Ne postavljati fish kao sistemski shell
- > Često linux distribucije poseduju bash skriptove koji inicijalizuju sve i svašta
- > Fish ne može da interpretira bash skriptove

Rešenje:

- > Npr pokretati terminal sa flegom `-e2` (koji execuje proces)
 - * `termite -e fish`
- > Naterati tmux da sam pokrene fish
 - * `set-option -g default-shell "/usr/bin/fish"`

²Ako terminal emulator poseduje fleg

```

1 2 3
~> vim ~/.tmux.conf 1
~> xrandr --brightness 1
--above          (Set position relative to the output)
--addmode        (Add a mode to the set of valid modes for a...)
--auto           (Enable connected but disabled outputs)
--below          (Set position relative to the output)
--brightness     (Set brightness. Multiplies gamma values.)
--crtc           (Set the crtc)
--current        (Print current screen configuration)
--delmode        (Remove a mode from the set of valid modes ...)
rows 1 to 8 of 44
~> cd ~/matf/master_studije/funkcionalno_programiranje/my_exercises/cpp/04_rangev3/ 1

fish showcase 1 fish 2017-03-09 15:43 aurora

```

§ Tmux

- > Tmux - terminal multiplexer
- > Omogućava da se jedan terminal podeli na više prozora, tabova...
- > Tmux sesija može da postane pozadinski proces iako je aplikacija za terminal isključena
 - * Korisnik se onda može zakačiti (eng. attach) na postojeću sesiju
 - * Neće imati utisak da je nešto bilo ugašeno
 - * Izuzetno zgodno za ssh konekcije ka serveru
- > Konfiguriše se iz datoteke /home/USERNAME/.tmux.conf



09:53:05

```

1 [|||||] 52.3% Battery: 99.0% (Running on A/C)
2 [|||||] 45.2% Tasks: 256 total, 6 running
3 [|||||] 48.7% CPU Temp: 82.8 C
4 [|||||] 42.9% Fan RPM: 2040 RPM
Mem[|||||] 6049/8192MB Swp[|] 1/81024MB
Avg[|||||] 47.2%

```

ToDo

Calendar

April 2014						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

```
[ Thu 2014-04-17 | 21:53:05 ] (apts)
```

```
      ***  
    *****  
   ****  
  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****  
*****
```

Hostname: Sams-MacBook-Pro
Distro: OS X 10.9.2
Kernel: Darwin
Uptime: 2 days
Shell: /bin/zsh
Terminal: screen-256color
Packages:
CPU:
Memory: 8 GB
Disk: 98%

```

A 1 j F o[ a'1
v2 cHV I { *WK bG
m v k u x p g i k w / : C K j s e
A g o v B - t j i n
M L k V C b z l E Z >

```

tweets [1194]	mentions [19]	favorites [20]	messages [39]	me
---------------	---------------	----------------	---------------	----

ReIateThings - 5 minutes ago
"i need to stop," i whispered as i clicked next episode

hemantmehta - 6 minutes ago
Generation Atheist is Free on Amazon Through Easter Sunday
tinyurl.com/nvvezdx

bbcscitech - 6 minutes ago
Ancient life 'frozen' by space impact bbc.in/1tgticb

markcruse RT gravicle - 7 minutes ago2
@realscientists If anyone tells you they know what ANY
fundamental particle actually is, they're lying !

jdottomazin - 7 minutes ago
TOEMS FOR GAME WINNA

Nick_Kostich27 - 9 minutes ago
Crawford is lights out right now! Glove save after glove save

brystol_ RT ry4npool_ - 10 minutes ago126
Butt naked nasty or naw? pic.twitter.com/51H3ay6twp

ifreddyamaxin RT ry4npool_ - 10 minutes ago21
Taylor Swift at her prom 😊(pic #6) pic.twitter.in/cdd5M

FabFreakaNature - 11 minutes ago
What a fuckin day. If I spoke of it, no 1 would believe I was telling the truth. The 4 ppl I engaged w/ranged from incompetent to crazy.

PromotionNews2 RT cofupaxebaz - 11 minutes ago2
Get into DevBeat for one day, one track: \$99 :
socialmedia-nieuws.nl/algemeen-nieuw.. [#socialmedia](#)

Okay, @lakings, let's do this. pic.twitter.com/YPoYkS5dFN

PromotionNews2 RT cofupaxebaz - 12 minutes ago
Infiniti wishes its now-legendary F1 driver Sebastian Vettel weren't so good : socialmedia-nieuws.nl/algemeen-nieuw-#socialmedia

SocialSavvyGeek - 12 minutes ago
5 Simple Ways to Get More Plusses and Reshares on Google Plus

- /colorscript:

3:17/6:38
[playing]

Hoover Street
Schoolboy Q - Oxymoron

4:30	Let Nas Down	J. Cole	Born Sinner-(Deluxe Edition)
4:30	Born Sinner (Feat. James Fauntleroy)	J. Cole	Born Sinner-(Deluxe Edition)
5:03	Gangsta	Schoolboy Q	Oxymoron
4:14	Low Aesthetic	Schoolboy Q	Oxymoron
5:51	Collard Greens	Schoolboy Q	Oxymoron
4:28	What They Want	Schoolboy Q	Oxymoron
5:30	Boover Street	Schoolboy Q	Oxymoron
4:30	Studio	Schoolboy Q	Oxymoron
7:11	Prescription/Oxymoron	Schoolboy Q	Oxymoron
4:55	The Purg	Schoolboy Q	Oxymoron
4:31	Blind Threats	Schoolboy Q	Oxymoron
4:34	Hell Of A Night	Schoolboy Q	Oxymoron

```
/ There are two ways to write error-free \
\ programs; only the third one works.  /
```

```

>>>
~/COMP_SCI

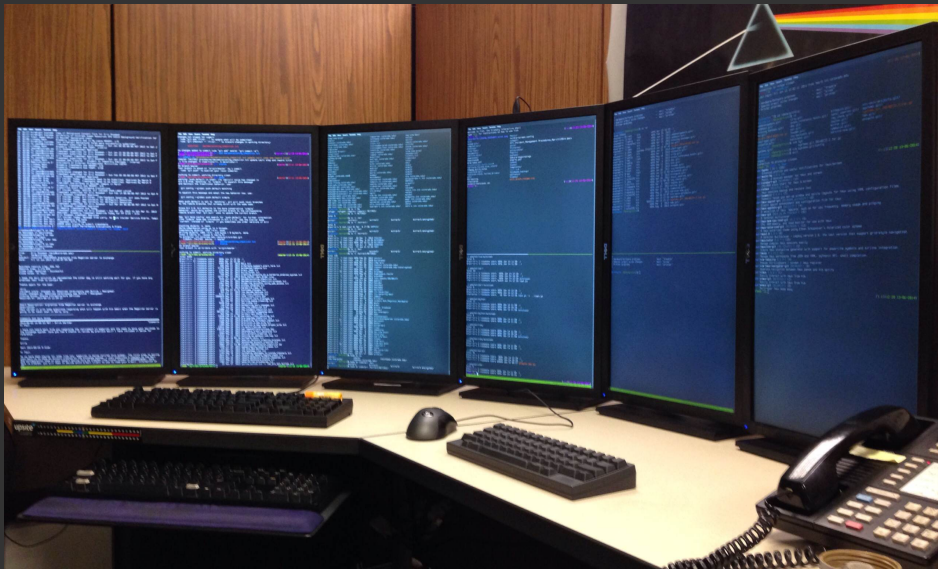
```

```

30 % define matrix for 2-pt finite difference
31 % representation of Laplacian for sparse matrices
32
33 e1 = ones(N,1);
34 Lap1 = spdiags([e1 -2*e1 e1], [-1 0 1], N, N)/(dx^2);
35
36
37
38 nmodes = input('Please enter the number of energy levels: ');
39
40 H1 = -(hbar^2)/(2*m0)*Lap1 + spdiags(U1,0,N,N);
41 nmodes = 30;
42 options.display = 0;
43 opts.tol = 1e-1074;
44 opts.maxit = 10000000;
45 [V1,E_harm,flag] = eigs(H1,nmodes,'as',opts);
46 [V1,E_harm,flag] = eigs(H1,nmodes,'as',opts);
47 %E_harm
48 %flag_harm = FLAG
49 [E_harm,ind1] = sort(diag(E_harm));
50 %E_harm
51 %k_harm = eigs(N,10,opts);
52 %V1 = A.*V1(:,ind1);
53
54 B1 = E_harmodes 1;

```

Schoolboy Q - Hoover Street 09:53 04/17/2014



1. 0 komandnoj liniji

2. Terminal emulatori

Termite

Terminator

Gnome terminal

Konsole

3. Shell

Bash

Zsh

Fish

4. Tmux

5. Editovanje teksta

Vim

Emacs

Ostali editori

- > Veliki deo programerskog posla
- > Da li iko u tome može biti bolji od programera?
- > Uvek treba da se trudimo da povećamo svoju efikasnost

§ Poznati editori

Neki od poznatijih tekst editora:

- > Vim
- > Emacs
- > Sublime
- > Notepad++
- > Kate
- > Gedit
- > Atom
- > Visual Studio Code

§ Vim - Vi improved

- > Nastao iz editora Vi
- > Modalni tekstualni editor
- > Editovanju teksta pristupa radikalno drugačije od ostalih editora
- > Ima vrlo bogat sistem plugin-ova
- > Postoji konzolna verzija programa kao i GTK i Qt frontend
- > Konfiguriše se iz datoteke /home/USERNAME/.vimrc



§ Vim - primer

> Kako to izgleda?

```
yy
```

```
p
```

```
%s/bar/foo/g
```

```
d4d
```

```
ddp
```

```
:13,18y
```

```
/bar<CR>wwi
```

> zabavno :)

> kao da ste promašili tastere za po jedan



§ Šta Vim može?

- > Da efikasno transformiše tekst
- > Promeni vaš način razmišljanja tokom editovanja teksta
- > Utiče na to da zavolite prečice

§ Šta mogu pluginovi?

- > Inline kompilator (youcompleteme)
- > Autocomplete (youcompleteme)
- > Git integracija (gitgutter, vim-fugitive)
- > Snipeti za razne jezike (vim-snippets, ultisnips)
- > Provera sintakse (syntastic)
- > File explorer (nerdtree)
- > Crti markdown tabele (vim-table-mode)
- > Fuzzy pretraga (ctrlp, commandT)
- > ...

§ Kako izgleda Vim?

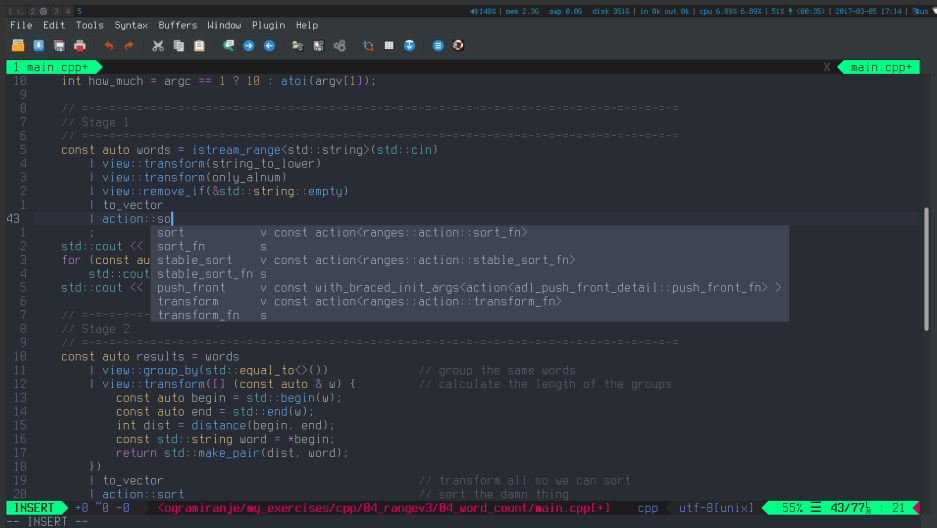
```
~/vimrc
330 let g:NERDSSnippets_key = '<c-h>'
331
332 augroup myfiletypes
333   "clear old autocmds in group
334   autocmd!
335   "for ruby, autoindent with two spaces, always expand tabs
336   autocmd FileType ruby,haml,eruby,yaml,html,javascript,sass set ai sw=2 sts=2 et
337   autocmd FileType python set sw=4 sts=4 et
338 augroup END
339
340 set switchbuf=useopen
341
342 autocmd BufRead,BufNewFile *.html source ~/.vim/indent/html_grb.vim
343 autocmd FileType htmdjango source ~/.vim/indent/html_grb.vim
344 autocmd! BufRead,BufNewFile *.sass setfiletype sass
345
346 " Map ,e and ,v to open files in the same directory as the current file
347 ignoremap %% <C-R>=expand('%:h'). '/'<cr>
348 map <leader>e :edit %%
349 map <leader>v :view %%
350 function! RenameFile()
351   let old_name = expand('%')
352   let new_name = input('New file name: ', expand('%'))
353   if new_name != '' && new_name != old_name
354     exec ':saveas ' . new_name
355     exec ':silent !rm ' . old_name
356     redraw!
357   endif
358 endfunction
359 map <leader>n :call RenameFile()<cr>
360
361 if has("python")
362   source ~/.vim/ropevim/rope.vim
363 endif
364
365 autocmd BufRead,BufNewFile *.feature set sw=4 sts=4 et
~/vimrc (vim)
```

347,01

§ Kako može da izgleda Vim?

```
1 HERD_tree_1
2 HERD_tree_1
3 (up a dir)
4 </my_exercises/cpp/
5 01_mostly_stl_algos/
6   tasks/
7     01.cpp
8     02.cpp
9     01_accumulate_transform.cpp
10    02_unstable_partition.cpp
11    03_stable_partition.cpp
12    04_moving_selection.cpp
13    05_filter.cpp
14    06_remove_if.cpp
15    07_functional_object.cpp
16    08_functional_objects.cpp
17    09_functional_object_move.cpp
18    10_lambdas.cpp
19    11_copy.cpp
20    12_copy_if.cpp
21    13_accumulate.cpp
22    14_boost_phoenix.cpp
23 02_more_functional_concepts/
24   maybe_monad/
25   std_bind/
26     main.cpp
27     Makefile
28   std_function/
29     main.cpp
30     Makefile
31     Person.hpp
32   std_invoke/
33     01_decltype.cpp
34 03_move/
35 04_rangev3/
36   01_sum_even_odd/
37   02_filter_transform/
38     main.cpp
39     Makefile
40   03_get_quote/
41   04_word_count/
42     main.cpp
43     Makefile
44 05_exam_prep/
45 HERD
46
47 #include <range/v3/to_container.hpp>
48
49 using namespace ranges::v3;
50
51 std::string string_to_lower(const std::string& s)
52 {
53     return s | view::transform(tolower);
54 }
55
56 std::string only_alnum(const std::string& s)
57 {
58     return s | view::filter(isalnum);
59 }
60
61 int main(int argc, char *argv[])
62 {
63     int how_much = argc == 1 ? 10 : atoi(argv[1]);
64
65     // =====
66     // Stage 1
67     // =====
68     const auto words = istream_range(std::string)(std::cin)
69         | view::transform(string_to_lower)
70         | view::transform(only_alnum)
71         | view::remove_if(&std::string::empty)
72         | to_vector
73         | action::sort;
74
75     std::cout << "Stage 1 complete." << std::endl;
76     for (const auto &e : words)
77         std::cout << e << " ";
78     std::cout << std::endl << std::endl;
79
80     // =====
81     // Stage 2
82     // =====
83     const auto results = words
84         | view::group_by(std::equal_to<>()) // group the same words
85         | view::transform([](const auto &w) { // calculate the length of the groups
86             const auto begin = std::begin(w);
87             const auto end = std::end(w);
88             int dist = distance(begin, end);
89         });
90 }
```

§ Kako može da izgleda Vim?



```
1 main.cpp+ X main.cpp+
10 int how_much = argc == 1 ? 10 : atoi(argv[1]);
9
8 // -----
7 // Stage 1
6 // -----
5 const auto words = istream_range<std::string>(std::cin)
4 | view::transform(string_to_lower)
3 | view::transform(only_alnum)
2 | view::remove_if(&std::string::empty)
1 | to_vector
43 | action::sort
1 : sort v const action<ranges::action::sort_fn>
2 std::cout << sort_fn s
3 for (const auto &w : words) { v const action<ranges::action::stable_sort_fn>
4 | std::cout << stable_sort_fn s
5 std::cout << push_front v const with_braced_init_args<action<adl_push_front_detail::push_front_fn> >
6 | transform v const action<ranges::action::transform_fn>
7 // ----- transform_fn s
8 // Stage 2
9 // -----
10 const auto results = words
11 | view::group_by(std::equal_to<>()) // group the same words
12 | view::transform([] (const auto & w) { // calculate the length of the groups
13 | const auto begin = std::begin(w);
14 | const auto end = std::end(w);
15 | int dist = distance(begin, end);
16 | const std::string word = *begin;
17 | return std::make_pair(dist, word);
18 | })
19 | to_vector // transform all so we can sort
20 | action::sort // sort the damn thing
INSERT +0 ~0 -0 <ogramiranje/my_exercises/cpp/04_rangev3/04_word_count/main.cpp[+] cpp utf-8[unix] 55% 43/77% : 21
-- INSERT --
```

§ Kako može da izgleda Vim?

```

21 has_many :user_watch_products, :dependent => :destroy, :class_name => 'UserWatchProduct'
22 has_many :watched_products, :through => :user_watch_products, :class_name => 'Product'
23 has_many :received_feedbacks, :class_name => 'Feedback', :foreign_key => 'product_id'
24 has_many :sent_feedbacks, :class_name => 'Feedback', :foreign_key => 'product_id'
25 has_many :service_invoices, :class_name => 'ServiceInvoice', :foreign_key => 'product_id'
26 has_many :saved_searches, :dependent => :destroy, :class_name => 'Search'
27 has_many :notifications, :class_name => 'Notification', :foreign_key => 'product_id'
28
29 has_attached_file :shop_banner,
30   :styles => {:thumb => '90x90'},
31   :convert_options => {:all => "-quality 85"},
32   :default_style => :large,
33   :hash_secret => "reverb",
34   :path => "banner_:hash._:format.extension"
35
36 validates :email, :presence => true
37 validates :login, :presence => true
38 validates :first_name, :presence => true
39
40 def self.find_by_slug(slug)
41   Product.find_by(slug: slug)
42 end
43
44 def self.find_by_id(id)
45   Product.find(id)
46 end
47
48 def self.find_by_name(name)
49   Product.find_by(name: name)
50 end
51
52 def self.find_by_slug_and_id(slug, id)
53   Product.find_by(slug: slug, id: id)
54 end
55
56 def self.find_by_name_and_id(name, id)
57   Product.find_by(name: name, id: id)
58 end
59
60 def self.find_by_slug_and_name(slug, name)
61   Product.find_by(slug: slug, name: name)
62 end
63
64 def self.find_by_name_and_slug(name, slug)
65   Product.find_by(name: name, slug: slug)
66 end
67
68 def self.find_by_slug_and_id_and_name(slug, id, name)
69   Product.find_by(slug: slug, id: id, name: name)
70 end
71
72 def self.find_by_name_and_id_and_slug(name, id, slug)
73   Product.find_by(name: name, id: id, slug: slug)
74 end
75
76 def self.find_by_slug_and_name_and_id(slug, name, id)
77   Product.find_by(slug: slug, name: name, id: id)
78 end
79
80 def self.find_by_name_and_slug_and_id(name, slug, id)
81   Product.find_by(name: name, slug: slug, id: id)
82 end
83
84 def self.find_by_slug_and_id_and_name_and_slug(slug, id, name, slug)
85   Product.find_by(slug: slug, id: id, name: name, slug: slug)
86 end
87
88 def self.find_by_name_and_id_and_slug_and_name(name, id, slug, name)
89   Product.find_by(name: name, id: id, slug: slug, name: name)
90 end
91
92 def self.find_by_slug_and_name_and_id_and_slug(slug, name, id, slug)
93   Product.find_by(slug: slug, name: name, id: id, slug: slug)
94 end
95
96 def self.find_by_name_and_slug_and_id_and_name(name, slug, id, name)
97   Product.find_by(name: name, slug: slug, id: id, name: name)
98 end
99
100 def self.find_by_slug_and_id_and_name_and_slug_and_name(slug, id, name, slug, name)
101   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name)
102 end
103
104 def self.find_by_name_and_id_and_slug_and_name_and_slug(name, id, slug, name, slug)
105   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug)
106 end
107
108 def self.find_by_slug_and_name_and_id_and_slug_and_name(slug, name, id, slug, name)
109   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name)
110 end
111
112 def self.find_by_name_and_slug_and_id_and_name_and_slug(name, slug, id, name, slug)
113   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug)
114 end
115
116 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug(slug, id, name, slug, name, slug)
117   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug)
118 end
119
120 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name)
121   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name)
122 end
123
124 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug(slug, name, id, slug, name, slug)
125   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug)
126 end
127
128 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug)
129   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug)
130 end
131
132 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name)
133   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name)
134 end
135
136 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name, slug, name)
137   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
138 end
139
140 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug_and_name_and_slug(slug, name, id, slug, name, slug, name, slug)
141   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug)
142 end
143
144 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug, name, slug)
145   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
146 end
147
148 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name, slug, name)
149   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
150 end
151
152 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name, slug, name, slug, name)
153   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
154 end
155
156 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(slug, name, id, slug, name, slug, name, slug, name, slug)
157   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
158 end
159
160 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug, name, slug, name, slug)
161   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
162 end
163
164 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name, slug, name, slug, name)
165   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
166 end
167
168 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name, slug, name, slug, name, slug, name)
169   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
170 end
171
172 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(slug, name, id, slug, name, slug, name, slug, name, slug, name, slug)
173   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
174 end
175
176 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug, name, slug, name, slug, name, slug)
177   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
178 end
179
180 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name, slug, name, slug, name, slug, name)
181   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
182 end
183
184 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name)
185   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
186 end
187
188 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(slug, name, id, slug, name, slug, name, slug, name, slug, name, slug, name, slug)
189   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
190 end
191
192 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug)
193   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
194 end
195
196 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name)
197   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
198 end
199
200 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(name, id, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name)
201   Product.find_by(name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
202 end
203
204 def self.find_by_slug_and_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(slug, name, id, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug)
205   Product.find_by(slug: slug, name: name, id: id, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
206 end
207
208 def self.find_by_name_and_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug(name, slug, id, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug)
209   Product.find_by(name: name, slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug)
210 end
211
212 def self.find_by_slug_and_id_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name(slug, id, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name, slug, name)
213   Product.find_by(slug: slug, id: id, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name, slug: slug, name: name)
214 end
215
216 def self.find_by_name_and_id_and_slug_and_name_and_slug_and_name_and_slug_and_name_and_slug_and_name
```



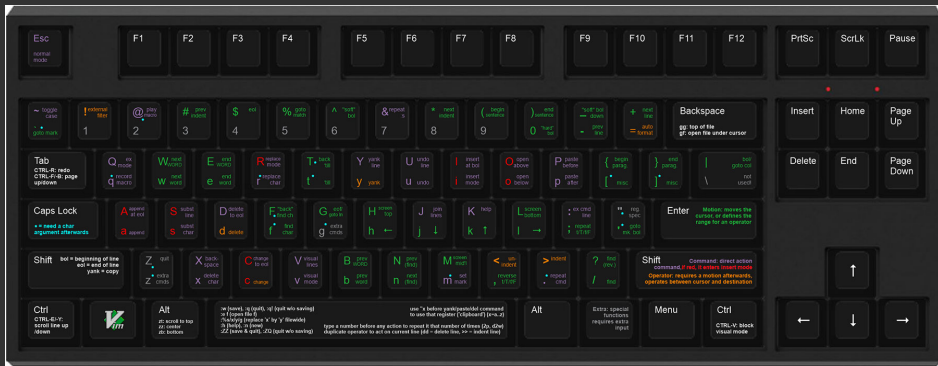
- > Radikalno drugačiji pogled na editovanje teksta
- > Efikasnost
- > Zabava
- > Vim možete prilagoditi sebi
- > Puno fantastičnih plugin-ova
- > Mogućnost da pravite sopstvene plugin-ove
- > Portabilnost
- > Ne treba vam miš (i ne želite ga ikada više :))
- > Besplatan i otvorenog koda
- > Dostupan za sve platforme

§ Vim - komande

Nekoliko komandi kako bi se stekao osećaj kako izgledaju:

- > h - pomeri kursor levo
- > j - pomeri kursor dole
- > k - pomeri kursor gore
- > l - pomeri kursor desno
- > i - uđi u **insert** mod
- > ESC - napusti **insert** mod
- > dd - obriši tekuću liniju
- > d5d - obriši 5 narednih linija od tekuće linije
- > w - pomeri kursor na sledeću reč
- > ddp - zameni trenutnu liniju sa narednom

§ Vim - komande





§ Vim - loše strane, sada stvarno



- > Zahteva da promenite način editovanja teksta
- > Prelazak ume da bude bolan u početku (h j k l)
- > Nekada ipak ne može kompletno zameniti profesionalno razvojno okruženje³

³But it goes down fighting!

§ Kako naučiti Vim?

Kratka napomena:

- > Najpre, nije teško ali nije za svakoga
- > Razmislite prvo da li ste spremni da posvetite vreme učenju
 - * Ali zapravo osnove Vim-a zaista nije teško naučiti
 - * No ipak ih nije trivijalno **provaliti** bez tutorial-a

Prvi koraci:

- > Pokrenuti program **vimtutor** i zavšiti mini tutorial
- > Odslušati dodatni uvodni tutorial na YouTube-u
- > Odštampati neku ilustraciju prečica koje se koriste
- > Probati neku od dostupnih video igara koje uče Vim prečice

Savet:

- > **Zaboravite** strelice.
- > Hajde da vidimo kako to izgleda **uživo**...

§ Emacs

- > Objavljen 1976. godine
- > I danas popularan i izuzetno moćan
- > Glavni neprijatelj Vim-a u ratu editora u unix svetu
- > Bliži standardnom načinu editovanju teksta
- > Posедује bogat plugin sistem
- > Veliki broj izuzetno korisnik prečica



- > Autor nije stručan za Emacs, više o njemu neke naredne prilike

§ Sublime Text

- > Objavljen 2009. godine
- > Nije besplatan
- > Izuzetno bogat plugin sistem



The screenshot shows the Sublime Text editor with a dark theme. On the left is a sidebar with a file explorer. The 'OPEN FILES' section at the top lists several files: `cuckoo.js`, `styles.less`, `app.php`, `t_js`, `t_Date.js`, `timer.php`, and `timer.php`. Below this, the 'FOLDERS' section shows a tree structure of folders and files, including `timelysis`, `application`, `css`, `img`, `js`, `system`, `core`, `database`, `fonts`, `helpers`, `language`, `libraries`, `htaccess`, `index.html`, `templates`, `htaccess`, `project`, `_index.html`, `index.php`, `license.txt`, and `names.rtf`.

The main editor area displays the code for `cuckoo.js`. The code is as follows:

```

132  };
133
134  /**
135   * Custom events
136   */
137  Cuckoo.Event = {
138      bind : function(ev, callback) {
139          var calls = this._callbacks || (this._callbacks = {});
140          var list = this._callbacks[ev] || (this._callbacks[ev] = []);
141          list.push(callback);
142          return this;
143      },
144
145      unbind: function(ev, callback) {
146          var calls;
147          if (!ev) {
148              this._callbacks = {};
149          }
150          else if (calls == this._callbacks) {
151              if (!callback) {
152                  calls[ev] = [];
153              }
154              else {
155                  var list = calls[ev];
156                  if (!list) return this;
157                  for (var i = 0, l = list.length; i < l; i++) {
158                      if (callback == list[i]) {
159                          list[i] = null;
160                          break;
161                      }
162                  }
163              }
164          }
165          return this;
166      },
167
168      fire: function(ev) {
169          var calls = this._callbacks[ev];
170          var args = Array.prototype.slice.call(arguments, 1);
171          var i, len;
172
173          for (i = 0, len = calls.length; i < len; i++) {
174              calls[i].apply(this, args);
175          }
176          return this;
177      }
178  };
179
180  /**
181   * Model
182   */
183  Cuckoo.Model = Class.extend({
184      storageKey : null,

```

At the bottom of the editor, a status bar shows 'Line 43, Column 24', 'Tab Size: 4', and 'JavaScript'.

§ Notepad++

- > Tekstualni editor za Windows
- > I danas izuzetno korišćen
- > Neki ga koriste i iz navike
- > Vrlo jednostavan, brz i elegantan editor



File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

Article.php load.php index.php

```

2580 $modified = $current != '' && $pro
2581
2582 if ( $protect ) {
2583     $comment_type = $modified ? 'm
2584 } else {
2585     $comment_type = 'unprotectedar
2586 }
2587
2588 $comment = $wgContLang->ucfirst( w
2589
2590 # Only restrictions with the 'prot
2591 # Otherwise, people who cannot nor
2592 $editrestriction = isset( $limit['
2593
2594 # The schema allows multiple restr
2595 if ( !in( 'protect', $editrestric
2596
2597 }
2598
2599 $scas
2600 ip2long
2601 iptcembed
2602 $scascade description = ' f'

```

interface_exists
intval
in_array
ip2long
iptcembed

```

75 exit;
76 }
77
78 if( $wgUseFileCache && isset( $wg1
79     wfProfileIn( 'main-try-filecac
80     // Raw pages should handle cac
81     // even when using file cache.
82     if( $action != 'raw' && HTMLF
83         /* Try low-level file cach
84         $cache = new HTMLFileCach
85         if( $cache->isFileCacheGoc
86             /* Check incoming head
87             if( !$wgOut->checkLast
88                 $cache->loadFromFi
89         }
90         # Do any stats increme
91         $wgArticle = MediaWiki
92         $wgArticle->viewUpdate
93         # Tell $wgOut that out
94         wfProfileOut( 'main-t
95         $mediaWiki->restInPeac
96         exit;

```

PHP Hy length: 139209 lines: 4673 Ln: 2595 Col: 26 Sel: 0 UNIX ANSI as UTF-8 INS

- > Editor KDE organizacije
- > Glavi alat na ispitima studenata Matf-a :)
- > Od skoro postoji i verzija za Windows



fvSchemes — Kate

File Edit View Build Projects Bookmarks Sessions Tools Settings Help

pureBreakup
system
controlDict
fvSchemes
fvSolution
setFieldsDict
system
controlDict
fvSchemes
fvSolution

setFieldsDict controlDict (2) fvSchemes (2) fvSolution (2) +3

```

// OpenFOAM: The Open Source CFD Toolbox
// Version: 2.3.1
// Web: www.OpenFOAM.org

FoamFile
{
    version      2.0;
    format       ascii;
    class        dictionary;
    location     "system";
    object       fvSchemes;
}

// *****

dtSchemes
{
    default      Euler;
}

gradSchemes
{
    default      Gauss linear;
}

divSchemes
{
    default      none;
    div(phi, alpha.oil)      Gauss vanLeer;
    div(phi, alpha.oil)      Gauss vanLeer;
    "div((alpha*rhoPhi, u, u, x))"      Gauss limitedLinearV 1;
    "div(phi, u, u, x)"      Gauss limitedLinearV 1;
    div(phi, oil, kappa.oil)      Gauss vanLeer;
    "div((alpha*rhoPhi, u, (h|e), x))"      Gauss limitedLinear 1;
    "div((alpha*rhoPhi, u, x, x))"      Gauss limitedLinear 1;
    "div((alpha*rhoPhi, u, p))"      Gauss limitedLinear 1;
    "div((u, nk))"      Gauss vanLeer;
    "div((alpha*rhoPhi, u, (kappa/ciln), x))"      Gauss limitedLinear 1;
    "div((p, nk, (kappa/ciln)))"      Gauss limitedLinear 1;
    "div(((1/(alpha + thermo.rho, u)) * nuEff, x)) * dev2(T( grad(U, x)) * I))"      Gauss linear;
}

LaplacianSchemes

```

Line 1, Column 1

INSERT Soft Tabs: 4 (8) UTF-8 C

Search and Replace Terminal Build Output Current Project

Pitanja?

Hvala na pažnji!