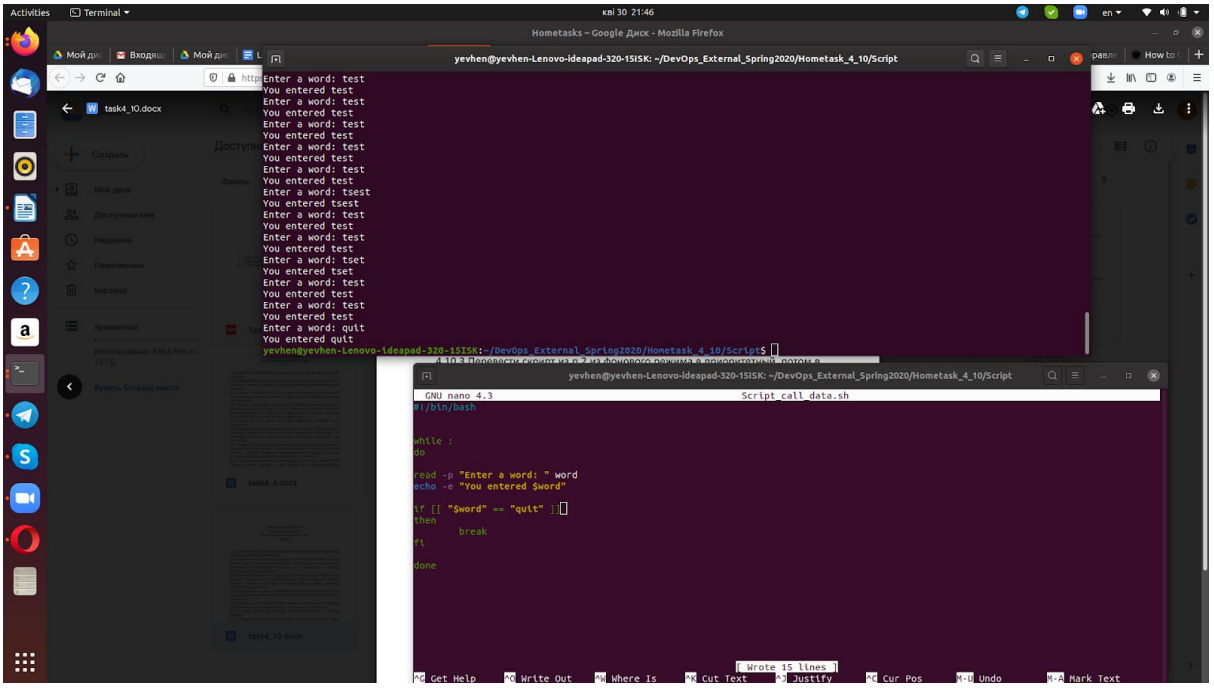
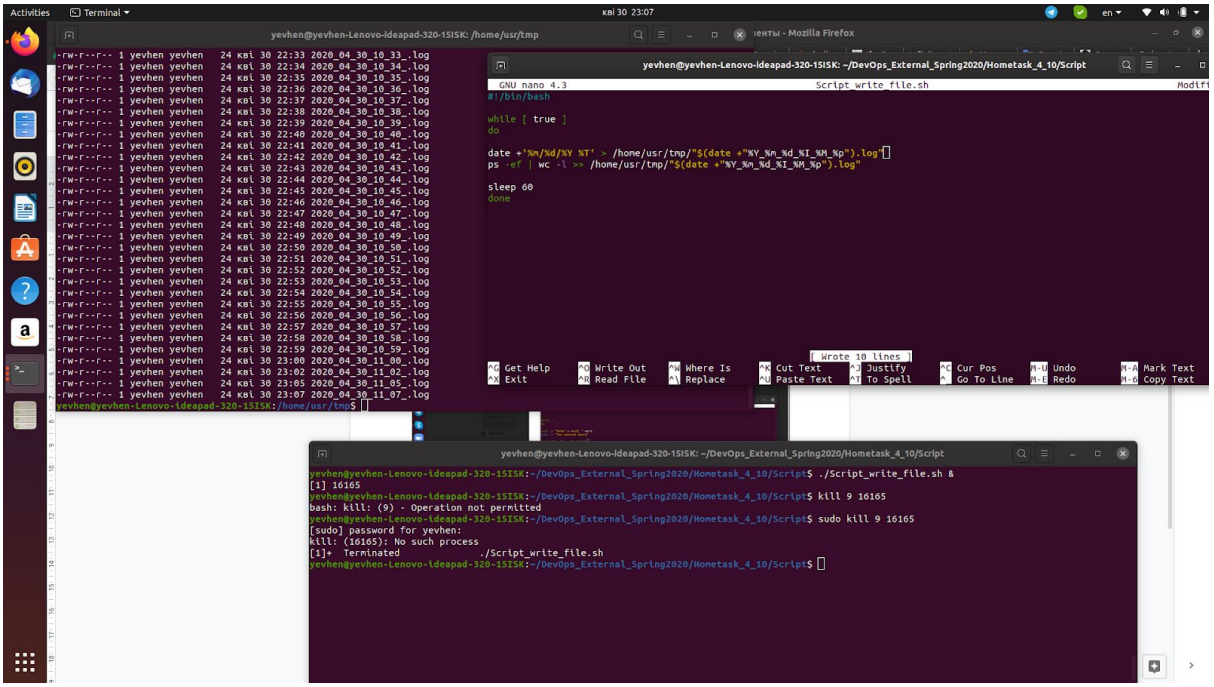
Linux Essentials with Bash Programming

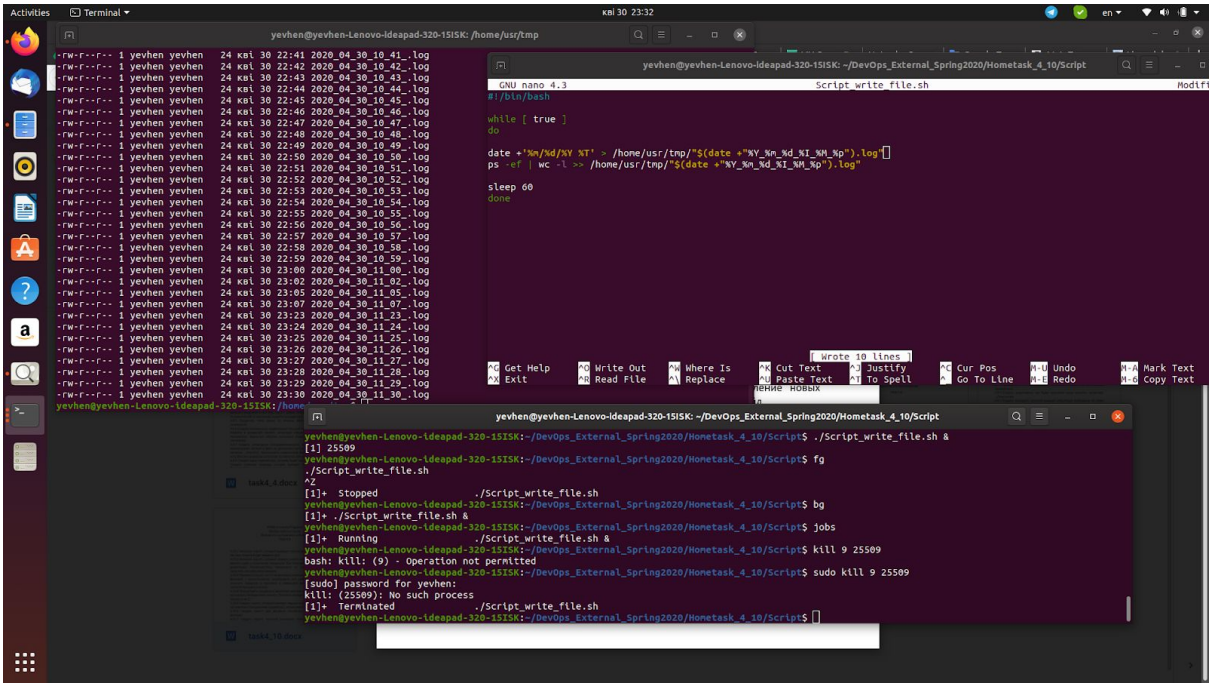
1. Create script that call data before word quit will be enter



2. Create script that every minute write current time and date with count of process into file in /home/usr/tmp, in background mode

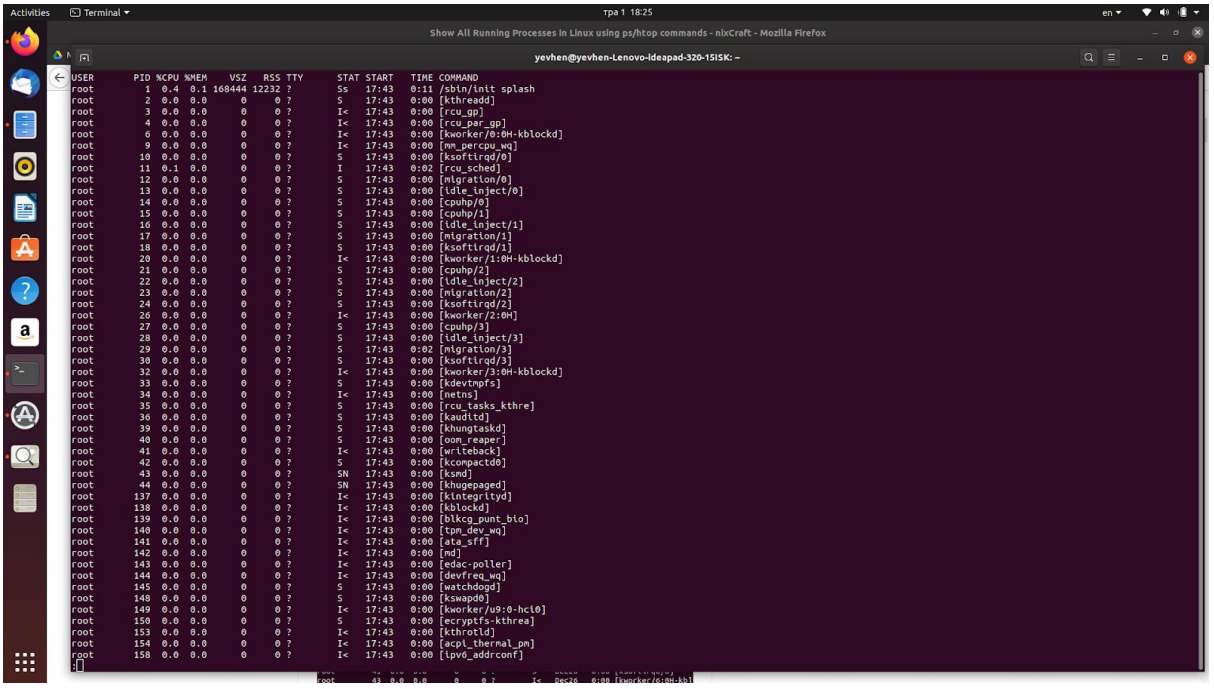


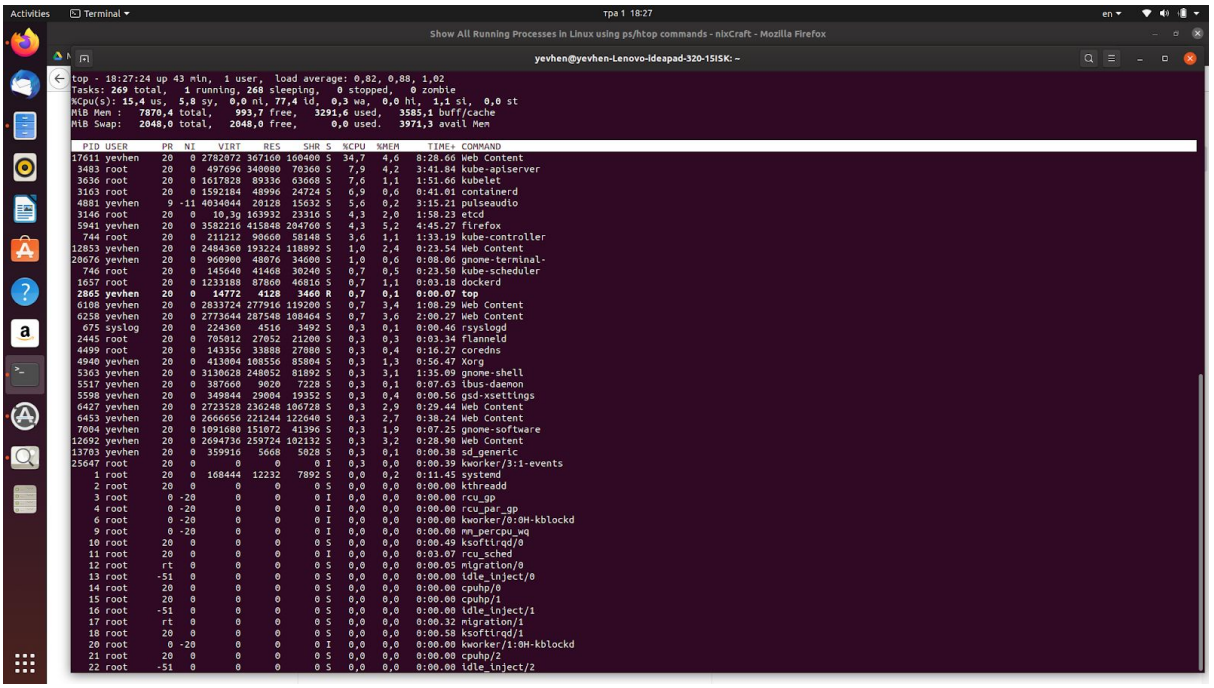
3. Make that script from background to the priority mode, than in background with stop and renew to the background mode, show information about that script. Finish work.

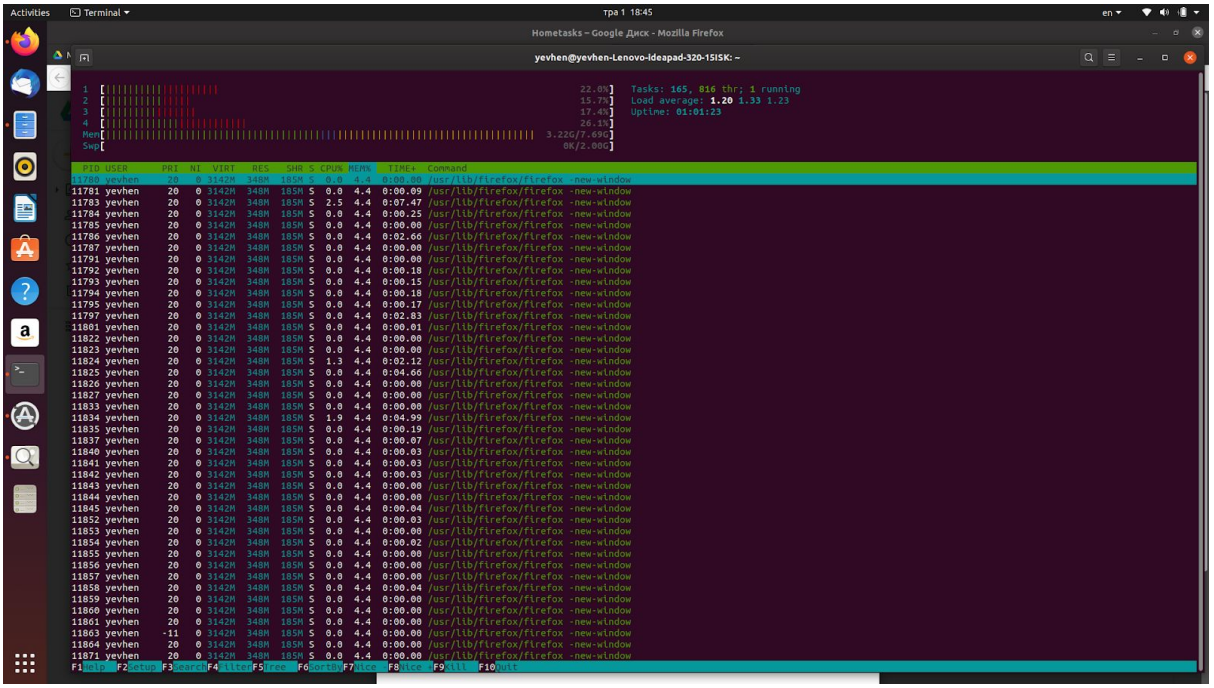


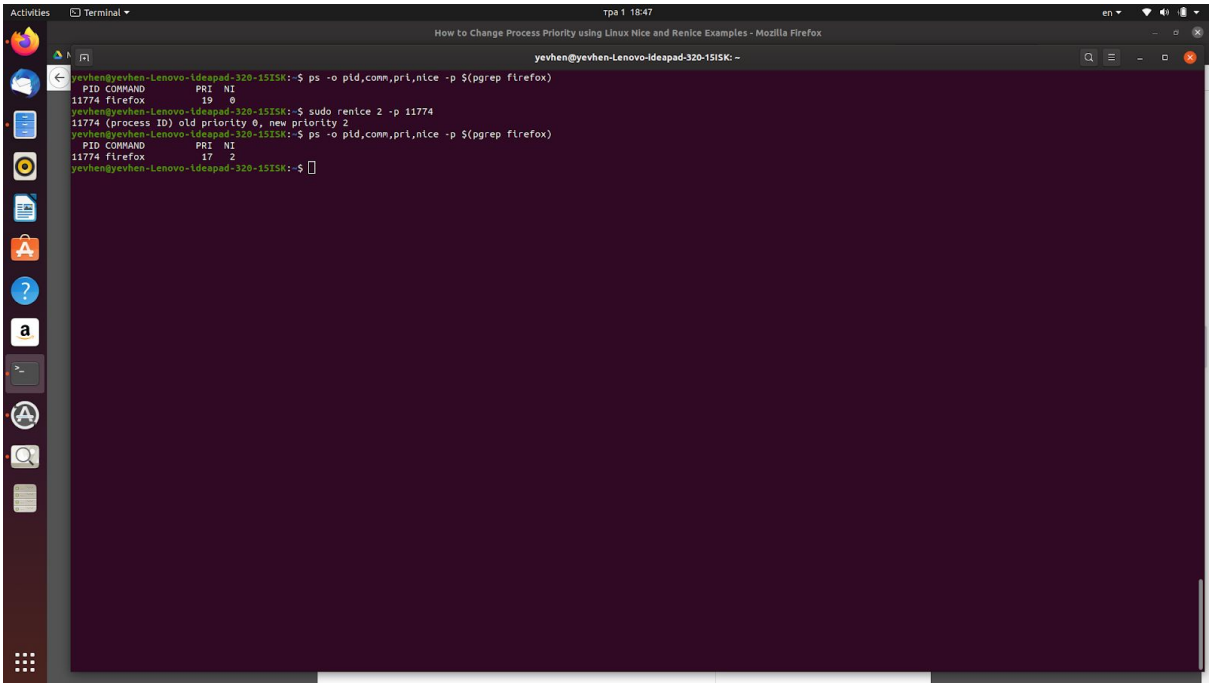
4. Show process in real time, how much memories does that process take, change priority for that process low on 2 points.

ps aux | less

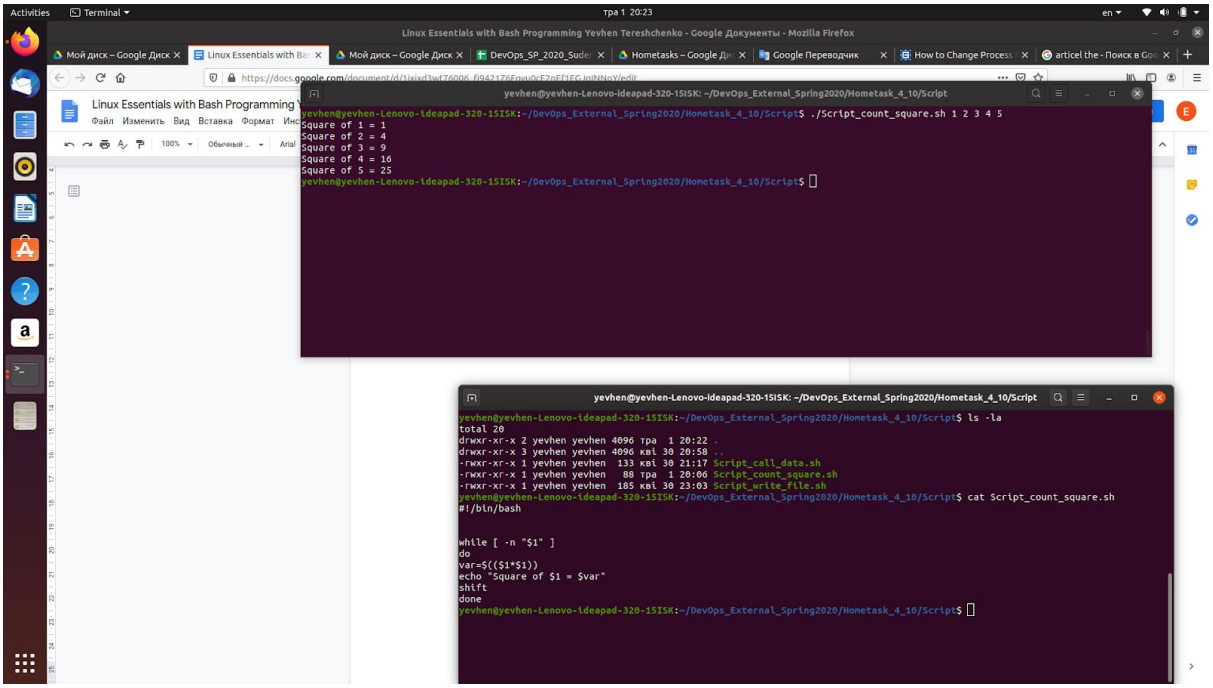



Activities
Terminal
тра 1 18:27
en
Show All Running Processes in Linux using ps/htop commands - nixCraft - Mozilla Firefox
yevhen@yevhen-Lenovo-ideapad-320-15ISK: ~
top - 18:27:24 up 43 min, 1 user, load average: 0,82, 0,88, 1,02
Tasks: 269 total, 1 running, 268 sleeping, 0 stopped, 0 zombie
%Cpu(s): 15,4 us, 5,8 sy, 0,0 ni, 77,4 id, 0,3 wa, 0,0 hi, 1,1 si, 0,0 st
MiB Mem : 7870,4 total, 993,7 free, 3291,6 used, 3585,1 buff/cache
MiB Swap: 2048,0 total, 2048,0 free, 0,0 used. 3971,3 avail Mem
PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
17611 yevhen 20 0 2782072 367160 160400 S 34,7 4,6 8:28.66 Web Content
3483 root 20 0 497696 340080 70360 S 7,9 4,2 3:41.84 kube-apiserver
3636 root 20 0 1617828 89336 63668 S 7,6 1,1 1:51.66 kubelet
3163 root 20 0 1592184 48996 24724 S 6,9 0,6 0:41.01 containerd
4881 yevhen 9 -11 4034044 20128 15632 S 5,6 0,2 3:15.21 pulseaudio
3146 root 20 0 10,3g 163932 23316 S 4,3 2,0 1:58.23 etcd
5941 yevhen 20 0 3582216 415848 204760 S 4,3 5,2 4:45.27 firefox
744 root 20 0 211212 90660 58148 S 3,6 1,1 1:33.19 kube-controller
12853 yevhen 20 0 2484360 193224 118892 S 1,0 2,4 0:23.54 Web Content
20676 yevhen 20 0 960900 48076 34600 S 1,0 0,6 0:08.06 gnome-terminal-
746 root 20 0 145540 41468 30240 S 0,7 0,5 0:23.50 kube-scheduler
1657 root 20 0 1233188 87860 46816 S 0,7 1,1 0:03.18 dockerd
2865 yevhen 20 0 14772 4128 3460 R 0,7 0,1 0:00.07 top
6108 yevhen 20 0 2833724 277916 119200 S 0,7 3,4 1:08.29 Web Content
6258 yevhen 20 0 2773644 287548 108464 S 0,7 3,6 2:00.27 Web Content
675 syslog 20 0 224360 4516 3492 S 0,3 0,1 0:00.46 rsyslogd
2445 root 20 0 705012 27052 21200 S 0,3 0,3 0:03.34 flanneld
4499 root 20 0 143356 33888 27080 S 0,3 0,4 0:16.27 coredns
4940 yevhen 20 0 413004 108556 85804 S 0,3 1,3 0:56.47 Xorg
5363 yevhen 20 0 3130628 248052 81892 S 0,3 3,1 1:35.09 gnome-shell
5517 yevhen 20 0 387660 9820 7228 S 0,3 0,1 0:07.63 ibus-daemon
5598 yevhen 20 0 349844 29004 19352 S 0,3 0,4 0:00.56 gsd-xsettings
6427 yevhen 20 0 2723528 236248 106728 S 0,3 2,9 0:29.44 Web Content
6453 yevhen 20 0 2666656 221244 122640 S 0,3 2,7 0:38.24 Web Content
7004 yevhen 20 0 1091680 151072 41396 S 0,3 1,9 0:07.25 gnome-software
12692 yevhen 20 0 2694736 259724 102132 S 0,3 3,2 0:28.90 Web Content
13703 yevhen 20 0 359916 5668 5028 S 0,3 0,1 0:00.38 sd_generic
25647 root 20 0 0 0 0 I 0,3 0,0 0:00.39 kworker/3:1-events
1 root 20 0 168444 12232 7892 S 0,0 0,2 0:11.45 systemd
2 root 20 0 0 0 0 S 0,0 0,0 0:00.00 kthreadd
3 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 rcu_gp
4 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 rcu_par_gp
6 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker/0:0H-kblockd
9 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 mm_percpu_wq
10 root 20 0 0 0 0 S 0,0 0,0 0:00.49 ksoftirqd/0
11 root 20 0 0 0 0 I 0,0 0,0 0:03.07 rcu_sched
12 root rt 0 0 0 0 S 0,0 0,0 0:00.05 migration/0
13 root -51 0 0 0 0 S 0,0 0,0 0:00.00 idle_inject/0
14 root 20 0 0 0 0 S 0,0 0,0 0:00.00 cpuhp/0
15 root 20 0 0 0 0 S 0,0 0,0 0:00.00 cpuhp/1
16 root -51 0 0 0 0 S 0,0 0,0 0:00.00 idle_inject/1
17 root rt 0 0 0 0 S 0,0 0,0 0:00.32 migration/1
18 root 20 0 0 0 0 S 0,0 0,0 0:00.58 ksoftirqd/1
20 root 0 -20 0 0 0 I 0,0 0,0 0:00.00 kworker/1:0H-kblockd
21 root 20 0 0 0 0 S 0,0 0,0 0:00.00 cpuhp/2
22 root -51 0 0 0 0 S 0,0 0,0 0:00.00 idle_inject/2

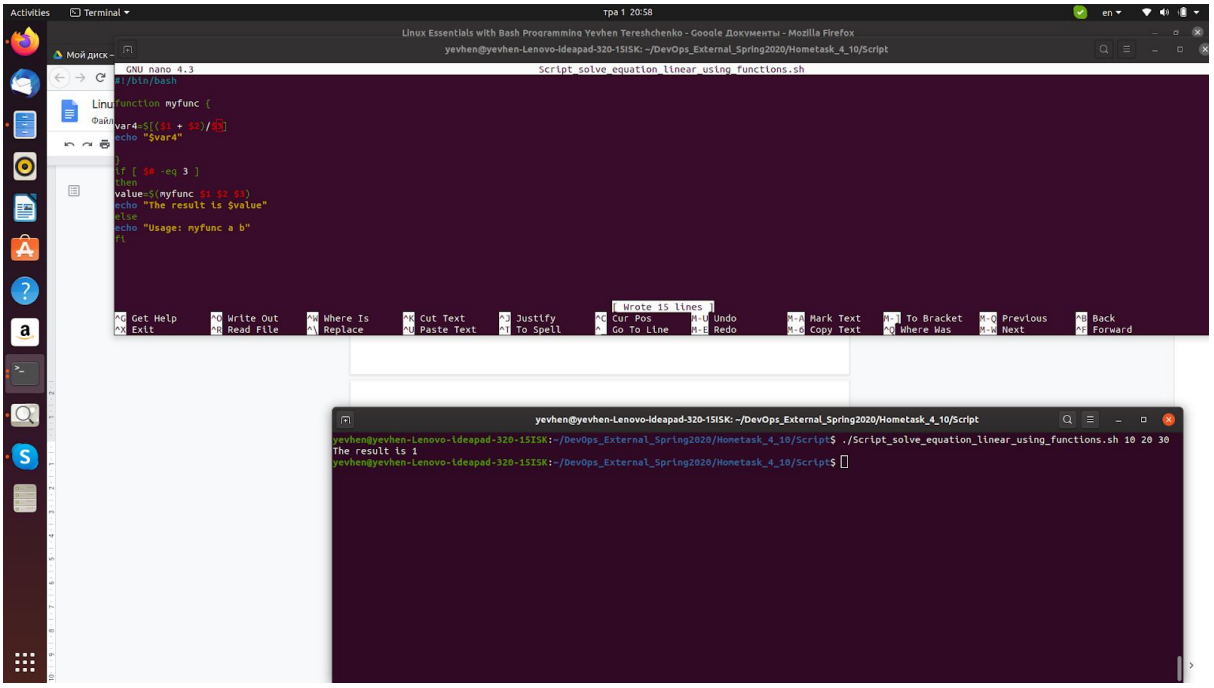

Activities
Terminal
тра 1 18:45
en
Hometasks – Google Диск - Mozilla Firefox
yevhen@yevhen-Lenovo-ideapad-320-15ISK: ~
1 [22.0%]
2 [15.7%]
3 [17.4%]
4 [26.1%]
Mem[3.22G/7.69G]
Swp[0K/2.00G]
Tasks: 165, 816 thr; 1 running
Load average: 1.20 1.33 1.23
Uptime: 01:01:23
PID USER PRI NI VIRT RES SHR S CPU% MEM% TIME+ Command
11720 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11781 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.09 /usr/lib/firefox/firefox -new-window
11783 yevhen 20 0 3142M 348M 185M S 2.5 4.4 0:07.47 /usr/lib/firefox/firefox -new-window
11784 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.25 /usr/lib/firefox/firefox -new-window
11785 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11786 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:02.66 /usr/lib/firefox/firefox -new-window
11787 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11791 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11792 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.18 /usr/lib/firefox/firefox -new-window
11793 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.15 /usr/lib/firefox/firefox -new-window
11794 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.18 /usr/lib/firefox/firefox -new-window
11795 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.17 /usr/lib/firefox/firefox -new-window
11797 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:02.83 /usr/lib/firefox/firefox -new-window
11801 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.01 /usr/lib/firefox/firefox -new-window
11822 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11823 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11824 yevhen 20 0 3142M 348M 185M S 1.3 4.4 0:02.12 /usr/lib/firefox/firefox -new-window
11825 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:04.66 /usr/lib/firefox/firefox -new-window
11826 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11827 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11833 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11834 yevhen 20 0 3142M 348M 185M S 1.9 4.4 0:04.99 /usr/lib/firefox/firefox -new-window
11835 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.19 /usr/lib/firefox/firefox -new-window
11837 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.07 /usr/lib/firefox/firefox -new-window
11840 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.03 /usr/lib/firefox/firefox -new-window
11841 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.03 /usr/lib/firefox/firefox -new-window
11842 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.03 /usr/lib/firefox/firefox -new-window
11843 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11844 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11845 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.04 /usr/lib/firefox/firefox -new-window
11852 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.03 /usr/lib/firefox/firefox -new-window
11853 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11854 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.02 /usr/lib/firefox/firefox -new-window
11855 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11856 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11857 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11858 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.04 /usr/lib/firefox/firefox -new-window
11859 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11860 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11861 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11863 yevhen -11 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11864 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
11871 yevhen 20 0 3142M 348M 185M S 0.0 4.4 0:00.00 /usr/lib/firefox/firefox -new-window
F1Help F2Setup F3SearchF4FilterF5Tree F6SortByF7Nice -F8Nice +F9Kill F10Quit



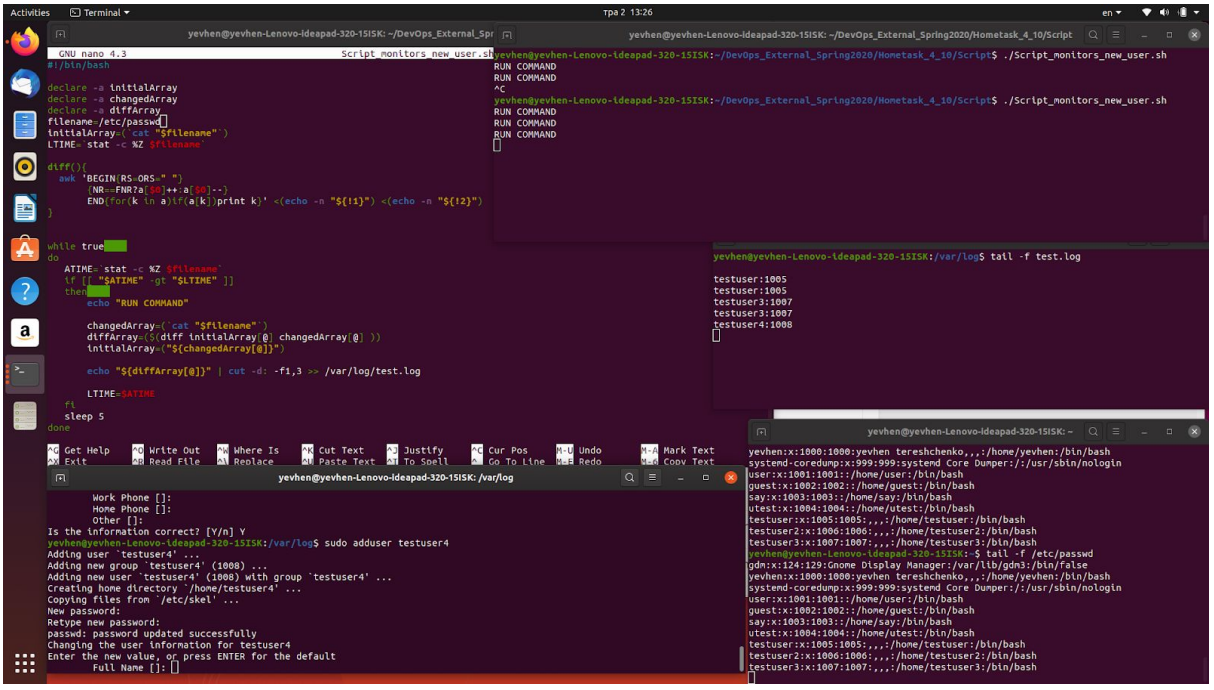
5. Create script that return square numbers absolutely from count

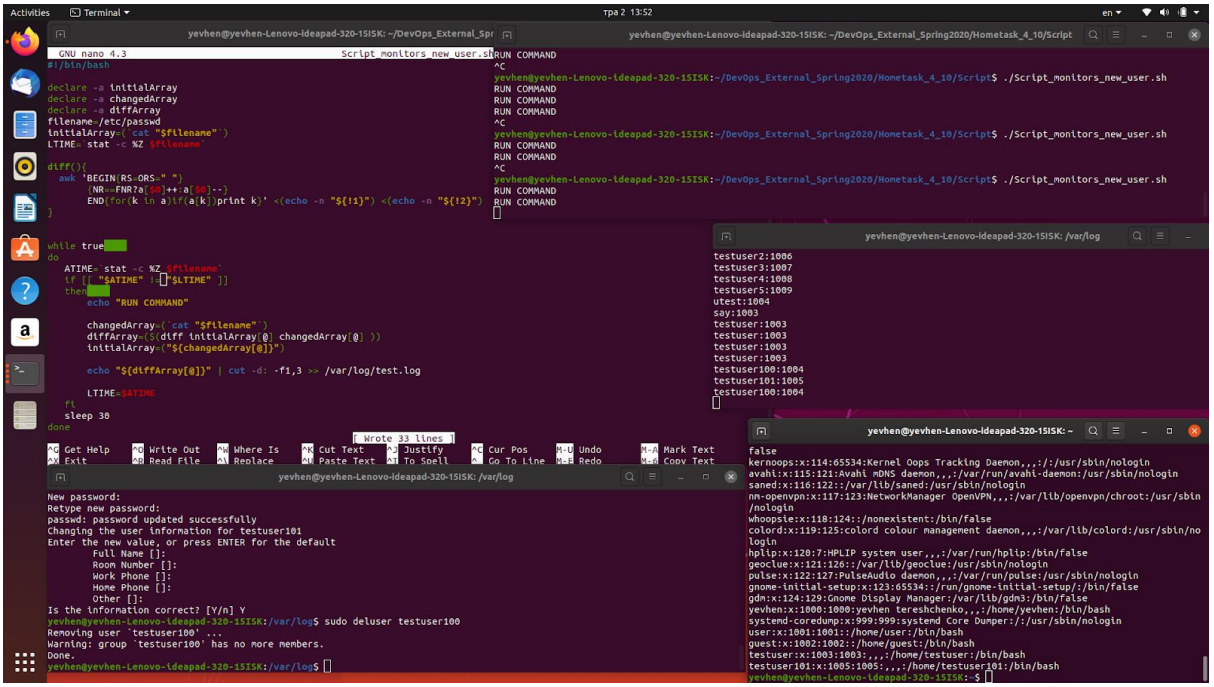


6. Create script that solve linear equation using functions



7. Create script that regularly monitors the emergence of new users and write them logins and uid into log file




Activities
Terminal
тра 2 13:52
en
GNU nano 4.3 Script_monitors_new_user.sh
#!/bin/bash
declare -a initialArray
declare -a changedArray
declare -a diffArray
filename=/etc/passwd
initialArray=(`cat "$filename"`)
LTIME=`stat -c %Z $filename`
diff(){
awk 'BEGIN{RS=ORS=" "}
{NR==FNR?a[$0]++:a[$0]--}
END{for(k in a)if(a[k])print k}' <(echo -n "${!1}") <(echo -n "${!2}")
}
while true
do
ATIME=`stat -c %Z $filename`
if [["$ATIME" != "$LTIME"]]
then
echo "RUN COMMAND"
changedArray=(`cat "$filename"`)
diffArray=($(diff initialArray[@] changedArray[@]))
initialArray=("${changedArray[@]}")
echo "${diffArray[@]}" | cut -d: -f1,3 >> /var/log/test.log
LTIME=$ATIME
fi
sleep 30
done
[Wrote 33 lines]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos M-U Undo M-A Mark Text
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^_ Go To Line M-E Redo M-6 Copy Text
yevhen@yevhen-Lenovo-ideapad-320-15ISK: ~/DevOps_External_Spr
yevhen@yevhen-Lenovo-ideapad-320-15ISK: ~/DevOps_External_Spring2020/Hometask_4_10/Script
RUN COMMAND
^C
yevhen@yevhen-Lenovo-ideapad-320-15ISK:~/DevOps_External_Spring2020/Hometask_4_10/Script$ ./Script_monitors_new_user.sh
RUN COMMAND
RUN COMMAND
RUN COMMAND
^C
yevhen@yevhen-Lenovo-ideapad-320-15ISK:~/DevOps_External_Spring2020/Hometask_4_10/Script$ ./Script_monitors_new_user.sh
RUN COMMAND
RUN COMMAND
^C
yevhen@yevhen-Lenovo-ideapad-320-15ISK:~/DevOps_External_Spring2020/Hometask_4_10/Script$ ./Script_monitors_new_user.sh
RUN COMMAND
RUN COMMAND
yevhen@yevhen-Lenovo-ideapad-320-15ISK: /var/log
testuser2:1006
testuser3:1007
testuser4:1008
testuser5:1009
utest:1004
say:1003
testuser:1003
testuser:1003
testuser:1003
testuser:1003
testuser100:1004
testuser101:1005
testuser100:1004
yevhen@yevhen-Lenovo-ideapad-320-15ISK: /var/log
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for testuser101
Enter the new value, or press ENTER for the default
Full Name []:
Room Number []:
Work Phone []:
Home Phone []:
Other []:
Is the information correct? [Y/n] Y
yevhen@yevhen-Lenovo-ideapad-320-15ISK:/var/log$ sudo deluser testuser100
Removing user `testuser100' ...
Warning: group `testuser100' has no more members.
Done.
yevhen@yevhen-Lenovo-ideapad-320-15ISK:/var/log$
yevhen@yevhen-Lenovo-ideapad-320-15ISK: ~
false
kernoops:x:114:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
saned:x:116:122::/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:117:123:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
whoopsie:x:118:124::/nonexistent:/bin/false
colord:x:119:125:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:120:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:121:126::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:122:127:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:123:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:124:129:Gnome Display Manager:/var/lib/gdm3:/bin/false
yevhen:x:1000:1000:yevhen tereshchenko,,,:/home/yevhen:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
user:x:1001:1001::/home/user:/bin/bash
guest:x:1002:1002::/home/guest:/bin/bash
testuser:x:1003:1003:,,,:/home/testuser:/bin/bash
testuser101:x:1005:1005:,,,:/home/testuser101:/bin/bash
yevhen@yevhen-Lenovo-ideapad-320-15ISK:~$