МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

Федеральное государственное автономное образовательное учреждение высшего образования «Национальный исследовательский университет ИТМО» (Университет ИТМО)

Факультет систем управления и робототехники

ОТЧЕТ ПО ЛАБОРАТОРНОЙ РАБОТЕ №4 по дисциплине

«Операционная система Linux»

Студент:

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1 ОСНОВЫ БЕЗОПАСНОСТИ В LINUX

1.1 Цель работы

Изучить управление пользователями и группами, права доступа к файлам, а также базовые операции с процессами. Зафиксировать ход работы в файлах записи терминала.

1.2 Краткий ход выполнения

1.2.1 Права root и системные файлы

- Просмотр /etc/passwd c пояснением полей: :: UID:GID: :
- : Использование sudo для безопасного выполнения привилегированных команд

1.2.2 Пользователи и группы

- Созданы пользователи: user1, user2, user3 - Создана группа Students, добавлены user1, user2 - user3 получал root-права для административных шагов - Проверена принадлежность к группам командой groups

1.2.3 Файлы и права

- Под user1 создан файл schedule, владельцем назначена группа Students (chgrp) - Под user2 проверена доступность и выполнена попытка записи - Под user3 создан файл important, права изменены chmod для доступа Others - Исследованы умолчания прав и отличия прав у файлов, созданных с root

1.2.4 Процессы

-Получен список процессов и сохранён в proc_list - Изучены pstree, kill, killall

1.2.5 Учебные файлы

```
10:00 Maths

11:40 Physics

13:30 Economics

15:20 Programming

17:00 Databases
```

```
All students need to be in recreation area at 18:00! Sign below if you got this message.

All personal! University will be closed tomorrow!
```

1.2.6 Список процессов

PID	TTY	TIME	CMD
1	?	00:00:04	systemd
2	?	00:00:00	kthreadd
3	?	00:00:00	pool_workqueue_release
4	?	00:00:00	kworker/R-rcu_gp
5	?	00:00:00	kworker/R-sync_wq
6	?	00:00:00	kworker/R-kvfree_rcu_reclaim
7	?	00:00:00	kworker/R-slub_flushwq
8	?	00:00:00	kworker/R-netns
11	?	00:00:00	kworker/0:0H-events_highpri
13	?	00:00:00	kworker/R-mm_percpu_wq
14	?	00:00:00	rcu_tasks_kthread
15	?	00:00:00	rcu_tasks_rude_kthread
16	?	00:00:00	rcu_tasks_trace_kthread
17	?	00:00:00	ksoftirqd/0

```
18 ?
            00:00:12 rcu preempt
19 ?
            00:00:00 rcu_exp_par_gp_kthread_worker/0
20 ?
            00:00:00 rcu_exp_gp_kthread_worker
21 ?
            00:00:00 migration/0
            00:00:00 idle inject/0
22 ?
23 ?
            00:00:00 cpuhp/0
24 ?
            00:00:00 cpuhp/1
25 ?
            00:00:00 idle_inject/1
26 ?
            00:00:00 migration/1
27 ?
            00:00:00 ksoftirqd/1
29 ?
            00:00:00 kworker/1:0H-events highpri
30 ?
            00:00:00 cpuhp/2
31 ?
            00:00:00 idle inject/2
32 ?
            00:00:00 migration/2
33 ?
            00:00:00 ksoftirqd/2
35 ?
            00:00:00 kworker/2:0H-events highpri
36 ?
            00:00:00 cpuhp/3
            00:00:00 idle inject/3
37 ?
38 ?
            00:00:00 migration/3
39 ?
            00:00:00 ksoftirqd/3
41 ?
            00:00:00 kworker/3:0H-events highpri
42 ?
            00:00:00 cpuhp/4
43 ?
            00:00:00 idle inject/4
44 ?
            00:00:00 migration/4
45 ?
            00:00:00 ksoftirqd/4
47 ?
            00:00:00 kworker/4:0H-events highpri
48 ?
            00:00:00 cpuhp/5
49 ?
            00:00:00 idle inject/5
            00:00:00 migration/5
50 ?
51 ?
            00:00:00 ksoftirqd/5
            00:00:00 kworker/5:0H-events highpri
53 ?
56 ?
            00:00:00 kdevtmpfs
57 ?
            00:00:00 kworker/R-inet_frag_wq
58 ?
            00:00:00 kauditd
59 ?
            00:00:00 khungtaskd
60 ?
            00:00:00 oom reaper
63 ?
            00:00:00 kworker/R-writeback
64 ?
            00:00:01 kcompactd0
65 ?
            00:00:00 ksmd
66 ?
            00:00:00 khugepaged
            00:00:00 kworker/R-kintegrityd
67 ?
            00:00:00 kworker/R-kblockd
68 ?
```

```
69 ?
             00:00:00 kworker/R-blkcg_punt_bio
 70 ?
             00:00:03 irq/9-acpi
             00:00:00 kworker/R-tpm dev wq
 72 ?
 73 ?
             00:00:00 kworker/R-ata sff
 75 ?
             00:00:00 kworker/R-md
 76 ?
             00:00:00 kworker/R-md bitmap
             00:00:00 kworker/R-edac-poller
 77 ?
 79 ?
             00:00:00 kworker/R-devfreq wq
             00:00:00 watchdogd
 81 ?
 82 ?
             00:00:00 kworker/4:1H-kblockd
 83 ?
             00:00:00 irg/25-AMD-Vi0-Evt
 84 ?
             00:00:00 irq/26-AMD-Vi0-PPR
             00:00:00 irq/27-AMD-Vi0-GA
 85 ?
 87 ?
             00:00:00 kswapd0
 88 ?
             00:00:00 ecryptfs-kthread
             00:00:00 kworker/R-kthrotld
 89 ?
 90 ?
             00:00:00 kworker/u27:0-hci0
             00:00:00 kworker/R-acpi_thermal_pm
 92 ?
 97 ?
             00:00:00 kworker/R-mld
             00:00:00 kworker/R-ipv6 addrconf
 98 ?
 99 ?
             00:00:00 kworker/3:1H-kblockd
107 ?
             00:00:00 kworker/R-kstrp
108 ?
             00:00:01 kworker/2:1-events
             00:00:00 kworker/R-charger manager
124 ?
             00:00:00 kworker/0:1H-kblockd
125 ?
             00:00:00 kworker/5:1H-kblockd
183 ?
             00:00:00 kworker/2:1H-kblockd
184 ?
             00:00:00 kworker/1:1H-kblockd
185 ?
             00:00:02 kworker/0:2-events
205 ?
209 ?
             00:00:00 kworker/R-nvme-wq
             00:00:00 kworker/R-nvme-reset-wq
210 ?
211 ?
             00:00:00 kworker/R-nvme-delete-wq
             00:00:00 irg/48-PNP0C50:09
212 ?
213 ?
             00:00:00 kworker/R-nvme-auth-wq
             00:00:00 scsi eh 0
214 ?
215 ?
             00:00:00 kworker/R-scsi tmf 0
             00:00:03 jbd2/nvme0n1p6-8
352 ?
             00:00:00 kworker/R-ext4-rsv-conversion
353 ?
406 ?
             00:00:05 systemd-journal
             00:00:00 systemd-udevd
505 ?
508 ?
             00:00:00 psimon
             00:00:00 kworker/R-cfg80211
674 ?
```

```
747 ?
              00:00:00 kworker/R-cryptd
798 ?
              00:01:38 irq/65-rtw88 pci
              00:00:05 systemd-oomd
940 ?
950 ?
              00:00:03 systemd-resolve
              00:00:00 systemd-timesyn
951 ?
1048 ?
              00:00:00 kworker/R-amdgpu-reset-dev
              00:00:00 kworker/R-ttm
1079 ?
1186 ?
              00:00:00 avahi-daemon
              00:00:00 bluetoothd
1187 ?
1188 ?
              00:00:04 dbus-daemon
1192 ?
              00:00:00 gnome-remote-de
              00:00:00 lttng-sessiond
1197 ?
              00:00:01 polkitd
1211 ?
1217 ?
              00:00:00 power-profiles-
1223 ?
              00:00:09 snapd
1226 ?
              00:00:00 accounts-daemon
              00:00:00 cron
1230 ?
              00:00:00 switcheroo-cont
1231 ?
1233 ?
              00:00:00 systemd-logind
              00:00:01 udisksd
1237 ?
1250 ?
              00:00:00 avahi-daemon
1256 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1257 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1258 ?
1259 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1260 ?
              00:00:00 kworker/R-dm vblank control workqueue
1261 ?
              00:00:00 rsyslogd
              00:00:00 lttng-runas
1269 ?
1311 ?
              00:00:00 card1-crtc0
1312 ?
              00:00:00 card1-crtc1
              00:00:00 card1-crtc2
1313 ?
1314 ?
              00:00:00 card1-crtc3
              00:00:00 kworker/R-gfx
1319 ?
1320 ?
              00:00:00 kworker/R-comp 1.0.0
1321 ?
              00:00:00 kworker/R-comp 1.1.0
1322 ?
              00:00:00 kworker/R-comp 1.2.0
              00:00:00 kworker/R-comp 1.3.0
1323 ?
1324 ?
              00:00:00 kworker/R-comp 1.0.1
              00:00:00 kworker/R-comp_1.1.1
1325 ?
              00:00:00 kworker/R-comp 1.2.1
1326 ?
              00:00:00 kworker/R-comp 1.3.1
1327 ?
              00:00:00 kworker/R-sdma0
1328 ?
```

```
1329 ?
              00:00:00 kworker/R-vcn dec
1330 ?
              00:00:00 kworker/R-vcn enc0
              00:00:00 kworker/R-vcn enc1
1331 ?
1332 ?
              00:00:00 kworker/R-jpeg_dec
1689 ?
              00:00:03 NetworkManager
1690 ?
              00:00:00 wpa_supplicant
1739 ?
              00:00:00 ModemManager
1853 ?
              00:00:00 cupsd
1855 ?
              00:00:00 run-cups-browse
1856 ?
              00:00:00 run-cupsd
              00:00:00 unattended-upgr
1858 ?
              00:00:06 containerd
1866 ?
1961 ?
              00:00:00 gdm3
1982 ?
              00:00:00 gdm-session-wor
1996 ?
              00:00:00 winbindd
2017 ?
              00:00:02 systemd
2030 ?
              00:00:00 (sd-pam)
              00:00:00 wb [LEONIDAS-AX1
2059 ?
2138 ?
              00:00:00 cupsd
2139 ?
              00:00:00 cups-proxyd
2145 ?
              00:00:33 pipewire
2146 ?
              00:00:00 pipewire
2148 ?
              00:00:02 wireplumber
2149 ?
              00:00:41 pipewire-pulse
2150 ?
              00:00:00 gnome-keyring-d
2175 ?
              00:00:02 dbus-daemon
              00:00:00 rtkit-daemon
2188 ?
2189 ?
              00:00:00 xdg-document-po
              00:00:00 run-cups-browse
2192 ?
2205 ?
              00:00:00 xdg-permission-
2210 tty2
              00:00:00 gdm-wayland-ses
2221 tty2
              00:00:00 gnome-session-b
2225 ?
              00:00:00 fusermount3
2307 ?
              00:00:00 gcr-ssh-agent
              00:00:00 gnome-session-c
2309 ?
2329 ?
              00:00:00 gvfsd
2338 ?
              00:00:00 gvfsd-fuse
2341 ?
              00:00:00 gnome-session-b
2361 ?
              00:00:00 krfcommd
              00:06:02 gnome-shell
2384 ?
2386 ?
              00:00:00 at-spi-bus-laun
              00:00:00 dbus-daemon
2397 ?
```

```
2449 ?
              00:00:00 at-spi2-registr
2450 ?
              00:00:00 colord
2477 ?
              00:00:00 cups-browsed
2479 ?
              00:00:00 kerneloops
2482 ?
              00:00:00 kerneloops
2503 ?
              00:00:00 gnome-shell-cal
2519 ?
              00:00:00 evolution-sourc
2521 ?
              00:00:00 gjs
2523 ?
              00:00:03 upowerd
2535 ?
              00:00:17 ibus-daemon
              00:00:00 gsd-a11y-settin
2539 ?
              00:00:00 gsd-color
2541 ?
2546 ?
              00:00:00 gsd-datetime
2549 ?
              00:00:00 gsd-housekeepin
2551 ?
              00:00:00 gsd-keyboard
2552 ?
              00:00:00 gsd-media-keys
2560 ?
              00:00:00 gsd-power
2562 ?
              00:00:00 gsd-print-notif
2570 ?
              00:00:00 gsd-rfkill
2574 ?
              00:00:00 gsd-screensaver
2575 ?
              00:00:01 gsd-sharing
              00:00:00 gsd-smartcard
2576 ?
2577 ?
              00:00:00 gsd-sound
2578 ?
              00:00:00 gsd-wacom
2593 ?
              00:00:00 gsd-disk-utilit
2601 ?
              00:00:00 evolution-alarm
2616 ?
              00:00:47 gnome-software
2721 ?
              00:00:00 ibus-dconf
2722 ?
              00:00:01 gvfs-udisks2-vo
2733 ?
              00:00:05 ibus-extension-
2742 ?
              00:00:02 ibus-portal
2753 ?
              00:00:00 gvfs-gphoto2-vo
              00:00:00 snapd-desktop-i
2769 ?
              00:00:00 gvfs-mtp-volume
2780 ?
              00:00:00 gvfs-goa-volume
2822 ?
2854 ?
              00:00:00 goa-daemon
2859 ?
              00:00:00 snapd-desktop-i
2861 ?
              00:00:00 gsd-printer
2875 ?
              00:00:00 goa-identity-se
              00:00:00 gvfs-afc-volume
2888 ?
2916 ?
              00:00:00 gvfsd-metadata
              00:00:00 evolution-calen
2927 ?
```

```
2934 ?
               00:00:05 ibus-engine-sim
2962 ?
               00:00:00 dconf-service
2975 ?
               00:00:00 evolution-addre
3006 ?
               00:00:00 gvfsd-trash
               00:00:00 xdg-desktop-por
3057 ?
3083 ?
               00:00:03 com.docker.back
               00:00:00 tracker-miner-f
3084 ?
3086 ?
               00:00:00 xdg-desktop-por
3090 ?
               00:00:00 gjs
3134 ?
               00:00:00 xdg-desktop-por
               00:00:02 fwupd
3174 ?
               00:02:50 com.docker.back
3194 ?
               00:00:00 com.docker.dev-
3237 ?
3248 ?
               00:00:00 com.docker.buil
3249 ?
               00:00:16 Docker Desktop
3292 ?
               00:00:00 Docker Desktop
3294 ?
               00:00:00 Docker Desktop
3298 ?
               00:00:00 Docker Desktop
3668 ?
               00:00:34 Xwayland
3741 ?
               00:00:00 gsd-xsettings
3826 ?
               00:00:00 gvfsd-recent
3833 ?
               00:00:00 ibus-x11
3878 ?
               00:00:06 mutter-x11-fram
3922 ?
               00:00:02 Docker Desktop
               00:00:02 Docker Desktop
3935 ?
4157 ?
               00:02:09 cursor
               00:00:23 Cursor-1.0.0-x8
4165 ?
               00:00:00 cursor
4188 ?
4189 ?
               00:00:00 cursor
4207 ?
               00:00:00 cursor
4245 ?
               00:00:00 chrome crashpad
4264 ?
               00:01:55 cursor
4270 ?
               00:00:05 cursor
4335 ?
               00:01:08 cursor
4393 ?
               00:02:37 cursor
4429 ?
               00:00:12 cursor
4430 ?
               00:00:08 cursor
4470 ?
               00:01:02 cursor
4557 ?
               00:01:30 cursor
4685 pts/1
               00:00:00 bash
5169 ?
               00:00:00 update-notifier
7051 ?
               00:00:00 flatpak-session
```

```
7056 ?
               00:00:00 p11-kit-server
 8814 ?
               00:00:00 psimon
 9243 ?
               00:00:01 kworker/5:0-mm_percpu_wq
 9698 ?
               00:10:59 cursor
 9776 ?
               00:00:00 gvfsd-network
9785 ?
               00:00:00 gvfsd-dnssd
 9942 ?
               00:03:20 cursor
9953 ?
               00:00:10 cursor
11422 ?
               00:00:01 kworker/1:1-mm_percpu_wq
11819 ?
               00:11:27 chrome
               00:00:00 cat
11826 ?
11827 ?
               00:00:00 cat
               00:00:00 chrome_crashpad
11829 ?
11831 ?
               00:00:00 chrome_crashpad
11837 ?
               00:00:00 chrome
               00:00:00 chrome
11838 ?
               00:00:01 chrome
11847 ?
11893 ?
               00:02:59 chrome
11905 ?
               00:01:20 chrome
               00:00:13 chrome
11944 ?
11963 ?
               00:02:36 chrome
12228 ?
               00:00:01 chrome
12302 ?
               00:00:53 chrome
12407 ?
               00:00:04 chrome
12542 ?
               00:04:24 chrome
12664 ?
               00:00:01 chrome
12674 ?
               00:00:01 chrome
               00:00:02 chrome
12721 ?
12888 ?
               00:00:14 chrome
13072 ?
               00:00:37 chrome
               00:00:31 chrome
18496 ?
18501 ?
               00:00:07 chrome
               00:16:34 chrome
19365 ?
22985 ?
               00:00:00 script
22986 pts/6
               00:00:00 bash
26135 ?
               00:06:46 chrome
27404 ?
               00:00:01 kworker/4:1-cgroup_destroy
42431 pts/4
               00:00:00 bash
44425 pts/5
               00:00:00 bash
44480 pts/7
               00:00:00 bash
46761 pts/4
               00:00:00 script
               00:00:00 bash
46762 pts/8
```

```
46865 pts/5
                00:00:00 script
46866 pts/9
                00:00:00 bash
46955 pts/7
                00:00:00 script
46956 pts/10
                00:00:00 bash
49342 pts/10
                00:00:00 su
49364 pts/10
                00:00:00 bash
50275 pts/10
                00:00:00 su
50324 pts/10
                00:00:00 bash
56677 ?
                00:00:02 chrome
68865 ?
                00:00:01 gnome-terminal-
                00:00:00 gnome-terminal
78183 ?
                00:00:00 gnome-terminal.
78186 ?
78192 pts/13
                00:00:00 bash
79083 pts/9
                00:00:00 su
79111 pts/9
                00:00:00 bash
79253 pts/8
                00:00:00 su
79294 pts/8
                00:00:00 bash
80331 pts/10
                00:00:00 su
80353 pts/10
                00:00:00 bash
109042 ?
                00:00:01 kworker/u25:1-events_unbound
110360 ?
                00:00:00 bwrap
110368 ?
                00:00:00 bwrap
                00:00:00 xdg-dbus-proxy
110369 ?
110372 ?
                00:00:00 bwrap
110373 ?
                00:01:42 Telegram
121295 ?
                00:00:30 chrome
131706 ?
                00:00:00 kworker/4:2-mm_percpu_wq
135624 ?
                00:00:00 sleep
                00:00:03 kworker/u24:2-phy0
142110 ?
144814 ?
                00:00:00 kworker/5:2-cgroup_destroy
                00:00:00 kworker/u25:4-flush-259:0
144815 ?
144816 ?
                00:00:00 kworker/u25:5-kvfree_rcu_reclaim
144842 ?
                00:00:00 kworker/u29:0-rtw_tx_wq
                00:00:00 kworker/3:3-mm percpu wq
144844 ?
                00:00:00 kworker/u26:1-kvfree rcu reclaim
144857 ?
144859 ?
                00:00:00 kworker/u27:2-hci0
                00:00:00 kworker/u26:3-ext4-rsv-conversion
145273 ?
145376 ?
                00:00:00 gjs
145420 ?
                00:00:00 chrome
                00:00:00 kworker/u28:1-ttm
145443 ?
                00:00:00 kworker/u29:2-ttm
145469 ?
                00:00:00 kworker/u29:5-ttm
145537 ?
```

```
145715 ?
               00:00:00 kworker/u26:4-events unbound
149698 ?
               00:00:00 kworker/u28:8-ttm
               00:00:00 kworker/u28:9-rtw tx wq
149699 ?
149700 ?
               00:00:00 kworker/u28:10-ttm
               00:00:01 kworker/u25:0-ext4-rsv-conversion
151997 ?
153872 ?
               00:00:00 kworker/2:3-events
               00:00:02 kworker/u24:0-gfx
155192 ?
               00:00:00 kworker/1:2-events
155946 ?
               00:00:00 kworker/u29:1-ttm
155957 ?
156718 ?
               00:00:00 obexd
156889 ?
               00:00:00 kworker/3:0-events
               00:00:01 kworker/u24:3-sdma0
157196 ?
               00:00:00 kworker/0:1-events
157352 ?
158655 ?
               00:00:04 chrome
158827 ?
               00:00:00 chrome
               00:02:33 chrome
158894 ?
               00:00:00 kworker/u25:2-ext4-rsv-conversion
159109 ?
159679 ?
               00:00:00 kworker/u26:0-kvfree rcu reclaim
160952 pts/8
               00:00:00 sudo
               00:00:00 sudo
161030 pts/11
161031 pts/11
               00:00:00 su
161032 pts/11
               00:00:00 bash
               00:00:00 kworker/4:0
161558 ?
161559 ?
               00:00:00 kworker/4:3
               00:00:00 chrome
161603 ?
161822 ?
               00:00:00 chrome
               00:00:00 chrome
161831 ?
               00:00:00 chrome
161860 ?
161928 ?
               00:00:00 sh
161929 ?
               00:00:00 cpuUsage.sh
161940 ?
               00:00:00 sleep
161941 pts/11
               00:00:00 sudo
161942 pts/12
               00:00:00 sudo
161943 pts/12
               00:00:00 ps
```

1.3 Полученные файлы (фрагменты/полный вывод)

1.3.1 Файлы записи терминала

```
Script started on 2025-10-01 15:35:22+03:00 [TERM="xterm-256color
  " TTY="/dev/pts/4" COLUMNS="48" LINES="20"]
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ add[K[K[K[7]
  msudo adduser ivanov1[27m
[?20041
[sudo] password for leonidas:
info: Adding user `ivanov1' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `ivanov1' (1001) ...
info: Adding new user `ivanov1' (1001) with group `ivanov1 (1001)
  1 . . .
warn: The home directory `/home/ivanov1' already exists. Not
  touching this directory.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for ivanov1
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
info: Adding new user `ivanov1' to supplemental / extra groups `
info: Adding user `ivanov1' to group `users' ...
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ sudo adduser
   ivanov1[K2
「?20041
info: Adding user `ivanov2' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `ivanov2' (1002) ...
info: Adding new user `ivanov2' (1002) with group `ivanov2 (1002)
warn: The home directory `/home/ivanov2' already exists.
  touching this directory.
```

```
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for ivanov2
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
info: Adding new user `ivanov2' to supplemental / extra groups `
  users' ...
info: Adding user `ivanov2' to group `users' ...
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
   os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ sudo adduser
   ivanov2 [K3
[?2004]
info: Adding user `ivanov3' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `ivanov3' (1003) ...
info: Adding new user `ivanov3' (1003) with group `ivanov3 (1003)
warn: The home directory `/home/ivanov3' already exists.
  touching this directory.
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for ivanov3
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
info: Adding new user `ivanov3' to supplemental / extra groups `
  users' ...
info: Adding user `ivanov3' to group `users' ...
```

```
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
   :[01;34m~/projects/itmo/os linux course/Lab4[00m$ su
Γ?20041
Password:
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ su ivanov1
[?20041
Password:
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   passwd
[?20041
Changing password for ivanov1.
Current password:
New password:
Retype new password:
passwd: password updated successfully
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
    [7mgroups ivanov1[27mgroups ivanov1
[?20041
ivanov1 : ivanov1 users Students
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
   [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ][39;49m(B[m[H(B[0;7m GNU nano 7.2
                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                          (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                           (B[0;7m^R(B[m Read File(B[0;7m^{\mbox{$\setminus$}}(B[m
  Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[K[1;32H(B[0;7m*[47G(B[m
[2d10:00 Maths
[4d11:40 Physics
```

```
[6d13:30 Economics
 [8d15:20 Programming[?121[?25h[?251[19;13H(B[0;7mM-D(B[m DOS Form
                  (B[0;7mM-A(B[m Append (B[0;7mM-B(B[m Backup F[20;2H(B[0;7mC(B[0;7mC)])])))))))
                                                                                              (B[0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend (B
                   [m Cancel
                   [0;7m^T(B[m Browse
 [18d(B[0;7mFile Name to Write: schedule
                                                                                                                                                                                                                                                                                                                                                                                                        [18;29
                  H(B[m[?121[?25h[?251
      (B[0;1m[37m[41m[ Error writing schedule: Permission denied
                        [39;49m(B[m[K[19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Write Out(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[1;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7
                        Where Is (B[0;7m^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit])])]))))
                         [0;7m^R(B[m Read File(B[0;7m^{\label{eq:beller}]}(B[m Replace (B[0;7m^U(B[m Replace (B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(
                        Paste [K[?121[?25h[8;18H[?251
[18d(B[0;7mSave modified buffer?
                                                                                                                                                                                                                                                                                                                                                                                                        [19;1H
                       Y(B[m Yes[K
[20d(B[0;7m N(B[m No
                                                                                                                                                                                                        (B[0;7m^C(B[m Cancel[K[18;23H[?12]
                   [?25h [?251
[19d(B[0;7m^G(B[m Help (B[0;7mM-D(B[m DOS Form(B[0;7mM-A(B[m DoS Form(B[0;7mM-A(B[0;7mM-A(B[m DoS Form(B[0;7mM-A(B[m DoS Form(B[0;7mM-A(B[0;7m)A[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m)A(B[0;7m
                  Append (B[0;7mM-B(B[m Backup F[20;1H(B[0;7m^C(B[m Cancel))])))))
                  [0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend (B[0;7m^T(B[m
[18d(B[0;7mFile Name to Write: schedule(B[m[?121[?25h[?251[?12]
                    [?25h[?251
      (B[0;1m[37m[41m[ Error writing schedule: Permission denied
                        [39;49m(B[m[K[19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Write Out(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0
                        Where Is (B[0;7m^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit)])])])))
                         [0;7m^R(B[m Read File(B[0;7m^{\label{eq:beller}]}(B[m Replace (B[0;7m^U(B[m Replace (B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(
                        Paste [K[?121[?25h[8;18H[?251
 [18d(B[0;7mSave modified buffer?
                                                                                                                                                                                                                                                                                                                                                                                                        [19;1H
                       Y(B[m Yes[K
[20d(B[0;7m N(B[m No
                                                                                                                                                                                                      (B[0;7m^C(B[m Cancel[K[18;23H[?12]
                   [?25h[?251[17G[1K (B[0;7m[ Cancelled ](B[m[K
[19d(B[0;7m^G(B[m Help (B[0;7m^O(B[m Write Out(B[0;7m^W(B[m
                  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                                                                                                                                      Replace (B[0;7m^U(B[m Paste[?121[?25h[8;18H[?251
[18d(B[0;7mline 7/8 (87%), col 18/18 (100%), char 62/63 (9[19;1H
                  (B[m[?121[?25h[8;18H[?251
[18d(B[0;7mSave modified buffer?
                                                                                                                                                                                                                                                                                                                                                                                                        [19;1H
                       Y(B[m Yes[K
                                                                                                                                                         (B[0;7m^C(B[m Cancel[K[18;23H[?121
 [20d(B[0;7m N(B[m No
                   [?25h[?251
[J[20d[?121[?25h[20;1H[?10491[23;0;0t
```

```
[?11>[?20041[?2004h]0;ivanov1@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov1@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os linux course/Lab4[00m$ sudo nano sch[K[K[K[K[K[K[K[K[K[K[K[K]
  K[Knano schedulesudo
[?20041
[sudo] password for ivanov1:
Sorry, try again.
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   sudo nano schedule
[?20041
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
[?2004h]0;ivanov1@leonidas-AX154OSD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   sudo nano schedule
[?20041
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   cd [K[K[Ksu[Kource .[K/home/.bashr
P~[C/.bashrc
[?20041
[?2004h]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   source ~/.bashrc udo nano schedule
[?20041
[sudo] password for ivanov1:
```

```
ivanov1 is not in the sudoers file.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   sudo nano schedule[1P[1P[1P[1P[1P
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]]
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                      schedule
                   [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                          (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m^K(B[m Cut
[20d(B[0;7m^X(B[m Exit
                          (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
  Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov1@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os_linux_course/Lab4[01;32mivanov1@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os linux course/Lab4[00m$ sudo su
[?20041
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   sudo su
[?20041
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ~/.bashrc udo nano schedule[1Pource ~/.bashrc
[?20041
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   source ~/.bashrc [10Pudo su
[?20041
[sudo] password for ivanov1:
ivanov1 is not in the sudoers file.
```

```
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   groups
[?20041
ivanov1 users
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   exit
「?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ su ic[
  Kvanov1
[?20041
Password:
To run a command as administrator (user "root"), use "sudo <
  command>".
See "man sudo root" for details.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   exitgroups
[?20041
ivanov1 sudo users Students
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
   :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   nano impot[Krtant
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
   [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ][39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                        important
                   [1;47H(B[m])]
[19d(B[0;7m^G(B[m Help
                           (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m^K(B[m Cut
[20d(B[0;7m^X(B[m Exit
                           (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
  Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[K[1;33H(B[0;7m*[47G(B[m
```

```
[2dAll students need to be in recreation area at 1(B[0;7m>[4;1H(B
       [m[?121[?25h[?251[19;13H(B[0;7mM-D(B[m DOS Form(B[0;7mM-A(B[m
      Append (B[0;7mM-B(B[m Backup F[20;2H(B[0;7mC(B[m Cancel
       [0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend (B[0;7m^T(B[m
      Browse
[18d(B[0;7mFile Name to Write: important
                                                                                                                                             [18;30
      H(B[m[?121[?25h[?251
  (B[0;1m[37m[41m[ Error writing important: Permission denied
        [39;49m(B[m[K[19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Write Out(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]
        Where Is (B[0;7m^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit])])]))))
         [0;7m^R(B[m Read File(B[0;7m^{\mbox{$\mbox{$\mbox{$}}}[m Replace]$})]
                                                                                                                  (B[0;7m^U)B[m]
         Paste [K[?121[?25h]
[4d[?251[18d(B[0;7mSave modified buffer?
                                                                     [19:1H Y(B[m Yes[K
[20d(B[0;7m N(B[m No
                                                                          (B[0;7m^C(B[m Cancel[K[18;23H[?12]
       [?25h[?251
[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov1@leonidas-AX1540SD: /home/leonidas/
      projects/itmo/os linux course/Lab4[01;32mivanov1@leonidas-
      AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
      os linux course/Lab4[00m$ exit
[?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
      os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
      :[01;34m~/projects/itmo/os linux course/Lab4[00m$ su ivanov1
[?20041
Password:
To run a command as administrator (user "root"), use "sudo <
      command>".
See "man sudo_root" for details.
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
      /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
      :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
        рs
[?20041
         PID TTY
                                                 TIME CMD
    79294 pts/8
                                        00:00:00 bash
  154095 pts/8
                                        00:00:00 ps
```

```
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ſΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ΓK
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
ΓΑΓΚ
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
[A [K
```

```
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ſΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
ΓΑΓΚ
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
[A [K
```

```
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ſΚ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ΓK
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
[A[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
ΓΑΓΚ
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[Κ
[A [K
```

```
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
]0;ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
   :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
    [K[Kps
[?20041
   PID TTY
                     TIME CMD
 79294 pts/8
                 00:00:00 bash
 154624 pts/8
                 00:00:00 ps
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
   :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ps -a
[?20041
   PID TTY
                     TIME CMD
   2221 tty2
                 00:00:00 gnome-session-b
 46761 pts/4
                 00:00:00 script
 46865 pts/5
                 00:00:00 script
 46955 pts/7
                 00:00:00 script
 49342 pts/10
                 00:00:00 su
 49364 pts/10
                 00:00:00 bash
  50275 pts/10
                 00:00:00 su
  50324 pts/10
                 00:00:00 bash
```

```
79083 pts/9
                 00:00:00 su
 79111 pts/9
                 00:00:00 bash
 79253 pts/8
                 00:00:00 su
 79294 pts/8
                 00:00:00 bash
 80331 pts/10
                 00:00:00 su
 80353 pts/10
                 00:00:00 bash
154820 pts/8
                 00:00:00 ps
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ps -d
[?20041
   PID TTY
                     TIME CMD
     2 ?
                 00:00:00 kthreadd
     3 ?
                 00:00:00 pool_workqueue_release
     4 ?
                 00:00:00 kworker/R-rcu gp
     5 ?
                 00:00:00 kworker/R-sync wq
     6 ?
                 00:00:00 kworker/R-kvfree rcu reclaim
     7 ?
                 00:00:00 kworker/R-slub flushwq
     8 ?
                 00:00:00 kworker/R-netns
    11 ?
                 00:00:00 kworker/0:0H-events highpri
    13 ?
                 00:00:00 kworker/R-mm_percpu_wq
    14 ?
                 00:00:00 rcu_tasks_kthread
    15 ?
                 00:00:00 rcu_tasks_rude_kthread
    16 ?
                 00:00:00 rcu_tasks_trace_kthread
    17 ?
                 00:00:00 ksoftirqd/0
    18 ?
                 00:00:11 rcu preempt
    19 ?
                 00:00:00 rcu_exp_par_gp_kthread_worker/0
                 00:00:00 rcu exp gp kthread worker
    20 ?
    21 ?
                 00:00:00 migration/0
                 00:00:00 idle_inject/0
    22 ?
    23 ?
                 00:00:00 cpuhp/0
                 00:00:00 cpuhp/1
    24 ?
                 00:00:00 idle inject/1
    25 ?
                 00:00:00 migration/1
    26 ?
                 00:00:00 ksoftirqd/1
    27 ?
    29 ?
                 00:00:00 kworker/1:0H-events_highpri
    30 ?
                 00:00:00 cpuhp/2
    31 ?
                 00:00:00 idle_inject/2
    32 ?
                 00:00:00 migration/2
    33 ?
                 00:00:00 ksoftirqd/2
                 00:00:00 kworker/2:0H-events_highpri
    35 ?
```

```
36 ?
            00:00:00 cpuhp/3
37 ?
            00:00:00 idle inject/3
            00:00:00 migration/3
38 ?
39 ?
            00:00:00 ksoftirqd/3
            00:00:00 kworker/3:0H-events highpri
41 ?
42 ?
            00:00:00 cpuhp/4
43 ?
            00:00:00 idle inject/4
44 ?
            00:00:00 migration/4
45 ?
            00:00:00 ksoftirqd/4
47 ?
            00:00:00 kworker/4:0H-events highpri
48 ?
            00:00:00 cpuhp/5
49 ?
            00:00:00 idle inject/5
50 ?
            00:00:00 migration/5
51 ?
            00:00:00 ksoftirqd/5
53 ?
            00:00:00 kworker/5:0H-events_highpri
56 ?
            00:00:00 kdevtmpfs
57 ?
            00:00:00 kworker/R-inet frag wq
            00:00:00 kauditd
58 ?
59 ?
            00:00:00 khungtaskd
60 ?
            00:00:00 oom reaper
63 ?
            00:00:00 kworker/R-writeback
64 ?
            00:00:01 kcompactd0
65 ?
            00:00:00 ksmd
66 ?
            00:00:00 khugepaged
67 ?
            00:00:00 kworker/R-kintegrityd
            00:00:00 kworker/R-kblockd
68 ?
            00:00:00 kworker/R-blkcg punt bio
69 ?
            00:00:02 irq/9-acpi
70 ?
            00:00:00 kworker/R-tpm dev wq
72 ?
73 ?
            00:00:00 kworker/R-ata sff
            00:00:00 kworker/R-md
75 ?
76 ?
            00:00:00 kworker/R-md_bitmap
77 ?
            00:00:00 kworker/R-edac-poller
79 ?
            00:00:00 kworker/R-devfreq wq
81 ?
            00:00:00 watchdogd
82 ?
            00:00:00 kworker/4:1H-kblockd
            00:00:00 irq/25-AMD-Vi0-Evt
83 ?
84 ?
            00:00:00 irg/26-AMD-Vi0-PPR
85 ?
            00:00:00 irq/27-AMD-Vi0-GA
87 ?
            00:00:00 kswapd0
88 ?
            00:00:00 ecryptfs-kthread
            00:00:00 kworker/R-kthrotld
89 ?
```

```
90 ?
              00:00:00 kworker/u27:0-hci0
              00:00:00 kworker/R-acpi_thermal_pm
  92 ?
              00:00:00 kworker/R-mld
  97 ?
  98 ?
              00:00:00 kworker/R-ipv6 addrconf
              00:00:00 kworker/3:1H-kblockd
  99 ?
 107 ?
              00:00:00 kworker/R-kstrp
              00:00:01 kworker/2:1-events
 108 ?
              00:00:00 kworker/R-charger_manager
 124 ?
              00:00:00 kworker/0:1H-kblockd
 125 ?
 183 ?
              00:00:00 kworker/5:1H-kblockd
 184 ?
              00:00:00 kworker/2:1H-kblockd
              00:00:00 kworker/1:1H-kblockd
 185 ?
              00:00:01 kworker/0:2-events
205 ?
 209 ?
              00:00:00 kworker/R-nvme-wq
210 ?
              00:00:00 kworker/R-nvme-reset-wq
              00:00:00 kworker/R-nvme-delete-wq
211 ?
              00:00:00 irg/48-PNP0C50:09
212 ?
              00:00:00 kworker/R-nvme-auth-wq
213 ?
214 ?
              00:00:00 scsi eh 0
215 ?
              00:00:00 kworker/R-scsi_tmf_0
352 ?
              00:00:03 jbd2/nvme0n1p6-8
353 ?
              00:00:00 kworker/R-ext4-rsv-conversion
              00:00:00 psimon
 508 ?
              00:00:00 kworker/R-cfg80211
674 ?
747 ?
              00:00:00 kworker/R-cryptd
              00:01:34 irq/65-rtw88 pci
798 ?
              00:00:00 kworker/R-amdgpu-reset-dev
1048 ?
              00:00:00 kworker/R-ttm
1079 ?
              00:00:00 avahi-daemon
1250 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1256 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1257 ?
1258 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1259 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
              00:00:00 kworker/R-dm_vblank_control_workqueue
1260 ?
              00:00:00 lttng-runas
1269 ?
1311 ?
              00:00:00 card1-crtc0
1312 ?
              00:00:00 card1-crtc1
1313 ?
              00:00:00 card1-crtc2
1314 ?
              00:00:00 card1-crtc3
              00:00:00 kworker/R-gfx
1319 ?
              00:00:00 kworker/R-comp 1.0.0
1320 ?
              00:00:00 kworker/R-comp 1.1.0
1321 ?
```

```
1322 ?
              00:00:00 kworker/R-comp 1.2.0
1323 ?
              00:00:00 kworker/R-comp 1.3.0
              00:00:00 kworker/R-comp 1.0.1
1324 ?
1325 ?
              00:00:00 kworker/R-comp 1.1.1
              00:00:00 kworker/R-comp 1.2.1
1326 ?
1327 ?
              00:00:00 kworker/R-comp 1.3.1
              00:00:00 kworker/R-sdma0
1328 ?
1329 ?
              00:00:00 kworker/R-vcn dec
1330 ?
              00:00:00 kworker/R-vcn_enc0
1331 ?
              00:00:00 kworker/R-vcn enc1
1332 ?
              00:00:00 kworker/R-jpeg dec
              00:00:00 gdm-session-wor
1982 ?
2030 ?
              00:00:00 (sd-pam)
2059 ?
              00:00:00 wb [LEONIDAS-AX1
2138 ?
              00:00:00 cupsd
              00:00:00 cups-proxyd
2139 ?
              00:00:00 run-cups-browse
2192 ?
2221 tty2
              00:00:00 gnome-session-b
2338 ?
              00:00:00 gvfsd-fuse
2361 ?
              00:00:00 krfcommd
2386 ?
              00:00:00 at-spi-bus-laun
2397 ?
              00:00:00 dbus-daemon
2449 ?
              00:00:00 at-spi2-registr
2503 ?
              00:00:00 gnome-shell-cal
              00:00:00 gjs
2521 ?
2593 ?
              00:00:00 gsd-disk-utilit
2601 ?
              00:00:00 evolution-alarm
2616 ?
              00:00:47 gnome-software
2721 ?
              00:00:00 ibus-dconf
2733 ?
              00:00:05 ibus-extension-
2742 ?
              00:00:02 ibus-portal
2854 ?
              00:00:00 goa-daemon
2859 ?
              00:00:00 snapd-desktop-i
2861 ?
              00:00:00 gsd-printer
              00:00:00 goa-identity-se
2875 ?
2934 ?
              00:00:04 ibus-engine-sim
3006 ?
              00:00:00 gvfsd-trash
3090 ?
              00:00:00 gjs
3194 ?
              00:02:44 com.docker.back
              00:00:00 com.docker.dev-
3237 ?
3248 ?
              00:00:00 com.docker.buil
              00:00:15 Docker Desktop
3249 ?
```

```
3292 ?
               00:00:00 Docker Desktop
               00:00:00 Docker Desktop
3294 ?
3298 ?
               00:00:00 Docker Desktop
3668 ?
               00:00:32 Xwayland
               00:00:00 gvfsd-recent
3826 ?
3833 ?
               00:00:00 ibus-x11
3878 ?
               00:00:06 mutter-x11-fram
3922 ?
               00:00:02 Docker Desktop
3935 ?
               00:00:02 Docker Desktop
4157 ?
               00:02:03 cursor
4188 ?
               00:00:00 cursor
               00:00:00 cursor
4189 ?
4207 ?
               00:00:00 cursor
4245 ?
               00:00:00 chrome_crashpad
4264 ?
               00:01:50 cursor
               00:00:05 cursor
4270 ?
4335 ?
               00:01:05 cursor
4393 ?
               00:02:30 cursor
4429 ?
               00:00:12 cursor
4430 ?
               00:00:08 cursor
4470 ?
               00:01:00 cursor
4557 ?
               00:01:24 cursor
5169 ?
               00:00:00 update-notifier
8814 ?
               00:00:00 psimon
9243 ?
               00:00:01 kworker/5:0-events
9698 ?
               00:10:23 cursor
9776 ?
               00:00:00 gvfsd-network
               00:00:00 gvfsd-dnssd
9785 ?
9942 ?
               00:03:11 cursor
9953 ?
               00:00:09 cursor
11422 ?
               00:00:01 kworker/1:1-events
11819 ?
               00:10:05 chrome
               00:00:00 cat
11826 ?
11827 ?
               00:00:00 cat
               00:00:00 chrome_crashpad
11829 ?
11831 ?
               00:00:00 chrome crashpad
               00:00:00 chrome
11837 ?
11838 ?
               00:00:00 chrome
11847 ?
               00:00:01 chrome
               00:02:10 chrome
11893 ?
11905 ?
               00:01:14 chrome
11944 ?
               00:00:13 chrome
```

```
11963 ?
                00:02:07 chrome
12228 ?
                00:00:01 chrome
                00:00:51 chrome
12302 ?
12407 ?
                00:00:04 chrome
                00:04:24 chrome
12542 ?
                00:00:01 chrome
12664 ?
12674 ?
                00:00:01 chrome
12721 ?
                00:00:02 chrome
12888 ?
                00:00:14 chrome
13072 ?
                00:00:36 chrome
                00:00:27 chrome
18496 ?
                00:00:06 chrome
18501 ?
19365 ?
                00:16:13 chrome
22985 ?
                00:00:00 script
26135 ?
                00:06:29 chrome
                00:00:01 kworker/4:1-cgroup_destroy
27404 ?
46761 pts/4
                00:00:00 script
46865 pts/5
                00:00:00 script
46955 pts/7
                00:00:00 script
49342 pts/10
                00:00:00 su
49364 pts/10
                00:00:00 bash
50275 pts/10
                00:00:00 su
50324 pts/10
                00:00:00 bash
56677 ?
                00:00:01 chrome
78183 ?
                00:00:00 gnome-terminal
78186 ?
                00:00:00 gnome-terminal.
79083 pts/9
                00:00:00 su
79111 pts/9
                00:00:00 bash
79253 pts/8
                00:00:00 su
79294 pts/8
                00:00:00 bash
80331 pts/10
                00:00:00 su
80353 pts/10
                00:00:00 bash
                00:00:00 kworker/1:2-events
99103 ?
                00:00:01 kworker/u25:1-writeback
109042 ?
110360 ?
                00:00:00 bwrap
110368 ?
                00:00:00 bwrap
110369 ?
                00:00:00 xdg-dbus-proxy
110372 ?
                00:00:00 bwrap
110373 ?
                00:01:30 Telegram
                00:00:00 kworker/3:2-cgroup_destroy
110777 ?
121295 ?
                00:00:29 chrome
                00:00:00 kworker/4:2-events
131706 ?
```

```
135624 ?
                 00:00:00 sleep
                 00:00:00 kworker/2:0-events
140132 ?
142110 ?
                 00:00:01 kworker/u24:2-phy0
144814 ?
                 00:00:00 kworker/5:2-cgroup destroy
                 00:00:00 kworker/u25:4-flush-259:0
144815 ?
144816 ?
                 00:00:00 kworker/u25:5-events unbound
                 00:00:01 kworker/u25:10-flush-259:0
144821 ?
                 00:00:00 kworker/u26:0-flush-259:0
144841 ?
                 00:00:00 kworker/u29:0-ttm
144842 ?
                 00:00:00 kworker/3:3-mm_percpu_wq
144844 ?
                 00:00:00 kworker/u26:1-flush-259:0
144857 ?
                 00:00:00 kworker/u27:2-hci0
144859 ?
                 00:00:00 kworker/0:4-events
145075 ?
                 00:00:00 kworker/u26:3-flush-259:0
145273 ?
145376 ?
                 00:00:00 gjs
145420 ?
                 00:00:00 chrome
                 00:00:00 kworker/u28:1-ttm
145443 ?
                 00:00:00 kworker/u29:2-rtw_tx_wq
145469 ?
145535 ?
                 00:00:00 kworker/u29:3-ttm
                 00:00:00 kworker/u29:5-ttm
145537 ?
145538 ?
                 00:00:00 kworker/u29:6-ttm
145715 ?
                 00:00:00 kworker/u26:4-events_unbound
                 00:00:00 kworker/u24:0-gfx
148729 ?
                 00:00:00 kworker/u24:1-sdma0
148818 ?
                 00:00:00 kworker/u28:8-rtw_tx_wq
149698 ?
149699 ?
                 00:00:00 kworker/u28:9-rtw tx wq
                 00:00:00 kworker/u28:10-ttm
149700 ?
                 00:00:00 kworker/u28:11-ttm
149701 ?
                 00:00:00 kworker/1:0
150955 ?
150978 ?
                 00:00:00 kworker/2:2-cgroup_destroy
                 00:00:00 kworker/u26:2-flush-259:0
151346 ?
                 00:00:00 kworker/0:0-events
151849 ?
                 00:00:00 kworker/u25:0-flush-259:0
151997 ?
153872 ?
                 00:00:00 kworker/2:3-cgroup destroy
154401 ?
                 00:00:00 chrome
                 00:00:00 chrome
154410 ?
154440 ?
                 00:00:00 chrome
154970 ?
                 00:00:00 chrome
155044 pts/8
                 00:00:00 ps
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
```

```
:[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ps -d[Ke
[?20041
   PID TTY
                     TIME CMD
     1 ?
                 00:00:04 systemd
     2 ?
                 00:00:00 kthreadd
     3 ?
                 00:00:00 pool workqueue release
     4 ?
                 00:00:00 kworker/R-rcu_gp
     5 ?
                 00:00:00 kworker/R-sync wq
     6 ?
                 00:00:00 kworker/R-kvfree rcu reclaim
     7 ?
                 00:00:00 kworker/R-slub flushwq
     8 ?
                 00:00:00 kworker/R-netns
                 00:00:00 kworker/0:0H-events highpri
    11 ?
    13 ?
                 00:00:00 kworker/R-mm percpu wq
    14 ?
                 00:00:00 rcu_tasks_kthread
    15 ?
                 00:00:00 rcu_tasks_rude_kthread
                 00:00:00 rcu_tasks_trace_kthread
    16 ?
                 00:00:00 ksoftirqd/0
    17 ?
    18 ?
                 00:00:11 rcu preempt
    19 ?
                 00:00:00 rcu_exp_par_gp_kthread_worker/0
    20 ?
                 00:00:00 rcu exp gp kthread worker
    21 ?
                 00:00:00 migration/0
    22 ?
                 00:00:00 idle_inject/0
    23 ?
                 00:00:00 cpuhp/0
    24 ?
                 00:00:00 cpuhp/1
    25 ?
                 00:00:00 idle inject/1
                 00:00:00 migration/1
    26 ?
    27 ?
                 00:00:00 ksoftirqd/1
                 00:00:00 kworker/1:0H-events highpri
    29 ?
    30 ?
                 00:00:00 cpuhp/2
                 00:00:00 idle inject/2
    31 ?
    32 ?
                 00:00:00 migration/2
    33 ?
                 00:00:00 ksoftirqd/2
    35 ?
                 00:00:00 kworker/2:0H-events highpri
                 00:00:00 cpuhp/3
    36 ?
    37 ?
                 00:00:00 idle inject/3
                 00:00:00 migration/3
    38 ?
    39 ?
                 00:00:00 ksoftirqd/3
    41 ?
                 00:00:00 kworker/3:0H-events_highpri
    42 ?
                 00:00:00 cpuhp/4
                 00:00:00 idle_inject/4
    43 ?
                 00:00:00 migration/4
    44 ?
```

```
45 ?
             00:00:00 ksoftirqd/4
47 ?
             00:00:00 kworker/4:0H-events highpri
48 ?
             00:00:00 cpuhp/5
49 ?
             00:00:00 idle inject/5
             00:00:00 migration/5
50 ?
51 ?
             00:00:00 ksoftirqd/5
53 ?
             00:00:00 kworker/5:0H-events highpri
             00:00:00 kdevtmpfs
56 ?
57 ?
             00:00:00 kworker/R-inet_frag_wq
58 ?
             00:00:00 kauditd
59 ?
             00:00:00 khungtaskd
             00:00:00 oom reaper
60 ?
             00:00:00 kworker/R-writeback
63 ?
64 ?
             00:00:01 kcompactd0
65 ?
             00:00:00 ksmd
66 ?
             00:00:00 khugepaged
67 ?
             00:00:00 kworker/R-kintegrityd
             00:00:00 kworker/R-kblockd
68 ?
             00:00:00 kworker/R-blkcg punt bio
69 ?
70 ?
             00:00:02 irq/9-acpi
72 ?
             00:00:00 kworker/R-tpm dev wq
73 ?
             00:00:00 kworker/R-ata_sff
             00:00:00 kworker/R-md
75 ?
76 ?
             00:00:00 kworker/R-md_bitmap
77 ?
             00:00:00 kworker/R-edac-poller
79 ?
             00:00:00 kworker/R-devfreq wq
81 ?
             00:00:00 watchdogd
82 ?
             00:00:00 kworker/4:1H-kblockd
             00:00:00 irg/25-AMD-Vi0-Evt
83 ?
84 ?
             00:00:00 irq/26-AMD-Vi0-PPR
             00:00:00 \text{ irg}/27-AMD-Vi0-GA
85 ?
87 ?
             00:00:00 kswapd0
88 ?
             00:00:00 ecryptfs-kthread
             00:00:00 kworker/R-kthrotld
89 ?
90 ?
             00:00:00 kworker/u27:0-hci0
92 ?
             00:00:00 kworker/R-acpi thermal pm
             00:00:00 kworker/R-mld
97 ?
98 ?
             00:00:00 kworker/R-ipv6_addrconf
99 ?
             00:00:00 kworker/3:1H-kblockd
107 ?
             00:00:00 kworker/R-kstrp
108 ?
             00:00:01 kworker/2:1-mm_percpu_wq
             00:00:00 kworker/R-charger_manager
124 ?
```

```
125 ?
              00:00:00 kworker/0:1H-kblockd
              00:00:00 kworker/5:1H-kblockd
 183 ?
              00:00:00 kworker/2:1H-kblockd
 184 ?
 185 ?
              00:00:00 kworker/1:1H-kblockd
              00:00:01 kworker/0:2-events
 205 ?
 209 ?
              00:00:00 kworker/R-nvme-wq
210 ?
              00:00:00 kworker/R-nvme-reset-wq
 211 ?
              00:00:00 kworker/R-nvme-delete-wq
              00:00:00 irq/48-PNP0C50:09
212 ?
213 ?
              00:00:00 kworker/R-nvme-auth-wq
214 ?
              00:00:00 scsi eh 0
              00:00:00 kworker/R-scsi tmf 0
215 ?
              00:00:03 jbd2/nvme0n1p6-8
352 ?
 353 ?
              00:00:00 kworker/R-ext4-rsv-conversion
406 ?
              00:00:04 systemd-journal
              00:00:00 systemd-udevd
 505 ?
 508 ?
              00:00:00 psimon
              00:00:00 kworker/R-cfg80211
 674 ?
747 ?
              00:00:00 kworker/R-cryptd
              00:01:35 irq/65-rtw88_pci
798 ?
              00:00:04 systemd-oomd
940 ?
950 ?
              00:00:03 systemd-resolve
951 ?
              00:00:00 systemd-timesyn
              00:00:00 kworker/R-amdgpu-reset-dev
1048 ?
1079 ?
              00:00:00 kworker/R-ttm
1186 ?
              00:00:00 avahi-daemon
              00:00:00 bluetoothd
1187 ?
              00:00:04 dbus-daemon
1188 ?
              00:00:00 gnome-remote-de
1192 ?
1197 ?
              00:00:00 lttng-sessiond
1211 ?
              00:00:00 polkitd
1217 ?
              00:00:00 power-profiles-
              00:00:09 snapd
1223 ?
1226 ?
              00:00:00 accounts-daemon
1230 ?
              00:00:00 cron
1231 ?
              00:00:00 switcheroo-cont
1233 ?
              00:00:00 systemd-logind
1237 ?
              00:00:01 udisksd
1250 ?
              00:00:00 avahi-daemon
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1256 ?
1257 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1258 ?
```

```
1259 ?
              00:00:00 kworker/R-amdgpu_dm_hpd_rx_offload_wq
1260 ?
              00:00:00 kworker/R-dm vblank control workqueue
1261 ?
              00:00:00 rsyslogd
1269 ?
              00:00:00 lttng-runas
              00:00:00 card1-crtc0
1311 ?
1312 ?
              00:00:00 card1-crtc1
1313 ?
              00:00:00 card1-crtc2
1314 ?
              00:00:00 card1-crtc3
1319 ?
              00:00:00 kworker/R-gfx
1320 ?
              00:00:00 kworker/R-comp 1.0.0
1321 ?
              00:00:00 kworker/R-comp 1.1.0
1322 ?
              00:00:00 kworker/R-comp 1.2.0
1323 ?
              00:00:00 kworker/R-comp 1.3.0
1324 ?
              00:00:00 kworker/R-comp 1.0.1
1325 ?
              00:00:00 kworker/R-comp_1.1.1
1326 ?
              00:00:00 kworker/R-comp 1.2.1
1327 ?
              00:00:00 kworker/R-comp_1.3.1
              00:00:00 kworker/R-sdma0
1328 ?
1329 ?
              00:00:00 kworker/R-vcn dec
1330 ?
              00:00:00 kworker/R-vcn enc0
1331 ?
              00:00:00 kworker/R-vcn enc1
1332 ?
              00:00:00 kworker/R-jpeg_dec
1689 ?
              00:00:03 NetworkManager
1690 ?
              00:00:00 wpa_supplicant
1739 ?
              00:00:00 ModemManager
1853 ?
              00:00:00 cupsd
1855 ?
              00:00:00 run-cups-browse
1856 ?
              00:00:00 run-cupsd
              00:00:00 unattended-upgr
1858 ?
1866 ?
              00:00:05 containerd
1961 ?
              00:00:00 gdm3
1982 ?
              00:00:00 gdm-session-wor
              00:00:00 winbindd
1996 ?
2017 ?
              00:00:02 systemd
2030 ?
              00:00:00 (sd-pam)
2059 ?
              00:00:00 wb [LEONIDAS-AX1
              00:00:00 cupsd
2138 ?
2139 ?
              00:00:00 cups-proxyd
2145 ?
              00:00:33 pipewire
              00:00:00 pipewire
2146 ?
2148 ?
              00:00:01 wireplumber
2149 ?
              00:00:40 pipewire-pulse
```

```
2150 ?
              00:00:00 gnome-keyring-d
2175 ?
              00:00:02 dbus-daemon
              00:00:00 rtkit-daemon
2188 ?
2189 ?
              00:00:00 xdg-document-po
2192 ?
              00:00:00 run-cups-browse
2205 ?
              00:00:00 xdg-permission-
2210 tty2
              00:00:00 gdm-wayland-ses
2221 tty2
              00:00:00 gnome-session-b
2225 ?
              00:00:00 fusermount3
2307 ?
              00:00:00 gcr-ssh-agent
2309 ?
              00:00:00 gnome-session-c
2329 ?
              00:00:00 gvfsd
2338 ?
              00:00:00 gvfsd-fuse
2341 ?
              00:00:00 gnome-session-b
2361 ?
              00:00:00 krfcommd
2384 ?
              00:05:26 gnome-shell
2386 ?
              00:00:00 at-spi-bus-laun
              00:00:00 dbus-daemon
2397 ?
2449 ?
              00:00:00 at-spi2-registr
2450 ?
              00:00:00 colord
              00:00:00 cups-browsed
2477 ?
2479 ?
              00:00:00 kerneloops
2482 ?
              00:00:00 kerneloops
2503 ?
              00:00:00 gnome-shell-cal
2519 ?
              00:00:00 evolution-sourc
2521 ?
              00:00:00 gjs
2523 ?
              00:00:03 upowerd
2535 ?
              00:00:17 ibus-daemon
2539 ?
              00:00:00 gsd-a11y-settin
2541 ?
              00:00:00 gsd-color
2546 ?
              00:00:00 gsd-datetime
2549 ?
              00:00:00 gsd-housekeepin
2551 ?
              00:00:00 gsd-keyboard
2552 ?
              00:00:00 gsd-media-keys
2560 ?
              00:00:00 gsd-power
2562 ?
              00:00:00 gsd-print-notif
2570 ?
              00:00:00 gsd-rfkill
2574 ?
              00:00:00 gsd-screensaver
2575 ?
              00:00:01 gsd-sharing
2576 ?
              00:00:00 gsd-smartcard
2577 ?
              00:00:00 gsd-sound
2578 ?
              00:00:00 gsd-wacom
```

```
2593 ?
              00:00:00 gsd-disk-utilit
2601 ?
              00:00:00 evolution-alarm
2616 ?
              00:00:47 gnome-software
2721 ?
              00:00:00 ibus-dconf
2722 ?
              00:00:01 gvfs-udisks2-vo
2733 ?
              00:00:05 ibus-extension-
2742 ?
              00:00:02 ibus-portal
2753 ?
              00:00:00 gvfs-gphoto2-vo
2769 ?
              00:00:00 snapd-desktop-i
2780 ?
              00:00:00 gvfs-mtp-volume
2822 ?
              00:00:00 gvfs-goa-volume
              00:00:00 goa-daemon
2854 ?
2859 ?
              00:00:00 snapd-desktop-i
2861 ?
              00:00:00 gsd-printer
2875 ?
              00:00:00 goa-identity-se
2888 ?
              00:00:00 gvfs-afc-volume
2916 ?
              00:00:00 gvfsd-metadata
              00:00:00 evolution-calen
2927 ?
2934 ?
              00:00:04 ibus-engine-sim
              00:00:00 dconf-service
2962 ?
2975 ?
              00:00:00 evolution-addre
3006 ?
              00:00:00 gvfsd-trash
3057 ?
              00:00:00 xdg-desktop-por
              00:00:03 com.docker.back
3083 ?
3084 ?
              00:00:00 tracker-miner-f
3086 ?
              00:00:00 xdg-desktop-por
3090 ?
              00:00:00 gjs
3134 ?
              00:00:00 xdg-desktop-por
3174 ?
              00:00:02 fwupd
3194 ?
              00:02:44 com.docker.back
3237 ?
              00:00:00 com.docker.dev-
3248 ?
              00:00:00 com.docker.buil
3249 ?
              00:00:15 Docker Desktop
3292 ?
              00:00:00 Docker Desktop
3294 ?
              00:00:00 Docker Desktop
3298 ?
              00:00:00 Docker Desktop
3668 ?
              00:00:32 Xwayland
3741 ?
              00:00:00 gsd-xsettings
3826 ?
              00:00:00 gvfsd-recent
              00:00:00 ibus-x11
3833 ?
3878 ?
              00:00:06 mutter-x11-fram
3922 ?
              00:00:02 Docker Desktop
```

```
3935 ?
                00:00:02 Docker Desktop
 4157 ?
               00:02:03 cursor
                00:00:22 Cursor-1.0.0-x8
 4165 ?
 4188 ?
               00:00:00 cursor
               00:00:00 cursor
4189 ?
4207 ?
               00:00:00 cursor
4245 ?
               00:00:00 chrome_crashpad
4264 ?
               00:01:50 cursor
4270 ?
               00:00:05 cursor
 4335 ?
               00:01:06 cursor
 4393 ?
               00:02:30 cursor
               00:00:12 cursor
 4429 ?
 4430 ?
               00:00:08 cursor
4470 ?
               00:01:00 cursor
4557 ?
               00:01:24 cursor
4685 pts/1
               00:00:00 bash
 5169 ?
               00:00:00 update-notifier
7051 ?
               00:00:00 flatpak-session
7056 ?
               00:00:00 p11-kit-server
8814 ?
               00:00:00 psimon
 9243 ?
               00:00:01 kworker/5:0-events
 9698 ?
               00:10:27 cursor
 9776 ?
               00:00:00 gvfsd-network
 9785 ?
               00:00:00 gvfsd-dnssd
 9942 ?
               00:03:12 cursor
 9953 ?
               00:00:09 cursor
11422 ?
               00:00:01 kworker/1:1-mm_percpu_wq
11819 ?
               00:10:06 chrome
11826 ?
               00:00:00 cat
11827 ?
               00:00:00 cat
               00:00:00 chrome_crashpad
11829 ?
11831 ?
               00:00:00 chrome_crashpad
               00:00:00 chrome
11837 ?
               00:00:00 chrome
11838 ?
               00:00:01 chrome
11847 ?
11893 ?
               00:02:10 chrome
               00:01:14 chrome
11905 ?
11944 ?
               00:00:13 chrome
11963 ?
               00:02:07 chrome
               00:00:01 chrome
12228 ?
12302 ?
               00:00:51 chrome
                00:00:04 chrome
12407 ?
```

```
12542 ?
                00:04:24 chrome
12664 ?
                00:00:01 chrome
                00:00:01 chrome
12674 ?
12721 ?
                00:00:02 chrome
12888 ?
                00:00:14 chrome
                00:00:36 chrome
13072 ?
18496 ?
                00:00:27 chrome
                00:00:06 chrome
18501 ?
19365 ?
                00:16:13 chrome
                00:00:00 script
22985 ?
22986 pts/6
                00:00:00 bash
26135 ?
                00:06:29 chrome
27404 ?
                00:00:01 kworker/4:1-cgroup_destroy
42431 pts/4
                00:00:00 bash
44425 pts/5
                00:00:00 bash
                00:00:00 bash
44480 pts/7
46761 pts/4
                00:00:00 script
46762 pts/8
                00:00:00 bash
46865 pts/5
                00:00:00 script
46866 pts/9
                00:00:00 bash
46955 pts/7
                00:00:00 script
46956 pts/10
                00:00:00 bash
49342 pts/10
                00:00:00 su
49364 pts/10
                00:00:00 bash
50275 pts/10
                00:00:00 su
                00:00:00 bash
50324 pts/10
56677 ?
                00:00:01 chrome
68865 ?
                00:00:01 gnome-terminal-
78183 ?
                00:00:00 gnome-terminal
                00:00:00 gnome-terminal.
78186 ?
78192 pts/13
                00:00:00 bash
79083 pts/9
                00:00:00 su
79111 pts/9
                00:00:00 bash
79253 pts/8
                00:00:00 su
79294 pts/8
                00:00:00 bash
80331 pts/10
                00:00:00 su
80353 pts/10
                00:00:00 bash
99103 ?
                00:00:00 kworker/1:2-events
109042 ?
                00:00:01 kworker/u25:1-flush-259:0
110360 ?
                00:00:00 bwrap
110368 ?
                00:00:00 bwrap
110369 ?
                00:00:00 xdg-dbus-proxy
```

```
110372 ?
                00:00:00 bwrap
110373 ?
                00:01:30 Telegram
                00:00:00 kworker/3:2-cgroup destroy
110777 ?
121295 ?
                00:00:29 chrome
131706 ?
                00:00:00 kworker/4:2-events
135624 ?
                00:00:00 sleep
                00:00:00 kworker/2:0-events
140132 ?
142110 ?
                00:00:01 kworker/u24:2-
  dm_vblank_control_workqueue
                00:00:00 kworker/5:2-cgroup_destroy
144814 ?
144815 ?
                00:00:00 kworker/u25:4-flush-259:0
144816 ?
                00:00:00 kworker/u25:5-events unbound
144821 ?
                00:00:01 kworker/u25:10-flush-259:0
                00:00:00 kworker/u26:0-flush-259:0
144841 ?
                00:00:00 kworker/u29:0-ttm
144842 ?
                00:00:00 kworker/3:3-events
144844 ?
                00:00:00 kworker/u26:1-events power efficient
144857 ?
                00:00:00 kworker/u27:2-hci0
144859 ?
145075 ?
                00:00:00 kworker/0:4-events
145273 ?
                00:00:00 kworker/u26:3-events unbound
145376 ?
                00:00:00 gjs
145420 ?
                00:00:00 chrome
                00:00:00 kworker/u28:1-ttm
145443 ?
                00:00:00 kworker/u29:2-ttm
145469 ?
                00:00:00 kworker/u29:3-ttm
145535 ?
                00:00:00 kworker/u29:5-ttm
145537 ?
                00:00:00 kworker/u29:6-ttm
145538 ?
                00:00:00 kworker/u26:4-flush-259:0
145715 ?
                00:00:00 kworker/u24:1-sdma0
148818 ?
149698 ?
                00:00:00 kworker/u28:8-ttm
                00:00:00 kworker/u28:9-rtw tx wq
149699 ?
149700 ?
                00:00:00 kworker/u28:10-ttm
                00:00:00 kworker/1:0
150955 ?
150978 ?
                00:00:00 kworker/2:2-cgroup destroy
                00:00:00 kworker/u26:2-flush-259:0
151346 ?
                00:00:00 kworker/0:0-events
151849 ?
                00:00:00 kworker/u25:0-events unbound
151997 ?
153872 ?
                00:00:00 kworker/2:3-cgroup_destroy
154401 ?
                00:00:00 chrome
154410 ?
                00:00:00 chrome
154440 ?
                00:00:00 chrome
                00:00:00 chrome
154970 ?
```

```
155192 ?
                 00:00:00 kworker/u24:0-sdma0
 155303 ?
                 00:00:00 sh
                 00:00:00 cpuUsage.sh
 155304 ?
 155311 ?
                 00:00:00 sleep
 155312 pts/8
                 00:00:00 ps
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ps -o
[?20041
error: format specification must follow -o
Usage:
ps [options]
Try 'ps --help <simple|list|output|threads|misc|all>'
 or 'ps --help <s|l|o|t|m|a>'
for additional help text.
For more details see ps(1).
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ps -o[Ku
[?20041
USER.
            PID %CPU %MEM
                              VSZ
                                  RSS TTY
                                                 STAT START
  TIME COMMAND
                                  5480 pts/8
ivanov1
          79294 0.0
                       0.0 11584
                                                 S
                                                      16:12
  0:00 bash
ivanov1 155766 0.0 0.0
                            13944
                                  4596 pts/8
                                                      20:41
                                                 R+
  0:00 ps -u
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[Κ
[A[K
]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
```

```
:[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
      [K[K[K[Ksudo su
[?20041
[sudo] password for ivanov1:
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os_linux_course/Lab4# [7msudo ps -e > proc_list
  [27msudo ps -e > proc_list
[?20041
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os linux course/Lab4# [7mfirefox &[27m]
ГΑ
[?20041
[1] 164080
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os linux course/Lab4# update.go:85: cannot
  change mount namespace according to change mount (/var/lib/
  snapd/hostfs/usr/local/share/doc /usr/local/share/doc none
  bind, ro 0 0): cannot write to "/var/lib/snapd/hostfs/usr/local
  /share/doc" because it would affect the host in "/var/lib/
  snapd"
update.go:85: cannot change mount namespace according to change
  mount (/var/lib/snapd/hostfs/usr/share/gtk-doc /usr/share/gtk-
  doc none bind, ro 0 0): cannot write to "/var/lib/snapd/hostfs/
  usr/share/gtk-doc" because it would affect the host in "/var/
  lib/snapd"
update.go:85: cannot change mount namespace according to change
  mount (/var/lib/snapd/hostfs/usr/share/libreoffice/help /usr/
  share/libreoffice/help none bind, ro 0 0): cannot write to "/
  var/lib/snapd/hostfs/usr/share/libreoffice/help" because it
  would affect the host in "/var/lib/snapd"
update.go:85: cannot change mount namespace according to change
  mount (/var/lib/snapd/hostfs/usr/share/sphinx rtd theme /usr/
  share/sphinx_rtd_theme none bind,ro 0 0): cannot write to "/
  var/lib/snapd/hostfs/usr/share/sphinx_rtd_theme" because it
  would affect the host in "/var/lib/snapd"
```

```
update.go:85: cannot change mount namespace according to change
  mount (/var/lib/snapd/hostfs/usr/share/xubuntu-docs /usr/share
  /xubuntu-docs none bind, ro 0 0): cannot write to "/var/lib/
  snapd/hostfs/usr/share/xubuntu-docs" because it would affect
  the host in "/var/lib/snapd"
touch: cannot touch '/root/snap/firefox/common/.cache/desktop-
  runtime-date': No such file or directory
mkdir: cannot create directory '/run/user'/0: Permission denied
Authorization required, but no authorization protocol specified
Error: cannot open display: :0
^C[?20041
[?2004h[?20041
[1]+ Exit 1
                              firefox
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os linux course/Lab4# [7mfirefox[27mfirefox
[?20041
mkdir: cannot create directory '/run/user'/0: Permission denied
Authorization required, but no authorization protocol specified
Error: cannot open display: :0
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os linux course/Lab4# exit
[?20041
exit
[?2004h]0; ivanov1@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov1@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   exit
[?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ firefox
「?20041
Gtk-[1;32mMessage[0m: [34m20:54:24.368[0m: Not loading module "
  atk-bridge": The functionality is provided by GTK natively.
  Please try to not load it.
^CExiting due to channel error.
Exiting due to channel error.
Exiting due to channel error.
```

```
Exiting due to channel error.
Exiting due to channel error.
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$
  Kfirefox
[?20041
Gtk-[1;32mMessage[0m: [34m20:55:50.702[0m: Not loading module "
  atk-bridge": The functionality is provided by GTK natively.
  Please try to not load it.
^CExiting due to channel error.
Exiting due to channel error.
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ firefox &
Γ?20041
[1] 167975
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ Gtk-[1;32
  mMessage[0m: [34m20:55:57.930[0m: Not loading module "atk-
  bridge": The functionality is provided by GTK natively. Please
   try to not load it.
[?20041
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ ps
「?20041
   PID TTY
                     TIME CMD
 46762 pts/8
                 00:00:00 bash
                 00:00:04 firefox
 167975 pts/8
 168193 pts/8
                 00:00:00 forkserver
 168198 pts/8
                 00:00:00 Socket Process
 168228 pts/8
                 00:00:00 Privileged Cont
 168238 pts/8
                 00:00:00 RDD Process
 168341 pts/8
                 00:00:00 WebExtensions
```

```
168451 pts/8
                00:00:00 Utility Process
 168496 pts/8
                00:00:00 Web Content
                00:00:00 Web Content
 168503 pts/8
 168526 pts/8
                00:00:00 Web Content
 168832 pts/8
                00:00:00 ps
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ kill -0 16
                       167922 167954
16
       164539 166334
                                       168526
161559
      164701 166335
                      167923 167975
                                      1689
162113 164811 166336 167924 168071 1690
162212 164848 166337
                       167925 168193 169087
162805
       164849 166487 167926 168198 169138
162897 164850 166740
                       167927 168228 169139
163009 165922 167107 167928 168238
163010 166330 167116
                       167929 168341
163011 166331 167145 167930 168451
163061 166332 167680
                      167931 168496
163448
       166333 167921 167932 168503
]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/os_linux_course/
  Lab4[01;32mleonidas@leonidas-AX1540SD[00m:[01;34m~/projects/
  itmo/os_linux_course/Lab4[00m$ kill -0 167975
[?20041
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ kill -0
  167975 sudo
「?20041
[sudo] password for leonidas:
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ ps
[?20041
   PID TTY
                    TIME CMD
 46762 pts/8
                00:00:00 bash
 167975 pts/8
                00:00:05 firefox
                00:00:00 forkserver
 168193 pts/8
 168198 pts/8
                00:00:00 Socket Process
 168228 pts/8
                00:00:00 Privileged Cont
 168238 pts/8
                00:00:00 RDD Process
 168341 pts/8
                00:00:00 WebExtensions
 168451 pts/8
                00:00:00 Utility Process
```

```
168496 pts/8
                00:00:00 Web Content
 168503 pts/8
                00:00:00 Web Content
                00:00:00 Web Content
168526 pts/8
169862 pts/8
                00:00:00 ps
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ pssudo kill
  167975[27mkill -9 167975
[?20041
bash: kill: (167975) - Permission denied
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ kill -9
   167975[1P[1Psudo
[?20041
kill: (167975): Permission denied
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ [7mkillall -
  u [27mkillall -u
[?20041
Usage: killall [OPTION]... [--] NAME...
      killall -1, --list
      killall -V, --version
 -e,--exact
                     require exact match for very long names
 -I,--ignore-case
                     case insensitive process name match
 -g,--process-group kill process group instead of process
 -y,--younger-than
                     kill processes younger than TIME
 -o,--older-than
                     kill processes older than TIME
 -i,--interactive
                     ask for confirmation before killing
 -1,--list
                     list all known signal names
                     don't print complaints
 -q,--quiet
 -r,--regexp
                     interpret NAME as an extended regular
    expression
 -s,--signal SIGNAL send this signal instead of SIGTERM
 -u,--user USER
                     kill only process(es) running as USER
 -v,--verbose
                     report if the signal was successfully sent
                     display version information
 -V,--version
 -w,--wait
                     wait for processes to die
```

```
namespaces
                      as PID
 -Z,--context REGEXP kill only process(es) having context
                      (must precede other arguments)
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ killall -u
  ivanov3
[?20041
bash (49364): Operation not permitted
su(50275): Operation not permitted
bash (80353): Operation not permitted
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ killall -u
  ivanov3sudo
[?2004]
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ sudo killall
   -u ivanov3[K1
[?20041
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ exit
「?20041
exit
Script done on 2025-10-01 20:59:11+03:00 [COMMAND_EXIT_CODE="1"]
Script started on 2025-10-01 15:35:26+03:00 [TERM="xterm-256color
  " TTY="/dev/pts/5" COLUMNS="48" LINES="20"]
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ su ivanov2
```

match processes that belong to the same

-n,--ns PID

[?20041 Password:

[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m

```
:[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
    [7mgroups ivanov1[27m[1Pgroups ivanov2
[?20041
ivanov2 : ivanov2 users Students
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   cd /root/
[?20041
bash: cd: /root/: Permission denied
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]]
   [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                    schedule
                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                           (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                          (B[0;7m^R(B[m Read File(B[0;7m^{\label{eq:beauto}]}(B[m
  Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os_linux_course/Lab4[00m$ [7mls -1 schedule[27mls -1 schedule
[?20041
-rw-r--r-- 1 root Students 65 Oct 1 15:47 schedule
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   ls -1 schedule
[?20041
-rw-rw-r-- 1 root Students 65 Oct 1 15:47 schedule
```

```
[?2004h]0;ivanov2@leonidas-AX154OSD: /home/leonidas/projects/itmo
      /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
      :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
        nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]]
      [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
      writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is ']
      un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                                schedule
                                            [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                                                            (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
      Where Is (B[0;7m^K(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                            (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
      Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
      projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
      AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
      os_linux_course/Lab4[00m$ nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
      [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
      writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is
      un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                                 schedule
                                            [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                                                           (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
      Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\setminus(B[m Exit (B[0;7m^\setminus(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\setminus(B[m Exit (B[0;7m^(B[m Exit (B[0;7m^(B[0;5m^(B[m Exit (B[0;7m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(B[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m^(A[0;5m)(A[0;5m^(A[0;5m^(A[0;5m)(A[0;5m^(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A[0;5m)(A
      Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?1049
      1[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
      projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
      AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
```

```
os linux course/Lab4[00m$ [7msudo chown ivanov1:[27m[7mS[27m[7
  mtudents schedule [27m [A[C[C[C[C[C[C[C[C[C[C[C[Csudo chown
  ivanov1:Students schedule
[?20041
[sudo] password for ivanov2:
ivanov2 is not in the sudoers file.
[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                 schedule
                   [1;47H(B[m
                          (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
[19d(B[0;7m^G(B[m Help
  Where Is (B[0;7m^K(B[m Cut
Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os linux course/Lab4[00m$ ls -1 schedule
[?20041
-rw-rw-r-- 1 ivanov1 Students 65 Oct 1 15:47 schedule
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   ls -l schedule [1Pnano[C[C[C[C[C[C[C[C[C
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is ']
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                schedule
                   [1;47H(B[m
```

```
[19d(B[0;7m^G(B[m Help (B[0;7m^O(B[m Write Out(B[0;7m^W(B[m Verite Out(B[0;7m^W(B[0;7m^W(B[m Verite Out(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]
               Where Is (B[0;7m^K(B[m Cut
 [20d(B[0;7m^X(B[m Exit
                                                                                                                                             (B[0;7m^R(B[m Read File(B[0;7m^{\label{eq:beauto}]}(B[m
               Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[?121[?25h[3d[?251[?121[?25h[4d[?251[?121[?25h
                [5d [?251 [?121 [?25h [6d [?251 [?121 [?25h [7d [?251 [?121 [?25h [8d [?251
                [?121 [?25h [9d [?251 [?121 [?25h [10d [?251 [?121 [?25h [11d [?251 [?121
                [?25h [?251 [?121 [?25h [?251 [?121 [?25h [?251 [?121 [?25h [?251 [?121
                [?25h]?251[18d[K[1;32H(B[0;7m*[47G(B[m
[11d17:00 Databases [?121 [?25h [?251 [19;13H(B[0;7mM-D(B[m DOS Form(
               B[0;7mM-A(B[m Append (B[0;7mM-B(B[m Backup F[20;2H(B[0;7mC(B[m Backup F[20;2H(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC(B[0;7mC)A[0;7mC(B[0;7mC(B[0;7mC)A[0;7mC(B[0;7mC)A[0;7mC(B[0;7mC(B[0;7mC)A[0;7mC)A[0;7mC(B[0;7mC(B[0;7mC)A[0;7mC)A[0;7mC(B[0;7mC)A[0;7mC(B[0;7mC)A[0;7mC)A[0;7mC(B[0;7mC)A[0;7mC)A[0;7mC]A[0;7mC)A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7mC]A[0;7
                                                                        (B[0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend (B
                [0;7m^T(B[m Browse
 [18d(B[0;7mFile Name to Write: schedule
                                                                                                                                                                                                                                                                                                                                      [18;29
              H(B[m[?121[?25h[?251
     (B[0;1m[37m[41m[ Error writing schedule: Permission denied
                    [39;49m(B[m[K[19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Write Out(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]
                    Where Is (B[0;7m^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit)])])])))
                     [0;7m^R(B[m Read File(B[0;7m^{\label{eq:beller}]}(B[m Replace (B[0;7m^U(B[m Replace (B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(B[0;7m^U(
                    Paste [K[?121[?25h[11:16H[?251
 [18d(B[0;7mSave modified buffer?
                                                                                                                                                                                                                                                                                                                                      [19;1H]
                    Y(B[m Yes[K
[20d(B[0;7m N(B[m No
                                                                                                                               (B[0;7m^C(B[m Cancel[K[18;23H[?121
                [?25h[?251
[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
              projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
               AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
               os_linux_course/Lab4[00m$ [7mgroups[27mgroups
 [?20041
ivanov2 users
 [?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
               /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
               :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
                                  [K[K[Knano schedule
 [?20041
 [?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]]
                [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not ]])])]]]
```

```
writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                    schedule
                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                           (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                           (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
  Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os_linux_course/Lab4[00m$ nano schedule [8Pgroups
[?20041
ivanov2 users
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   source de[K[K~/.bash
[?20041
bash: /home/ivanov2/.bash: No such file or directory
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   source ~/.bashrc
[?20041
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
   :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   source ~/.bashrc [K[8Pgroupsnano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is 
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                    schedule
                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                          (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m^K(B[m Cut
```

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[20d(B[0;7m^X(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[a] (B[m Exit (B[a] (B[a] (B[a] (B[a) (B
     Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
     projects/itmo/os_linux_course/Lab4[01;32mivanov2@leonidas-
     AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
     os_linux_course/Lab4[00m$ nano schedule source ~/.bashrc[C[K[8
     Pgroupsnano schedule [8Pgroupsnano schedule [8Pgroups
[?20041
ivanov2 users
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
     /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
      :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
       nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
      [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
     writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is ']
     un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                               schedule
                                            [1:47H(B[m
[19d(B[0;7m^G(B[m Help
                                                           (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
     Where Is (B[0;7m^K(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                       Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
     projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
     AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
     os_linux_course/Lab4[00m$ nano schedule [8Pgroupsnano schedule
        source ~/.bashrc[C
[?20041
[?2004h]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo
     /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
```

```
:[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   source ~/.bashrc [3Pnano schedule[C
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ] [39;49m(B[m[18;10H(B[0;1m[37m[41mFile 'schedule' is
  un[41G[39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                  schedule
                    [1;47H(B[m
                          (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
[19d(B[0;7m^G(B[m Help
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit)])]
                           Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov2@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov2@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os linux course/Lab4[00m$ groups
[?20041
ivanov2 users
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  /os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   exit
[?20041
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ su ivanov2
[?20041
Password:
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  /os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   exitgroups nano schedule[C
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]]
   [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
```

```
writable ][39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                                                                                                             schedule
                                                                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
                                                                                             (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
         Where Is (B[0;7m^K(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                                                        (B[0;7m^R(B[m Read File(B[0;7m^{\mbox{$\setminus$}}(B[m
         Replace (B[0;7m^U(B[m Paste
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
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         os_linux_course/Lab4[00m$ groups
[?20041
ivanov2 users Students
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         :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
            groups nano schedule[C
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
          [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
         writable ][39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                                                                                                            schedule
                                                                    [1;47H(B[m
[19d(B[0;7m^G(B[m Help
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  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
```

```
[A[K
ΓΑΓΚ
]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ΓK
ΓΑΓΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
ΓΑΓΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ΓK
ΓΑΓΚ
[A[K
]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A[K
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ΓK
ΓΑΓΚ
[A[K
]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A [K
[A[K
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
[K
```

```
[A[K
ΓΑΓΚ
]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
ΓΑΓΚ
[A[K
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
[K
ΓΑΓΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
ΓΑΓΚ
[A [K
[4P]0; ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  : [01; 34m/h]
ome/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A [K
[A[K
[A[K
ΓΑΓΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
ΓΑΓΚ
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A [K
```

```
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ГΚ
[A[K
]0;ivanov2@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov2@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   exit
[?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ exit
[?20041
exit
Script done on 2025-10-01 20:59:28+03:00 [COMMAND_EXIT_CODE="0"]
Script started on 2025-10-01 15:35:30+03:00 [TERM="xterm-256color
  " TTY="/dev/pts/7" COLUMNS="48" LINES="20"]
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os linux course/Lab4[00m$ su ivanov3
[?20041
Password:
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   sudo su
[?20041
[sudo] password for ivanov3:
ivanov3 is not in the sudoers file.
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   [7msudo usermod -aG su[27m[7md[27m[7mo ivanov3[27m[A[C[C[C[C]]
  [?20041
[sudo] password for ivanov3:
ivanov3 is not in the sudoers file.
```

```
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   su leonidas
[?20041
Password:
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ [7msudo
  usermod -aG sudo ivanov3[27m
[?20041
[sudo] password for leonidas:
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ su ivanov3
[?20041
Password:
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   [7mgroupadd Students [27mgroupadd Students
[?20041
groupadd: group 'Students' already exists
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   [7musermod -aG Student [27m [7ms [27m [7m ivanov1 [27m [A [C [C [C [C
  [C[C[C[C[C[C[C[C[C[C[C[C[C[C[Cusermod -aG Students ivanov1
[?20041
usermod: Permission denied.
usermod: cannot lock /etc/passwd; try again later.
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   usermod -aG Students ivanov1
C[C[C[C[C[C[C[C[C[C[C[C[C[C[Csusermod -aG Students ivanov1[A]]]]]]]]])]
```

```
[?20041
[sudo] password for ivanov3:
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
     /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
     :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
        [7msudo usermod -aG St[27m[7mu[27m[7mdents ivanov2[27m[A[C[C[
     C[C[C[C[C[C[C[C[C[C[C[Csudo usermod -aG Students ivanov2
[?20041
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
     /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
     :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
       sudo su
[?20041
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
     os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
     projects/itmo/os_linux_course/Lab4# exit
「?20041
exit
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
     /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
     :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
        [7msudo nano schedule [27msudo nano schedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
      [39;49m(B[m[H[2J[18;19H(B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File )(B[0;7m[ New File ](B[0;7m[ New File )(B[0;7m[ New File )(
     nano 7.2
                                                                                             [1;47H(B[m
                                       schedule
                                                    (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
[19d(B[0;7m^G(B[m Help
     Where Is (B[0;7m^K(B[m Cut
                                                      [20d(B[0;7m^X(B[m Exit)])]
     Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
     projects/itmo/os_linux_course/Lab4[01;32mivanov3@leonidas-
     AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
     os linux course/Lab4[00m$ [7msudo usermod -aG su[27m[7md[27m[7
     usermod -aG sud[1Po ivanov1
[?20041
```

[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C]]] usermod -aG Stud[A[C]])]]]]]]]]]

```
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
  sudo su
[?20041
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os_linux_course/Lab4# [200~sudo usermod -aG sudo
  ivanov3~[K[K1
[?20041
[200~sudo: command not found
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os_linux_course/Lab4# [200~sudo usermod -aG sudo
  ivanov1
[C[C[C[C[C[C[C[C[C[C[Csudo usermod -aG sudo [1Pivanov1[A[C[C
  [?20041
[?2004h]0;root@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4root@leonidas-AX1540SD:/home/leonidas/
  projects/itmo/os linux course/Lab4# exit
[?20041
exit
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
  sudo nano [7mschedule[27mschedule
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
  [39;49m(B[m[H[2J[18;19H(B[0;7m[ New File ](B[m[H(B[0;7m
  nano 7.2
              schedule
                                   [1;47H(B[m
                   (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
[19d(B[0;7m^G(B[m Help
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
```

```
[20d(B[0;7m^X(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[m Read File(B[0;7m^\(B[m Exit (B[m Exit (B[a] (B[m Exit (B[a] (B[a] (B[a] (B[a) (B
       Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[K[1;32H(B[0;7m*[47G(B[m
[3d10:00 Maths
[5d11:40 Physics
[7d13:30 Economics
[9d15:20 Programming
[11d[?121[?25h[?251[19;13H(B[0;7mM-D(B[m DOS Form(B[0;7mM-A(B[m
       Append (B[0;7mM-B(B[m Backup F[20;2H(B[0;7mC(B[m Cancel
                                                                                                                                                                      (B
       [0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend (B[0;7m^T(B[m
       Browse
[18d(B[0;7mFile Name to Write: schedule
                                                                                                                                                               [18;29
       H(B[m[?121[?25h[?251[18;17H[1K (B[0;7m[Writing...](B[m[K
       [1;32H(B[0;7m [47G(B[m[18;16H(B[0;7m[ Wrote 9 lines ](B[m
       [19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Where Is (B[0;7m^K(B[m Where Is (B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m^K(B[0;7m))]))]))])])])])])])])])]))]))
       (B[m Cut[K[20;2H(B[0;7mX(B[m Exit]
                                                                                                            (B[0;7m^R(B[m Read File(
       B[0;7m^{\mbox{\ m}}] B[0;7m^U(B[m Paste[K[?121[?25h]]])
[11d[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
       projects/itmo/os linux course/Lab4[01;32mivanov3@leonidas-
       AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
       os_linux_course/Lab4[00m$ [7mchgrp Students sche[27m[7md[27m[7
       Cchgrp Students schedule
[?20041
chgrp: changing group of 'schedule': Operation not permitted
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
       /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
       :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
         chgrp Students schedule[A[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C]
       [?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
```

/os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m

```
:[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
      [K[K[K[KKudo [7mchmod g+w sche[27m[7md[27m[7mule[27m[A[C
  Cchmod g+w schedule
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   [7msudo chown ivanov1: [27m[7mS[27m[7mtudents schedule[27m[A[C
  [C[C[C[C[C[C[C[C[C[Csudo chown ivanov1:Students schedule]]]]]]]]
「?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   [7msudo usermod -aG St[27m[7mu[27m[7mdents ivanov2[27m
Csudo usermod -aG Students ivanov2
ГΑ
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   sudo usermod -aG Students ivanov2[K1
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   nano important
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
  [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
  writable ][39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                    important
                  [1;47H(B[m])]
[19d(B[0;7m^G(B[m Help
                         (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
  Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                         (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
  Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[K[1;33H(B[0;7m*[47G(B[m
```

```
[2d(B[0;7m<(B[message.[?121[?25h[?251[?121[?25h[?251[?121[?25h
[?251[?121[?25h[?251[?121[?25h[?251[?121[?25h
[?251[?121[?25h
```

All students need to be in recreation area at [?251[?121[?25h [?25] 1[?121[?25h [?251[?121[?25h[?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25h[?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251[?121 [?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251 [?121[?25h [?251[?121[?25h [?251[?121[?25h[?251[?121[?25h 1[?121[?25h [?251[?121[?25h[?251[?121[?25h [?251[?121[?25h [?251[?121[?25h[?251[?121[?25h [?251[?121[?25h [?251[?121]?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25h [?251[?121[?25 h [?251[?121[?25h[?251[?121[?25h [?251[?121[?25h [?251[?121 [?25h [?251]?121]?25h [?251]?121[?25h [?251]?121]?25h [?251 [?121[?25h [?251[?121[?25h [?251[?121[?25h[?251[?121[?25h 1[?121[?25h [?251[?121[?25h[K[?251[?121[?25h[?251[?121[?25h [?251[?121[?25h[?251[?121[?25h[?251[?121[?25h[?251]?121]?25h [?251(B[0;7m<(B[message.[?121[?25h[?251[19;13H(B[0;7mM-D(B[m DOS Form(B[0;7mM-A(B[m Append (B[0;7mM-B(B[m Backup F[20;2H(B (B[0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m[0;7mC(B[m Cancel Prepend (B[0;7m^T(B[m Browse

[18d(B[0;7mFile Name to Write: important [18;30 H(B[m[?121[?25h[?251

(B[0;1m[37m[41m[Error writing important: Permission denied][39;49m(B[m[K[19;13H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Where Is (B[0;7m^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^\(B[m Replace (B[0;7m^U(B[m Paste[K[?121[?25h[2;9H[?25]

[18d(B[0;7mSave modified buffer? [19;1H Y(B[m Yes[K]

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[20d(B[0;7m N(B[m No
                              (B[0;7m^C(B[m Cancel[K[18;23H[?12]
  [?25h[?251
[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov3@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os_linux_course/Lab4[00m$ [Kpwd
[?20041
/home/leonidas/projects/itmo/os_linux_course/Lab4
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   [7mls -ld /home/leonid[27m[7ma[27m[7ms/projects/itmo/
  os_linux_course/Lab4[27m
-ld /home/leonidas/projects/itmo/os_linux_course/Lab4
ГΑ
[?20041
ls: cannot access '/home/leonidas/projects/itmo/os linux course/
  Lab4': Permission denied
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ls -ld /home/leonidas/projects/itmo/os linux course/Lab4[Als
   -ld /home/leonidas/projects/itmo/os_linux_course/Lab4[Als -
  ld /home/leonidas/projects/itmo/os_linux_course/Lab4[Als -ld
  /home/leonidas/projects/itmo/os linux course/Lab4[Als -ld /
  home/leonidas/projects/itmo/os_linux_course/Lab4[A ls -ld /
  home/leonidas/projects/itmo/os_linux_course/Lab4[Als -ld /home
  /leo[1Pnidas/projects/itmo/os_linux_course/Lab4[Als -ld /home/
  leon[1Pidas/projects/itmo/os_linux_course/Lab4[Als -ld /home/
  leoni[1Pdas/projects/itmo/os linux course/Lab4[Als -ld /home/
  leonid[1Pas/projects/itmo/os_linux_course/Lab4[Als -ld /home/
  leonida[1Ps/projects/itmo/os linux course/Lab4[Asls -ld /home/
  leonidas/projects/itmo/os_linux_course/Lab4[Auls -ld /home/
  leonidas/projects/itmo/os_linux_course/Lab4[Adls -ld /home/
  leonidas/projects/itmo/os_linux_course/Lab4[Aols -ld /home/
  leonidas/projects/itmo/os_linux_course/Lab4[A ls -ld /home/
  leonidas/projects/itmo/os_linux_course/Lab4[A
```

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[?2004]
drwxrwxr-x 4 leonidas leonidas 4096 Oct 1 15:47 /home/leonidas/
 projects/itmo/os linux course/Lab4
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
  [7msudo usermod -aG St[27m[7mu[27m[7mdents ivanov2[27m[A[C[C[
 C[C[C[C[C[C[C[C[C[C[C[C[Csudo usermod -aG Students ivanov2[C[C]]]]]]]]]]
  [C[1P ivanov2
[C[C[C[C[1P ivanov2
[C[C[C[1P ivanov2
[C[C[C[1P ivanov2
[C[C[1P ivanov2
[C
[1P ivanov2
C[C[C[C[C[C[C[C[C[C[C[C[C[C[C]C]
  C[C[C[C[C[C[C[C[C[C[C[C[C[C] ivanov2[A[C[C[C[C[C[C[C[C[C[C] [C[C] ivanov2[A[C] |
  ivanov2
o ivanov2
[Cnidas ivanov2
[C[C[C[C[C
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
 /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
  sudo usermod -aG leonidas ivanov2[K1
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
  sudo usermod -aG leonidas ivanov1[K3
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
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:[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
          an [K [Knano important
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?25]
        [39;49m(B[m[H[2J[18;8H(B[0;1m[37m[41m[ Directory '.' is not
       writable ] [39;49m(B[m[H(B[0;7m GNU nano 7.2
                                                                                                                                                               important
                                                       [1:47H(B[m
[19d(B[0;7m^G(B[m Help
                                                                              (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
       Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                                              (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
       Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
       projects/itmo/os linux course/Lab4[01;32mivanov3@leonidas-
       AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
       os_linux_course/Lab4[00m$ exit
[?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
       os linux course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
        :[01;34m~/projects/itmo/os linux course/Lab4[00m$ su ivanov3
[?20041
Password:
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
       /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
        :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
          exitnano important
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251]])]])]]]]
        [39;49m(B[m[H[2J[18;19H(B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File ](B[m[H(B[0;7m[ New File ](B[0;7m[ New File )(B[0;7m[ New File ](B[0;7m[ New File )(B[0;7m[ New File )(
       nano 7.2
                                                      important
                                                                                                                                  [1:47H(B[m
[19d(B[0;7m^G(B[m Help
                                                                             (B[0;7m^0(B[m Write Out(B[0;7m^W(B[m
       Where Is (B[0;7m<sup>K</sup>(B[m Cut
[20d(B[0;7m^X(B[m Exit
                                                                              (B[0;7m^R(B[m Read File(B[0;7m^{\t}(B[m
       Replace (B[0;7m^U(B[m Paste
[2d[?121[?25h[?251[18d[K[1;33H(B[0;7m*[47G(B[m
[2d(B[0;7m<(B[message.[?121[?25h[?251[19;13H(B[0;7mM-D(B[m DOS
       Form (B[0;7mM-A(B[m Append (B[0;7mM-B(B[m Backup F[20;2H(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(b;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(B[0;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(B[0;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7mM-B(b;7m)A))))))))))))))))))))))))))))))))
       mC(B[m Cancel (B[0;7mM-M(B[m Mac Form(B[0;7mM-P(B[m Prepend
       (B[0;7m^T(B[m Browse
[18d(B[0;7mFile Name to Write: important
                                                                                                                                                                            [18;30
```

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[1;33H(B[0;7m [47G(B[m[18;17H(B[0;7m[ Wrote 1 line ](B[m[19;13
        H(B[0;7m^0(B[m Write Out(B[0;7m^W(B[m Where Is (B[0;7m^K(B[m Where Is (B[0;7m^K(B[m Where Is (B[0;7m^V(B[m Where Is (B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^V(B[0;7m^
        Cut[K[20;2H(B[0;7mX(B[m Exit (B[0;7m^R(B[m Read File(B[0;7m^R(B[m Read File(B[0;7m^R(B[0;7m^R(B[m Read File(B[0;7m^R(B[m Read File(B[0;7m^R(B[0;7m^R(B[m Read File(B[0;7m^R(B[0;7m^R(B[m Read File(B[0;7m^R(B[0;7m^R(B[0;7m^R(B[0;7m^R(B[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m)R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m^R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)R(A[0;7m)
        [18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
        projects/itmo/os linux course/Lab4[01;32mivanov3@leonidas-
        AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
        os_linux_course/Lab4[00m$ ls -la
[?20041
total 136
drwxrwxr-x 4 leonidas leonidas
                                                                                                  4096 Oct 1 16:13 [Om [01;34m.[Om
drwxrwxr-x 9 leonidas leonidas
                                                                                                  4096 Oct 1 15:05 [01;34m..[0m
-rw-rw-r-- 1 leonidas leonidas
                                                                                                  1154 Sep 17 20:01 1 title.tex
-rw-rw-r-- 1 leonidas leonidas
                                                                                                            0 Sep 17 19:41 2_main.tex
                                                                                                  4096 Sep 17 20:38 [01;34mimages[0
drwxrwxr-x 2 leonidas leonidas
-rw-rw-r-- 1 ivanov3 ivanov3
                                                                                                         89 Oct 1 16:13 important
-rw-rw-r-- 1 leonidas leonidas 12288 Oct 1 16:04 14 result u1
-rw-rw-r-- 1 leonidas leonidas 16384 Oct 1 16:03 14 result u2
-rw-rw-r-- 1 leonidas leonidas 20480 Oct 1 16:13 l4_result_u3
-rw-rw-r-- 1 leonidas leonidas 18597 Sep 17 20:51 OS_lab4_report.
        tex
-rw-rw-r-- 1 ivanov1 Students
                                                                                                        81 Oct
                                                                                                                              1 16:03 schedule
drwxrwxr-x 2 leonidas leonidas 4096 Sep 18 15:09 [01;34mwork[0m
-rw-rw-r-- 1 leonidas leonidas 33455 Sep 17 19:28 SLinuxLab4.
        docx
[?2004h]0;ivanov3@leonidas-AX154OSD: /home/leonidas/projects/itmo
        /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
        :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A[K
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        os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
        :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
ΓΑΓΚ
]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo/
        os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
        :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
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  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   chmod o+r important
[?20041
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   chmod o+r important
[C[C[C[C[Cls -la[K
「?20041
total 148
drwxrwxr-x 4 leonidas leonidas
                                4096 Oct 1 16:13 [Om [01;34m.[Om
drwxrwxr-x 9 leonidas leonidas
                                4096 Oct 1 15:05 [01;34m..[0m
-rw-rw-r-- 1 leonidas leonidas
                                1154 Sep 17 20:01 1 title.tex
-rw-rw-r-- 1 leonidas leonidas
                                   0 Sep 17 19:41 2 main.tex
```

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drwxrwxr-x 2 leonidas leonidas 4096 Sep 17 20:38 [01;34mimages[0
-rw-rw-r-- 1 ivanov3
                    ivanov3
                                 89 Oct 1 16:13 important
-rw-rw-r-- 1 leonidas leonidas 12288 Oct 1 16:04 l4_result_u1
-rw-rw-r-- 1 leonidas leonidas 20480 Oct 1 16:18 14_result_u2
-rw-rw-r-- 1 leonidas leonidas 24576 Oct 1 16:18 14_result_u3
-rw-rw-r-- 1 leonidas leonidas 18597 Sep 17 20:51 OS_lab4_report.
  t.ex
-rw-rw-r-- 1 ivanov1 Students
                                 81 Oct 1 16:03 schedule
drwxrwxr-x 2 leonidas leonidas 4096 Sep 18 15:09 [01;34mwork[0m
-rw-rw-r-- 1 leonidas leonidas 33455 Sep 17 19:28 SLinuxLab4.
  docx
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ls -lachmod o+r important [1Pw
[?20041
[?2004h]0;ivanov3@leonidas-AX154OSD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   chmod o+w important
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total 148
drwxrwxr-x 4 leonidas leonidas
                               4096 Oct 1 16:13 [Om[01;34m.[Om
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-rw-rw-r-- 1 leonidas leonidas 1154 Sep 17 20:01 1 title.tex
-rw-rw-r-- 1 leonidas leonidas
                                  0 Sep 17 19:41 2 main.tex
drwxrwxr-x 2 leonidas leonidas
                               4096 Sep 17 20:38 [01;34mimages[0
-rw-rw-rw- 1 ivanov3 ivanov3
                                 89 Oct 1 16:13 important
-rw-rw-r-- 1 leonidas leonidas 12288 Oct 1 16:04 14_result_u1
-rw-rw-r-- 1 leonidas leonidas 20480 Oct 1 16:18 l4_result_u2
-rw-rw-r-- 1 leonidas leonidas 24576 Oct 1 16:18 14 result u3
-rw-rw-r-- 1 leonidas leonidas 18597 Sep 17 20:51 OS_lab4_report.
  tex
-rw-rw-r-- 1 ivanov1
                     Students
                                 81 Oct 1 16:03 schedule
drwxrwxr-x 2 leonidas leonidas 4096 Sep 18 15:09 [01;34mwork[0m
-rw-rw-r-- 1 leonidas leonidas 33455 Sep 17 19:28 SLinuxLab4.
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           :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
                     [K[K[Knano important
[?20041
[?2004h[?1049h[22;0;0t[1;20r(B[m[41[?7h[39;49m[?1h=[?1h=[?251
           [39;49m(B[m[H[2J[18;20H(B[0;7m[ Reading...](B[m[18;19H(B[0;7m
           [ Read 1 line ] (B[m[H(B[0;7m GNU nano 7.2]
                                                                                                                                                                                                              important
                                                                               [1:51H(B[m
[19d(B[0;7m^G(B[m Help[14G(B[0;7m^O(B[m Write Out (B[0;7m^W(B[m Write Out (B[0;7m^W(B[0;7m^W(B[0;7m^W(B[m Write Out (B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(B[0;7m^W(A[0;7m^W(B[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m^W(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A
          Where Is
                                            (B[0;7m^K(B[m Cut
(B[0;7m^U(B[m Paste
[2dAll students need to be in recreation area at 18:00(B[0;7m
          >[2;1H(B[m[?121[?25h[?251[?121[?25h[3d[?251[18d[K[1;35H(B[0;7m
          *[51G(B[m
[3dAll personal! University will be closed tomorrow!
[5d[?121[?25h[?251[19;14H(B[0;7mM-D(B[m DOS Forma(B[0;7mM-A(B[m
                                            (B[0;7mM-B(B[m Backup Fi[20;2H(B[0;7mC(B[m Cancel
          (B[0;7mM-M(B[m Mac Forma(B[0;7mM-P(B[m Prepend (B[0;7m^T(B[m Prepend (B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(B[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m^T(A[0;7m)A[0;7m^T(A[0;7m^T(A[0;7m)A[0;7m^T(A[0;7m)A[0;7m^T(A[0;7m)A[0;7m^T(A[0;7m)A[0;7m)A[0;7m^T(A[0;7m)A[0;7m)A[0;7m^T(A[0;7m)A[0;7m)A[0;7m)A[0;7m^T(A[0;7m)A[0;7m)A[0;7m)A[0;7m)A[0;7m]A[0;7m)A[0;7m)A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[0;7m]A[
          Browse
[18d(B[0;7mFile Name to Write: important
           [18;30H(B[m[?121[?25h[?251[18;19H[1K (B[0;7m[ Writing...](B[m
           [K[1;35H(B[0;7m [51G(B[m[18;18H(B[0;7m[ Wrote 3 lines ](B[m[18;18H(B[0;7m[ Wrote 3 lines ](B[m[18;18H(B[0;7m[W[18;18H(B[0;7m[W[18;18H(W[18;18H(B[0;7m[W[18;18H(W[18;18H(W[18;18H(W[18;18H(U)))](B[m[18;18H(W[18;18H(U))))))))]]]]]]]]]]]]]]]]]]]]
          [19;14H(B[0;7m^0(B[m Write Out (B[0;7m^W(B[m Where Is)]))])]
          ^K(B[m Cut[K[20;2H(B[0;7mX(B[m Exit
                                                                                                                                                                  (B[0;7m^R(B[m Read)
         File (B[0;7m^{\mbox{\ensuremath{\mbox{$|}}}}(B[m\mbox{\ensuremath{\mbox{$|}}})]) = (B[0;7m^{\mbox{\ensuremath{\mbox{$|}}}}) = (B[0;7m^{\mbox{\ensuremath{\mbox{$|}}}})])
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[5d[?251[18d[J[20d[?121[?25h[20;1H[?10491[23;0;0t
[?11>[?20041[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/
  projects/itmo/os linux course/Lab4[01;32mivanov3@leonidas-
  AX1540SD[00m:[01;34m/home/leonidas/projects/itmo/
  os linux course/Lab4[00m$ ls - la
[?20041
ls: cannot access '-': No such file or directory
ls: cannot access 'la': No such file or directory
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
   ls - la important
[?20041
ls: cannot access '-': No such file or directory
ls: cannot access 'la': No such file or directory
important
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
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ΓΑΓΚ
]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os linux course/Lab4[00m$
ГΚ
ΓΑΓΚ
]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
ΓK
[A [K
```

```
]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo/
  os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ls - la important [K[K[K[K[K[K
C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C[C]K]
C[C[C[C[C[C[C[C[C[C[C[K[K
「?20041
ls: cannot access '-': No such file or directory
ls: cannot access 'la': No such file or directory
[?2004h]0;ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os_linux_course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   ls - la [1P
[?20041
total 156
drwxrwxr-x 4 leonidas leonidas 4096 Oct 1 20:39 [Om[01;34m.[Om
drwxrwxr-x 9 leonidas leonidas 4096 Oct 1 15:05 [01;34m..[0m
-rw-rw-r-- 1 leonidas leonidas 1154 Sep 17 20:01 1 title.tex
-rw-rw-r-- 1 leonidas leonidas
                                0 Sep 17 19:41 2_main.tex
drwxrwxr-x 2 leonidas leonidas
                             4096 Sep 17 20:38 [01;34mimages[0
                             140 Oct 1 20:39 important
-rw-rw-rw- 1 ivanov3 ivanov3
-rw-rw-r-- 1 leonidas leonidas 12288 Oct 1 16:04 l4_result_u1
-rw-rw-r-- 1 leonidas leonidas 20480 Oct 1 16:18 14 result u2
-rw-rw-r-- 1 leonidas leonidas 32768 Oct 1 20:39 14_result_u3
-rw-rw-r-- 1 leonidas leonidas 18597 Sep 17 20:51 OS_lab4_report.
  t.ex
-rw-rw-r-- 1 ivanov1 Students
                               81 Oct 1 16:03 schedule
drwxrwxr-x 2 leonidas leonidas 4096 Sep 18 15:09 [01;34mwork[0m
-rw-rw-r-- 1 leonidas leonidas 33455 Sep 17 19:28 SLinuxLab4.
  docx
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
  :[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
Session terminated, killing shell... ...killed.
Terminated
[?2004h]0; ivanov3@leonidas-AX1540SD: /home/leonidas/projects/itmo
  /os linux course/Lab4[01;32mivanov3@leonidas-AX1540SD[00m
```

```
:[01;34m/home/leonidas/projects/itmo/os_linux_course/Lab4[00m$
   e[?20041
xexit
it
[?20041
exit
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ it
[?20041
it: command not found
[?2004h]0;leonidas@leonidas-AX1540SD: ~/projects/itmo/
  os_linux_course/Lab4[01;32mleonidas@leonidas-AX1540SD[00m
  :[01;34m~/projects/itmo/os_linux_course/Lab4[00m$ exit
[?20041
exit
Script done on 2025-10-01 20:59:23+03:00 [COMMAND_EXIT_CODE
  ="127"]
```

1.4 Вывод

Выполнены основные действия по управлению пользователями/группами, настройке прав доступа к файлам и работе с процессами. Результаты шагов зафиксированы в приложенных файлах записи.