

Презентация к лабораторной работе №2

Цель работы

Цель работы: получить практический навык работы в консоли с атрибутами файлов, закрепить теоретические основы дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.



Выполнение работы

Создание пользователя

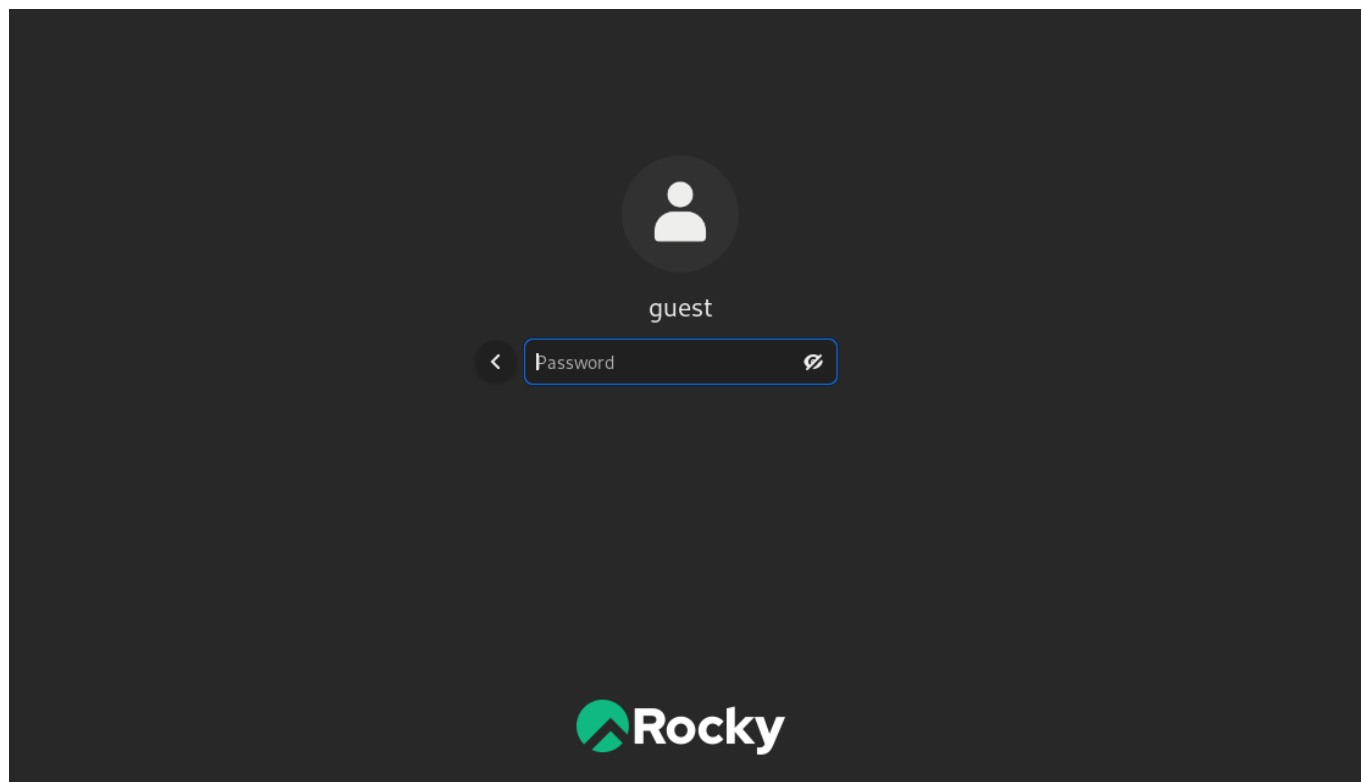
```
amermolaev@amermolaev:~$ whoami
amermolaev
[amermolaev@amermolaev ~]$ useradd guest
useradd: Permission denied.
useradd: cannot lock /etc/passwd; try again later.
[amermolaev@amermolaev ~]$ sudo useradd guest

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

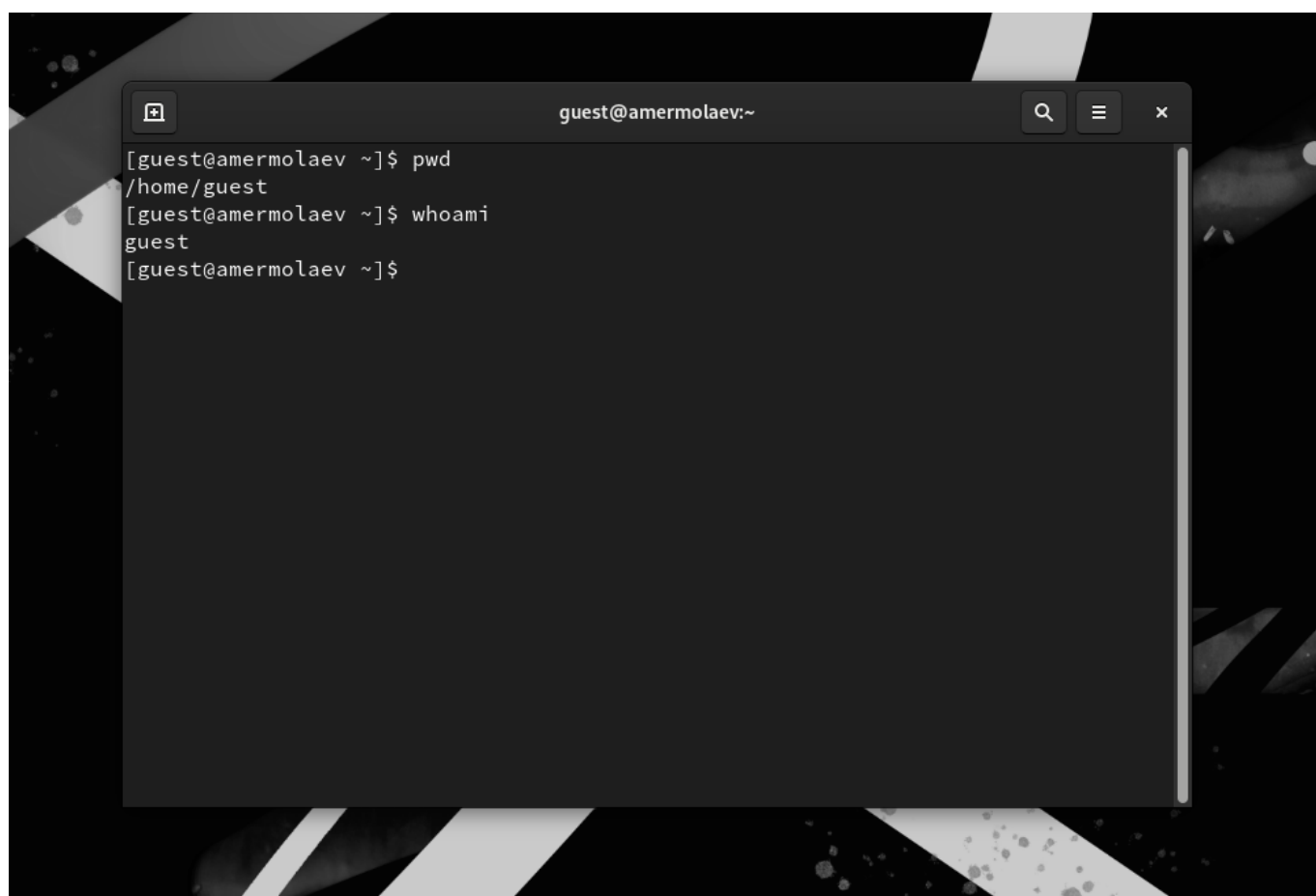
#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.

[sudo] password for amermolaev:
[amermolaev@amermolaev ~]$ sudo passwd guest
Changing password for user guest.
New password:
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[amermolaev@amermolaev ~]$
```

Вход в систему под новым пользователем



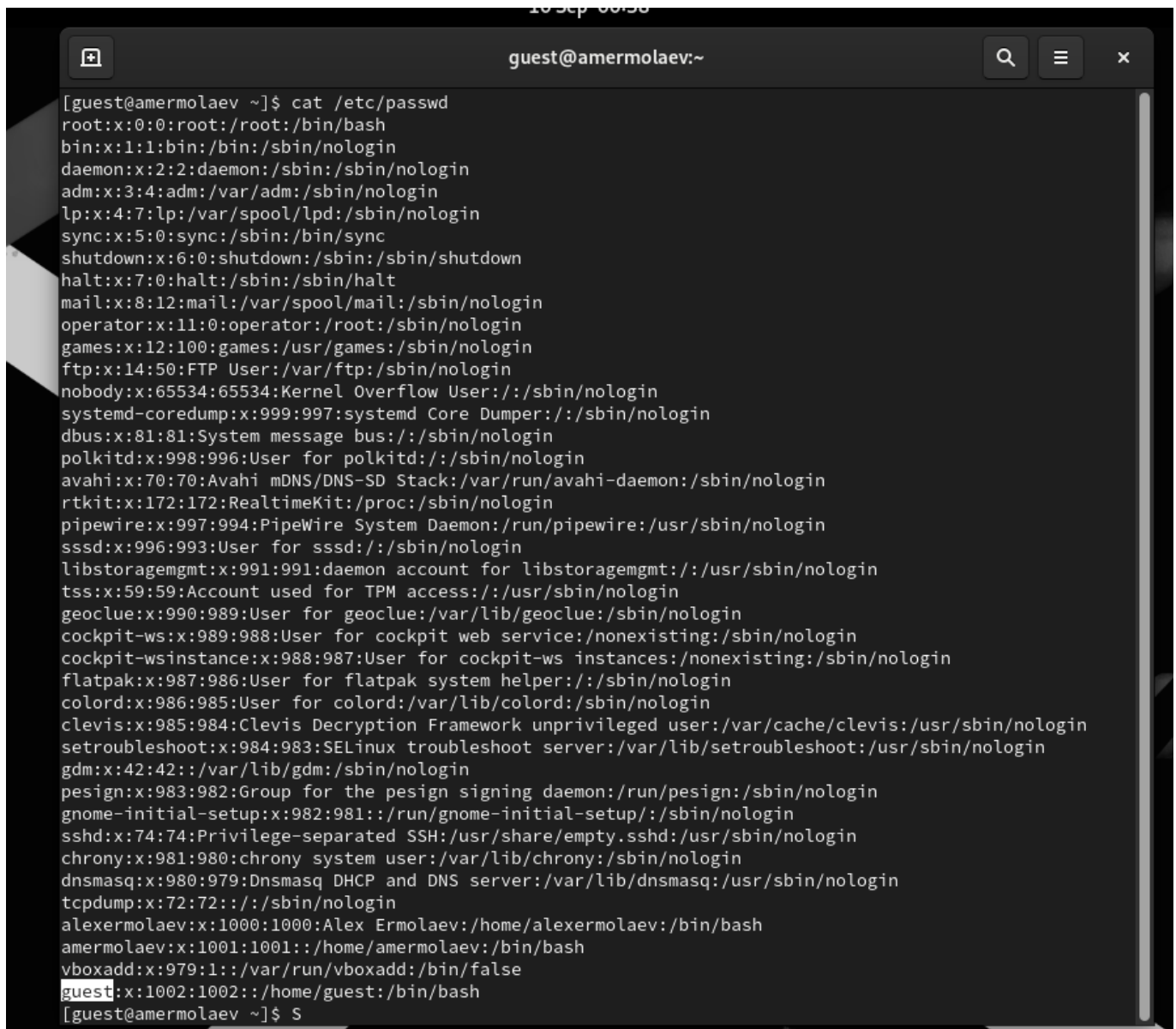
Просмотр информации о домашней директории



Просмотр информации о пользователе

A terminal window titled 'guest@amermolaev:~' with search, menu, and close icons. It shows the output of 'id' and 'groups' commands.

```
[guest@amermolaev ~]$ id
uid=1002(guest) gid=1002(guest) groups=1002(guest) context=unconfined_u:unconfined
_r:unconfined_t:s0-s0:c0.c1023
[guest@amermolaev ~]$ groups
guest
[guest@amermolaev ~]$
```

A terminal window titled 'guest@amermolaev:~' with search, menu, and close icons. It shows the output of the 'cat /etc/passwd' command, listing system users and regular users.

```
[guest@amermolaev ~]$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
polkitd:x:998:996:User for polkitd:/:/sbin/nologin
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin
pipewire:x:997:994:PipeWire System Daemon:/run/pipewire:/usr/sbin/nologin
sssd:x:996:993:User for sssd:/:/sbin/nologin
libstoragemgmt:x:991:991:daemon account for libstoragemgmt:/:/usr/sbin/nologin
tss:x:59:59:Account used for TPM access:/:/usr/sbin/nologin
geoclue:x:990:989:User for geoclue:/var/lib/geoclue:/sbin/nologin
cockpit-ws:x:989:988:User for cockpit web service:/nonexisting:/sbin/nologin
cockpit-wsinstance:x:988:987:User for cockpit-ws instances:/nonexisting:/sbin/nologin
flatpak:x:987:986:User for flatpak system helper:/:/sbin/nologin
colord:x:986:985:User for colord:/var/lib/colord:/sbin/nologin
clevis:x:985:984:Clevis Decryption Framework unprivileged user:/var/cache/clevis:/usr/sbin/nologin
setroubleshoot:x:984:983:SELinux troubleshoot server:/var/lib/setroubleshoot:/usr/sbin/nologin
gdm:x:42:42:/:/var/lib/gdm:/sbin/nologin
pesign:x:983:982:Group for the pesign signing daemon:/run/pesign:/sbin/nologin
gnome-initial-setup:x:982:981:/:run/gnome-initial-setup:/:/sbin/nologin
sshd:x:74:74:Privilege-separated SSH:/usr/share/empty.sshd:/usr/sbin/nologin
chrony:x:981:980:chrony system user:/var/lib/chrony:/sbin/nologin
dnsmasq:x:980:979:Dnsmasq DHCP and DNS server:/var/lib/dnsmasq:/usr/sbin/nologin
tcpdump:x:72:72:/:/sbin/nologin
alexermolaev:x:1000:1000:Alex Ermolaev:/home/alexermolaev:/bin/bash
amermolaev:x:1001:1001:/:home/amermolaev:/bin/bash
vboxadd:x:979:1:/:var/run/vboxadd:/bin/false
guest:x:1002:1002:/:home/guest:/bin/bash
[guest@amermolaev ~]$ S
```

```
10 Sep 00:33
guest@amermolaev:~
[guest@amermolaev ~]$ cat /etc/passwd | grep guest
guest:x:1002:1002::/home/guest:/bin/bash
[guest@amermolaev ~]$
```

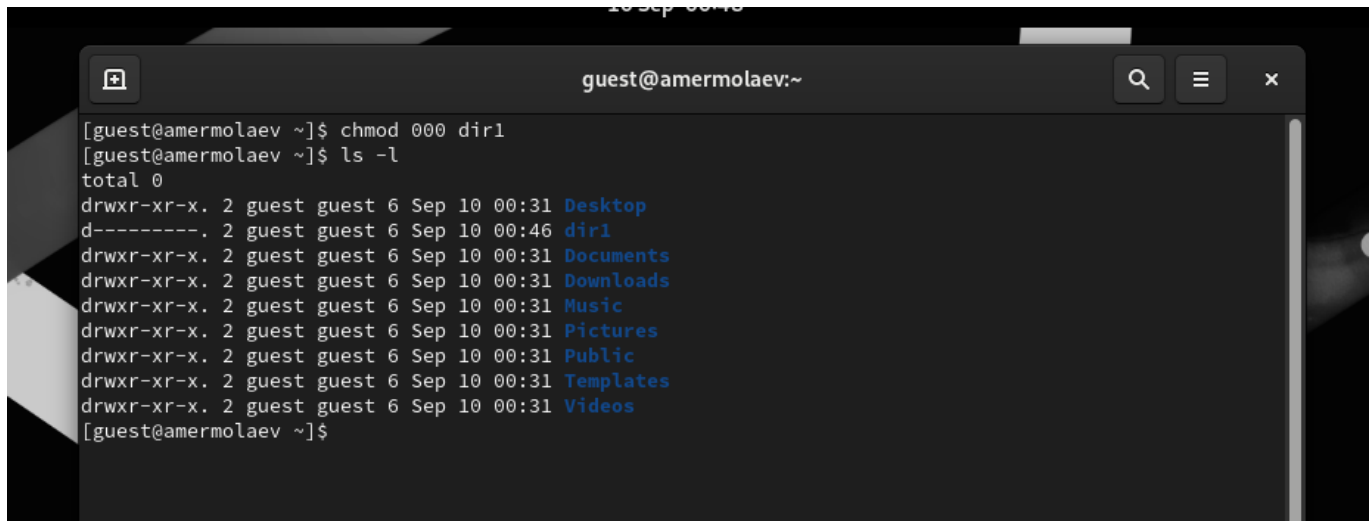
Просмотр существующих директорий

```
10 Sep 00:33
guest@amermolaev:~
[guest@amermolaev ~]$ ls -l /home/
total 12
drwx-----, 14 alexermolaev alexermolaev 4096 Sep  3 23:52 alexermolaev
drwx-----, 14 amermolaev amermolaev 4096 Sep 10 00:30 amermolaev
drwx-----, 14 guest guest 4096 Sep 10 00:31 guest
[guest@amermolaev ~]$
```

```
10 Sep 00:42
guest@amermolaev:~
[guest@amermolaev ~]$ lsattr /home
lsattr: Permission denied While reading flags on /home/alexermolaev
lsattr: Permission denied While reading flags on /home/amermolaev
----- /home/guest
[guest@amermolaev ~]$
```

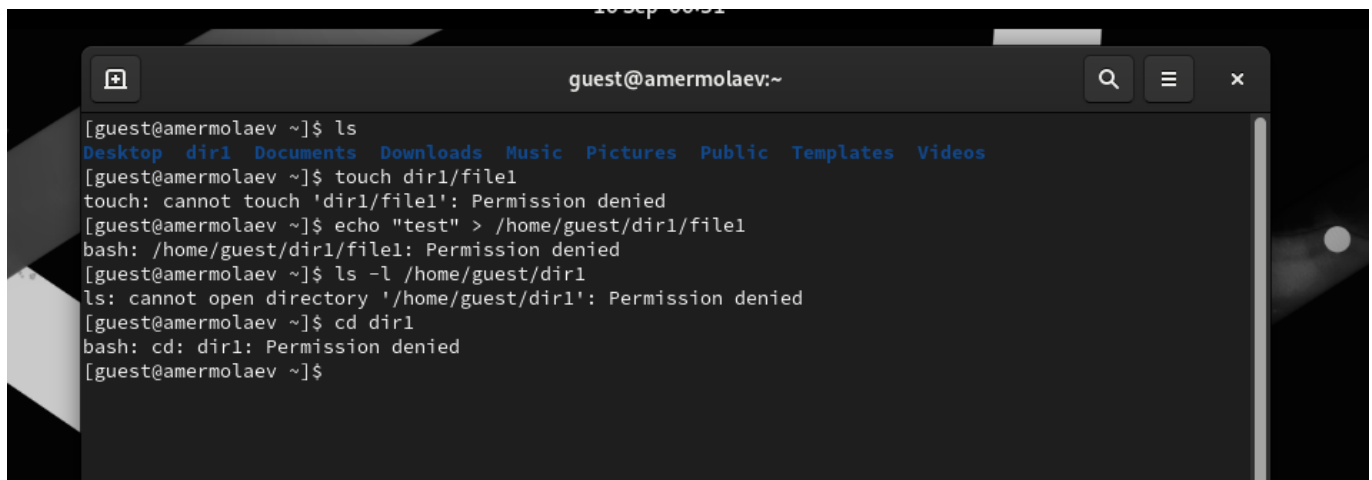
Права доступа к созданной папке (по умолчанию и при изменении прав доступа)

```
10 Sep 00:48
guest@amermolaev:~
[guest@amermolaev ~]$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
[guest@amermolaev ~]$ mkdir dir1
[guest@amermolaev ~]$ ls -l
total 0
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Desktop
drwxr-xr-x. 2 guest guest 6 Sep 10 00:46 dir1
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Documents
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Downloads
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Music
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Pictures
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Public
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Templates
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Videos
[guest@amermolaev ~]$ lsattr
----- ./Desktop
----- ./Downloads
----- ./Templates
----- ./Public
----- ./Documents
----- ./Music
----- ./Pictures
----- ./Videos
----- ./dir1
[guest@amermolaev ~]$
```



A terminal window titled 'guest@amermolaev:~' with search, menu, and close buttons. The user runs 'chmod 000 dir1' and 'ls -l'. The output shows a list of directories with permissions 'drwxr-xr-x' and owner 'guest'.

```
[guest@amermolaev ~]$ chmod 000 dir1
[guest@amermolaev ~]$ ls -l
total 0
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Desktop
d------. 2 guest guest 6 Sep 10 00:46 dir1
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Documents
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Downloads
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Music
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Pictures
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Public
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Templates
drwxr-xr-x. 2 guest guest 6 Sep 10 00:31 Videos
[guest@amermolaev ~]$
```



The same terminal window continues with attempts to create a file, write to it, and change directory, all of which fail with 'Permission denied'.

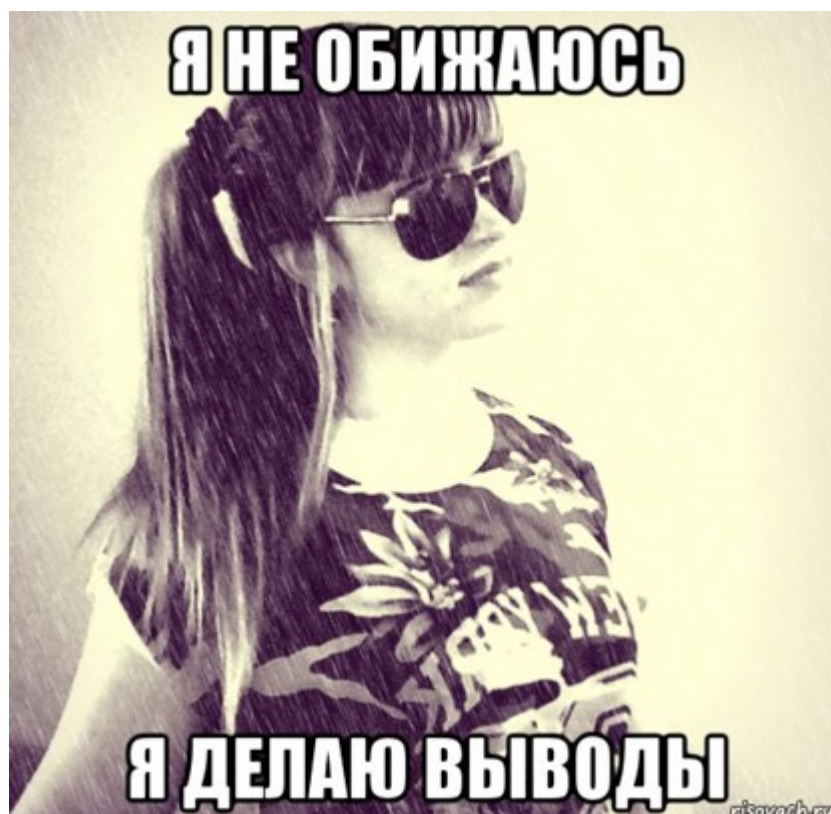
```
[guest@amermolaev ~]$ ls
Desktop dir1 Documents Downloads Music Pictures Public Templates Videos
[guest@amermolaev ~]$ touch dir1/file1
touch: cannot touch 'dir1/file1': Permission denied
[guest@amermolaev ~]$ echo "test" > /home/guest/dir1/file1
bash: /home/guest/dir1/file1: Permission denied
[guest@amermolaev ~]$ ls -l /home/guest/dir1
ls: cannot open directory '/home/guest/dir1': Permission denied
[guest@amermolaev ~]$ cd dir1
bash: cd: dir1: Permission denied
[guest@amermolaev ~]$
```

Заполнение таблиц «Установленные права и разрешённые действия» и «Минимально необходимые права для выполнения операций внутри директории»

```
guest@amermolaev:~  
[guest@amermolaev ~]$ ls -l dir1/  
total 0  
-rw-r--r--. 1 guest guest 0 Sep 10 01:09 file1  
[guest@amermolaev ~]$ chmod 100 dir1  
[guest@amermolaev ~]$ touch dir1/file2  
touch: cannot touch 'dir1/file2': Permission denied  
[guest@amermolaev ~]$ rm dir1/file1  
rm: cannot remove 'dir1/file1': Permission denied  
[guest@amermolaev ~]$ echo 'bobr kurwa' > dir1/file1  
[guest@amermolaev ~]$ ls  
Desktop dir1 Documents Downloads Music Pictures Public Templates Videos  
[guest@amermolaev ~]$ cat dir1/file1  
bobr kurwa  
[guest@amermolaev ~]$ cd dir1  
[guest@amermolaev dir1]$ ls  
ls: cannot open directory '.': Permission denied  
[guest@amermolaev dir1]$ pwd  
/home/guest/dir1  
[guest@amermolaev dir1]$ cd ..  
[guest@amermolaev ~]$ ls  
Desktop dir1 Documents Downloads Music Pictures Public Templates Videos  
[guest@amermolaev ~]$ mv dir1/file1 dir1/superfile  
mv: cannot move 'dir1/file1' to 'dir1/superfile': Permission denied  
[guest@amermolaev ~]$ chatter -a dir1/file1  
[guest@amermolaev ~]$ ls -l dir1  
ls: cannot open directory 'dir1': Permission denied  
[guest@amermolaev ~]$
```

Вывод

В рамках выполнения работы я получил практический навык работы в консоли с атрибутами файлов, закрепил теоретические основы дискреционного разграничения доступа в современных системах с открытым кодом на базе ОС Linux.



Финал

