

Операционные системы

Командная оболочка Midnight Commander

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Цели и задачи работы

Ознакомление с файловой системой Linux, её структурой, именами и содержанием каталогов. Приобретение практических навыков по применению команд для работы с файлами и каталогами, по управлению процессами, по проверке использования диска и обслуживанию файловой системы.

- 1 Изучить возможности Midnight Commander
- 2 Изучить редактор Midnight Commander

Процесс выполнения лабораторной работы

Работа с Midnight Commander

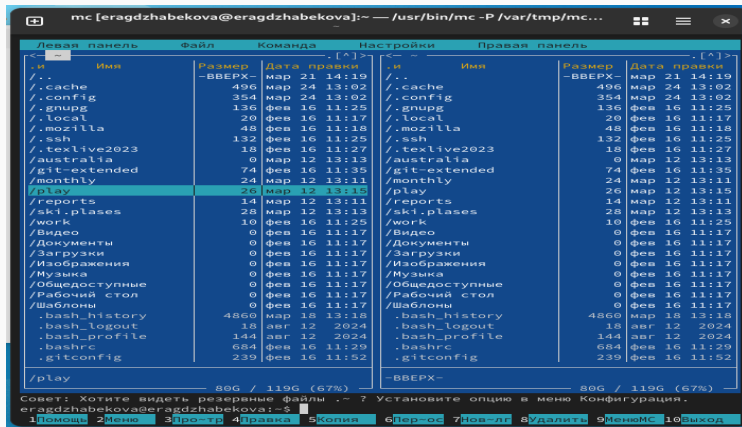


Рис. 1: Запуск mc

Работа с Midnight Commander

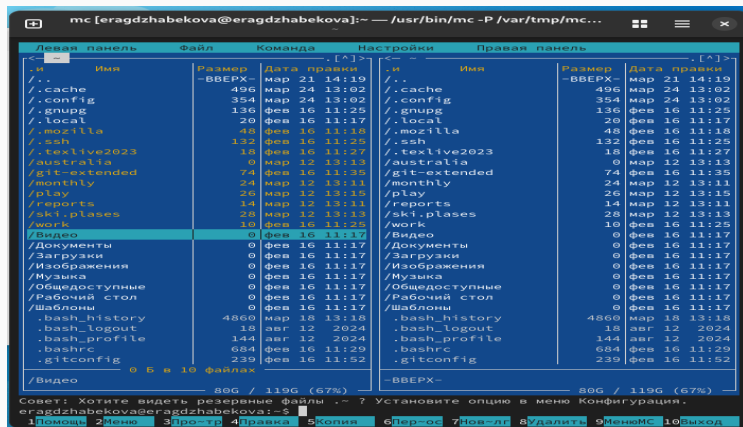


Рис. 2: Выделение

Работа с Midnight Commander

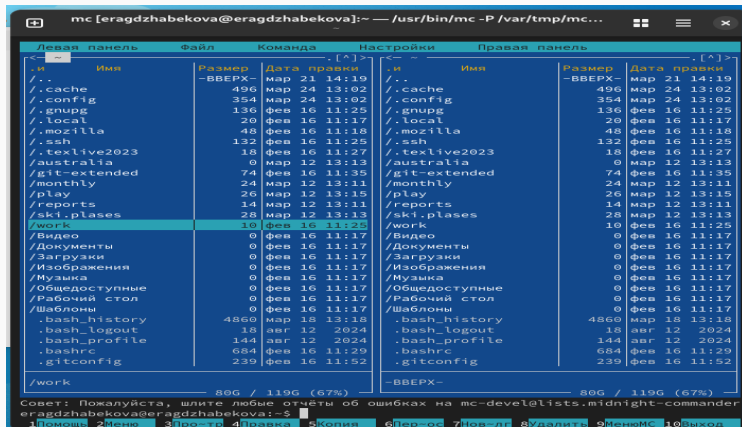


Рис. 3: Отмена

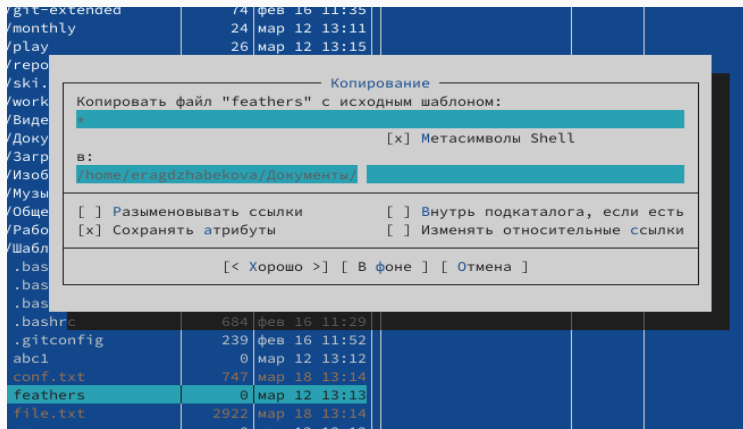


Рис. 4: Копирование

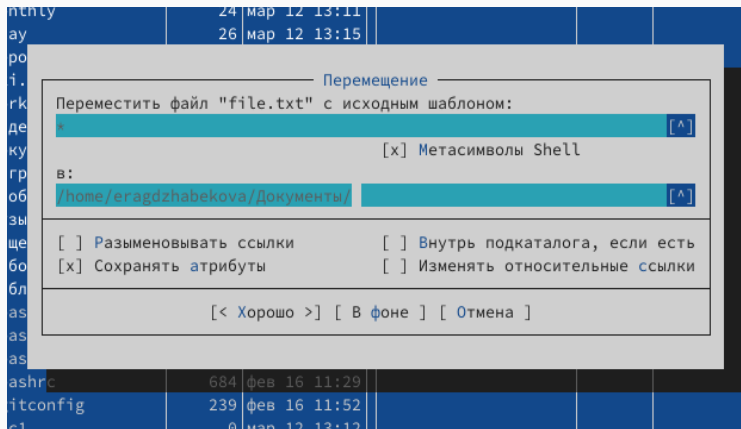


Рис. 5: Перемещение

Работа с Midnight Commander

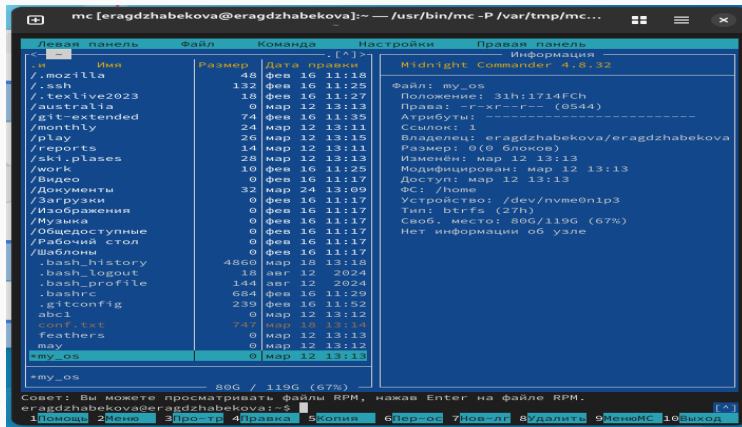


Рис. 6: Информация

Работа с Midnight Commander

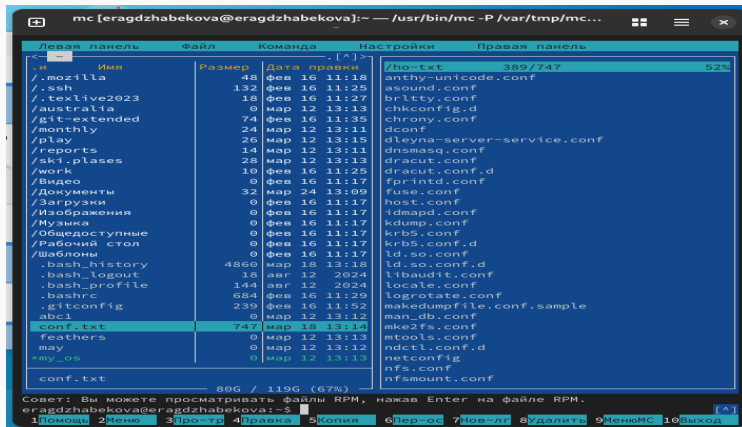


Рис. 7: Быстрый просмотр

Работа с Midnight Commander

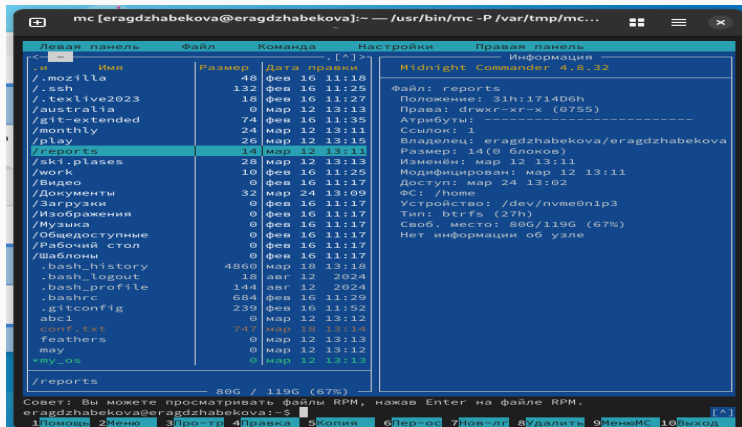


Рис. 8: Информация

Работа с Midnight Commander

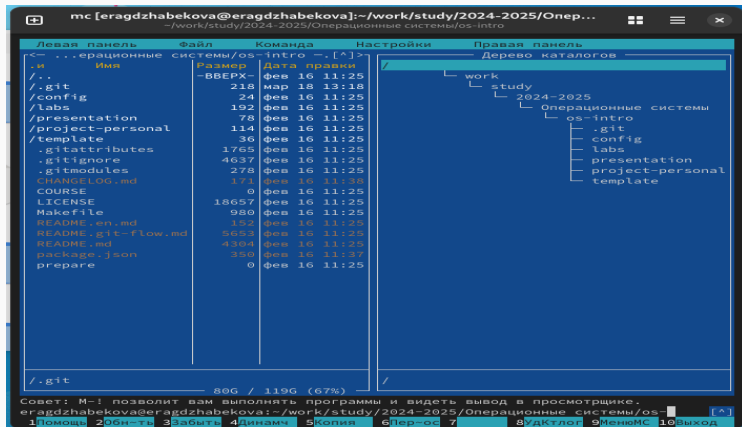
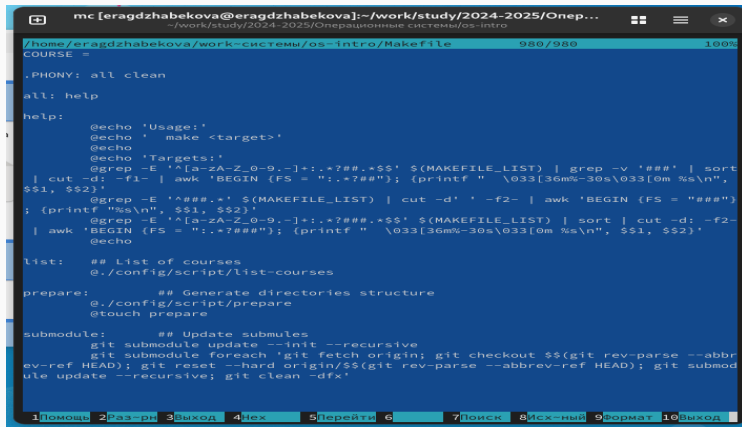


Рис. 9: Дерево каталогов

Работа с Midnight Commander



```
mc [eragdzhabekova@eragdzhabekova]:~/work/study/2024-2025/Onep...
~/work/study/2024-2025/Операционные системы/os-intro

/home/eragdzhabekova/work-системы/os-intro/Makefile 980/980 100%
COURSE =

.PHONY: all clean

all: help

help:
    @echo 'Usage:'
    @echo '  make <target>'
    @echo
    @echo 'Targets:'
    @grep -E '^[a-zA-Z_0-9-]+:.*?###.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort
    | cut -d: -f1- | awk 'BEGIN {FS = ":.*?###"}; {printf " \033[36m%-30s\033[0m %s\n",
    $$1, $$2}'
    @grep -E '###.*' $(MAKEFILE_LIST) | cut -d: -f2- | awk 'BEGIN {FS = "###"}
    ; {printf "%s\n", $$1, $$2}'
    @grep -E '^[a-zA-Z_0-9-]+:.*?###.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2-
    | awk 'BEGIN {FS = ":.*?###"}; {printf " \033[36m%-30s\033[0m %s\n", $$1, $$2}'
    @echo

list:    ## List of courses
    @./config/script/list-courses

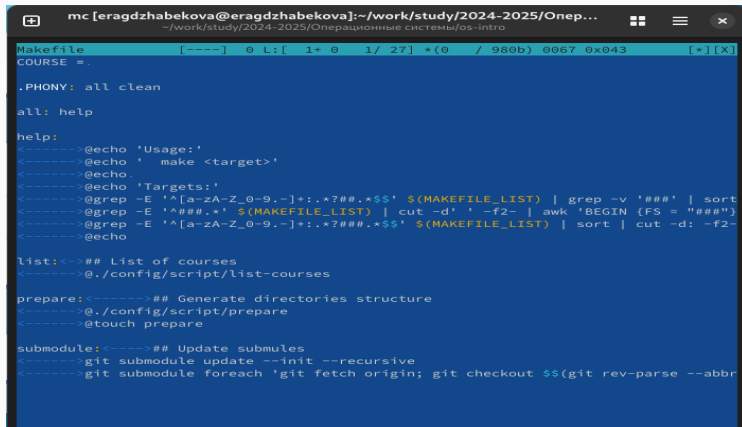
prepare:    ## Generate directories structure
    @./config/script/prepare
    @touch prepare

submodule:    ## Update submodules
    git submodule update --init --recursive
    git submodule foreach 'git fetch origin; git checkout $(git rev-parse --abbr
ev-ref HEAD); git reset --hard origin/$(git rev-parse --abbrev-ref HEAD); git submod
ule update --recursive; git clean -dfx'
```

1Помощь 2Раз-рн 3Выход 4Нех 5Перейти 6 7Поиск 8Иск-ный 9Формат 10Выход

Рис. 10: Просмотр содержимого текстового файла

Работа с Midnight Commander



The screenshot shows a terminal window titled "mc [eragdzhabekova@eragdzhabekova]:~/work/study/2024-2025/Onep...". The window displays the content of a file named "Makefile". The text in the terminal is as follows:

```
Makefile      [-----]  0 L:[ 1+ 0  1/ 27]  *(0  / 980b) 0067 0x043  [*] [X]
COURSE =.

.PHONY: all clean

all: help

help:
<----->@echo 'Usage:'
<----->@echo '  make <target>'
<----->@echo.
<----->@echo 'Targets:'
<----->@grep -E '^ [a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort
<----->@grep -E '^###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"}'
<----->@grep -E '^ [a-zA-Z_0-9.-]+:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2-
<----->@echo

list:<-->## List of courses
<----->@./config/script/list-courses

prepare:<----->## Generate directories structure
<----->@./config/script/prepare
<----->@touch prepare

submodule:<----->## Update submules
<----->git submodule update --init --recursive
<----->git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbr
```

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов

Работа с Midnight Commander

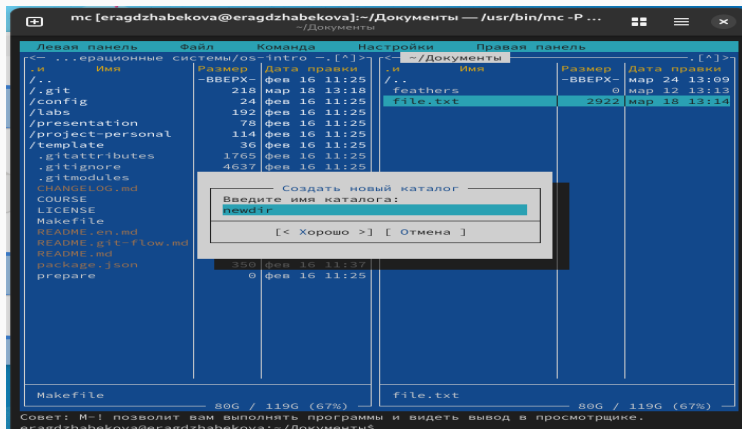


Рис. 12: Создание каталога

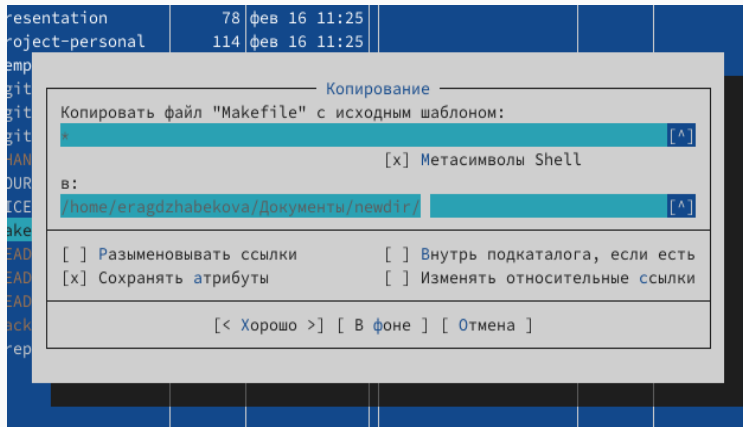


Рис. 13: Копирование в файлов в созданный каталог

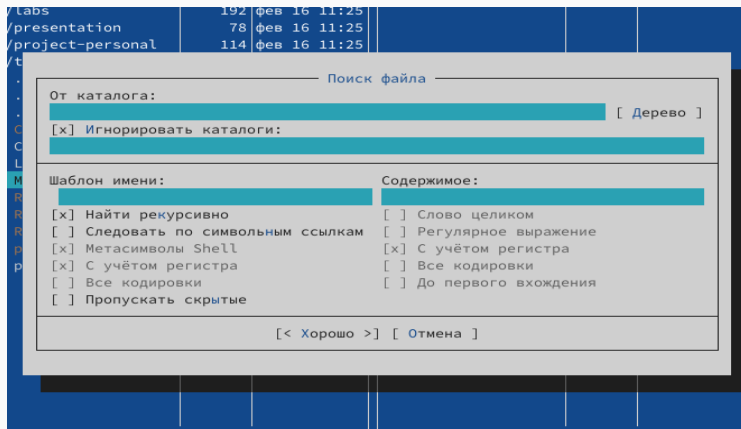


Рис. 14: Поиск файлов

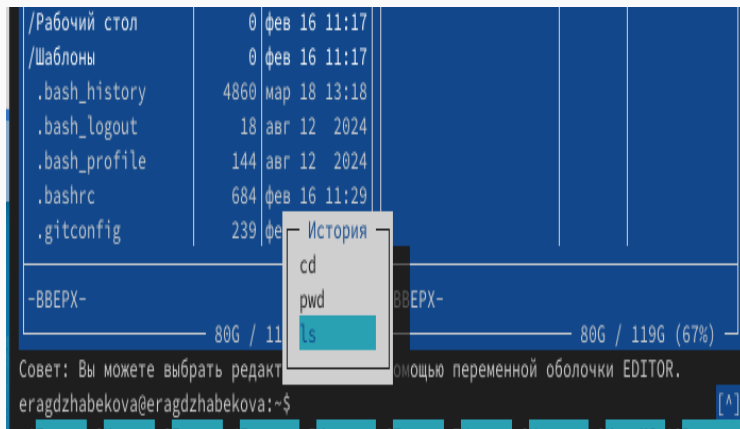


Рис. 15: История команд

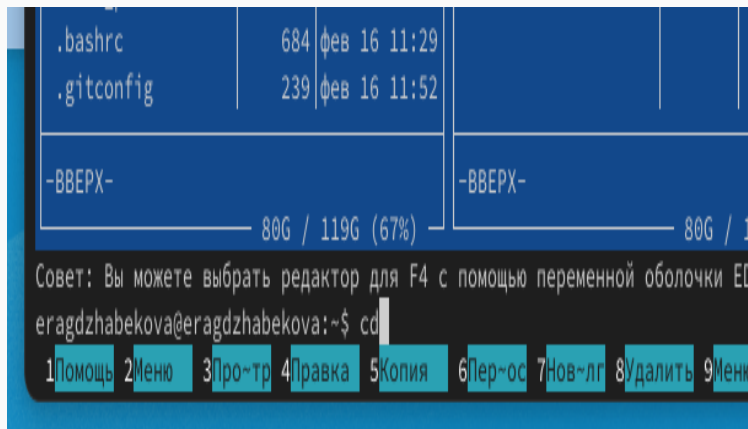


Рис. 16: Переход в домашний каталог

A screenshot of the Midnight Commander file manager. The title bar at the top shows the file path 'mc.ext.ini' and some system information. The main window displays the contents of the 'mc.ext.ini' file, which is a configuration file for Midnight Commander. The text is displayed in a monospaced font on a dark blue background. The file contains several sections of text, including warnings, instructions on how to edit the file, and details about section names and patterns. A mouse cursor is visible over the text.

```
mc.ext.ini [----] 0 L:[ 1+ 0 1/1136] *(0 /26909b) 0035 0x023 [•][X]
# Midnight Commander 4.0 extension file

# Warning: The structure of this file has been completely changed with the version 4.0!
#
# All lines starting with # or empty lines are ignored.
#
# IMPORTANT: mc scans this file only upon first use or after editing it using the
# mc "Edit extension file" command (F9-c-e). If you edit this file in any other way
# while mc is running, you will need to press F9-c-e and exit the editor for your
# changes to take effect, or exit mc and start it again.
#
# Section name can be anything with following exceptions:
#   there are two reserved section names:
#       mc.ext.ini
#       Default
#   special name pattern:
#       Include/xxxxx
# See below for more details.
#
# Section [mc.ext.ini] is mandatory. It contains file metadata.
# "Version" parameter is mandatory. It contains the file format version.
#
# Section [Default] is optional. It is applied only if no other match was found.
#
# Sections like [Include/xxxx] can be referenced as "Include=xxxx" from other sections.
# Section [Include/xxxx] can be located as before as after sections that point to it.
#
# Sections are processed from top to bottom, thus the order is important.
# If there are more than one sections with the same name in this file, the first
# section will be used.
#
# [Default] should be a catch-all action and come last.
```

Рис. 17: Просмотр файла расширений

A screenshot of the Midnight Commander file manager's menu system. The window title is 'menu' with standard window controls. The menu is open, showing a list of options. At the top, it says 'shell_patterns=0'. The menu items include: '%%' (The % character), '%f' (The current file), '%p' (The current file), '%d' (The current working directory), '%s' (Selected files), '%t' (Tagged files), '%u' (Tagged files), '%view' (Runs commands), and a section for format letters (ascii, hex, nroff, uniform). Below this, there are two sections for macros: one for the current file (starting with '! t t') and one for tagged files (starting with 't t'). The bottom of the window shows a status bar with numbered shortcuts: 1.Помощь, 2.Сохранить, 3.Блок, 4.Замена, 5.Копия, 6.Перем-тить, 7.Поиск, 8.Удалить, 9.МенюМС, 10.Выход.

```
menu [=====] 1 L: [ 1*16 17/370] *(732 /11821b) 0010 0x00A [ * ] [ X ]
shell_patterns=0

#####
# %% The % character
# %f The current file (if non-local vfs, file will be copied locally and
#      %f will be full path to it)
# %p The current file
# %d The current working directory
# %s "Selected files"; the tagged files if any, otherwise the current file
# %t Tagged files
# %u Tagged files (and they are untagged on return from expand_format)
# %view Runs the commands and pipes standard output to the view command
# If %view is immediately followed by '{', recognize keywords
#      ascii, hex, nroff and uniform
#
# If the format letter is in uppercase, it refers to the other panel
#
# With a number followed the % character you can turn quoting on (default)
# and off. For example:
# %f quote expanded macro
# %!f ditto
# %0f don't quote expanded macro
#####

+ ! t t
@ Do something on the current file
  CMD=%{Enter command}
  $CMD %f

+ t t
@ Do something on the tagged files
  CMD=%{Enter command}
  for i in %t ; do

1.Помощь 2.Сохранить 3.Блок 4.Замена 5.Копия 6.Перем-тить 7.Поиск 8.Удалить 9.МенюМС 10.Выход
```

Рис. 18: Просмотр файла меню



Рис. 19: Конфигурация



Рис. 20: Внешний вид



Рис. 21: Настройки панелей



Рис. 22: Подтверждение

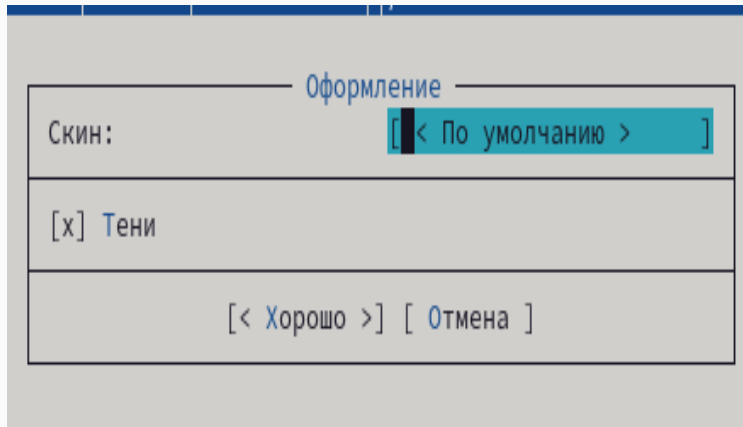


Рис. 23: Оформление



Рис. 24: Кодировка символов



Рис. 25: Распознавание клавиш



```
LICENSE [----] 46 L: [ 1+18 19/397] *(898 /18657b) 0108 0x06C [*] [X]
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1Помощь 2Сохран 3Блок 4Замена 5Копия 6Пере-ить 7Поиск 8Удалить 9МенюМС 10Выход
```

Рис. 26: Файл с текстом



```
LICENSE      [-M--]  0 L:[ 1+16 17/388] *(716 /18143b) 0032 0x020      [*][X]
Attribution 4.0 International

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```

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Рис. 27: Файл с текстом

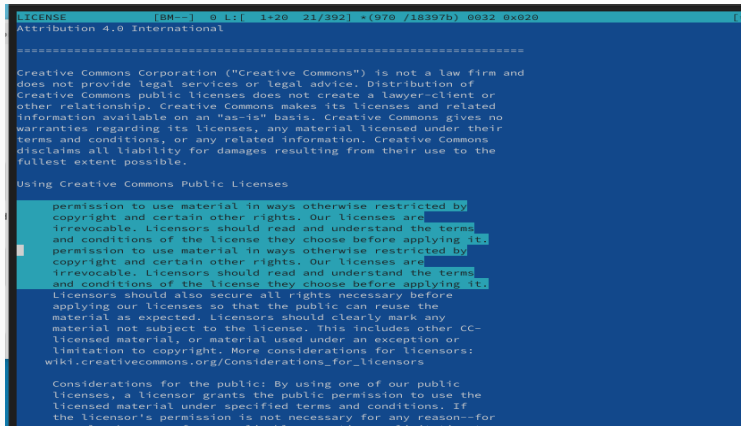
Работа с редактором Midnight Commander



Рис. 28: Копирование фрагмента



Рис. 29: Сохранение



```
LICENSE [BM--] 0 L:[ 1+20 21/392] *(970 /18397b) 0032 0x020 [*]
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```

Рис. 30: Отмена



```
LICENSE      [-M--]  0 L:[355+36 391/391] *(18396/18396b) <EOF>      [*][X]
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  cannot be reformed, it shall be severed from this Public License
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1Помощь  2Сохран  3Блок  4Замена  5Копия  6Пере-ить  7Поиск  8Удалить  9МенюМС  10Выход
```

Рис. 31: Переход в конец файла

Работа с редактором Midnight Commander



```
LICENSE      [-M--] 29 L:[ 1+ 0 1/391] *(29 /18396b) 0010 0x00A      [*] [X]
Attribution 4.0 International

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```

Рис. 32: Переход в начало файла

Работа с редактором Midnight Commander



```
orc_dump.c      [----]  0 L:[ 13+ 0  13/161] *(272 /3240b) 0105 0x069      [*][X]
1int orc_dump(const char *_objname)
{
    ----->int fd, nr_entries, i, *orc_ip = NULL, orc_size = 0;
    ----->struct orc_entry *orc = NULL;
    ----->char *name;
    ----->size_t nr_sections;
    ----->Elf64_Addr orc_ip_addr = 0;
    ----->size_t shstrtab_idx, strtab_idx = 0;
    ----->Elf *elf;
    ----->Elf_Scn *scn;
    ----->GElf_Shdr sh;
    ----->GElf_Rela rela;
    ----->GElf_Sym sym;
    ----->Elf_Data *data, *symtab = NULL, *rela_orc_ip = NULL;
    ----->struct elf dummy_elf = {};

    ----->objname = _objname;

    ----->elf_version(EV_CURRENT);

    ----->fd = open(objname, O_RDONLY);
    ----->if (fd == -1) {
    -----><----->perror("open");
    -----><----->return -1;
    ----->}

    ----->elf = elf_begin(fd, ELF_C_READ_MMAP, NULL);
    ----->if (!elf) {
    -----><----->WARN_ELF("elf_begin");
    -----><----->return -1;
    ----->}

    ----->if (!elf64_getehdr(elf)) {
    -----><----->WARN_ELF("elf64_getehdr");
    -----><----->return -1;
    ----->}

1Помощь  2Сохран  3Блок  4Замена  5Копия  6Пере-ить  7Поиск  8Удалить  9МенюМС  10Выход
```

Рис. 33: Файл с программой



Рис. 34: Цветовыделение синтаксиса

Выводы по проделанной работе

В данной работе мы ознакомились с инструментами поиска файлов и фильтрации текстовых данных. А также приобрели практические навыки по управлению процессами.