

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

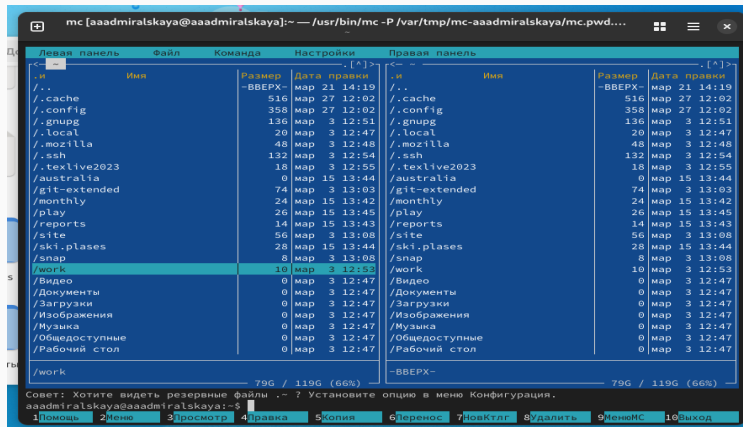


Рис. 1: Запуск mc

Работа с Midnight Commander

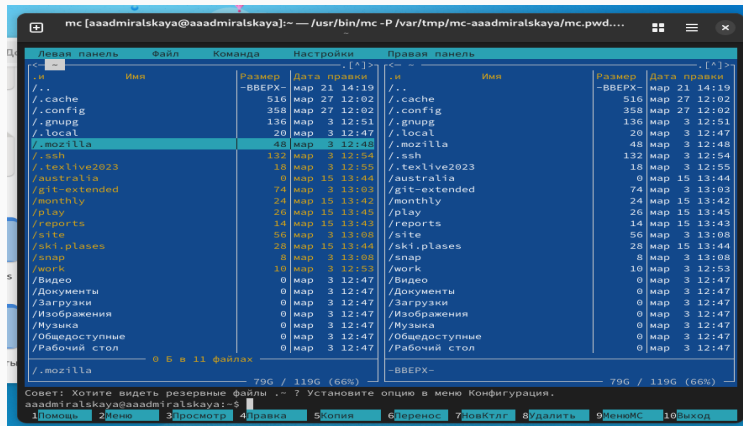


Рис. 2: Выделение

Работа с Midnight Commander

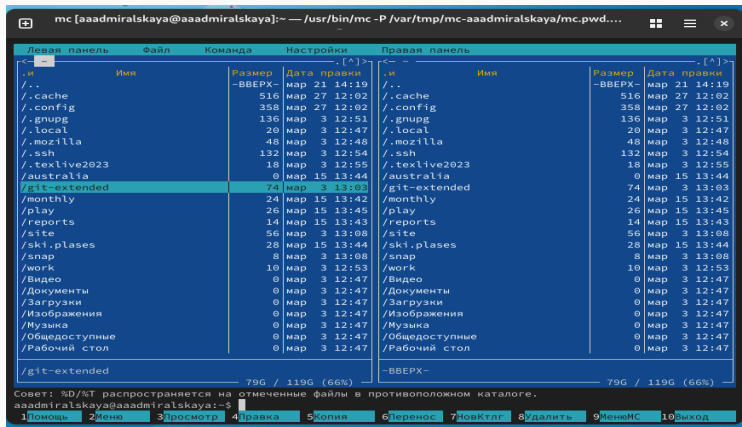


Рис. 3: Отмена

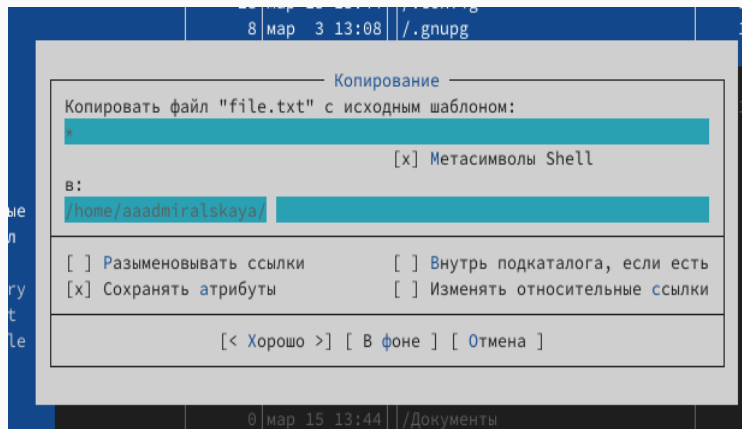


Рис. 4: Копирование

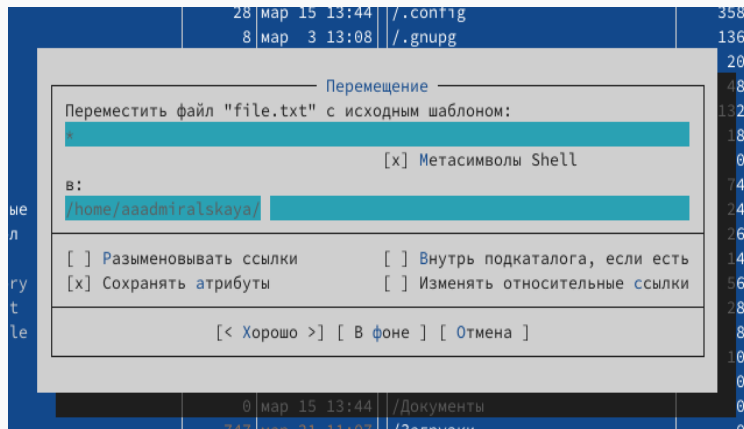


Рис. 5: Перемещение

Работа с Midnight Commander

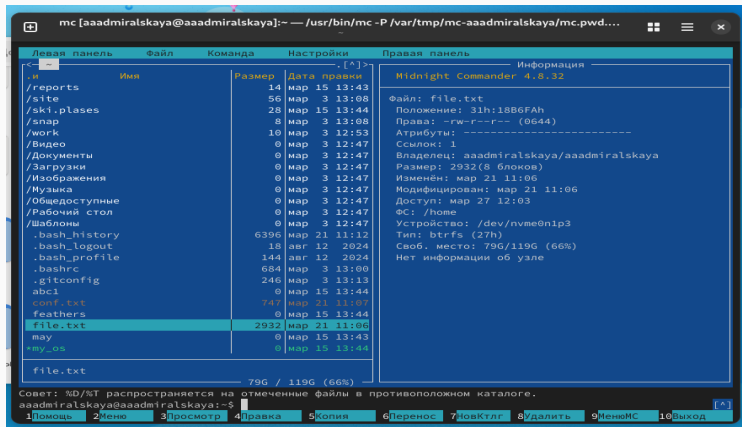


Рис. 6: Информация

Работа с Midnight Commander

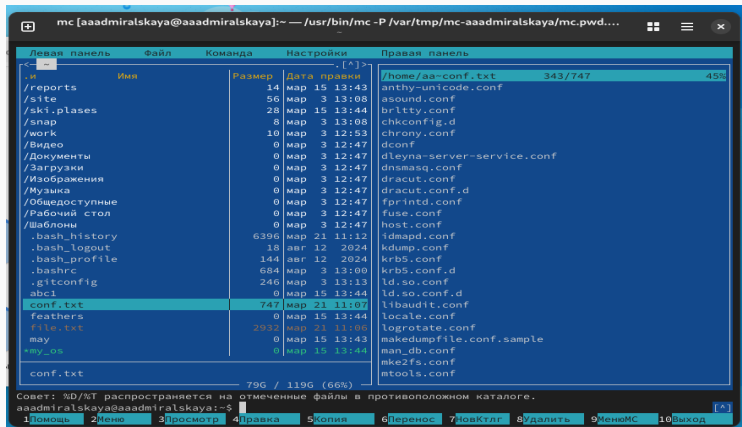


Рис. 7: Быстрый просмотр

Работа с Midnight Commander

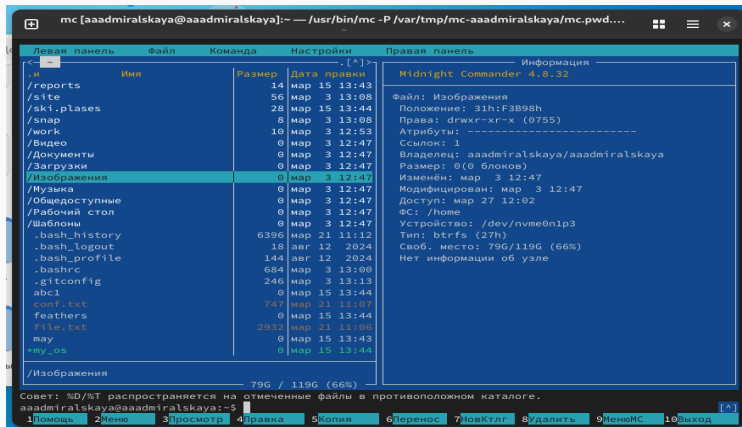


Рис. 8: Информация

Работа с Midnight Commander

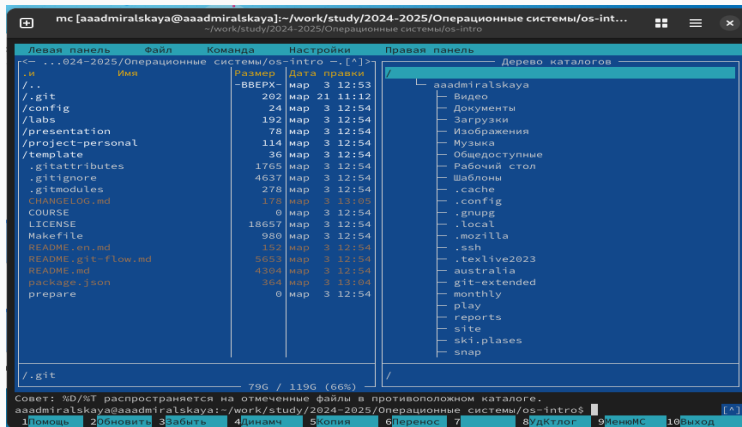
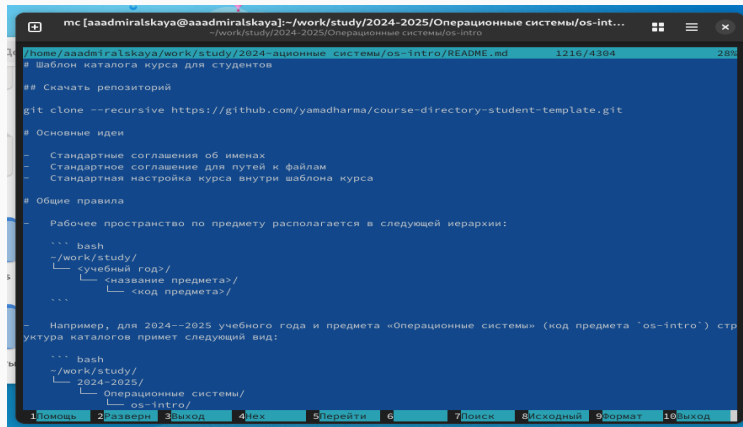


Рис. 9: Дерево каталогов

Работа с Midnight Commander

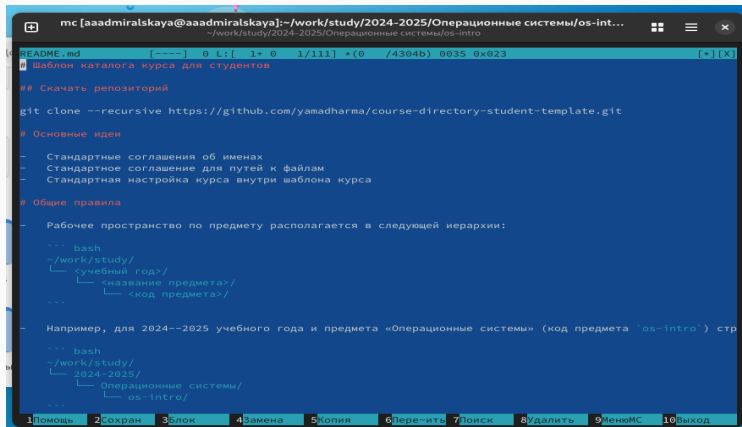


The screenshot shows the Midnight Commander (MC) interface. The title bar indicates the user is 'mc [aaadmiralskaya@aaadmiralskaya]' and the current directory is '~/work/study/2024-2025/Операционные системы/os-intro'. The main window displays the contents of the file '/home/aaadmiralskaya/work/study/2024-2025/Операционные системы/os-intro/README.md'. The file size is 1216/4304 bytes and it is 28% full. The content of the README.md file is displayed in a monospaced font on a dark blue background. It includes instructions on how to clone a repository, a list of basic ideas, and general rules for the course directory structure. At the bottom of the window, there is a toolbar with 10 buttons: 1.Помощь, 2.Разверн, 3.Выход, 4.Лек, 5.Перейти, 6., 7.Поиск, 8.Исходный, 9.Формат, 10.Выход.

```
mc [aaadmiralskaya@aaadmiralskaya]:~/work/study/2024-2025/Операционные системы/os-intro
~/work/study/2024-2025/Операционные системы/os-intro
/home/aaadmiralskaya/work/study/2024-2025/Операционные системы/os-intro/README.md 1216/4304 28%
# Шаблон каталога курса для студентов
## Скачать репозиторий
git clone --recursive https://github.com/yamadharma/course-directory-student-template.git
# Основные идеи
- Стандартные соглашения об именах
- Стандартное соглашение для путей к файлам
- Стандартная настройка курса внутри шаблона курса
# Общие правила
- Рабочее пространство по предмету располагается в следующей иерархии:
    ...
    bash
    ~/work/study/
    |   <учебный год>/
    |   |   <название предмета>/
    |   |   |   <код предмета>/
    ...
- Например, для 2024--2025 учебного года и предмета «Операционные системы» (код предмета 'os-intro') структура каталогов примет следующий вид:
    ...
    bash
    ~/work/study/
    |   2024-2025/
    |   |   Операционные системы/
    |   |   |   os-intro/
    ...
1.Помощь 2.Разверн 3.Выход 4.Лек 5.Перейти 6. 7.Поиск 8.Исходный 9.Формат 10.Выход
```

Рис. 10: Просмотр содержимого текстового файла

Работа с Midnight Commander



The screenshot shows the Midnight Commander (MC) interface. The title bar indicates the user is 'mc [aaadmiralskaya@aaadmiralskaya]:~/work/study/2024-2025/Операционные системы/os-intro'. The main window displays the contents of a file named 'README.md'. The file content includes a header 'Шаблон каталога курса для студентов', instructions to clone a repository from GitHub, and a list of basic ideas and rules for the course. The interface features a dark blue background with light blue text. At the bottom, there is a menu bar with 10 numbered options: 1.Помощь, 2.Сохран, 3.Блок, 4.Замена, 5.Копия, 6.Перем-ить, 7.Поиск, 8.Удалить, 9.МенюМС, 10.Выход.

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

[----] 0 L: [ 1+ 0 1/111] *(0 /4304b) 0035 0x023 [*)(X]
# Шаблон каталога курса для студентов

## Скачать репозиторий

git clone --recursive https://github.com/yamadharma/course-directory-student-template.git

# Основные идеи

- Стандартные соглашения об именах
- Стандартное соглашение для путей к файлам
- Стандартная настройка курса внутри шаблона курса

# Общие правила

- Рабочее пространство по предмету располагается в следующей иерархии:

... bash
~/work/study/
├── <учебный год>/
│   ├── <название предмета>/
│   └── <код предмета>/
...

- Например, для 2024--2025 учебного года и предмета «Операционные системы» (код предмета 'os-intro') стр

... bash
~/work/study/
├── 2024-2025/
│   ├── Операционные системы/
│   └── os-intro/
...

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

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов

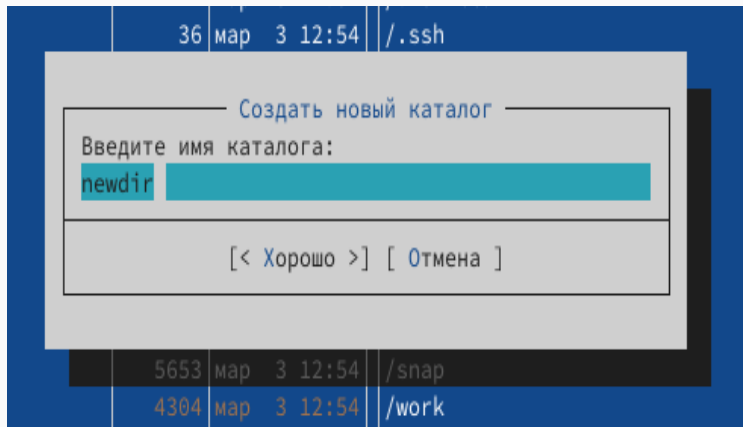


Рис. 12: Создание каталога

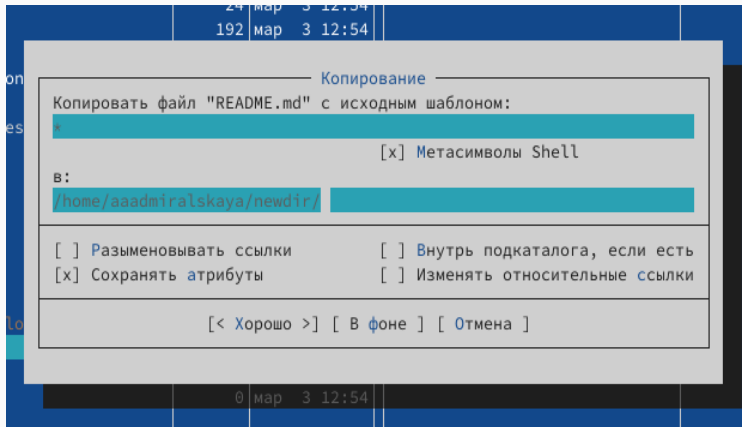


Рис. 13: Копирование в файлов в созданный каталог

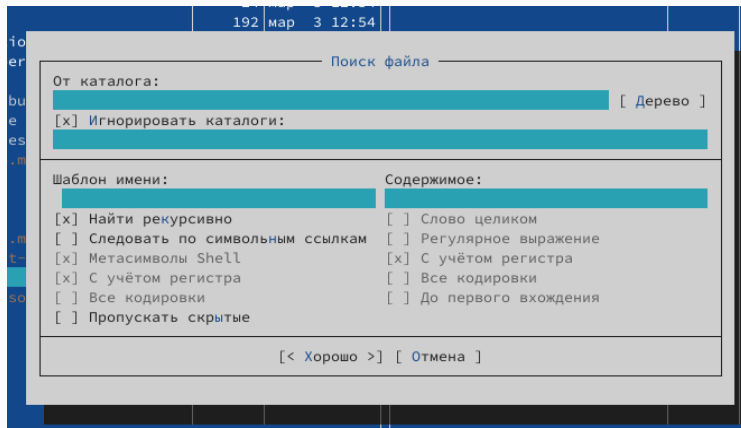


Рис. 14: Поиск файлов

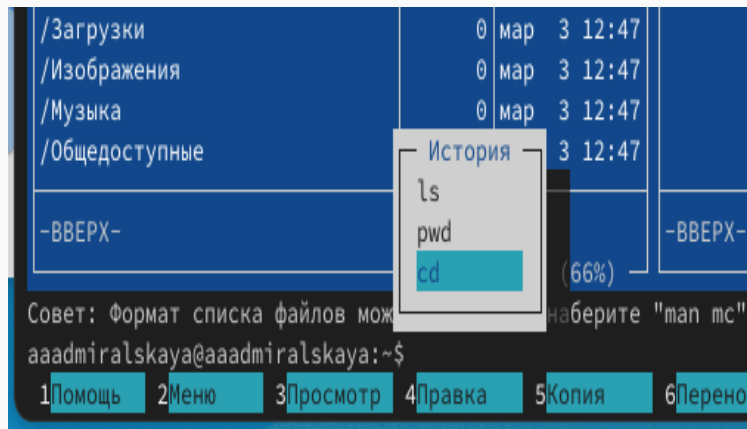


Рис. 15: История команд

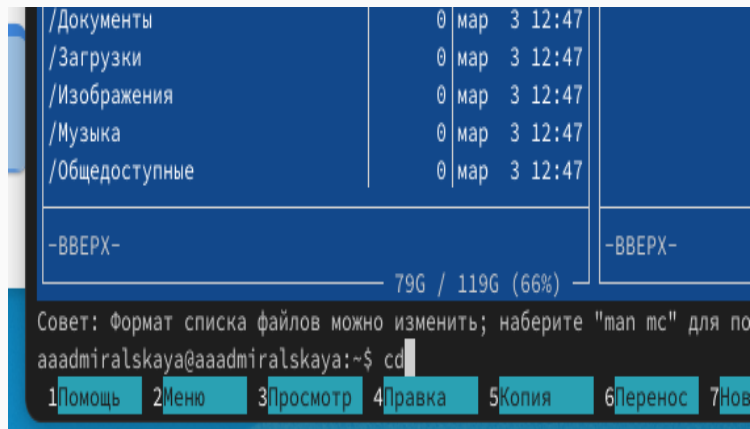


Рис. 16: Переход в домашний каталог



```
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 has a title bar with the text "menu" and a standard window control icon. The main area is a blue terminal window displaying the menu options. At the top, it shows "shell_patterns=0". The menu is divided into two sections by a line of asterisks. The first section lists various macros like %%, %f, %p, %d, %s, %t, %u, %view, and %f, each with a brief description. The second section contains two options: "+ ! t t" and "+ t t", each followed by a description and a command prompt. At the bottom, there is a status bar with ten numbered buttons: 1.Помощь, 2.Сохранить, 3.Блок, 4.Замена, 5.Копия, 6.Перем-тить, 7.Поиск, 8.Удалить, 9.МенюМС, and 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 unform
#
# 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]
Attribution 4.0 International

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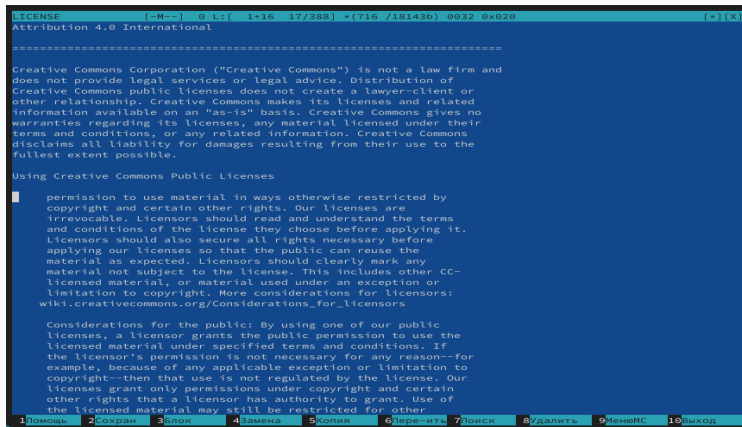
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```

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

Рис. 26: Файл с текстом

Работа с редактором Midnight Commander



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

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

Рис. 27: Файл с текстом

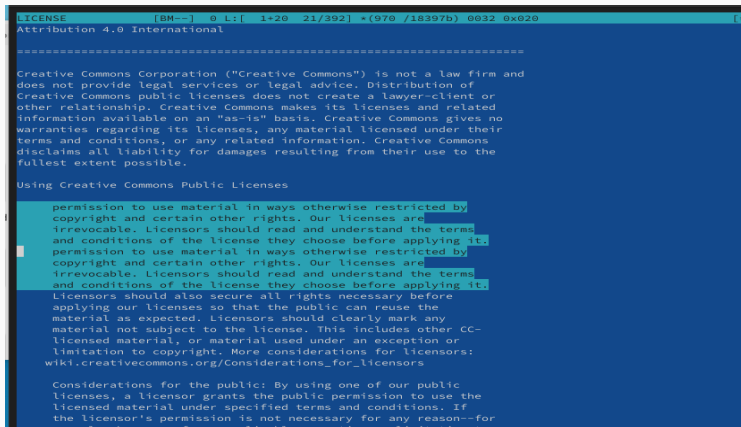
Работа с редактором Midnight Commander



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

Работа с редактором Midnight Commander



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

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]
int 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.