

Операционные системы

Командная оболочка Midnight Commander

Вишняков Родион Сергеевич

18 сентября 2025

Российский университет дружбы народов, Москва, Россия

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 до управлению процессами до 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

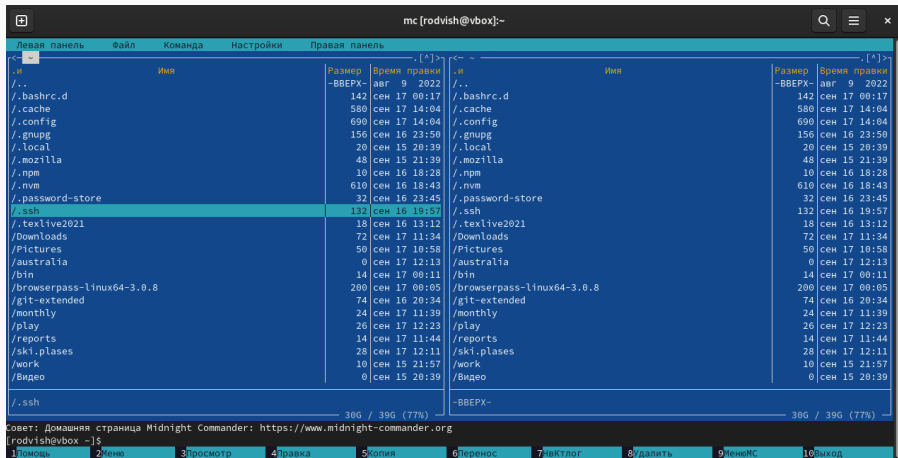


Рис. 1:Запуск mc

Работа с Midnight Commander

Левая панель				Правая панель			
Файл				Файл			
Команда				Команда			
Настройки				Настройки			
.				.			
Имя	Размер	Дата правки		Имя	Размер	Дата правки	
./	-ВВЕРХ-	июн 19 08:05		./	-ВВЕРХ-	июн 19 08:05	
/.cache	496	июн 19 10:20		/.cache	496	июн 19 10:20	
/.config	350	июн 19 10:20		/.config	350	июн 19 10:20	
/.gnupg	136	июн 19 08:18		/.gnupg	136	июн 19 08:18	
/.local	20	июн 19 08:09		/.local	20	июн 19 08:09	
/.mozilla	48	июн 19 08:09		/.mozilla	48	июн 19 08:09	
/.ssh	132	июн 19 08:22		/.ssh	132	июн 19 08:22	
/.texlive2023	18	июн 19 08:35		/.texlive2023	18	июн 19 08:35	
/australia	0	июн 19 09:32		/australia	0	июн 19 09:32	
/git-extended	74	июн 19 09:00		/git-extended	74	июн 19 09:00	
/monthly	24	июн 19 09:25		/monthly	24	июн 19 09:25	
/play	26	июн 19 09:34		/play	26	июн 19 09:34	
/reports	14	июн 19 09:28		/reports	14	июн 19 09:28	
/ski.plases	28	июн 19 09:32		/ski.plases	28	июн 19 09:32	
/work	10	июн 19 08:21		/work	10	июн 19 08:21	
/Видео	0	июн 19 08:09		/Видео	0	июн 19 08:09	
/Документы	0	июн 19 08:09		/Документы	0	июн 19 08:09	
/Загрузки	26	июн 19 08:35		/Загрузки	26	июн 19 08:35	
/Изображения	0	июн 19 08:09		/Изображения	0	июн 19 08:09	
/Музыка	0	июн 19 08:09		/Музыка	0	июн 19 08:09	
/Общедоступные	0	июн 19 08:09		/Общедоступные	0	июн 19 08:09	
/Рабочий стол	0	июн 19 08:09		/Рабочий стол	0	июн 19 08:09	
/Шаблоны	0	июн 19 08:09		/Шаблоны	0	июн 19 08:09	
.bash_history	4119	июн 19 10:18		.bash_history	4119	июн 19 10:18	
0 Б в 10 файлах				-ВВЕРХ-			
95G / 119G (79%)				95G / 119G (79%)			

Рис. 2:Выделение

Работа с Midnight Commander

Левая панель				Правая панель			
Файл	Команда	Настройки		Файл	Команда	Настройки	
<- ~				~ ->			
Имя	Размер	Дата правки		Имя	Размер	Дата правки	
..	-ВВЕРХ-	июн 19 08:05		..	-ВВЕРХ-	июн 19 08:05	
/.cache	496	июн 19 10:20		/.cache	496	июн 19 10:20	
/.config	350	июн 19 10:20		/.config	350	июн 19 10:20	
/.gnupg	136	июн 19 08:18		/.gnupg	136	июн 19 08:18	
/.local	20	июн 19 08:09		/.local	20	июн 19 08:09	
/.mozilla	48	июн 19 08:09		/.mozilla	48	июн 19 08:09	
/.ssh	132	июн 19 08:22		/.ssh	132	июн 19 08:22	
/.texlive2023	18	июн 19 08:35		/.texlive2023	18	июн 19 08:35	
/australia	0	июн 19 09:32		/australia	0	июн 19 09:32	
/git-extended	74	июн 19 09:00		/git-extended	74	июн 19 09:00	
/monthly	24	июн 19 09:25		/monthly	24	июн 19 09:25	
/play	26	июн 19 09:34		/play	26	июн 19 09:34	
/reports	14	июн 19 09:28		/reports	14	июн 19 09:28	
/ski.plases	28	июн 19 09:32		/ski.plases	28	июн 19 09:32	
/work	10	июн 19 08:21		/work	10	июн 19 08:21	
/Видео	0	июн 19 08:09		/Видео	0	июн 19 08:09	
/Документы	0	июн 19 08:09		/Документы	0	июн 19 08:09	
/Загрузки	26	июн 19 08:35		/Загрузки	26	июн 19 08:35	
/Изображения	0	июн 19 08:09		/Изображения	0	июн 19 08:09	
/Музыка	0	июн 19 08:09		/Музыка	0	июн 19 08:09	
/Общедоступные	0	июн 19 08:09		/Общедоступные	0	июн 19 08:09	
/Рабочий стол	0	июн 19 08:09		/Рабочий стол	0	июн 19 08:09	
/Шаблоны	0	июн 19 08:09		/Шаблоны	0	июн 19 08:09	
.bash_history	4119	июн 19 10:18		.bash_history	4119	июн 19 10:18	
/ski.plases				-ВВЕРХ-			
95G / 119G (79%)				95G / 119G (79%)			

Рис. 3:Отмена

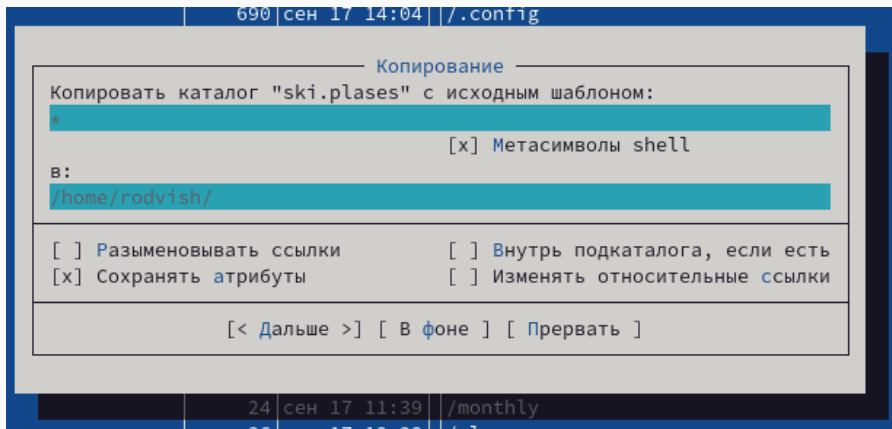


Рис. 4: Копирование

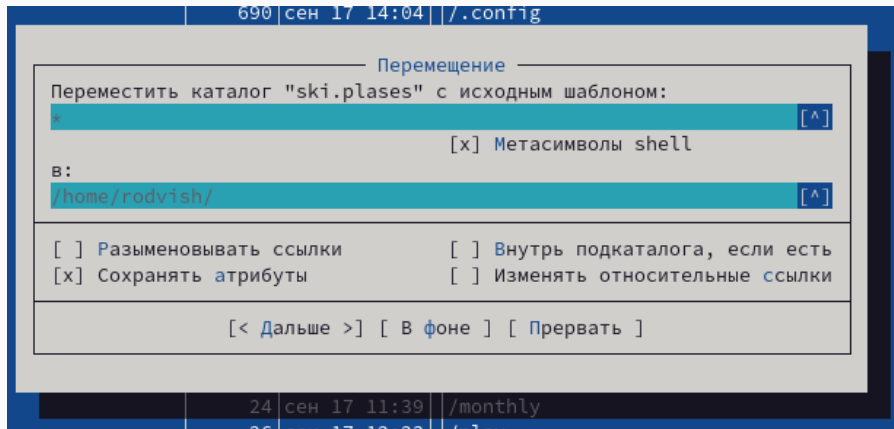


Рис. 5:Перемещение

Работа с Midnight Commander

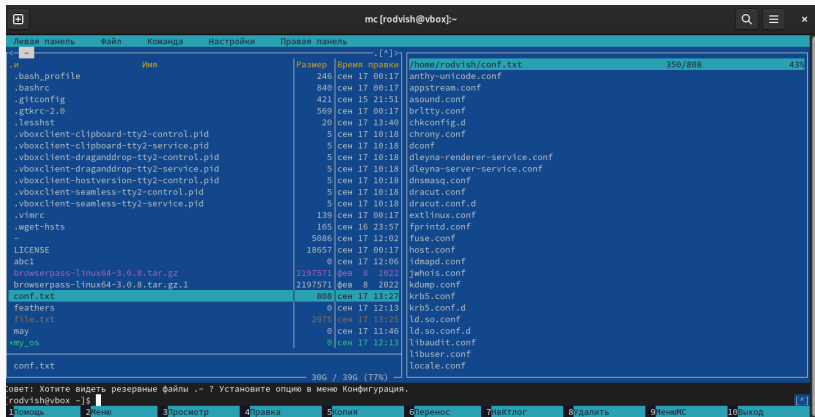


Рис. 6: Информация

Работа с Midnight Commander

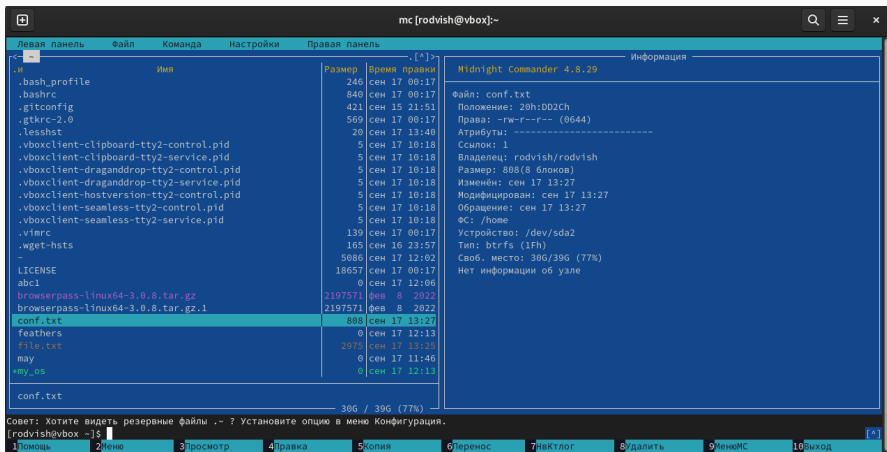


Рис. 7:Быстрый просмотр

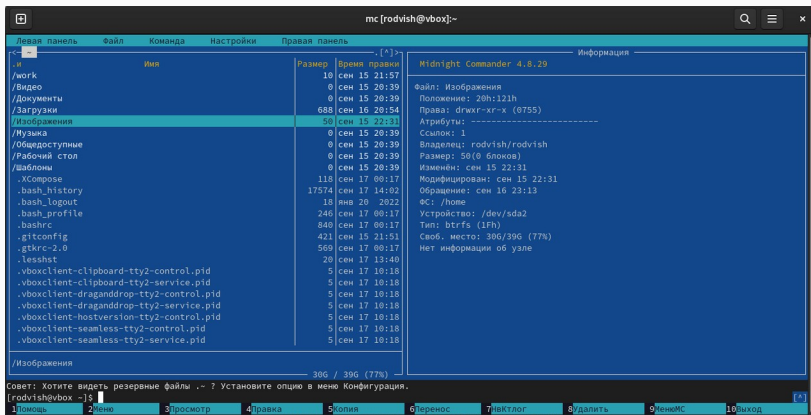


Рис. 8: Информация

Работа с Midnight Commander

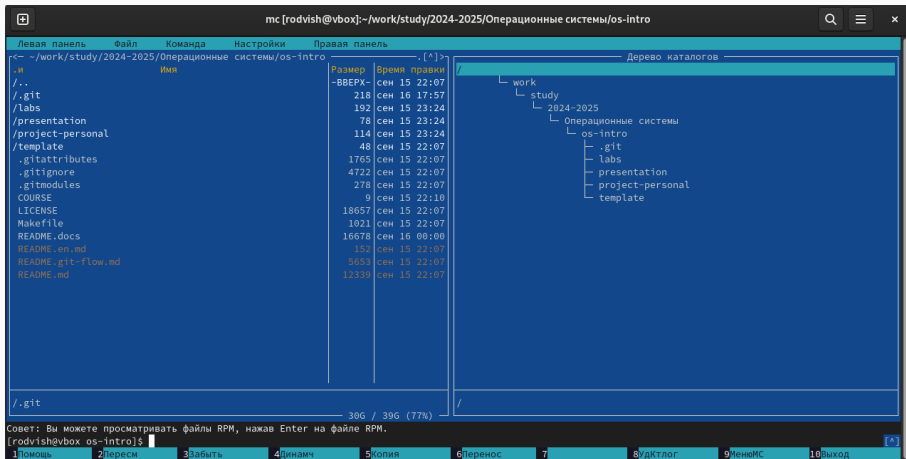
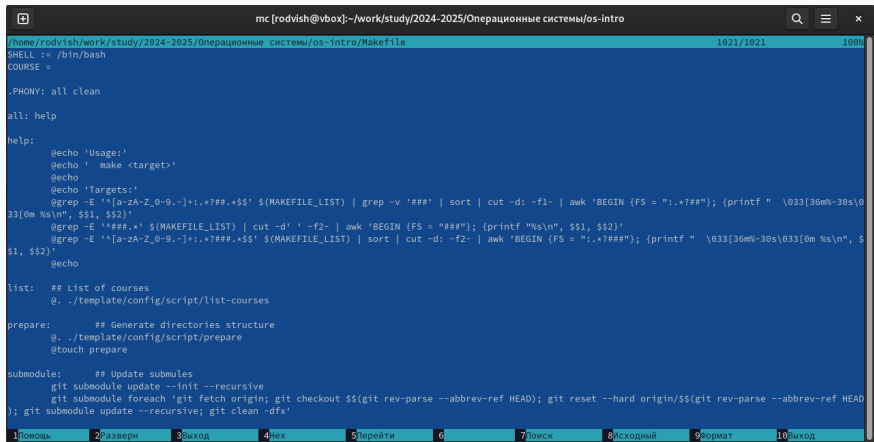


Рис. 9: Дерево каталогов



The screenshot shows the Midnight Commander (MC) interface. The title bar indicates the current directory is `~/work/study/2024-2025/Операционные системы/os-intro`. The main pane displays the contents of a `Makefile` file. The file content includes a shebang, course information, a clean target, a help target with detailed usage instructions, a list target, a prepare target, and a submodule target. The bottom status bar shows navigation shortcuts: 1Помощь, 2Разверн, 3Выход, 4Нех, 5Перейти, 6, 7Поиск, 8Исходный, 9Формат, 10Выход.

```
mc [rodvish@vbox]:~/work/study/2024-2025/Операционные системы/os-intro
/home/rodvish/work/study/2024-2025/Операционные системы/os-intro/Makefile 1021/1021 100%
SHELL := /bin/bash
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
    @. ./template/config/script/list-courses

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

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

Рис. 10:Просмотр содержимого текстового файла

Работа с Midnight Commander



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

Makefile  [----]  0 L:[ 1+ 0 1/ 28] *(0 /1021b) 0083 0x053  [*)(X)
SHELL := /bin/bash
COURSE = .

.PHONY: all clean

all: help

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

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

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

submodule:<----## Update submules
<----->git submodule update --init --recursive
<----->git submodule foreach 'git fetch origin; git checkout $$ (git rev-parse --abbrev-ref HEAD); git reset --hard origin/$$(git rev-parse --abbrev-ref HEAD
```

1Помощь 2Сохранить 3Блок 4Замена 5Копия 6Переместить 7Поиск 8Удалить 9ИменаИС 10Выход

Рис. 11:Отредактируем содержимое текстового файла без сохранения результатов

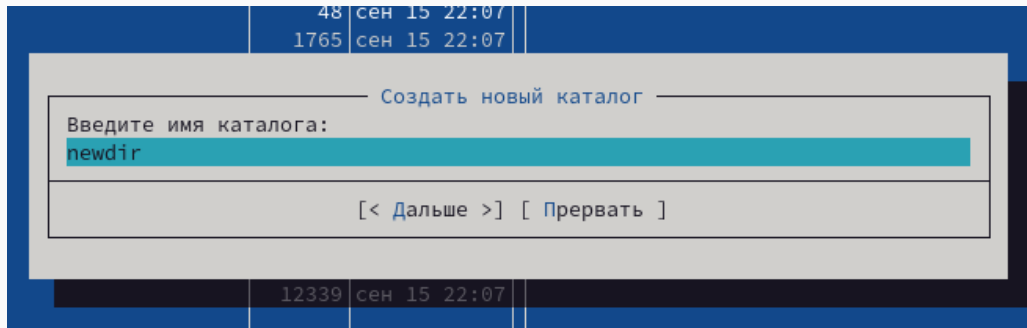


Рис. 12:Создание каталога

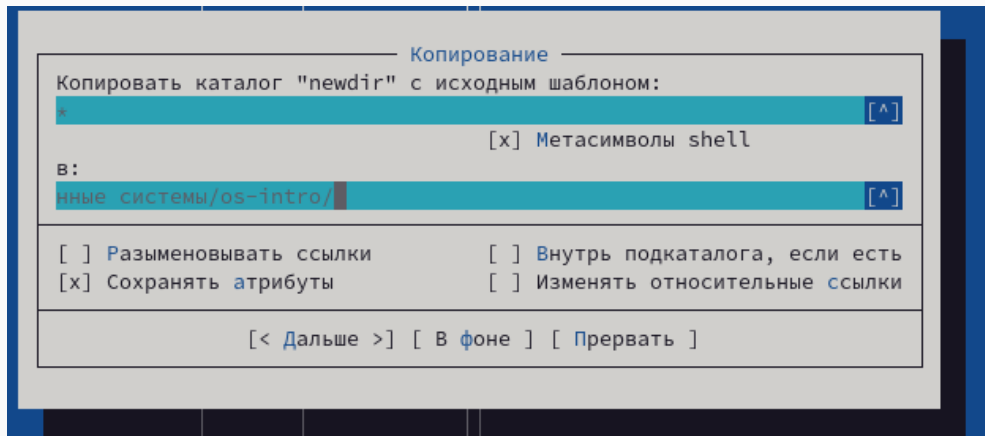


Рис. 13: Копирование в файлов в созданный каталог

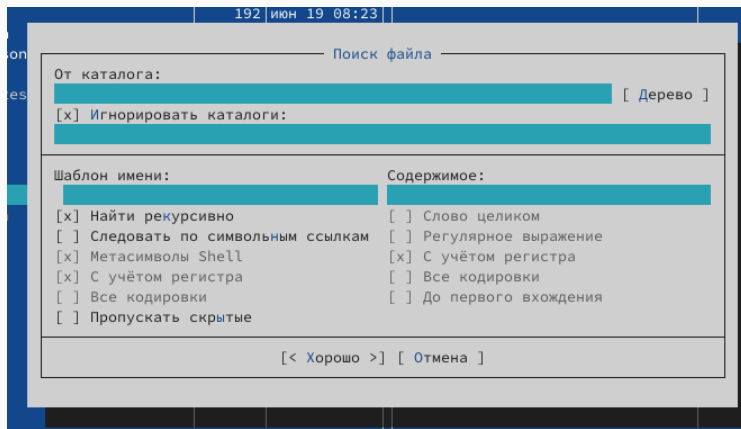


Рис. 14:Поиск файлов

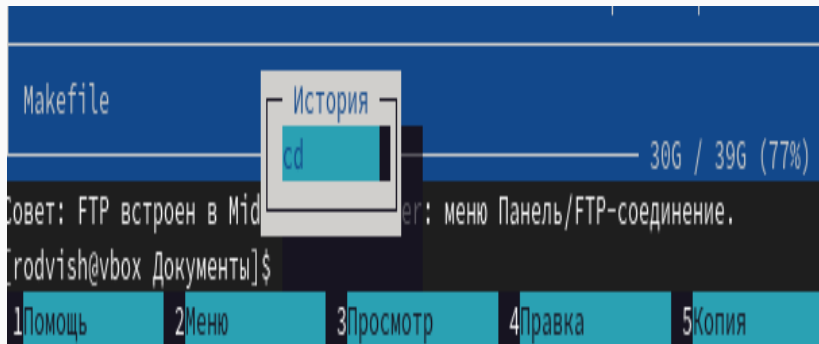


Рис. 15:История команд

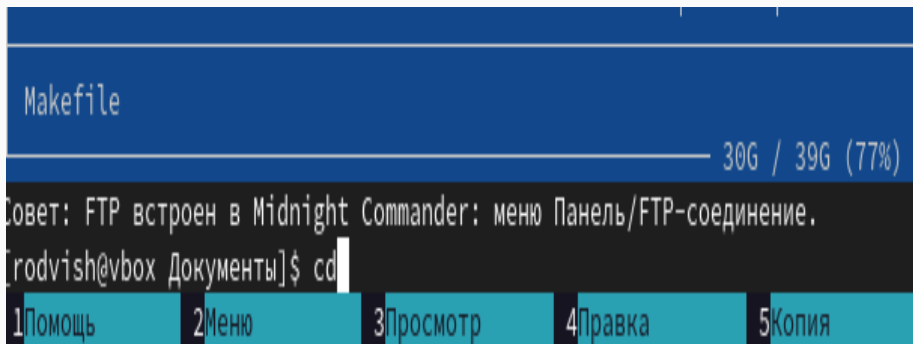
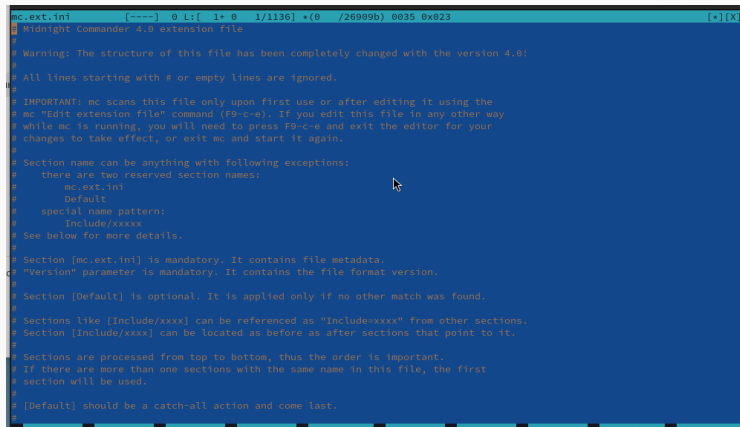


Рис. 16:Переход в домашний каталог



```
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 file menu. At the top, it shows "shell_patterns=0". The menu items are listed with their corresponding keyboard shortcuts in Russian. A mouse cursor is pointing at the "t" key shortcut for the "Do something on the tagged files" option. 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, 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

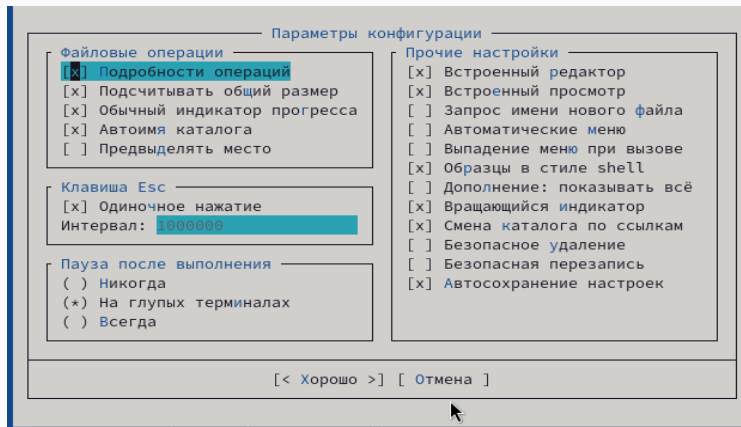


Рис. 19: Конфигурация



Рис. 20: Внешний вид

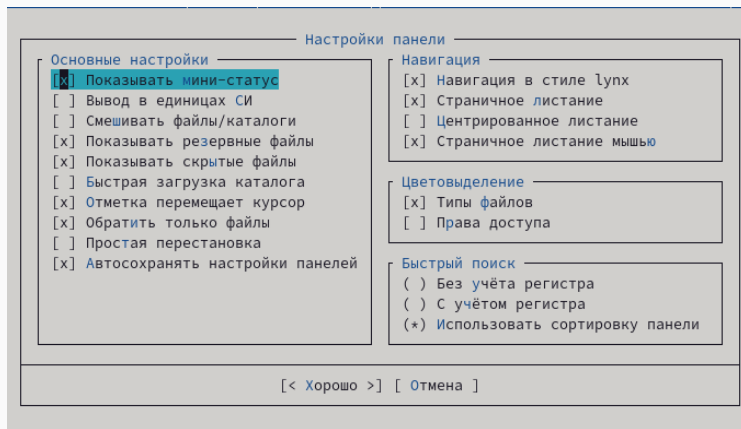


Рис. 21:Настройки панелей



Рис. 22:Подтверждение



Рис. 23: Оформление

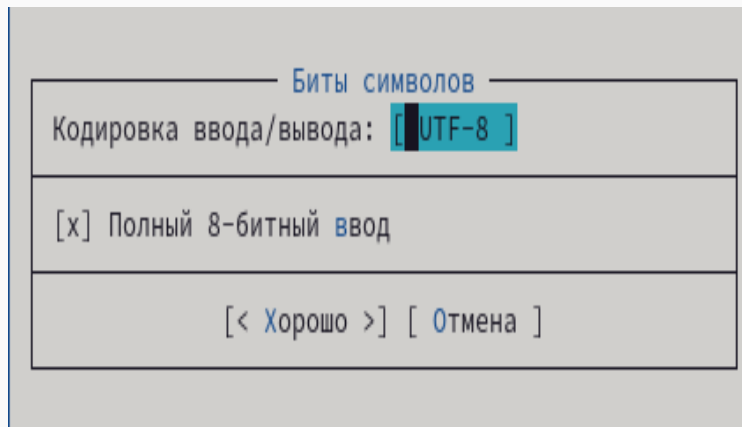
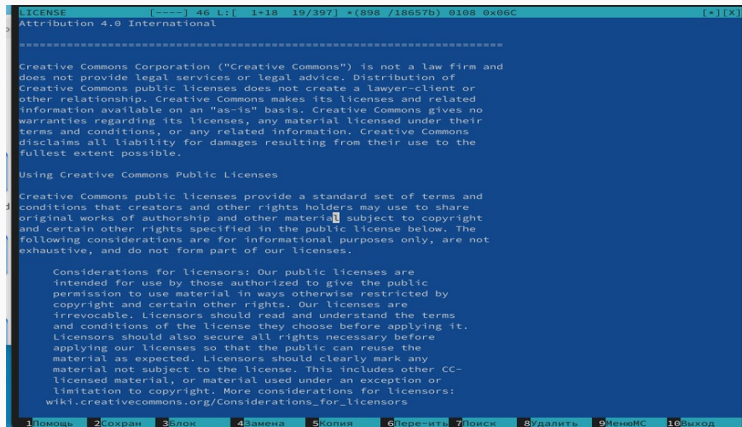


Рис. 24:Кодировка символов



Рис. 25:Распознавание клавиш

Работа с редактором Midnight Commander



```
LICENSE      [----] 46 L:[ 1+18 19/397] *(898 /18657b) 0108 0x06C [*) [X]
Attribution 4.0 International

=====

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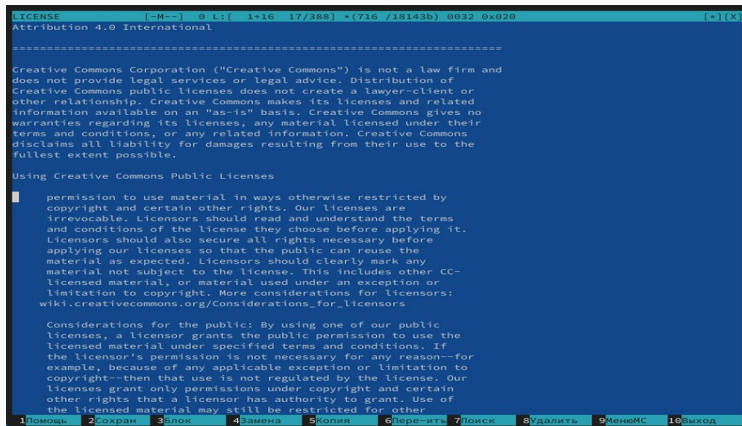
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```

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]
Attribution 4.0 International

=====

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the licensed material may still be restricted for other

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

Рис. 27:Файл с текстом

Работа с редактором Midnight Commander

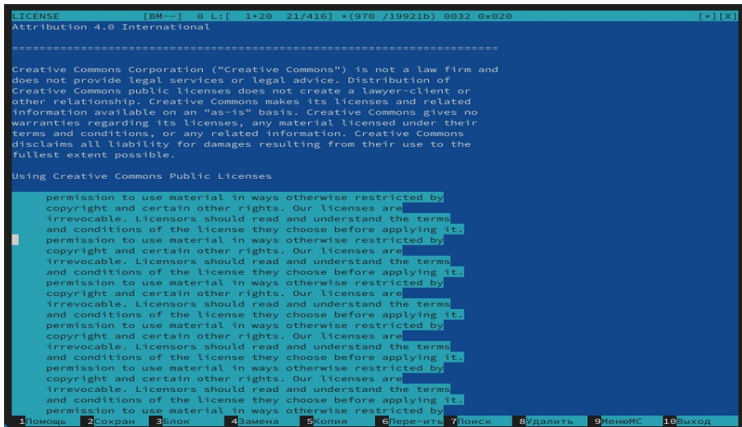


Рис. 28:Копирование фрагмента

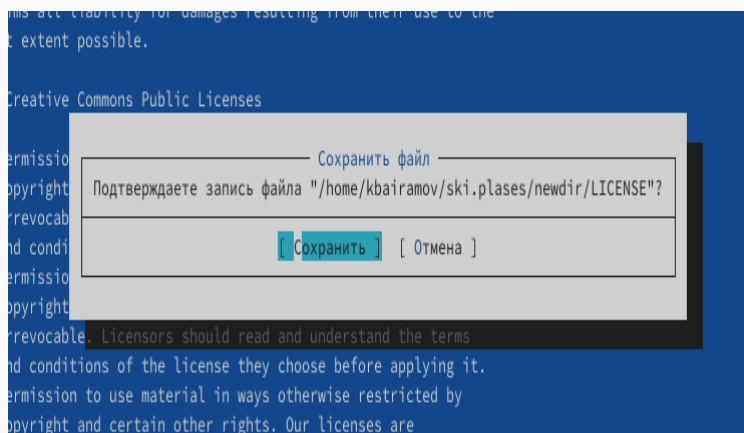


Рис. 29:Сохранение

Работа с редактором Midnight Commander

```
LICENSE [BM--] 0 L:[ 1+20 21/392] *(970 /18397b) 0032 0x020 [*]
Attribution 4.0 International

=====

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fullest extent possible.

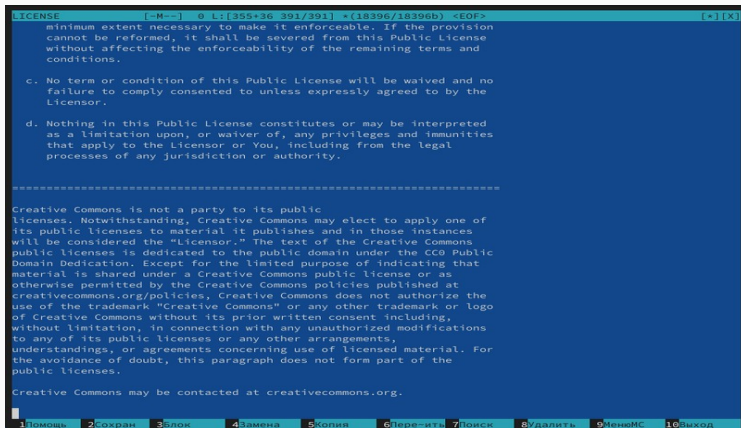
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Рис. 30:Отмена

Работа с редактором Midnight Commander



```
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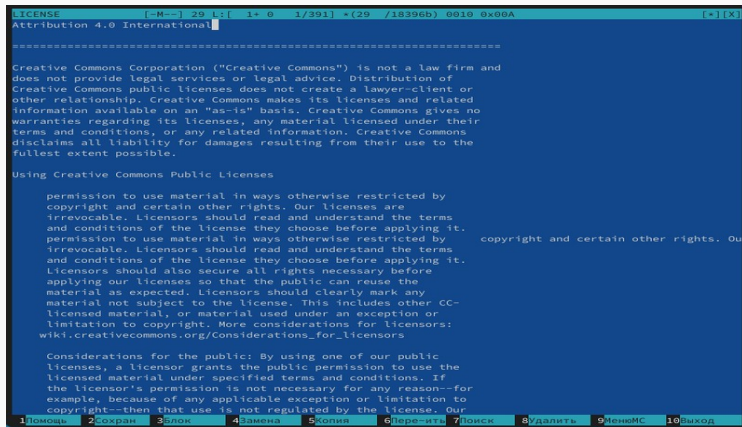
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```

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

Рис. 31:Переход в конец файла

Работа с редактором Midnight Commander



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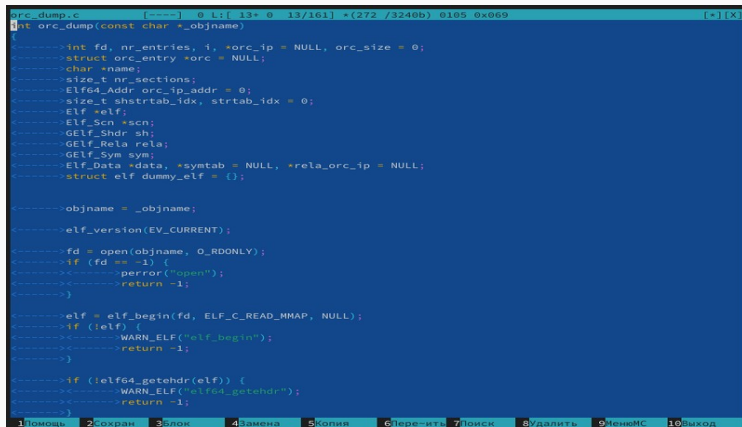
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1Помощь  2Сохран  3Блок  4Замена  5Копия  6Пере-ить  7Поиск  8Удалить  9МенюМС  10Выход
```

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

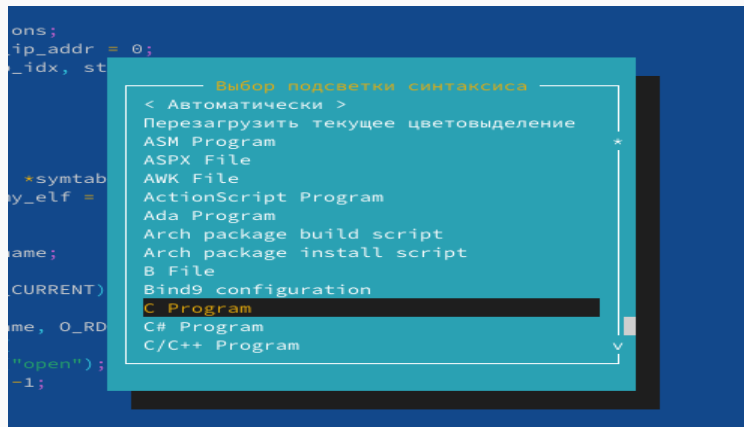


Рис. 34:Цветовыделение синтаксиса

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.