

# Командная оболочка Midnight Commander

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# Цели и задачи работы

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## Цель лабораторной 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.

# Задачи лабораторной работы

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

# **Процесс выполнения лабораторной работы**

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# Работа с Midnight Commander

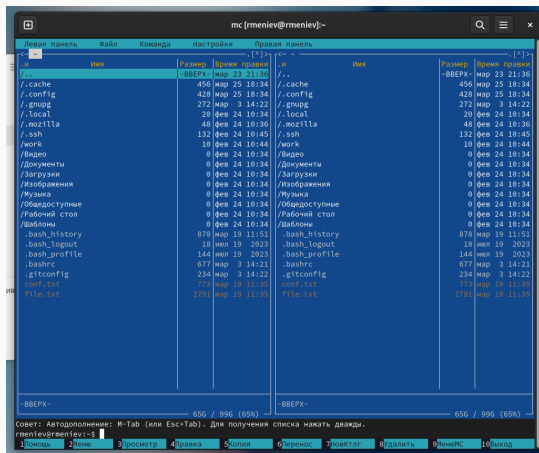


Рис. 1: Запуск mc

# Работа с Midnight Commander

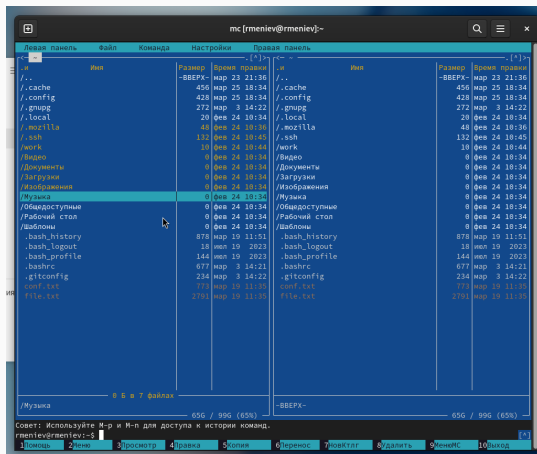


Рис. 2: Выделение

# Работа с Midnight Commander

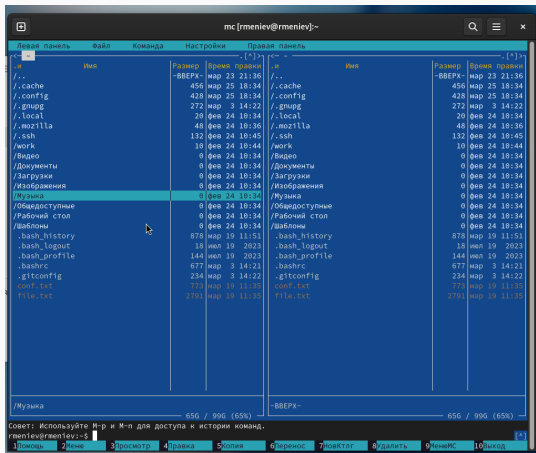


Рис. 3: Отмена



# Работа с Midnight Commander

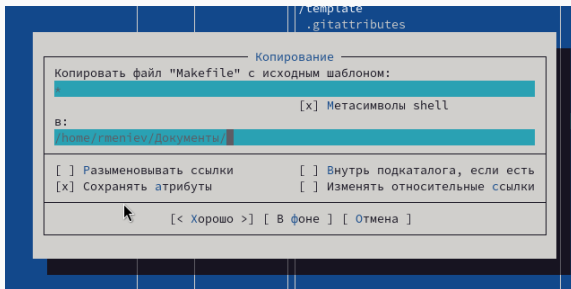


Рис. 4: Копирование

# Работа с Midnight Commander

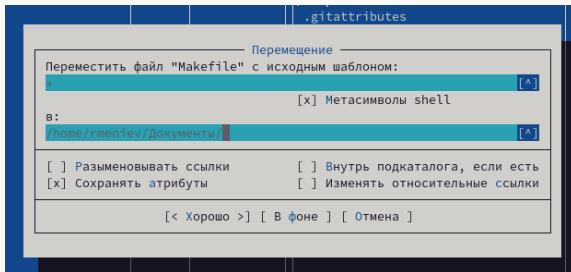


Рис. 5: Перемещение

# Работа с Midnight Commander

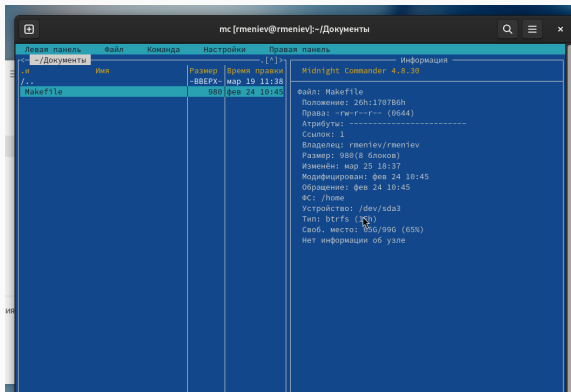


Рис. 6: Информация

# Работа с Midnight Commander

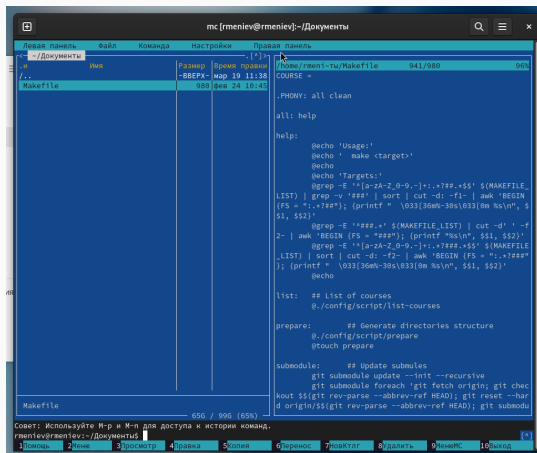


Рис. 7: Быстрый просмотр

# Работа с Midnight Commander

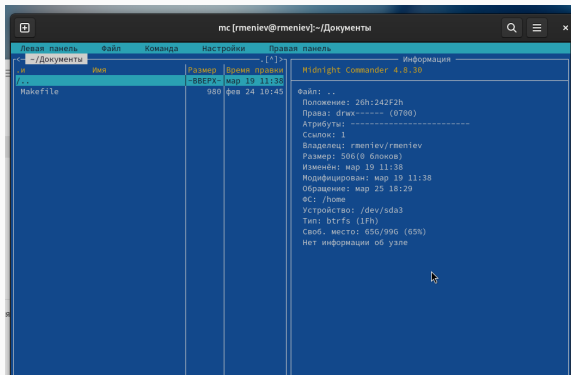


Рис. 8: Информация

# Работа с Midnight Commander

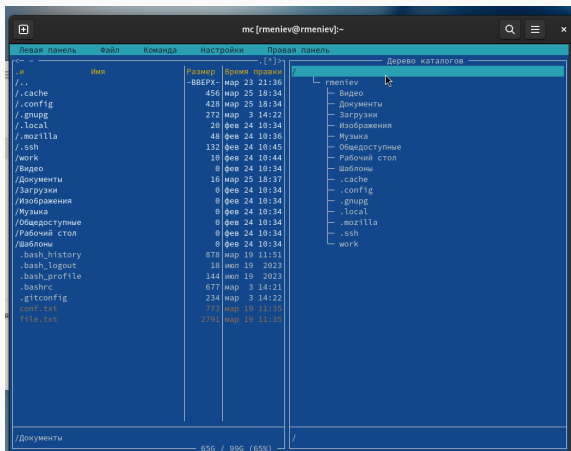
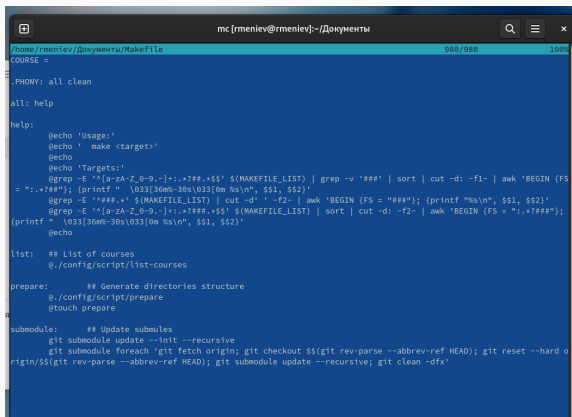


Рис. 9: Дерево каталогов

# Работа с Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'rmeniev' and the current directory is '~/Документы'. The top status bar shows the file path '/home/rmeniev/Документы/Makefile', its size '980/980', and its permissions '100%'. The main window displays the text of the Makefile, which includes a 'COURSE =' assignment, a 'phony' target for 'all: help', and a 'help:' target that uses 'echo' and 'grep' to display usage and targets. It also defines a 'list' target for listing courses, a 'prepare' target for generating directory structure, and a 'submodule' target for updating submodules.

```
mc [rmeniev@rmeniev:~/Документы]
/home/rmeniev/Документы/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

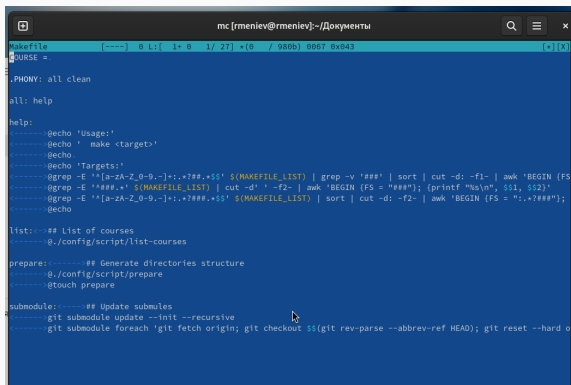
list: ## List of courses
    @./config/script/list-courses

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 $(git rev-parse --abbrev-ref HEAD); git reset --hard origin/$(git rev-parse --abbrev-ref HEAD); git submodule update --recursive; git clean -dfx'
```

Рис. 10: Просмотр содержимого текстового файла

# Работа с Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'rmeniev' in the directory '~/Документы'. The main window displays a file named 'Makefile' with a status bar at the top showing '0 L: 1+ 0 1/ 27] +(0 / 980b) 0067 0x043'. The file content is a Makefile with targets like 'course', 'phony', 'all', 'help', 'list', 'prepare', and 'submodule'. The 'list' target contains a complex shell command using 'grep', 'sort', 'cut', and 'awk' to process the 'MAKEFILE\_LIST' variable. The 'prepare' target generates directory structures, and the 'submodule' target updates submodules using 'git'.

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

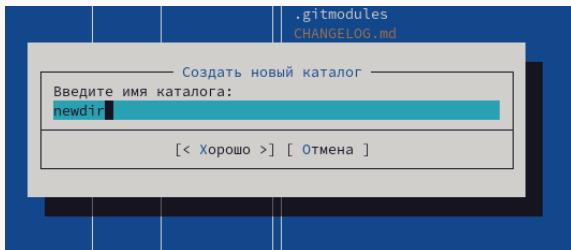
list:## List of courses
-----@./config/script/list-courses

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 --abbrev-ref HEAD); git reset --hard o
```

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов





**Рис. 12:** Создание каталога

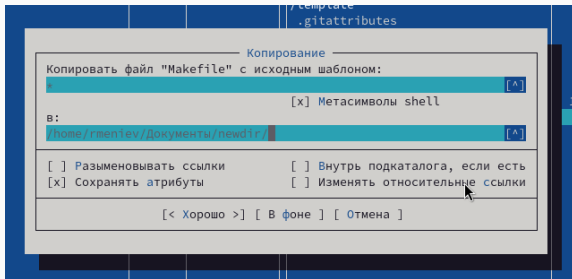


Рис. 13: Копирование в файлы в созданный каталог

# Работа с Midnight Commander

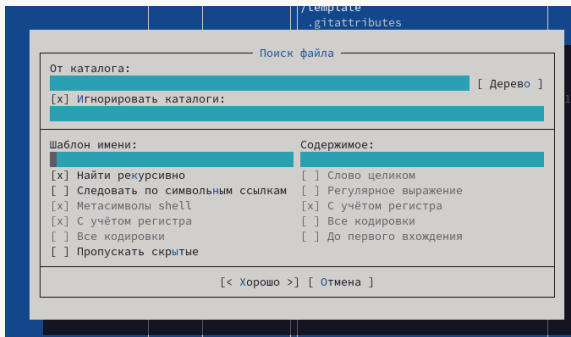


Рис. 14: Поиск файлов

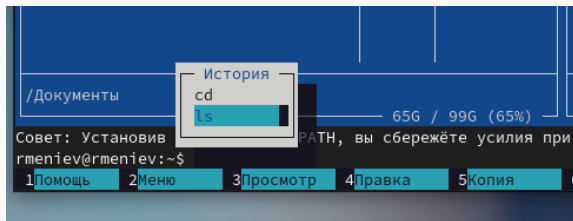
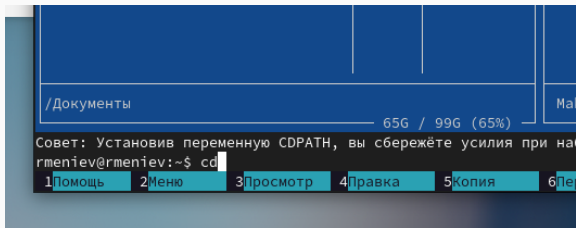


Рис. 15: История команд

# Работа с Midnight Commander



**Рис. 16:** Переход в домашний каталог

# Работа с Midnight Commander

```
mc.ext.ini [-----] 0 L: [ 1+ 0 1/1136] *0 /26909b/0035 0x023 [*][X]
# Midnight Commander 4.8 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 (F8-c-e). If you edit this file in any other way
# while mc is running, you will need to press F8-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/xxxx
#   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 menu. The window title is "menu" with a status bar at the bottom showing "1: Помощь 2: Сохранить 3: Поиск 4: Имена 5: Скопия 6: Переименовать 7: Поиск 8: Удалить 9: Ненавс 10: Выход". The menu content includes options like "shell\_patterns=0", "#####", "F The % character", "f The current file", "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)", "vview Runs the commands and pipes standard output to the view command", "If vview 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", "f don't quote expanded macro", "#####", "t t Do something on the current file CMD=:(Enter command) SCMD f", "t t Do something on the tagged files CMD=:(Enter command) for i in \$t ; do", and a status bar at the bottom with 10 numbered buttons: 1: Помощь, 2: Сохранить, 3: Поиск, 4: Имена, 5: Скопия, 6: Переименовать, 7: Поиск, 8: Удалить, 9: Ненавс, 10: Выход.

Рис. 18: Просмотр файла меню

# Работа с Midnight Commander



Рис. 19: Конфигурация



# Работа с Midnight Commander



Рис. 20: Внешний вид

# Работа с Midnight Commander



Рис. 21: Настройки панелей



Рис. 22: Подтверждение



**Рис. 23:** Оформление



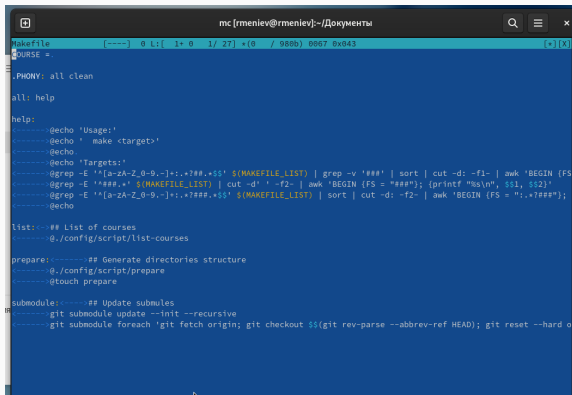
**Рис. 24:** Кодировка символов

# Работа с Midnight Commander



Рис. 25: Распознавание клавиш

# Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (mc) file editor interface. The title bar indicates the user is 'rmenlev' in the directory '~/Документы'. The editor is displaying a file named 'Makefile'. The content of the Makefile is as follows:

```
Makefile  [----]  0 L:  1+ 0  1/ 27)  +{0  / 988b) 0067 8x043  [*)(X]
COURSE =

.PHONY: all clean

all: help

help:
-----@echo 'Usage:'
-----@echo '  make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '^[a-zA-Z_0-9-]*:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS
-----@grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", $$1, $$2)'
-----@grep -E '^[a-zA-Z_0-9-]*:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ".?##"};
-----@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 --abbrev-ref HEAD); git reset --hard o
```

Рис. 26: Файл с текстом

# Работа с редактором Midnight Commander

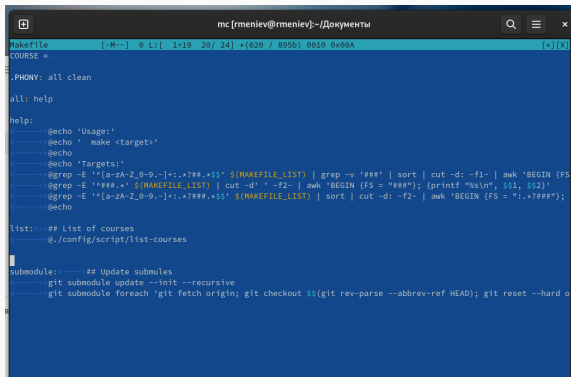
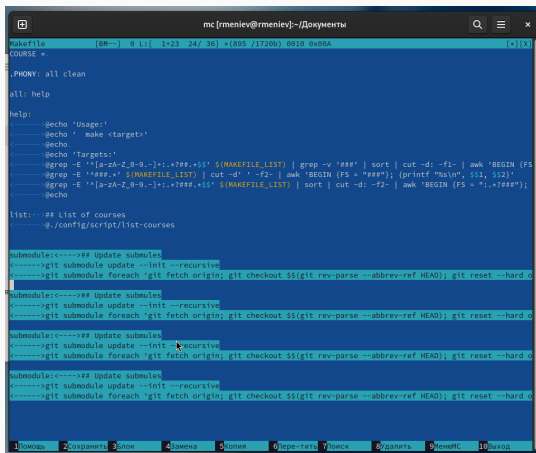
A screenshot of the Midnight Commander (mc) file manager and editor. The window title is 'mc [rmeniev@rmeniev:~/Документы]'. The top status bar shows file details for 'Makefile': '[M--] 0 Li[ 1\*19 28/ 24] \*(620 / 895b) 0010 0x00A [\*) (X)'. The main editing area has a blue background and displays the content of a Makefile. The text includes: 'COURSE \*', '.PHONY: all clean', 'all: help', 'help:', and several lines of shell code for generating targets from a list of courses. The code uses 'grep' to find lines in 'MAKEFILE\_LIST' and 'awk' to format them. At the bottom, there are comments and a 'submodule' target that updates submodules using 'git'.

Рис. 27: Файл с текстом



# Работа с редактором Midnight Commander



```
mc [rmeniev@rmeniev] ~/Документы
makefile  [BM--] 8 Li 1+23 24/ 36 * (895 /1720b) 0010 0x00A (*)
COURSE =
PHONY: all clean
all: help
help:
    @echo 'Usage:'
    @echo ' make <target>'
    @echo
    @echo 'Targets:'
    @grep -E '[a-zA-Z_0-9-]*:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1 | awk 'BEGIN {FS}
    @grep -E '##.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "##"}; {printf "%s\n", $$1, $$2}'
    @grep -E '[a-zA-Z_0-9-]*:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ".*?##"};
    @echo

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

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 o

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 o

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 o

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 o
```

Рис. 28: Копирование фрагмента

# Работа с редактором Midnight Commander

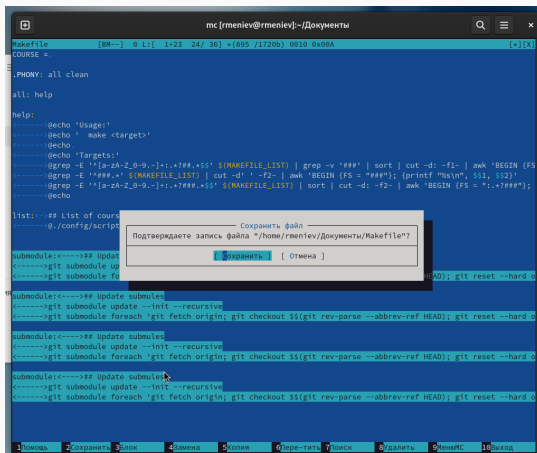
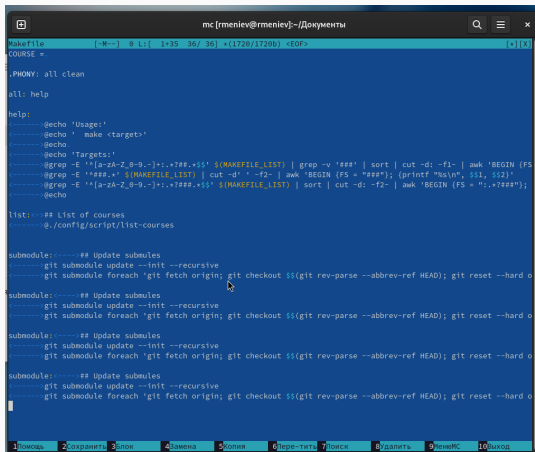


Рис. 29: Сохранение

# Работа с редактором Midnight Commander



```
Makefile [-M--] 0 Li[ 1x35 36/ 36] x(1720/1720b) <EOF> [*)(X]
COURSE = .

.PHONY: all clean

all: help

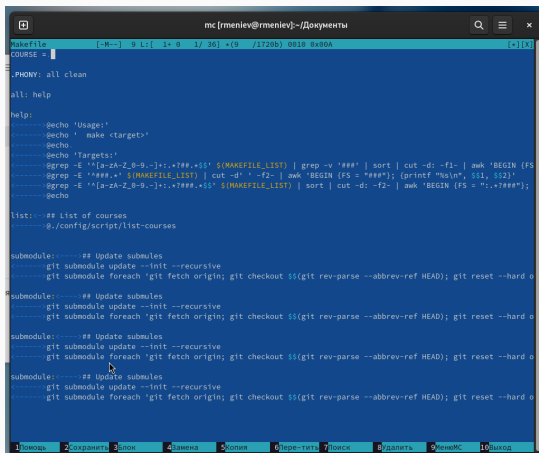
help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '[a-zA-Z_0-9-]*.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1- | awk 'BEGIN {FS
-----@grep -E '##.*.*' $(MAKEFILE_LIST) | cut -d: -f2- | awk 'BEGIN {FS = "##"}; {printf "%s\n", $$1, $$2}'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

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

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

Рис. 30: Отмена

# Работа с редактором Midnight Commander



```
mc [rmeniev@rmeniev:~/Документы]
Makefile [-R--] 9 L: 1+ 0 1/ 36 *(9 /1720b) 0010 0x00A [*][X]
COURSE =
PHONY: all clean
all: help
help:
-----@echo 'Usage:'
-----@echo ' make <target>'
-----@echo
-----@echo 'Targets:'
-----@grep -E '[a-zA-Z_0-9.-]+.*?##.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1 | awk 'BEGIN {FS
-----@grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", $$1, $$2)'
-----@grep -E '[a-zA-Z_0-9.-]+.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ".*?##"}';
-----@echo

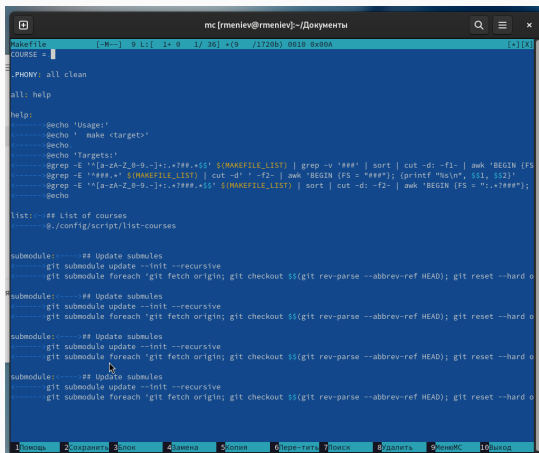
list:-- ## List of courses
----- @./config/script/list-courses

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

1 Ввод 2 Сохранить 3 Блок 4 Замена 5 Копия 6 Пере-ить 7 Поиск 8 Удалить 9 Меню 10 Выход

Рис. 31: Переход в конец файла

# Работа с редактором Midnight Commander

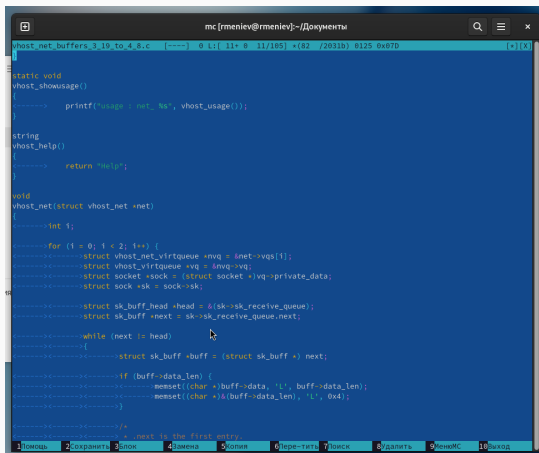


The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'rmeniev' in the directory '~/Документы'. The main window displays a file named 'Makefile' with a status bar at the top showing file details: '[-R--] 9 L: 1+ 0 1/ 36 \* (9 /1720b) 0010 0x00A [+][X]'. The file content is visible, starting with 'COURSE =', followed by a blank line, 'PHONY: all clean', and 'all: help'. Below this is a 'help:' section with several '@echo' commands and complex shell commands using 'grep', 'cut', 'awk', and 'sort'. The bottom status bar shows various keyboard shortcuts: 1.Ввод, 2.Сохранить, 3.Блок, 4.Замена, 5.Копия, 6.Пере-типы, 7.Поиск, 8.Удалить, 9.МенюМС, 10.Выход. A mouse cursor is positioned over the '3.Блок' button.

```
mc [rmeniev@rmeniev:~/Документы]
Makefile [-R--] 9 L: 1+ 0 1/ 36 * (9 /1720b) 0010 0x00A [+][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 | cut -d: -f1 | awk 'BEGIN {FS}
@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 = ".*?#.*?";}
@echo
list:## List of courses
@./config/script/list-courses
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 o
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 o
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 o
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 o
```

Рис. 32: Переход в начало файла

# Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'rmeniev' in the '~ / Документы' directory. The editor displays a C program with the following code:

```
vhost_net_buffers_3_19_to_4_8.c  [----]  0 L: [ 11+ 0  11/105]  *(82 /20315) 0125 0x07D  [*)(X)]

static void
vhost_showusage()
{
    printf("usage : net. %s", vhost_usage());
}

string
vhost_help()
{
    return "help";
}

void
vhost_net(struct vhost_net *net)
{
    int i;

    for (i = 0; i < 2; i++) {
        struct vhost_net_virtqueue *nvq = &net->vqs[i];
        struct vhost_virtqueue *vq = &nvq->vq;
        struct socket *sock = (struct socket *)vq->private_data;
        struct sock *sk = sock->sk;

        struct sk_buff_head *head = &(sk->sk_receive_queue);
        struct sk_buff *next = sk->sk_receive_queue.next;

        while (next != head) {
            struct sk_buff *buff = (struct sk_buff *) next;

            if (buff->data_len) {
                memset((char *)buff->data, 'L', buff->data_len);
                memset((char *)&buff->data_len, 'L', 0x4);
            }

            /*
             * .next is the first entry.
            */
        }
    }
}
```

At the bottom of the window, a menu bar contains the following items: 1.Помощь, 2.Сохранить, 3.Блок, 4.Замена, 5.Копия, 6.Пере-тиг, 7.Поиск, 8.Удалить, 9.МенюMC, 10.Выход.

Рис. 33: Файл с программой

# Работа с редактором Midnight Commander

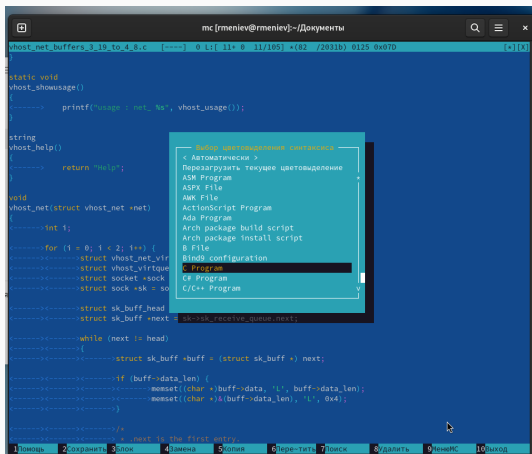


Рис. 34: Цветовыделение синтаксиса

## **Выводы по проделанной работе**

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