

Командная оболочка Midnight Commander

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Цели и задачи работы

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

Работа с Midnight Commander

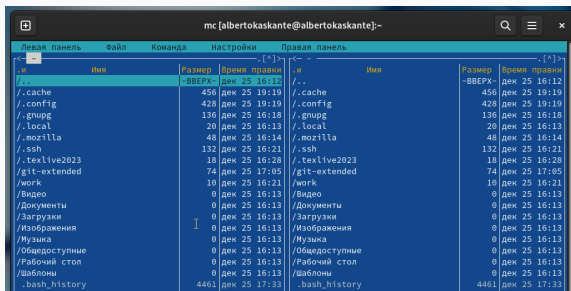


Рис. 1: Запуск mc

Работа с Midnight Commander

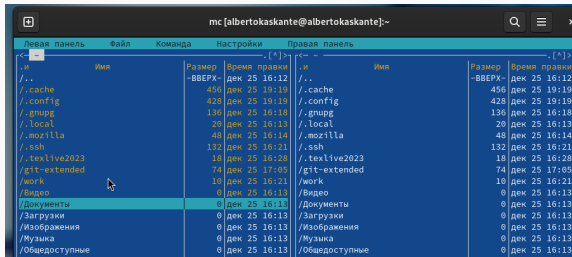


Рис. 2: Выделение

Работа с Midnight Commander

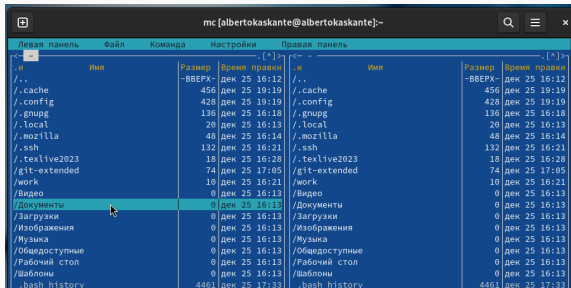


Рис. 3: Отмена

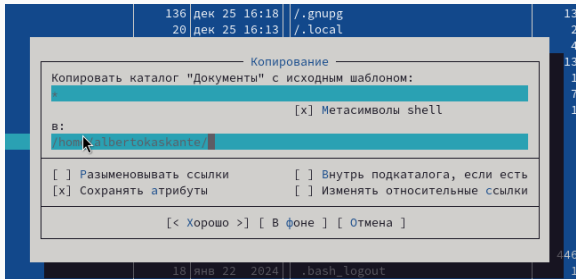


Рис. 4: Копирование

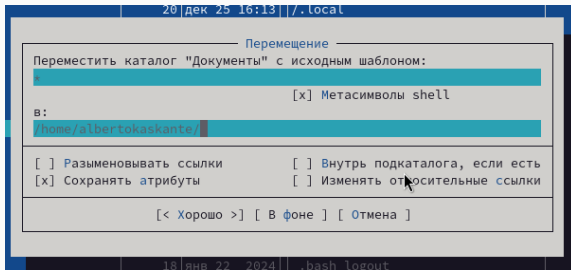


Рис. 5: Перемещение

Работа с Midnight Commander

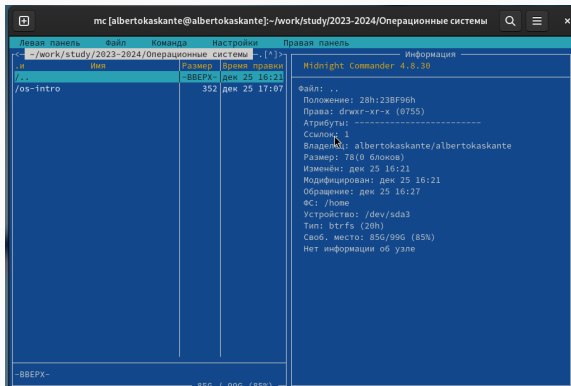


Рис. 6: Информация

Работа с Midnight Commander

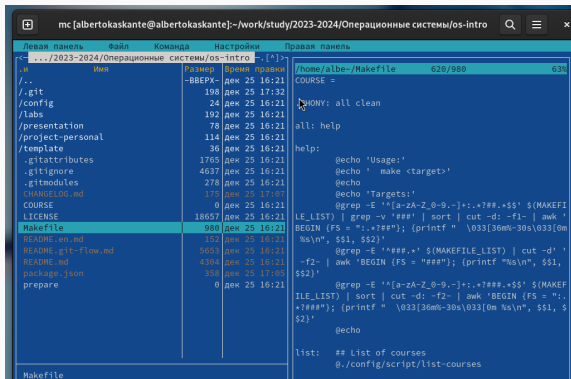


Рис. 7: Быстрый просмотр

Работа с Midnight Commander

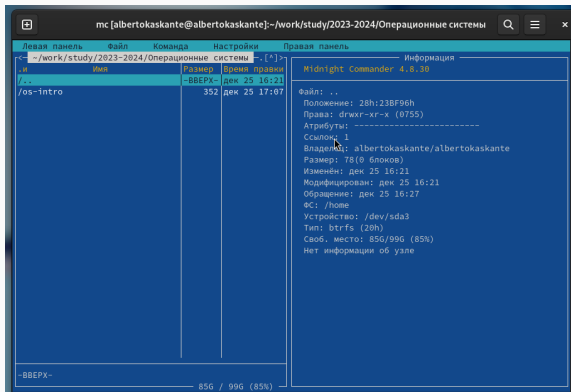


Рис. 8: Информация

Работа с Midnight Commander

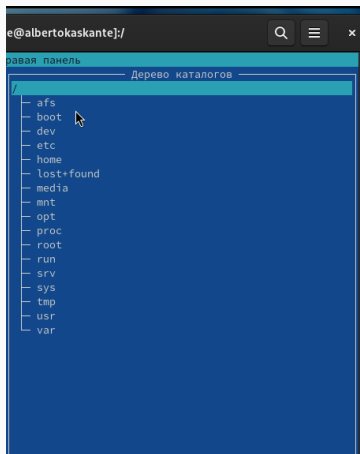
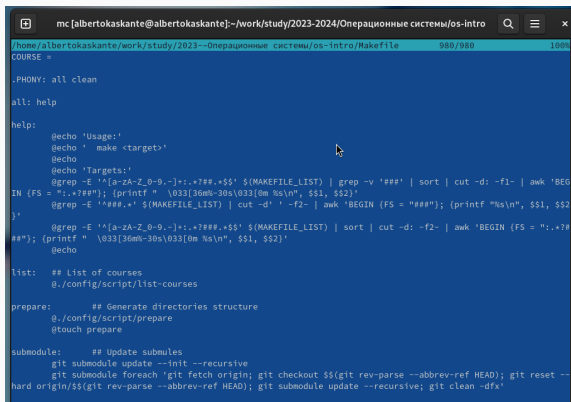


Рис. 9: Дерево каталогов

Работа с Midnight Commander



The screenshot shows a terminal window of the Midnight Commander file manager. The title bar indicates the user is 'mc [albertokaskante@albertokaskante]~/.work/study/2023-2024/Операционные системы/os-intro'. The main pane displays the contents of a file named 'Makefile' located at '/home/albertokaskante/work/study/2023-2024/Операционные системы/os-intro/Makefile'. The file size is 980/980 bytes and it is 100% readable. The content of the Makefile is as follows:

```
COURSE =

.PHONY: all clean

all: help

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

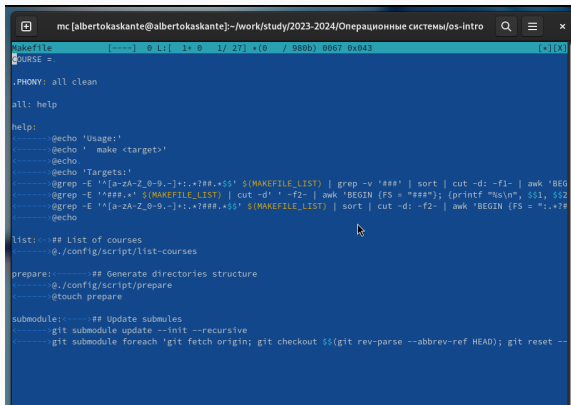
list: ## List of courses
    @./config/script/list-courses

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 'albertokaskante' in the directory '~/work/study/2023-2024/Операционные системы/os-intro'. The main window displays the contents of a file named 'Makefile'. The file's metadata at the top shows it is 980 bytes, dated 01/27, and has permissions 0067 0x043. The Makefile content includes a 'PURSE =' line, a '.PHONY: all clean' declaration, a 'help:' target with a complex shell command using 'echo', 'grep', 'sort', 'cut', and 'awk', and three other targets: 'list:', 'prepare:', and 'submodule:', each with their own shell commands.

```
mc [albertokaskante@albertokaskante]:~/work/study/2023-2024/Операционные системы/os-intro
Makefile  [-----]  0 L: [ 1+ 0 1/ 27] * (0 / 980b) 0067 0x043  (*) [X]
PURSE =

.PHONY: all clean

all: help

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

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов

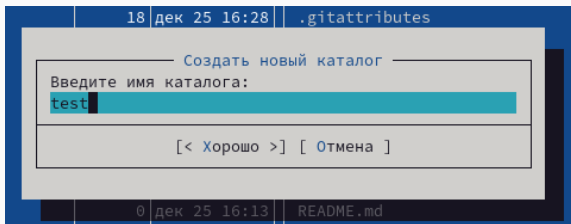


Рис. 12: Создание каталога

Работа с Midnight Commander

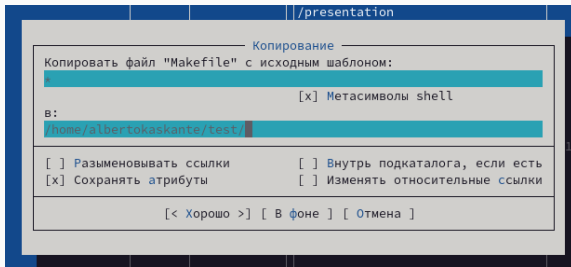


Рис. 13: Копирование в файлов в созданный каталог

Работа с Midnight Commander

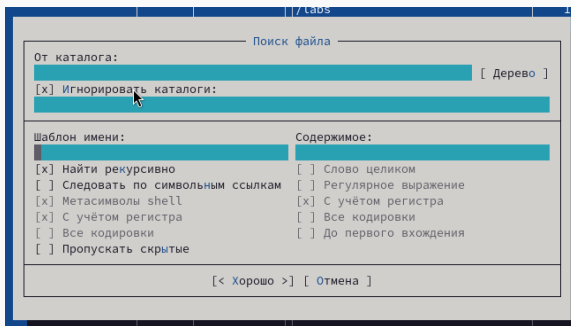


Рис. 14: Поиск файлов

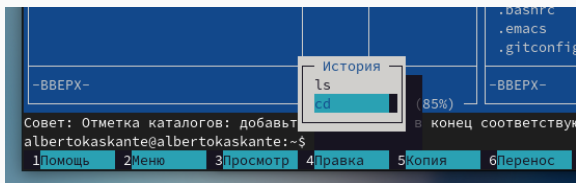


Рис. 15: История команд

Работа с Midnight Commander

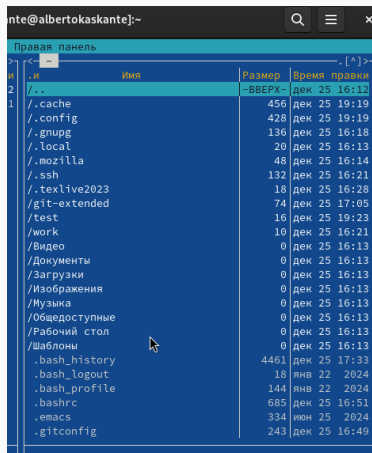
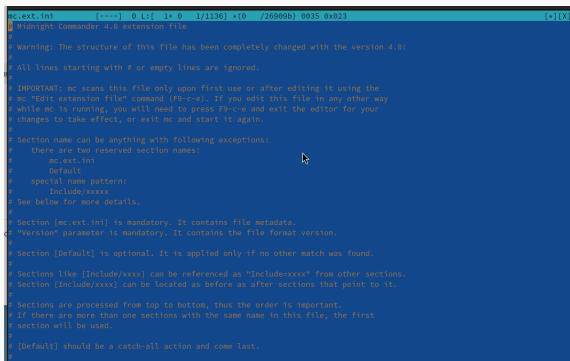


Рис. 16: Переход в домашний каталог

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

Работа с Midnight Commander

A screenshot of the Midnight Commander file menu. The window title is "menu" with a status bar on the right showing "[*][X]". The menu content is as follows:

```
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)
# %v Run 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
# %if  ditto
# %of  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
```

At the bottom of the window, there is a toolbar with 10 buttons labeled in Russian: 1.Помощь, 2.Сохранить, 3.Открыть, 4.Имена, 5.Копия, 6.Перенести, 7.Полоск, 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



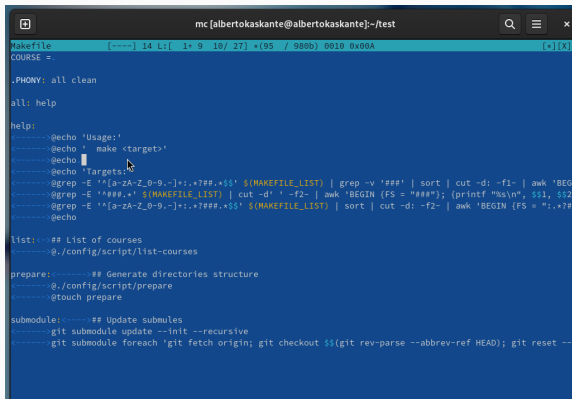
Рис. 24: Кодировка символов

Работа с Midnight Commander



Рис. 25: Распознавание клавиш

Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (MC) interface. The title bar indicates the user is 'albertokaskante' at 'albertokaskante' in the directory '~/test'. The main window displays a file named 'Makefile' with a size of 14 KiB (14,910 bytes) and permissions of -rwxr-xr-x. The file's contents are shown in a blue background with white text. The Makefile includes comments, a 'COURSE =' variable, and several shell commands for cleaning, help, and generating directories. A mouse cursor is visible over the 'Targets:' section of the file.

```
Makefile  [----] 14 KiB 10/27 95 / 980b 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-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '##' | sort | cut -d: -f1- | awk 'BEGIN
-----@grep -E '[a-zA-Z_0-9-]+:.*?##.*$$' $(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 "%s\n", $1, $2
-----@echo

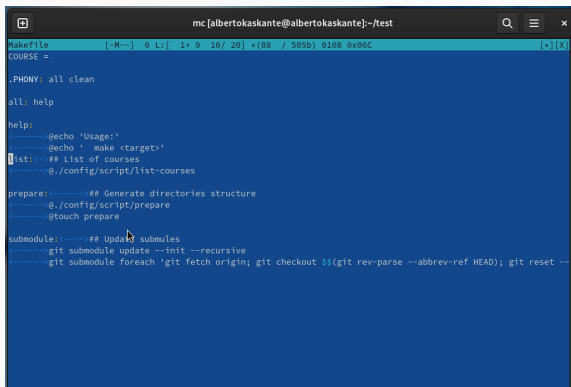
list:#### List of courses
-----@./config/script/list-courses

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 --
```

Рис. 26: Файл с текстом

Работа с редактором Midnight Commander

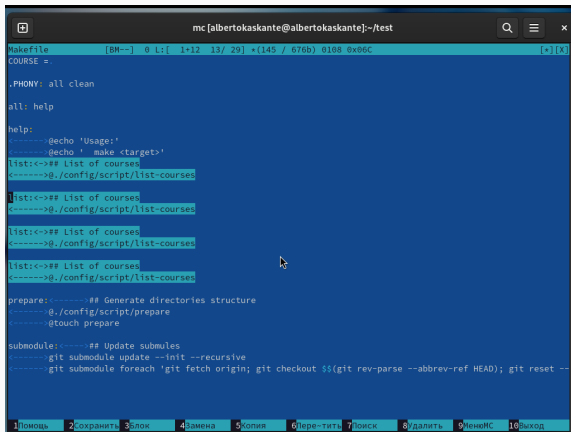


The screenshot shows the Midnight Commander (mc) file editor interface. The title bar indicates the user is 'albertokaskante@albertokaskante' in the directory '~/test'. The editor is displaying a file named 'Makefile'. The text content of the file is as follows:

```
Makefile      [-M--]  0 L: [ 1* 9 10/ 20] *(88 / 505b) 0108 0x06C [*][X]  
COURSE =  
  
.PHONY: all clean  
  
all: help  
  
help:  
-----@echo 'Usage:'  
-----@echo ' make <target>'  
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 --
```

Рис. 27: Файл с текстом

Работа с редактором Midnight Commander



```
mc [albertokaskante@albertokaskante]:~/test

Makefile      [BM--]  0 L: [ 1+12  13/ 29] *(145 / 676b) 0168 0x06C      [*] [X]
COURSE =

.PHONY: all clean

all: help

help:
<----->@echo 'Usage:'
<----->@echo '  make <target>'
list:<->## List of courses
<----->@./config/script/list-courses

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

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

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

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

Рис. 28: Копирование фрагмента

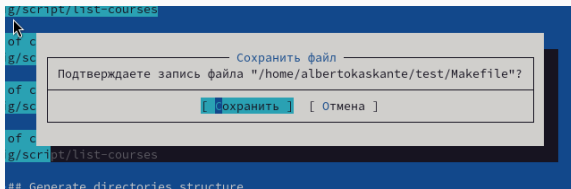
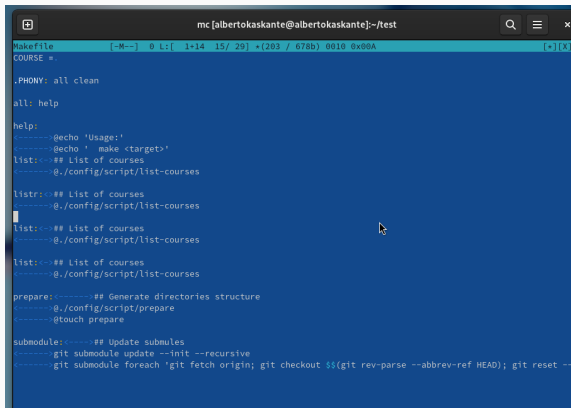


Рис. 29: Сохранение

Работа с редактором Midnight Commander



The screenshot shows a terminal window titled "mc [albertokaskante@albertokaskante]~/test". The terminal displays the contents of a Makefile and the output of the 'make' command. The Makefile includes a 'COURSE' variable, a 'phony' declaration, and several targets: 'all', 'help', 'list', 'prepare', and 'submodule'. The 'make' command is executed, and the output shows the execution of the 'list' target, which prints the list of courses. The terminal window has a dark blue background and a light blue title bar.

```
Makefile      [-M--]  0 L: [ 1+14 15/ 29] *(203 / 678b) 0010 0x00A      [+][X]
COURSE =

.PHONY: all clean

all: help

help:
----->@echo 'Usage:'
----->@echo ' make <target>'
list:<-->## List of courses
----->@./config/script/list-courses

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

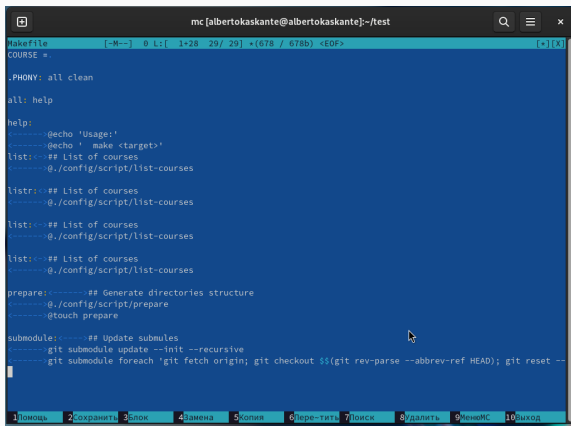
list:<-->## List of courses
----->@./config/script/list-courses

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 --
```

Рис. 30: Отмена

Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'albertokaskante' in the directory '~/test'. The main window displays a Makefile with the following content:

```
Makefile      [-M--]  0 L:  1+28  29/ 29]  *(678 / 678b) <EOF>  [*] [X]
COURSE = .

.PHONY: all clean

all: help

help:
-----@echo 'Usage:'
-----@echo '  make <target>'
list:<--## List of courses
-----@./config/script/list-courses

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

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

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

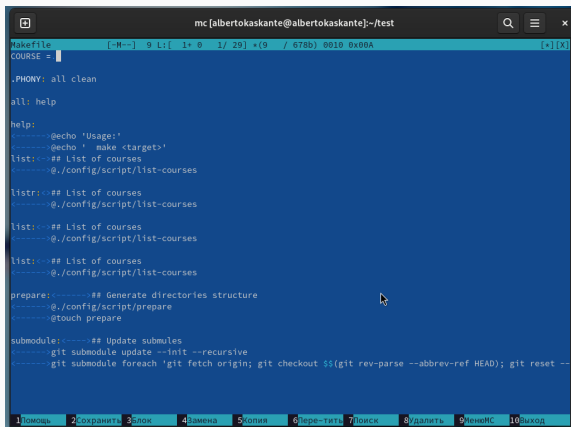
prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

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

At the bottom of the window, a menu bar is visible with the following options: 1 Доночь, 2 Сохранить, 3 Блок, 4 Замена, 5 Копия, 6 Пере-титл, 7 Поиск, 8 Удалить, 9 МенюМС, 10 Выход.

Рис. 31: Переход в конец файла

Работа с редактором Midnight Commander



```
mc [albertokaskante@albertokaskante]:~/test
Makefile  [-M--]  9 L: [ 1+ 0  1/ 29] *(9  / 678b) 0010 0x00A  [*] [X]
COURSE =
.PHONY: all clean
all: help
help:
-----@echo 'Usage:'
-----@echo ' make <target>'
list:## List of courses
-----@./config/script/list-courses
list:## List of courses
-----@./config/script/list-courses
list:## List of courses
-----@./config/script/list-courses
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 --
```

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

Рис. 32: Переход в начало файла

Работа с редактором Midnight Commander



The image shows a screenshot of the Midnight Commander (mc) file manager. The title bar at the top reads "mc [albertokaskante@albertokaskante]". The main window displays the contents of a file named "sqrt.c". The code is as follows:

```
sqrt.c      [-----]  0 L:[ 1+ 0  1/ 12] *(0  / 187b) 0035 0x0.  
#include <stdio.h> /* needed for printf */  
#include <math.h> /* needed for sqrt */  
  
int main()  
{  
    double x = sqrt(2.0); /* $x = \sqrt{2}$ */  
  
    printf("x = %f\n", x);  
  
    return 1;  
}.
```

Рис. 33: Файл с программой

Работа с редактором Midnight Commander

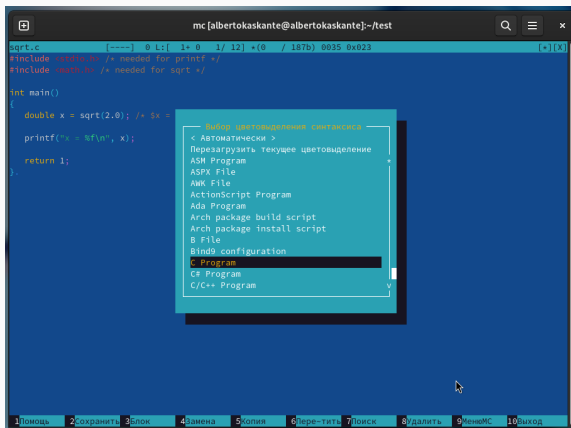


Рис. 34: Цветовыделение синтаксиса

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.