

Командная оболочка Midnight Commander

Даваасурэн Цэгцтур¹

6 сентября, 2024, Москва, Россия

¹Российский Университет Дружбы Народов

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

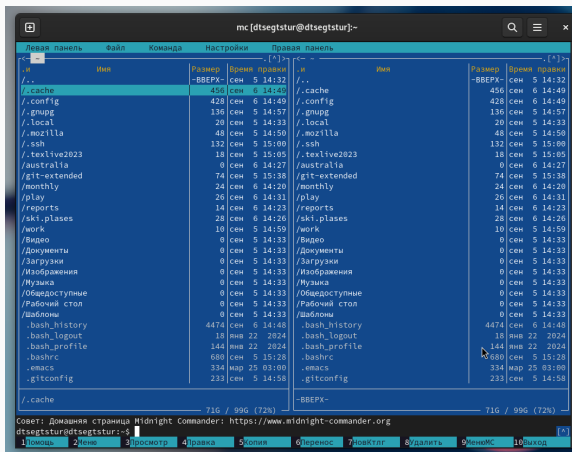


Рис. 1: Запуск mc

Работа с Midnight Commander

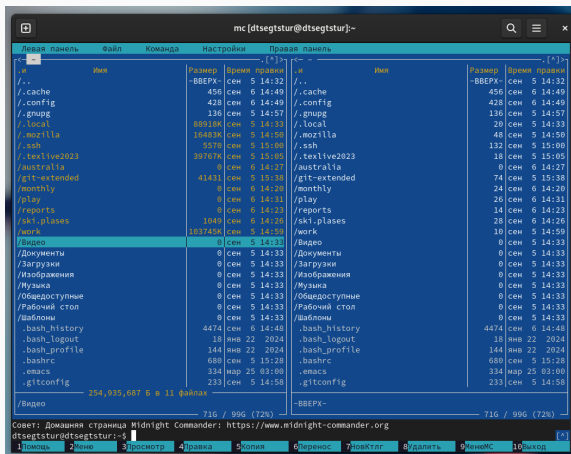


Рис. 2: Выделение

Работа с Midnight Commander

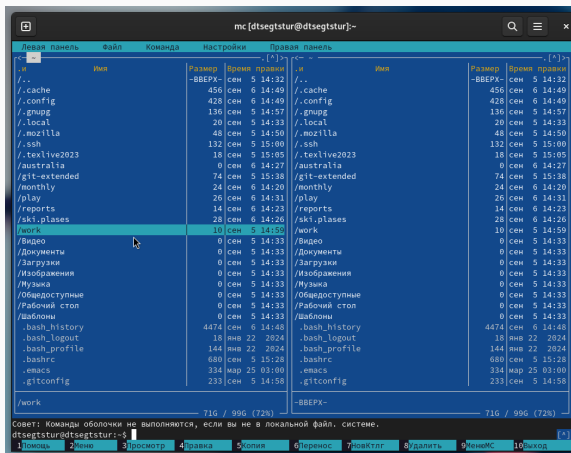


Рис. 3: Отмена

Работа с Midnight Commander

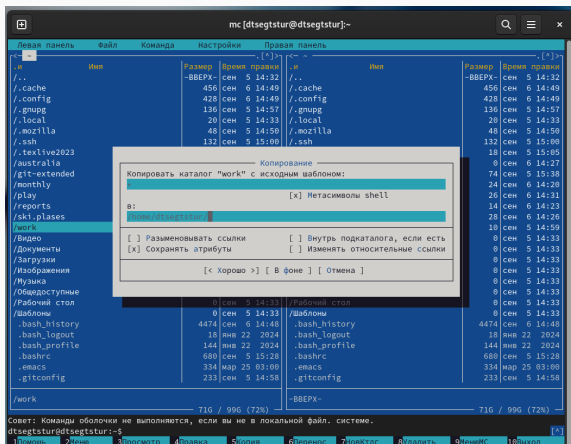


Рис. 4: Копирование

Работа с Midnight Commander

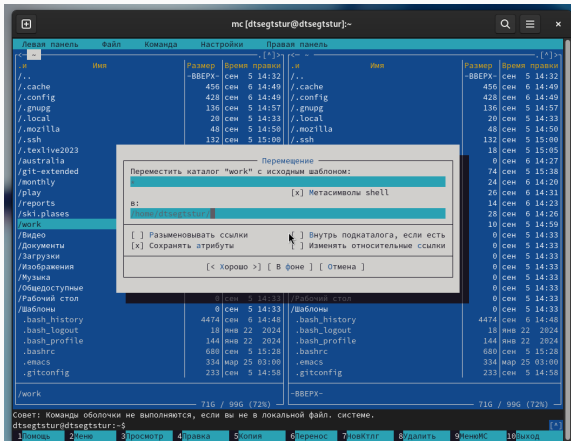


Рис. 5: Перемещение

Работа с Midnight Commander

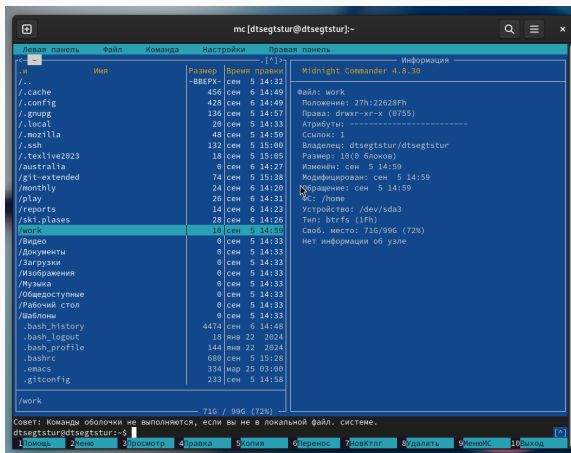


Рис. 6: Информация

Работа с Midnight Commander

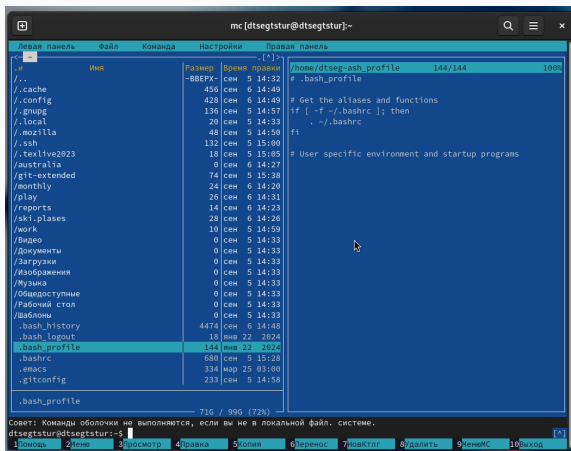


Рис. 7: Быстрый просмотр

Работа с Midnight Commander

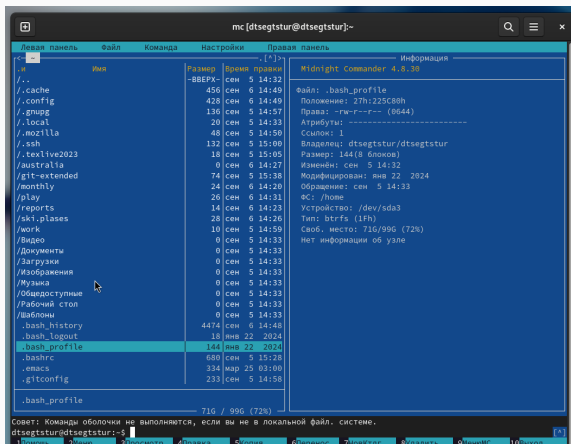


Рис. 8: Информация

The screenshot shows a macOS terminal window with the title bar "mc [dtsegstsur]@dtsegstsur:~/work/study/2023-2024/Операционные системы/os-intro". The terminal is running the command "ls -la" in the directory "/work/study/2023-2024/Операционные системы/os-intro". The output is a detailed file listing with permissions, owner, group, size, date, and filename. The files listed are:

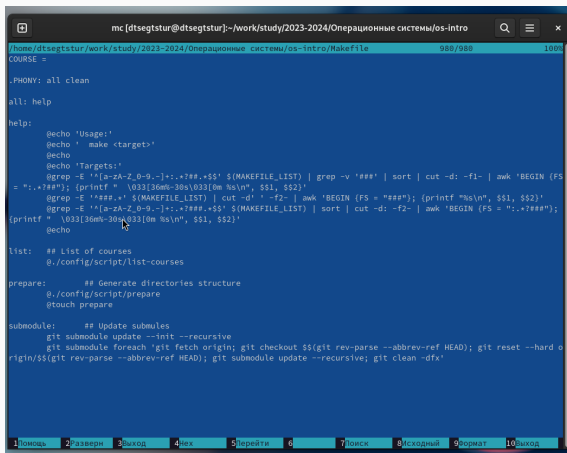
- ..
- ...
- .git
- .config
- .labs
- .presentation
- .project-personal
- .template
- .gitattributes
- .gitignore
- .gitmodules
- CHANGELOG.md
- COURSE
- LICENSE
- Makefile
- README.en.md
- README.git-flow.md
- README.md
- package.json
- prepare

The file manager interface on the right shows a tree view of the directory structure, with the current directory being "/work/study/2023-2024/Операционные системы/os-intro". The tree view shows the following structure:

- work
 - study
 - 2023-2024
 - Операционные системы
 - os-intro
 - .git
 - .config
 - .labs
 - .presentation
 - .project-personal
 - .template

12/38

Работа с Midnight Commander



The screenshot shows the Midnight Commander (MC) interface. The title bar indicates the user is 'mc [dtsegtstur@dtsegtstur]~/.work/study/2023-2024/Операционные системы/os-intro'. The current directory is '/home/dtsegtstur/work/study/2023-2024/Операционные системы/os-intro/Makefile', and the file size is 980/980 bytes, 100% loaded. The main pane displays the content of the Makefile, which includes a 'COURSE =' variable, a 'help:' target with usage and targets information, a 'list:' target for listing courses, a 'prepare:' target for generating directory structure, and a 'submodule:' target for updating submodules. The bottom status bar shows navigation shortcuts: 1)Помощь, 2)Назад, 3)Выход, 4)Файл, 5)Перейти, 6)О, 7)Поиск, 8)Исходный, 9)Формат, 10)Выход.

```
mc [dtsegtstur@dtsegtstur]~/.work/study/2023-2024/Операционные системы/os-intro
/home/dtsegtstur/work/study/2023-2024/Операционные 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

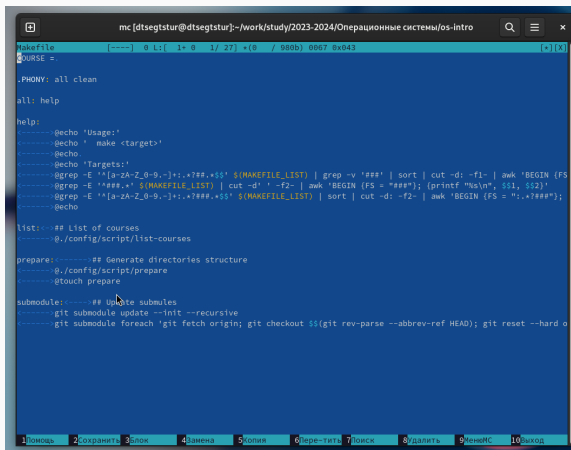
list: ## List of courses
    @./config/script/list-courses

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 $(git rev-parse --abbrev-ref HEAD); git reset --hard o
rigin/$(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 current directory is `mc [dtsegtstur@dtsegtstur:~/work/study/2023-2024/Операционные системы/os-intro]`. The main window displays a file named `Makefile` with a status bar at the top showing file details: `0 L: 1+ 0 1/ 27) * (0 / 980b) 0067 0x043`. The file content is a Makefile script. The status bar at the bottom of the window contains 10 numbered buttons: 1.Помощь, 2.Сохранить, 3.Блок, 4.Вставить, 5.Копия, 6.Переместить, 7.Поиск, 8.Удалить, 9.Выход, 10.Выход.

```
Makefile
#---- 0 L: 1+ 0 1/ 27) * (0 / 980b) 0067 0x043
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

Работа с Midnight Commander

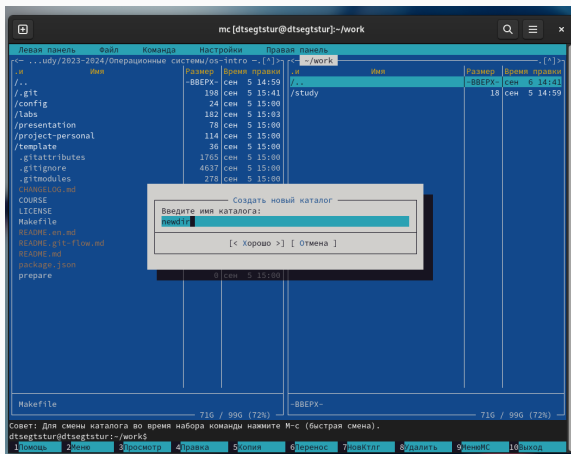


Рис. 12: Создание каталога

Работа с Midnight Commander

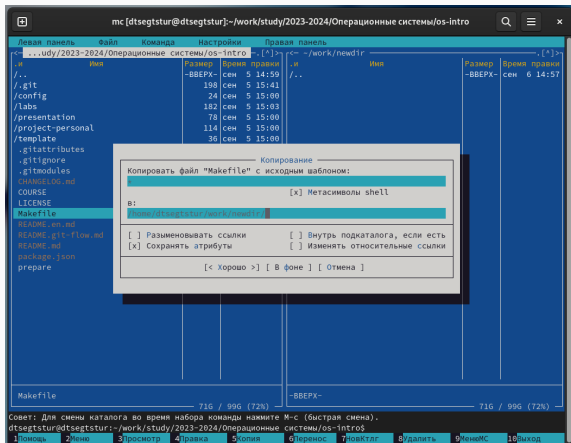


Рис. 13: Копирование в файлов в созданный каталог

Работа с Midnight Commander

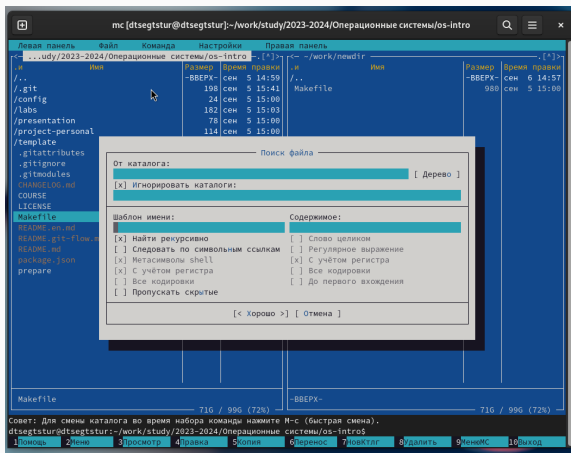


Рис. 14: Поиск файлов

Работа с Midnight Commander

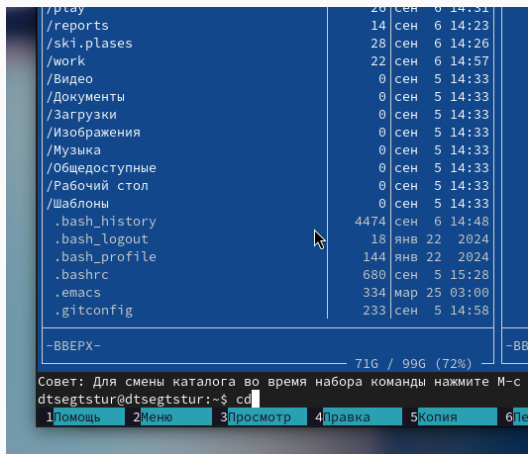
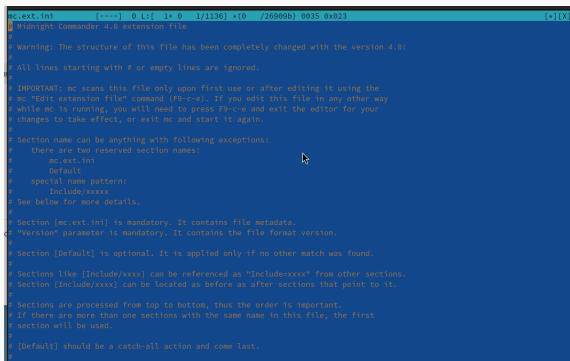


Рис. 16: Переход в домашний каталог

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 showing "1 t: 1*16 17/378 *(732 /11821b) 0010 0x00A" and a close button. The menu text 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)
| SCMD %f

+ t t
| Do something on the tagged files
| CMD=%(Enter command)
| for i in %t ; do
```

At the bottom of the window is a toolbar with 10 icons and their Russian labels: 1. Помощь (Help), 2. Сохранить (Save), 3. Поиск (Search), 4. Имена (Names), 5. Скопия (Copy), 6. Перенести (Move), 7. Повтор (Repeat), 8. Удалить (Delete), 9. НенайС (Not Found), 10. Выход (Exit).

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

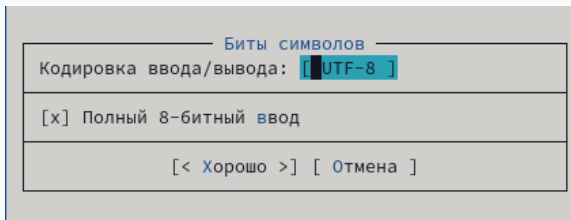


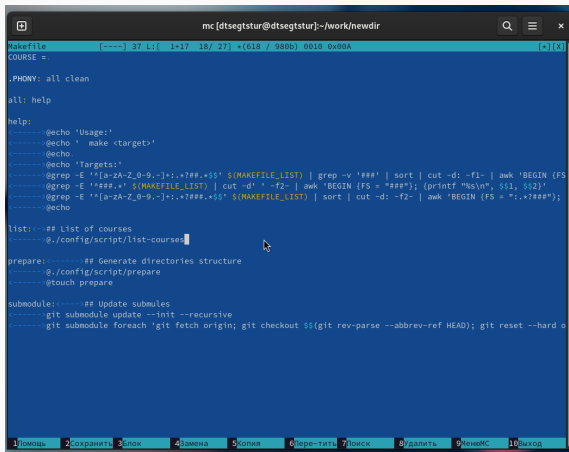
Рис. 24: Кодировка символов

Работа с Midnight Commander



Рис. 25: Распознавание клавиш

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur]~/work/newdir
Makefile  [----] 37 L: [ 1+17 18/ 27] +(618 / 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-]+:.*?##.*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS
-----@grep -E '###.*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", %1, %2)}'
-----@grep -E '[a-zA-Z_0-9-]+:.*?##.*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ".*?##"}';
-----@echo

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

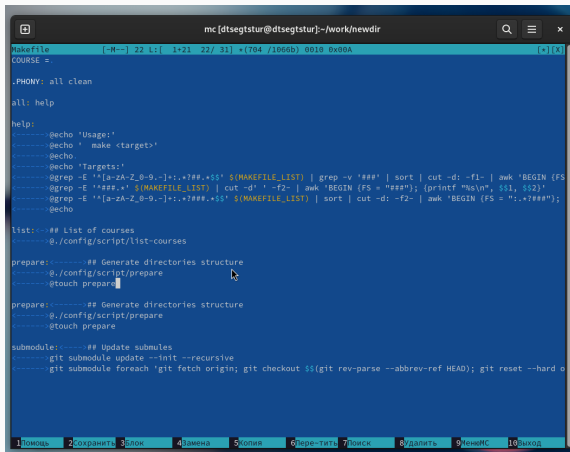
prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

submodule:-----## Update 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 Помощь 2 Сохранить 3 Блок 4 Замена 5 Копия 6 Пере-титы 7 Поиск 8 Удалить 9 МенюМС 10 Выход

Рис. 26: Файл с текстом

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur]~/work/newdir
Makefile  [-M~] 22 L:[ 1+2] 22/ 31] +(704 /1066b) 0010 Bx00A [+](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

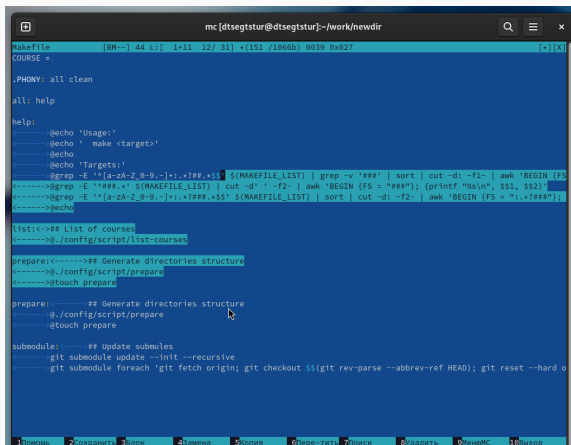
prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

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
```

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

Рис. 27: Файл с текстом

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur:~/work/newdir]
Makefile [BM--] 44 L:[ 1+11 12/ 31] *(151 /106Gb) 0039 0x027 [*][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

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. 28: Копирование фрагмента

Работа с редактором Midnight Commander

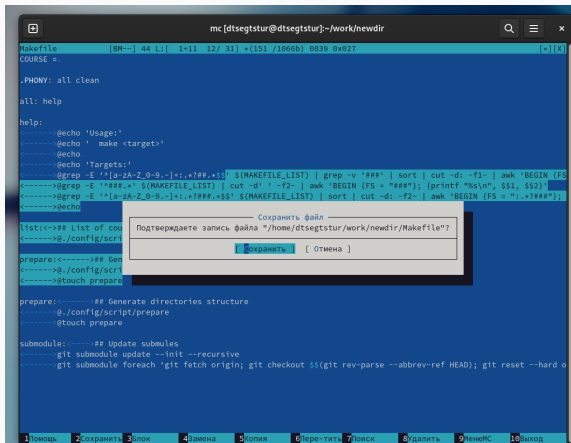
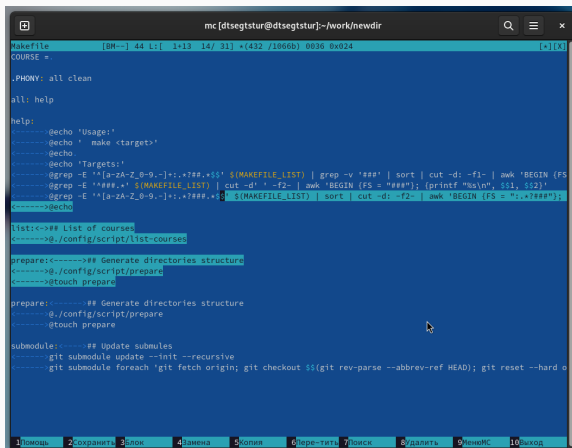


Рис. 29: Сохранение

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur:~/work/newdir]
Makefile [BH--] 44 L: [ 1+13 14/ 31] +(432 /1066b) 0036 0x024 [x]
COURSE = .

.PHONY: all clean

all: help

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

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

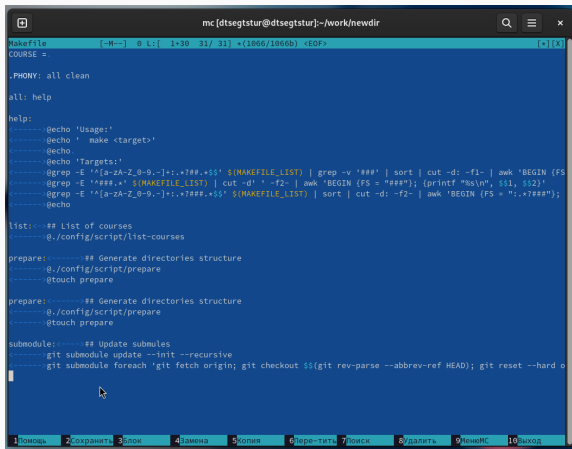
prepare:-----## Generate directories structure
----->@./config/script/prepare
----->touch prepare

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. 30: Отмена

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur:~/work/newdir]
Makefile [-M--] 0 L: [ 1+30 31/ 31] * (1066/1066b) <EOF>
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

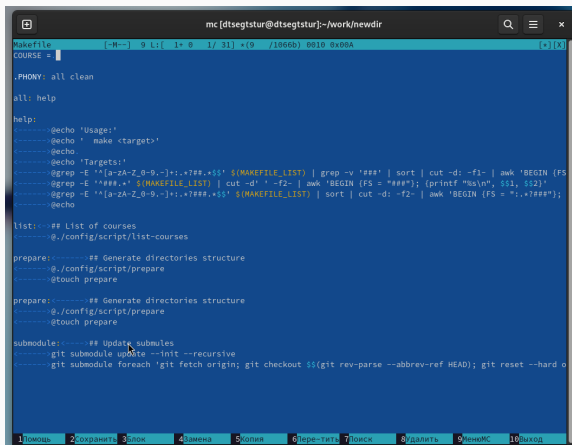
prepare:-----## Generate directories structure
-----@./config/script/prepare
-----@touch prepare

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. 31: Переход в конец файла

Работа с редактором Midnight Commander



```
mc [dtsegtstur@dtsegtstur:~/work/newdir]
Makefile  [-M--]  9 L: 1+ 0 1/ 31) *(9  /1066b) 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-]+\.[7##,]*$$' $(MAKEFILE_LIST) | grep -v '###' | sort | cut -d: -f1- | awk 'BEGIN {FS
-----@grep -E '###,*' $(MAKEFILE_LIST) | cut -d' ' -f2- | awk 'BEGIN {FS = "###"; (printf "%s\n", $0, $2)}'
-----@grep -E '[a-zA-Z_0-9-]+\.[7##,]*$$' $(MAKEFILE_LIST) | sort | cut -d: -f2- | awk 'BEGIN {FS = ":[7##,]*";
-----@echo

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

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

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 --hard o
```

1Помощь 2Сохранить 3Взлом 4Замена 5Копия 6Пере-тит 7Поиск 8Удалить 9МенюМС 10Выход

Рис. 32: Переход в начало файла

Работа с редактором Midnight Commander

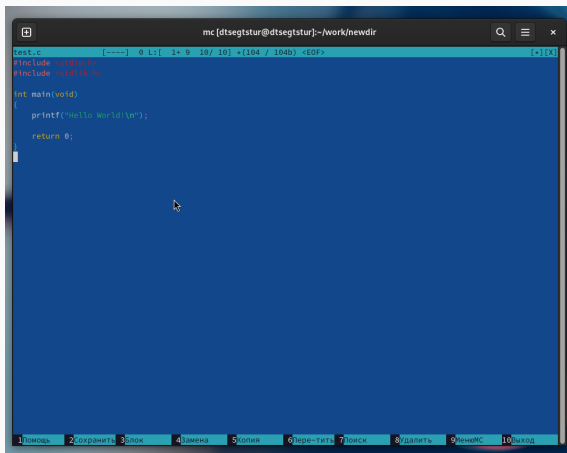


Рис. 33: Файл с программой

Работа с редактором Midnight Commander

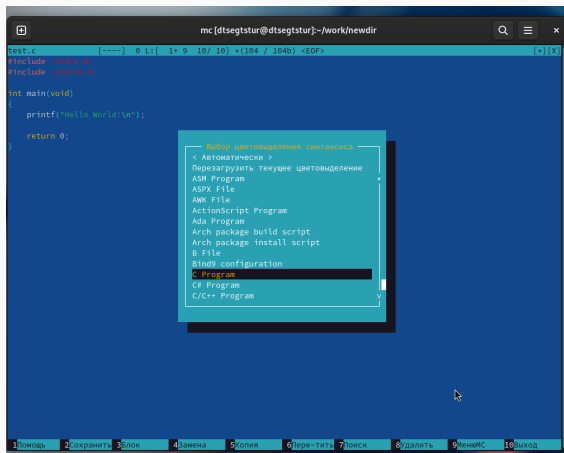


Рис. 34: Цветовыделение синтаксиса

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.