

# Операционные системы

Командная оболочка Midnight Commander

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## Цели и задачи работы

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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

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# Работа с Midnight Commander

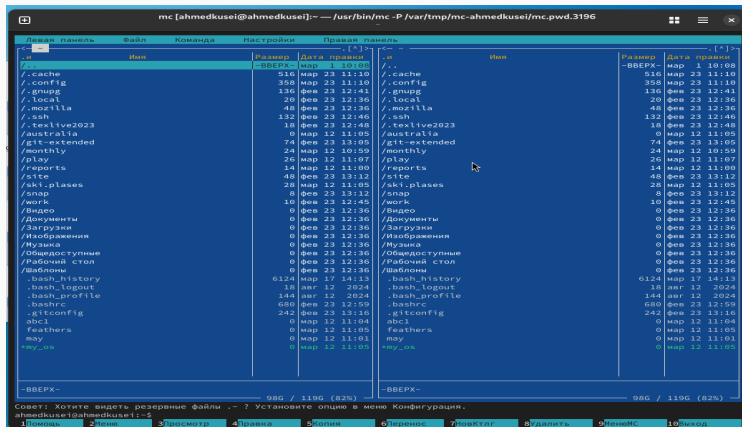


Рис. 1: Запуск mc

# Работа с Midnight Commander

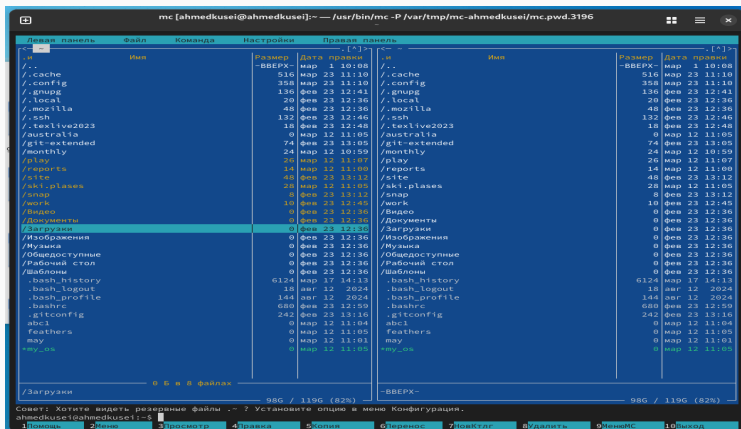


Рис. 2: Выделение

# Работа с Midnight Commander

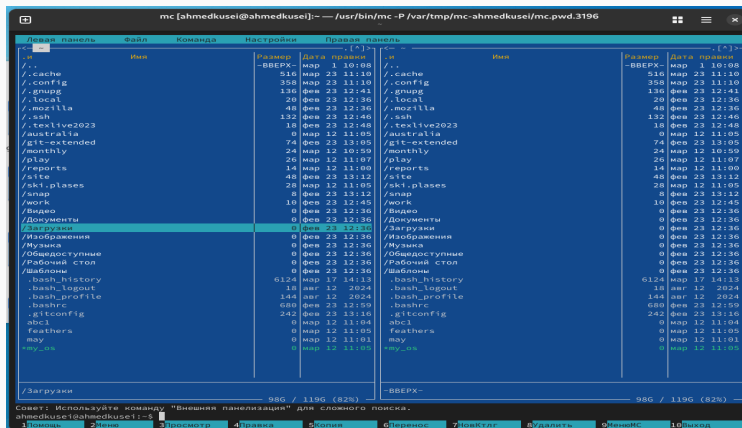


Рис. 3: Отмена



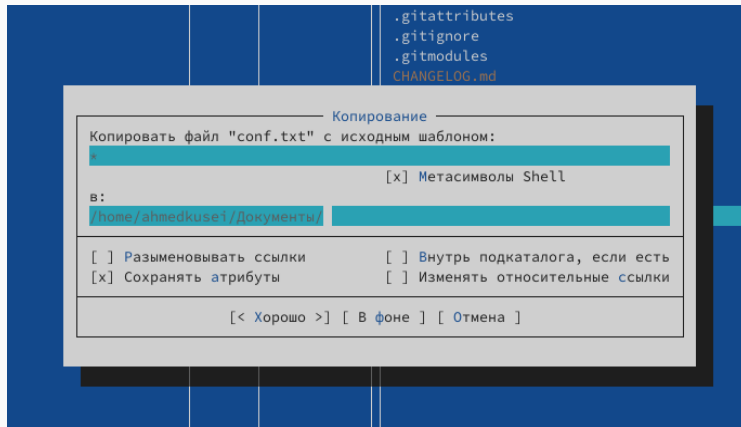


Рис. 4: Копирование

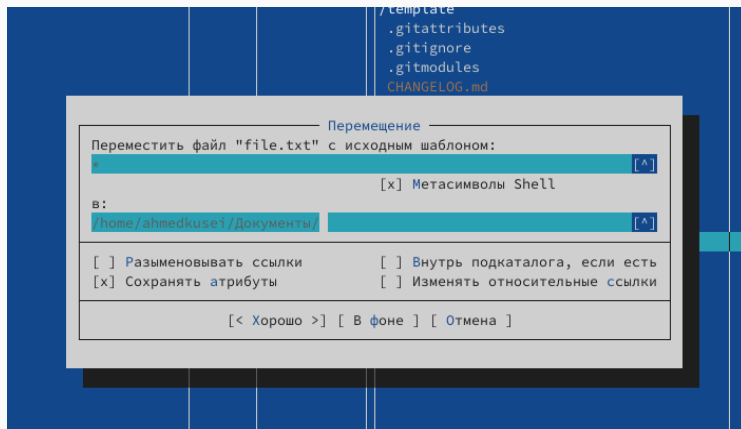


Рис. 5: Перемещение

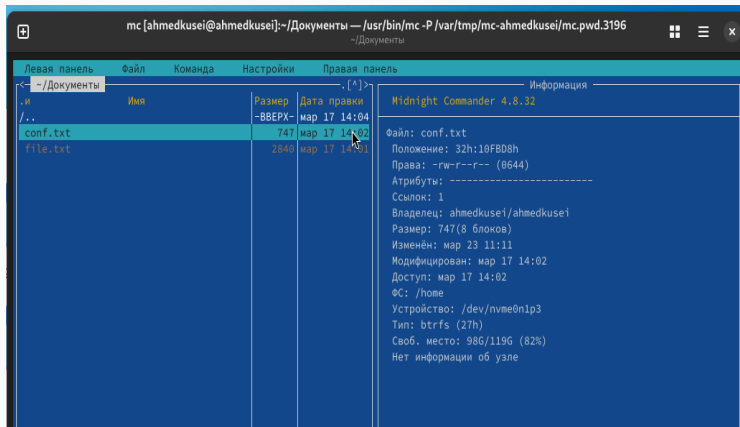


Рис. 6: Информация

# Работа с Midnight Commander

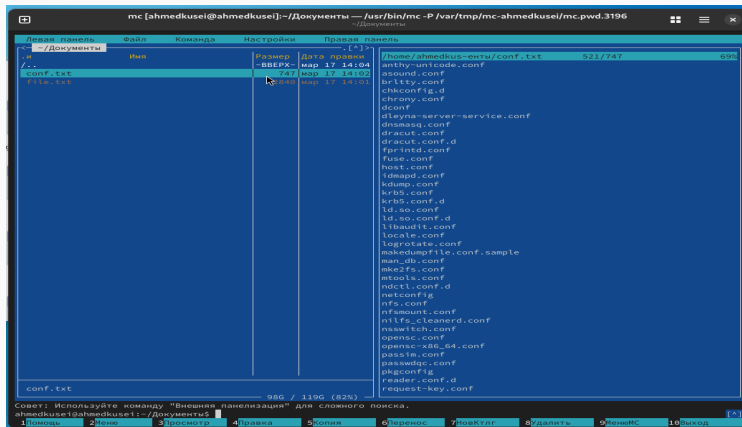


Рис. 7: Быстрый просмотр

# Работа с Midnight Commander

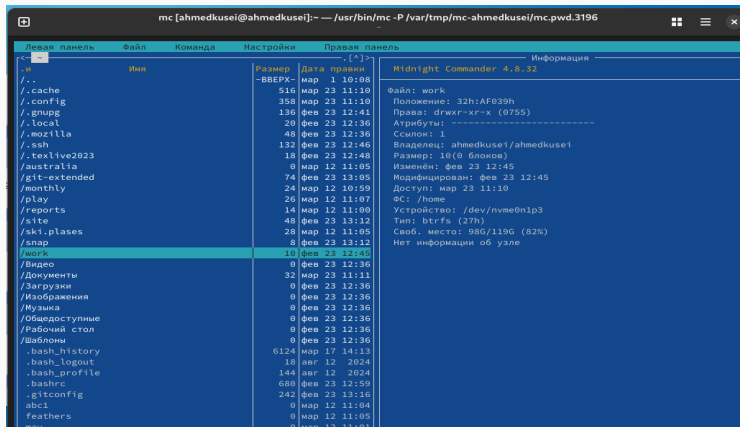


Рис. 8: Информация

# Работа с Midnight Commander

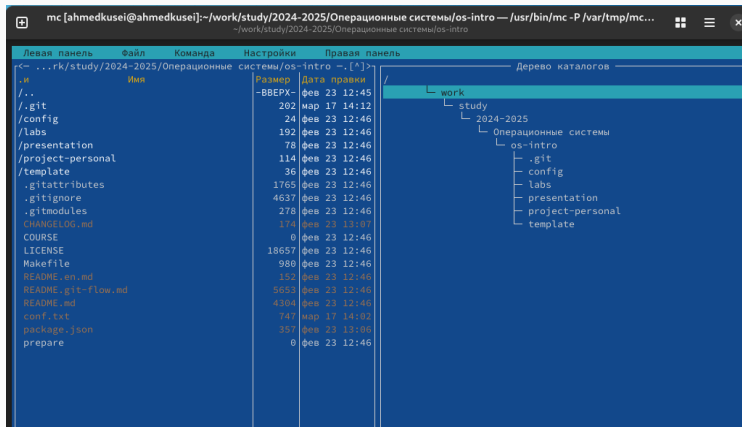
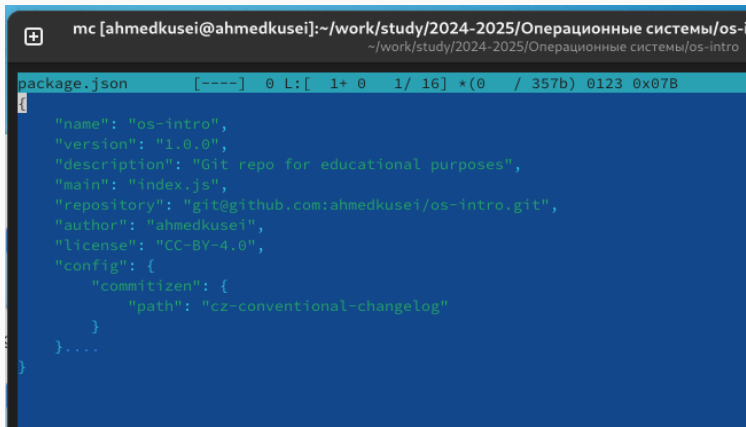


Рис. 9: Дерево каталогов

```
/home/ahmedkusei/work/study/2024-2025/Операционные системы/os-intro/package.json
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
    "commitizen": {
      "path": "cz-conventional-changelog"
    }
  }
}
```

Рис. 10: Просмотр содержимого текстового файла



The screenshot shows the Midnight Commander (mc) interface. The title bar at the top indicates the current directory is `~/work/study/2024-2025/Операционные системы/os-...`. The main window displays the contents of the `package.json` file. The file's metadata bar shows it is 16 lines long, with the cursor at line 1, column 0. The JSON content is as follows:

```
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
    "commitizen": {
      "path": "cz-conventional-changelog"
    }
  }
}
```

Рис. 11: Отредактируем содержимое текстового файла без сохранения результатов



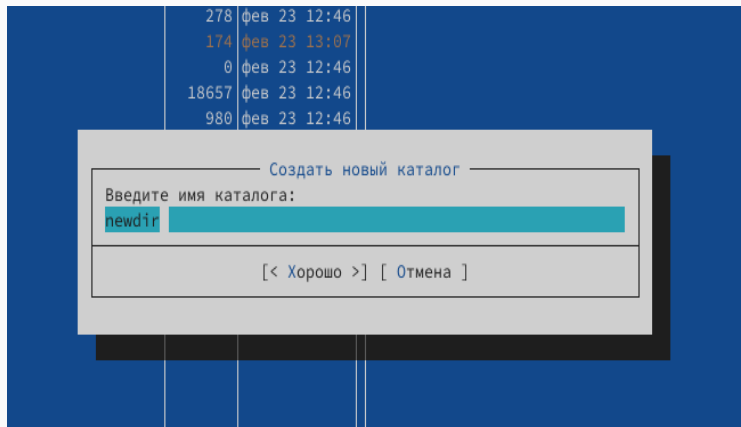


Рис. 12: Создание каталога

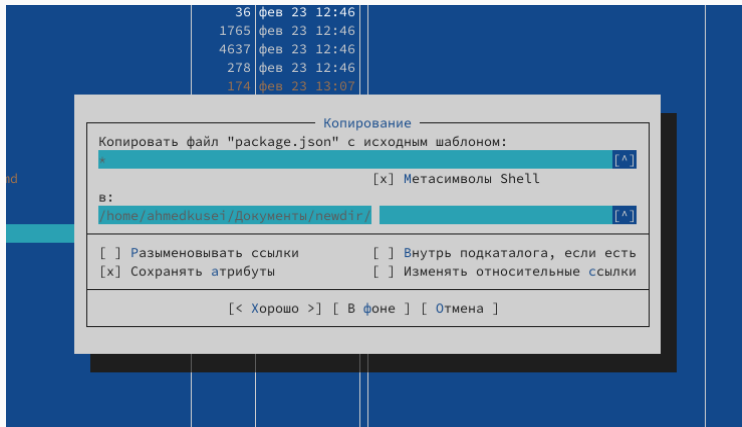


Рис. 13: Копирование в файлов в созданный каталог

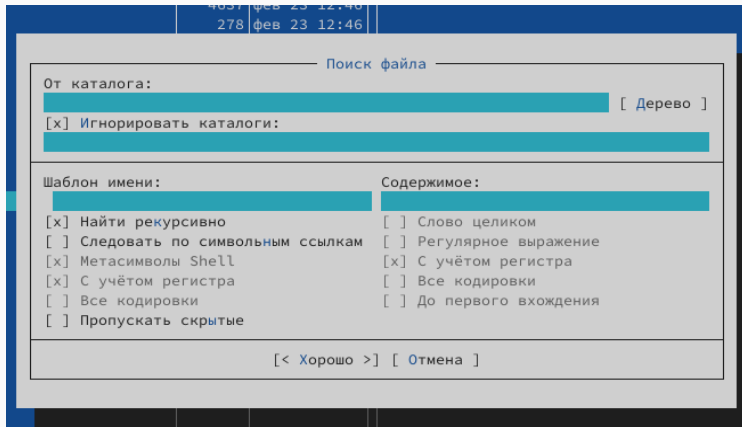


Рис. 14: Поиск файлов

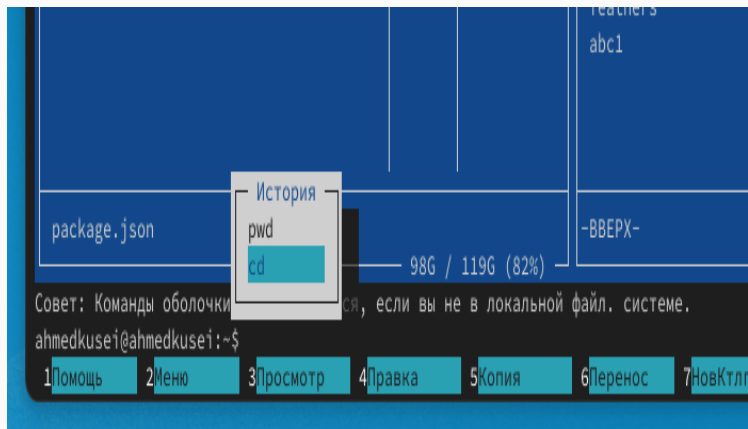


Рис. 15: История команд

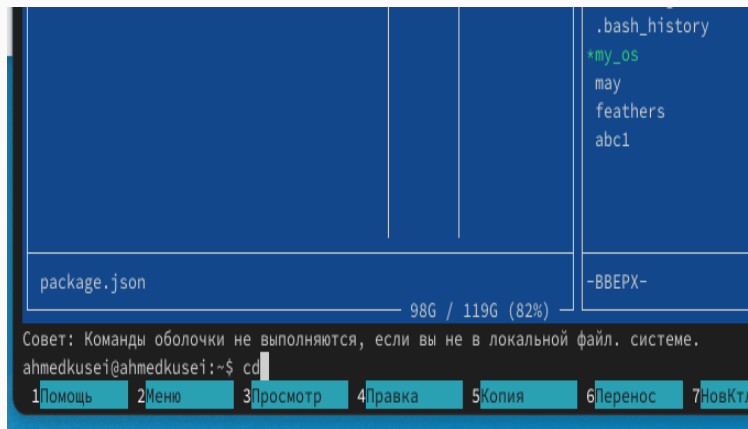


Рис. 16: Переход в домашний каталог



```
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, 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

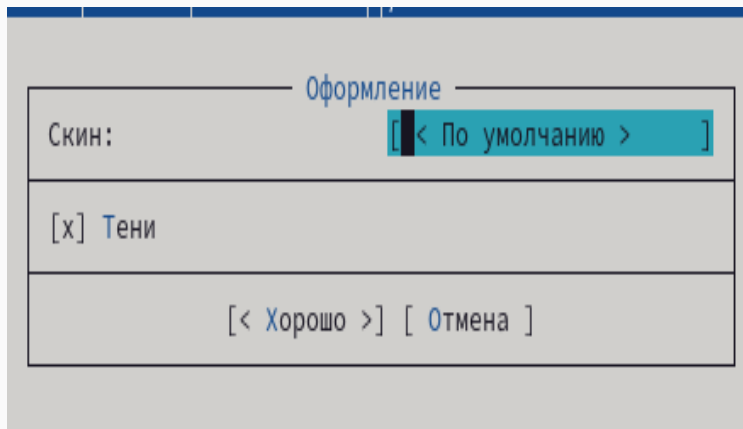


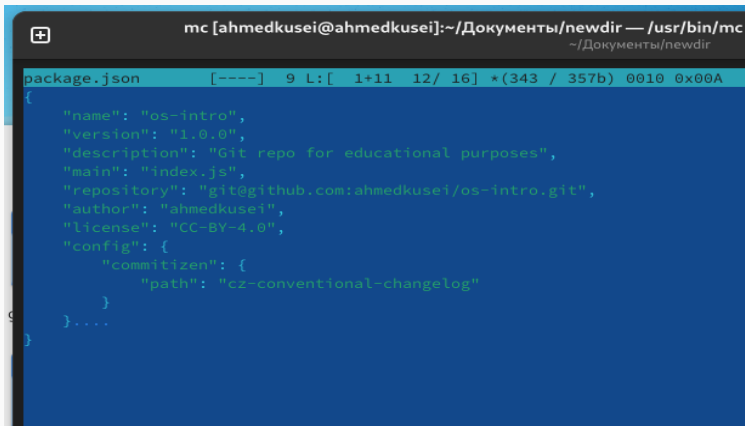
Рис. 23: Оформление



Рис. 24: Кодировка символов



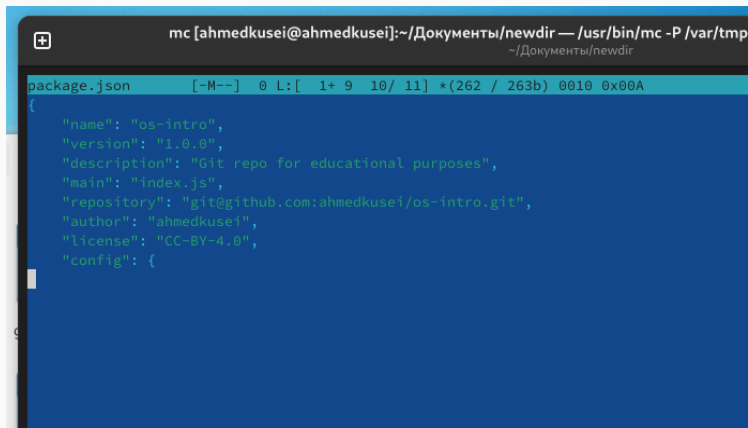
Рис. 25: Распознавание клавиш



The image shows a screenshot of the Midnight Commander (mc) file manager. The title bar at the top reads "mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc" and the status bar below it shows "~/Документы/newdir". The main window displays the file "package.json" with a status line "[----] 9 L: [ 1+11 12/ 16] \*(343 / 357b) 0010 0x00A". The file's content is a JSON object with the following fields: "name", "version", "description", "main", "repository", "author", "license", and "config". The "config" field contains a "commitizen" object with a "path" field.

```
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
    "commitizen": {
      "path": "cz-conventional-changelog"
    }
  }
}
```

Рис. 26: Файл с текстом

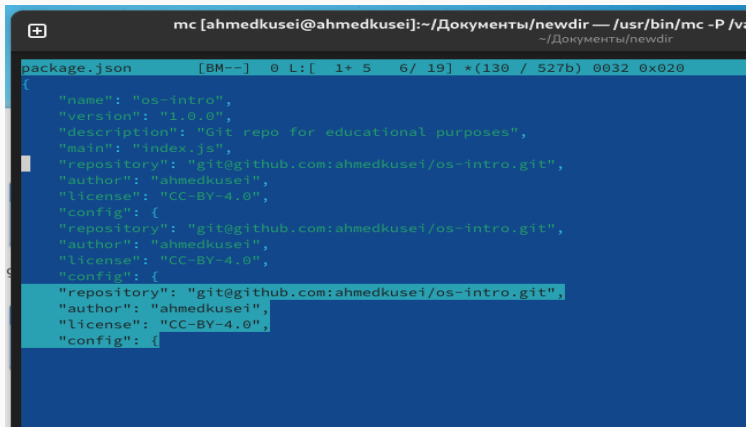


The screenshot shows the Midnight Commander (mc) interface. The title bar at the top reads "mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc -P /var/tmp" and the status bar below it shows "~/Документы/newdir". The file being edited is "package.json", with a status bar above the text showing "[-M--] 0 L: [ 1+ 9 10/ 11] \*(262 / 263b) 0010 0x00A". The text content of the file is a JSON object:

```
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
```

Рис. 27: Файл с текстом





The screenshot shows the Midnight Commander (mc) interface. The title bar indicates the user is 'ahmedkusei@ahmedkusei' and the current directory is '~/Документы/newdir'. The file being edited is 'package.json'. The editor shows a JSON object with the following structure:

```
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
    "repository": "git@github.com:ahmedkusei/os-intro.git",
    "author": "ahmedkusei",
    "license": "CC-BY-4.0",
    "config": {
      "repository": "git@github.com:ahmedkusei/os-intro.git",
      "author": "ahmedkusei",
      "license": "CC-BY-4.0",
      "config": {
```

A light blue selection bar highlights the following lines of the JSON object:

```
    "repository": "git@github.com:ahmedkusei/os-intro.git",
    "author": "ahmedkusei",
    "license": "CC-BY-4.0",
    "config": {
```

Рис. 28: Копирование фрагмента

# Работа с редактором Midnight Commander

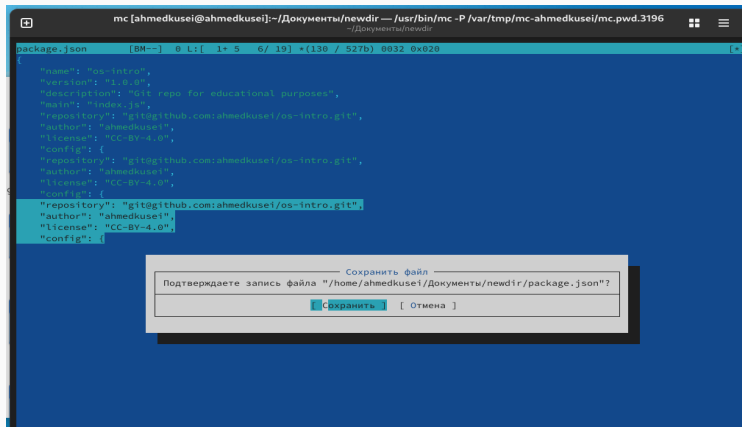
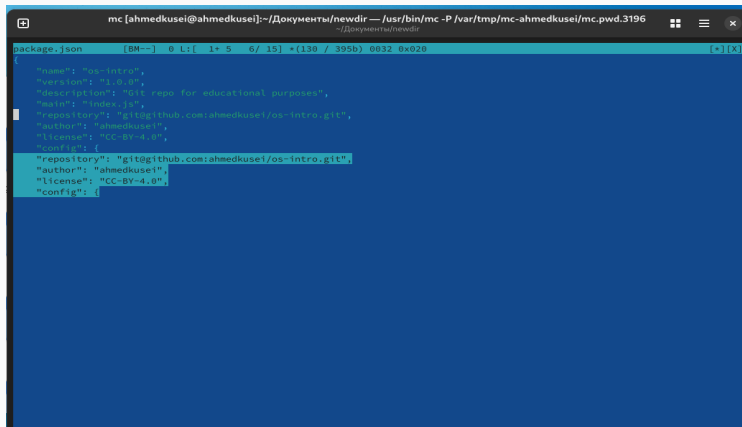


Рис. 29: Сохранение

# Работа с редактором Midnight Commander



The screenshot shows the Midnight Commander (MC) interface. The title bar at the top reads: `mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc -P /var/tmp/mc-ahmedkusei/mc.pwd.3196`. Below the title bar, the file `package.json` is open, with its metadata shown in a status bar: `[BM--] 0 L:[ 1+ 5 6/ 15] +(130 / 395b) 0032 0x020`. The main editing area displays the content of `package.json` in a light blue background with dark text. The JSON content is as follows:

```
{
  "name": "os-intro",
  "version": "1.0.0",
  "description": "Git repo for educational purposes",
  "main": "index.js",
  "repository": "git@github.com:ahmedkusei/os-intro.git",
  "author": "ahmedkusei",
  "license": "CC-BY-4.0",
  "config": {
    "repository": "git@github.com:ahmedkusei/os-intro.git",
    "author": "ahmedkusei",
    "license": "CC-BY-4.0",
    "config": {}
  }
}
```

Рис. 30: Отмена

# Работа с редактором Midnight Commander

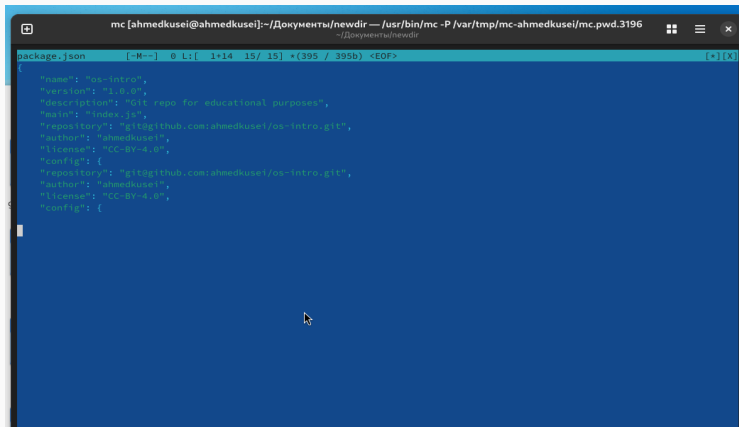
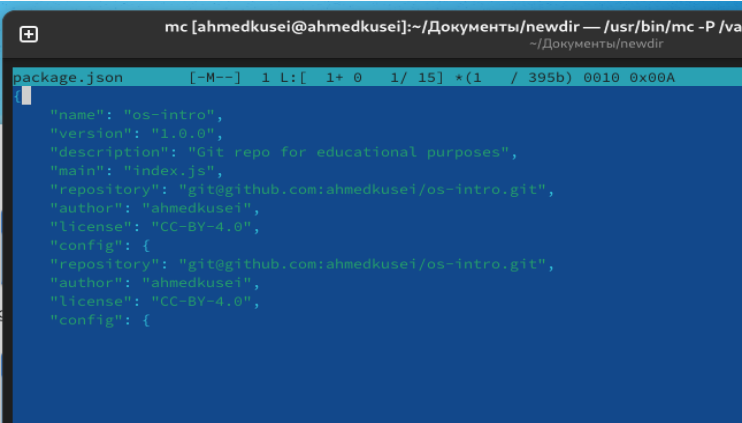


Рис. 31: Переход в конец файла

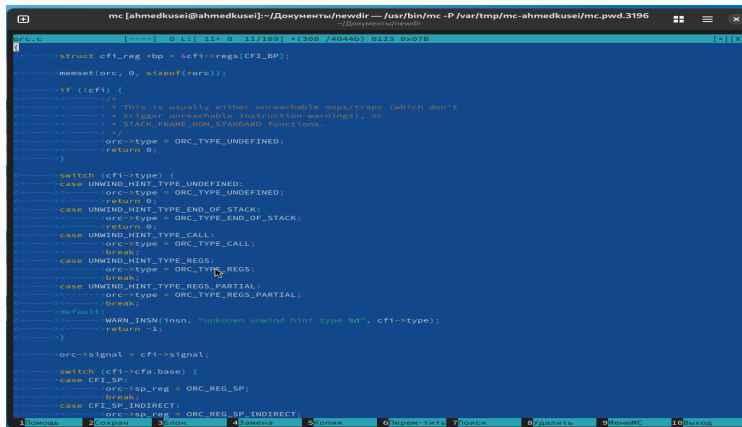


The screenshot shows the Midnight Commander (mc) interface. The title bar at the top reads "mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc -P /va" and the status bar below it shows "~/Документы/newdir". The file being edited is "package.json", with a status bar line showing "[ -M-- ] 1 L: [ 1+ 0 1/ 15 ] \*(1 / 395b) 0010 0x00A". The cursor is at the start of the first line, which is an opening curly brace "{". The JSON content of the file is as follows:

```
{  
  "name": "os-intro",  
  "version": "1.0.0",  
  "description": "Git repo for educational purposes",  
  "main": "index.js",  
  "repository": "git@github.com:ahmedkusei/os-intro.git",  
  "author": "ahmedkusei",  
  "license": "CC-BY-4.0",  
  "config": {  
    "repository": "git@github.com:ahmedkusei/os-intro.git",  
    "author": "ahmedkusei",  
    "license": "CC-BY-4.0",  
    "config": {
```

Рис. 32: Переход в начало файла

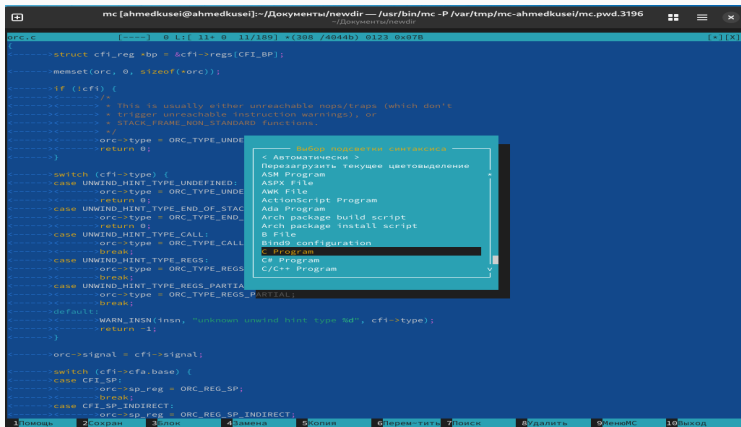
# Работа с редактором Midnight Commander



```
mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc -P /var/tmp/mc-ahmedkusei/mc.pwd.3196
~Документы/newdir
orc.c [----] 0 L: [ 11+ 0 11/189] *(308 /4044b) 6123 0x07B [X]
1
/*----->struct cfi_reg *bp = &cfi->regs[CFI_BP];
/*----->memset(orc, 0, sizeof(*orc));
/*----->if (!cfi) {
/*----->-----> * This is usually either unreachable nops/traps (which don't
/*----->-----> * trigger unreachable (instruction warnings), or
/*----->-----> * STACK_FRAME_NON_STANDARD functions.
/*----->-----> */
/*----->-----> orc->type = ORC_TYPE_UNDEFINED;
/*----->-----> return 0;
/*-----> }
/*----->switch (cfi->type) {
/*----->case UNWIND_HINT_TYPE_UNDEFINED:
/*----->-----> orc->type = ORC_TYPE_UNDEFINED;
/*----->-----> return 0;
/*----->case UNWIND_HINT_TYPE_END_OF_STACK:
/*----->-----> orc->type = ORC_TYPE_END_OF_STACK;
/*----->-----> return 0;
/*----->case UNWIND_HINT_TYPE_CALL:
/*----->-----> orc->type = ORC_TYPE_CALL;
/*----->-----> break;
/*----->case UNWIND_HINT_TYPE_REGS:
/*----->-----> orc->type = ORC_TYPE_REGS;
/*----->-----> break;
/*----->case UNWIND_HINT_TYPE_REGS_PARTIAL:
/*----->-----> orc->type = ORC_TYPE_REGS_PARTIAL;
/*----->-----> break;
/*----->default:
/*----->-----> WARN_INSN(insn, "unknown unwind hint type %d", cfi->type);
/*----->-----> return -1;
/*-----> }
/*----->orc->signal = cfi->signal;
/*----->switch (cfi->cfa.base) {
/*----->case CFI_SP:
/*----->-----> orc->sp_reg = ORC_REG_SP;
/*----->-----> break;
/*----->case CFI_SP_INDIRECT:
/*----->-----> orc->sp_reg = ORC_REG_SP_INDIRECT;
/*-----> }
1Помощь 2Сохран 3Слос 4Замена 5Копия 6Перем-тить 7Поиск 8Удалить 9МенюМС 10Выход
```

Рис. 33: Файл с программой

# Работа с редактором Midnight Commander



```
mc [ahmedkusei@ahmedkusei]:~/Документы/newdir — /usr/bin/mc -P /var/tmp/mc-ahmedkusei/mc.pwd.3196
~/Документы/newdir
orc.c [----] 0 L: [ 11* 0 11/189] *(395 /4044b) 0123 0x07B [~][X]
{
    -----> struct cfi_reg *bp = &cfi->regs[CFI_BP];
    -----> memset(orc, 0, sizeof(*orc));
    -----> if (!cfi) {
    -----> /*
    -----> * This is usually either unreachable nops/traps (which don't
    -----> * trigger unreachable instruction warnings), or
    -----> * STACK_FRAME_NON_STANDARD functions.
    -----> */
    -----> orc->type = ORC_TYPE_UNDE
    -----> return 0;
    -----> }
    -----> switch (cfi->type) {
    -----> case UNWIND_HINT_TYPE_UNDEFINED:
    -----> orc->type = ORC_TYPE_UNDE
    -----> return 0;
    -----> case UNWIND_HINT_TYPE_END_OF_STAC
    -----> orc->type = ORC_TYPE_END_
    -----> return 0;
    -----> case UNWIND_HINT_TYPE_CALL:
    -----> orc->type = ORC_TYPE_CALL
    -----> break;
    -----> case UNWIND_HINT_TYPE_REGS:
    -----> orc->type = ORC_TYPE_REGS
    -----> break;
    -----> case UNWIND_HINT_TYPE_REGS_PARTIA
    -----> orc->type = ORC_TYPE_REGS_PARTIAL;
    -----> break;
    -----> default:
    -----> WARN_INSN(insn, "unknown unwind hint type %d", cfi->type);
    -----> return -1;
    -----> }
    -----> orc->signal = cfi->signal;
    -----> switch (cfi->cfa.base) {
    -----> case CFI_SP:
    -----> orc->sp_reg = ORC_REG_SP;
    -----> break;
    -----> case CFI_SP_INDIRECT:
    -----> orc->sp_reg = ORC_REG_SP_INDIRECT;
    -----> break;
    -----> }
}
```

Before modification: синтаксис  
< Автоматически >  
Перезагрузить текущее цветовыделение  
ASM Program  
ASPX File  
AWK File  
ActionScript Program  
Ada Program  
Arch package build script  
Arch package install script  
B File  
Bind9 configuration  
C Program  
C# Program  
C/C++ Program

1 Помощь 2 Сохранить 3 Поиск 4 Замена 5 Сопоставить 6 Переименовать 7 Поиск 8 Удалить 9 Меню MC 10 Выход

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.