

# Лабораторная работа № 11

Операционные системы

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# Информация

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# **Вводная часть**

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Текстовый редактор Emacs

- Текстовый редактор Emacs является мощной альтернативой другим редакторам.

- Текстовый редактор Emacs.

Получить практические навыки работы с редактором Emacs.



- Процессор pandoc для входного формата Markdown
- Результирующие форматы
  - pdf
  - html
- Автоматизация процесса создания: Makefile

# Презентация

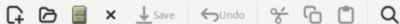
---

# Открыл Emacs

```
[avperegudov@fedora ~]$ emacs
```

\*GNU Emacs\* - GNU Emacs at fedora

File Edit Options Buffers Tools Help



Welcome to [GNU Emacs](#), one component of the [GNU/Linux](#) operating system.

<a href="#">Emacs Tutorial</a>	Learn basic keystroke commands
<a href="#">Emacs Guided Tour</a>	Overview of Emacs features at gnu.org
<a href="#">View Emacs Manual</a>	View the Emacs manual using Info
<a href="#">Absence of Warranty</a>	GNU Emacs comes with <b>ABSOLUTELY NO WARRANTY</b>
<a href="#">Copying Conditions</a>	Conditions for redistributing and changing Emacs
<a href="#">Ordering Manuals</a>	Purchasing printed copies of manuals

To start... [Open a File](#) [Open Home Directory](#)

[Customize Startup](#) [Explore Packages](#)

To quit a partially entered command, type Control-g.

This is GNU Emacs 29.3 (build 1, x86\_64-redhat-linux-gnu, GTK+ Version

3.24.41, cairo version 1.18.0) of 2024-03-25

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```
U:%%-  *GNU Emacs*  All  L5  (Fundamental)  
Find file: ~/lab07.sh
```

## Создал файл

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools



Save

```
#!/bin/bash
```

```
HELL=Hello
```

```
function hello {
```

```
    LOCAL HELLO=World
```

```
    echo $HELLO
```

```
}
```

```
echo $HELLO
```

```
hello
```

```
U:--- lab07.sh      All  L8  (Shell-script[sh])  
Wrote /home/avperegudov/lab07.sh
```

## Изменил текст

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools Sh-Script Help



Save









Undo

```
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $HELLO
hello
#!/bin/bash
```

## Изменил текст

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools Sh-Script H

     Save  Undo

```
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $HELLO
hello
#!/bin/bash
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
```



## Изменил текст

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools



```
HELL=Hello
```

```
echo $HELLO
```

```
hello
```

```
#!/bin/bash
```

```
HELL=Hello
```

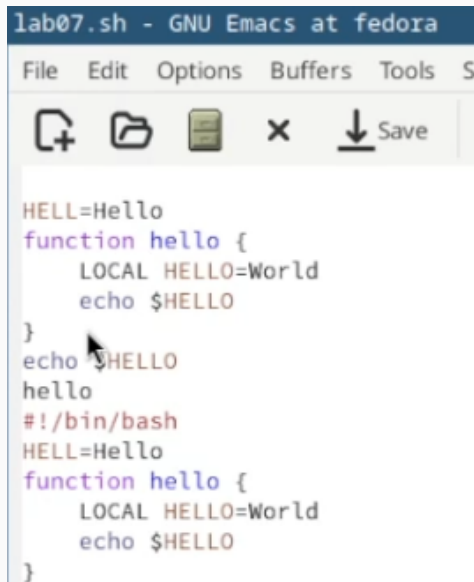
```
function hello {
```

```
    LOCAL HELLO=World
```

```
    echo $HELLO
```

```
}
```

## Изменил текст



```
lab07.sh - GNU Emacs at fedora
File Edit Options Buffers Tools S
[Icons: Open, Save, Close] Save

HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $HELLO
hello
#!/bin/bash
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
```

# Окно активных буферов



The screenshot shows the GNU Emacs editor interface. The main window displays the contents of the 'lab07.sh' buffer, which contains a shell script. The script defines a function 'hello' that prints 'Hello' and 'World' using 'echo' and '\$HELLO'. The script also sets the shell to '/bin/bash' and calls the 'hello' function. The cursor is positioned at the end of the script.

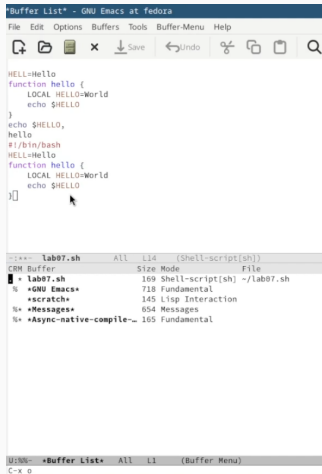
```
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
```

Below the main window, the 'Buffer List' window is open, showing a list of buffers. The buffers are listed in a table with columns for buffer name, size, mode, and file.

Buffer	Size	Mode	File
*lab07.sh	169	Shell-script[sh]	~/lab07.sh
*GNU Emacs*	718	Fundamental	
*scratch*	145	Lisp Interaction	
*Messages*	654	Messages	
*Async-native-compile_...	165	Fundamental	

The status bar at the bottom of the window shows the current buffer is 'lab07.sh' and the current line is 14.

# Окно активных буферов



The screenshot shows the GNU Emacs Buffer List window. The title bar reads "Buffer List\* - GNU Emacs at fedora". The menu bar includes File, Edit, Options, Buffers, Tools, Buffer-Menu, and Help. The toolbar contains icons for creating a new buffer, opening a file, saving, closing, undo, redo, copy, paste, and search. The main area displays the content of the active buffer, which is a shell script named "lab07.sh". The script contains a function "hello" that echoes "HELLO=World" and "HELLO=Hello". The buffer list at the bottom shows the following buffers:

Buffer	Size	Mode	File
*lab07.sh	169	Shell-script[sh]	~/lab07.sh
*GNU Emacs*	718	Fundamental	
*scratch*	145	Lisp Interaction	
*Messages*	654	Messages	
*Async-native-compile~	165	Fundamental	

The status bar at the bottom shows "Buffer List\* All L1 (Buffer Menu)" and "C-X 0".

# Окно активных буферов



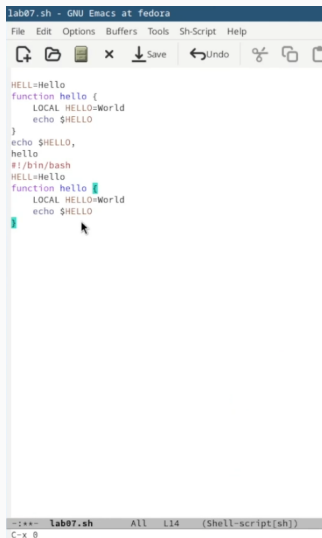
The screenshot shows the GNU Emacs editor window titled "GNU Emacs - GNU Emacs at fedora". The menu bar includes File, Edit, Options, Buffers, Tools, and Help. The toolbar contains icons for opening, saving, undo, redo, and other editing functions. The main text area displays a shell script with the following content:

```
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
```

The cursor is positioned at the end of the last line. Below the text area, the buffer list shows "lab07.sh" as the active buffer, with "All" and "L14" indicating the current buffer and line. The status bar at the bottom shows "U:~% - GNU Emacs - Top L6 (Fundamental)".

Below the script, the Emacs logo is displayed, followed by the text: "Welcome to GNU Emacs, one component of the GNU/Linux operating system." and links to "Emacs Tutorial" and "Emacs Guided Tour".

# Окно активных буферов



```
lab07.sh - GNU Emacs at fedora
File Edit Options Buffers Tools Sh-Script Help

HELL=Hello
function hello {
  LOCAL_HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello
  LOCAL_HELLO=World
  echo $HELLO

*** lab07.sh All L14 (Shell-script[sh])
C-x 0
```

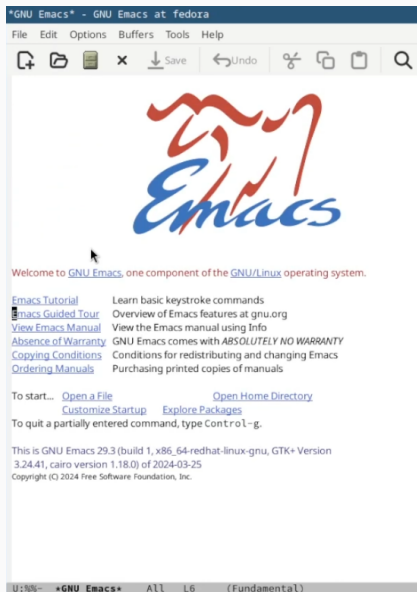
## Окно активных буферов



The screenshot shows the 'Active Buffers' window in Emacs. It contains a single entry for the buffer 'lab07.sh'. The entry is displayed on two lines: the first line shows the buffer name 'lab07.sh', its encoding 'All', its major mode 'L14', and its parent buffer '(Shell-script[sh])'; the second line shows the command to switch to the buffer, 'Switch to buffer (default \*GNU Emacs\*):', followed by a cursor.

```
-:***- lab07.sh      All    L14    (Shell-script[sh])  
Switch to buffer (default *GNU Emacs*):
```

# Окно активных буферов





## Управление окнами

The screenshot shows a GNU Emacs editor window with the title bar "lab07.sh - GNU Emacs at fedora". The menu bar includes "File", "Edit", "Options", "Buffers", "Tools", "Sh-Script", and "Help". The toolbar contains icons for file operations (new, open, save, close), editing (undo, redo, cut, copy, paste), and search. The main window displays a diff between two versions of a shell script named "lab07.sh". The diff is split into four panes, showing the original and modified versions side-by-side. The script content is as follows:

```
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $SHELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
```

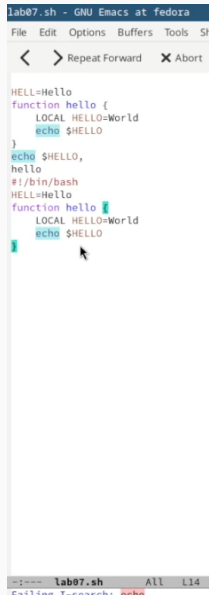
The diff highlights changes in the function "hello" and the "SHELL" variable. The status bar at the bottom of each pane shows "--:\*\*\*- lab07.sh All L14 (Shell)".

# Управление окнами



```
-:--- lab07.sh All
I-search:
```

# Режим поиска



```
lab07.sh - GNU Emacs at fedora
File Edit Options Buffers Tools SP

< > Repeat Forward X Abort

HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}

-:--- lab07.sh All L14
Failing Search: echo
```

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools

< > Repeat Forward X Abo

```
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
    LOCAL HELLO=World
    echo $HELLO
}
```

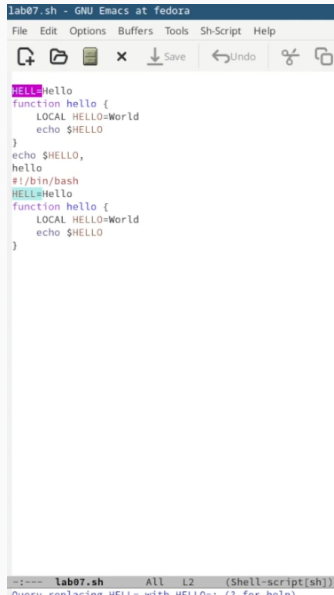
```
--:--- lab07.sh
```

```
Query replace:
```

```
--:--- lab07.sh All L1
```

```
Query replace HELL= with: HELLO=
```

# Режим поиска и замены



The screenshot shows the GNU Emacs editor interface. The title bar reads "lab07.sh - GNU Emacs at fedora". The menu bar includes "File", "Edit", "Options", "Buffers", "Tools", "Sh-Script", and "Help". The toolbar contains icons for opening, saving, undo, redo, and other editing functions. The main text area displays a shell script with the following content:

```
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELL=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
```

The status bar at the bottom shows "lab07.sh" and "All L2 (Shell-script[sh])". A tooltip at the bottom left indicates "Query relation HELLO with HELLO=: (2 for help)".

# Режим поиска и замены

lab07.sh - GNU Emacs at fedora

File Edit Options Buffers Tools Sh-

📄 📁 📄 ✕ ⬇ Save 🔍

```
HELLO=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
echo $HELLO,
hello
#!/bin/bash
HELLO=Hello
function hello {
  LOCAL HELLO=World
  echo $HELLO
}
```

~:\*\*\*- lab07.sh All L10

Replaced 2 occurrences



```
-:★★- lab07.sh All
```

```
List lines matching regexp:
```

```
-:★★- lab07.sh All L10
```

```
List lines matching regexp: echo
```

## Альтернативный режим поиска

```
-:***- lab07.sh All L10 (Shell-script[sh])
```

```
3 matches for "echo" in buffer: lab07.sh
```

```
5: echo $HELLO
```

```
7: echo $HELLO,
```

```
13: echo $HELLO
```

```
U:%%- *Occur* All L1 (Occur)
```

```
Searched 1 buffer: 3 matches for "echo"
```