

# Лабораторная работа №9

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Malkov Roman Sergeevich

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## Цель работы

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Познакомиться с операционной системой Linux. Получить практические навыки работы с редактором Emacs.

# Ход работы

1. Открываем emacs командой emacs.

```
[rsmaljkov@rsmaljkov ~]$ emacs
```

Рис. 1: Screenshot\_23

# Ход работы

2. Создаем файл lab07.sh с помощью комбинации Ctrl-x Ctrl-f (C-x C-f).



Рис. 2: Screenshot \_1

# Ход работы

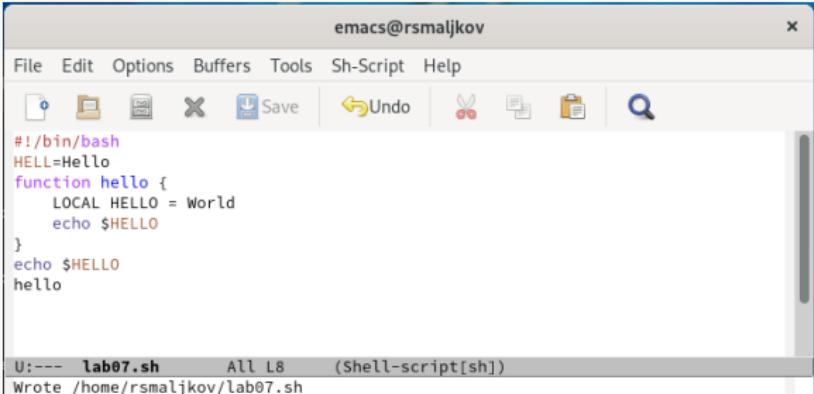
---

3. Набираем текст:

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

# Ход работы

4. Сохраняем файл с помощью комбинации Ctrl-x Ctrl-s (C-x C-s).



The screenshot shows an Emacs window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar contains icons for file operations like Open, Save, Undo, Cut, Copy, Paste, and Find. The main buffer area displays the following shell script:

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

The status bar at the bottom shows "U:--- lab07.sh All L8 (Shell-script[sh])" and "Wrote /home/rsmaljkov/lab07.sh".

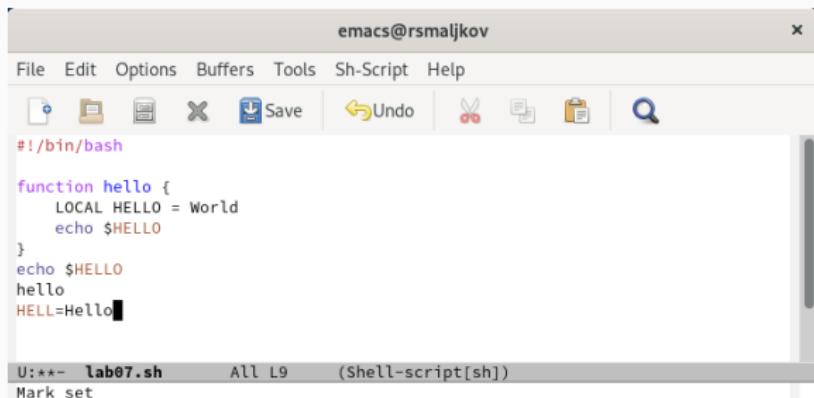
Рис. 3: Screenshot \_2

## Ход работы

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5. Проделываем с текстом стандартные процедуры редактирования, каждое действие выполняем комбинацией клавиш.
  - 5.1. Вырезаем одной командой целую строку (C-k).
  - 5.2. Вставляем эту строку в конец файла (C-y).

# Ход работы



The screenshot shows an Emacs window titled "emacs@rsmaljkov". The buffer contains a shell script named "lab07.sh". The script defines a function "hello" that prints "World" and then calls itself with the argument "Hello". The file path "U:-- lab07.sh" is shown in the status bar at the bottom.

```
#!/bin/bash

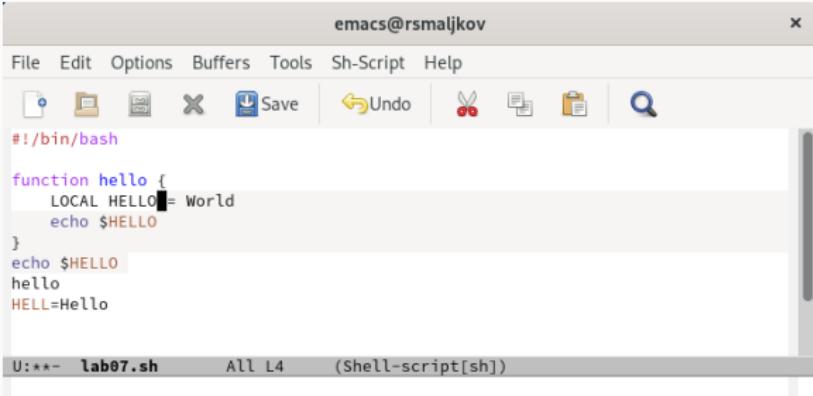
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

U:-- lab07.sh All L9 (Shell-script[sh])  
Mark set

Рис. 4: Screenshot \_3

# Ход работы

- 5.3. Выделяем область текста (C-space).



The screenshot shows the Emacs editor interface with the title bar "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. Below the menu is a toolbar with icons for file operations like Open, Save, Undo, and Cut/Paste. The main buffer area contains a shell script:

```
#!/bin/bash

function hello {
    LOCAL HELLO=World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

The status bar at the bottom shows "U:\*\*\* lab07.sh All L4 (Shell-script(sh))".

Рис. 5: Screenshot\_4

## Ход работы

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- 5.4. Копируем область в буфер обмена (M-w).
- 5.5. Вставляем область в конец файла.

# Ход работы

The screenshot shows an Emacs window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar contains icons for New, Open, Save, Undo, Cut, Copy, Paste, and Find. The main buffer displays a shell script:

```
#!/bin/bash

function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello

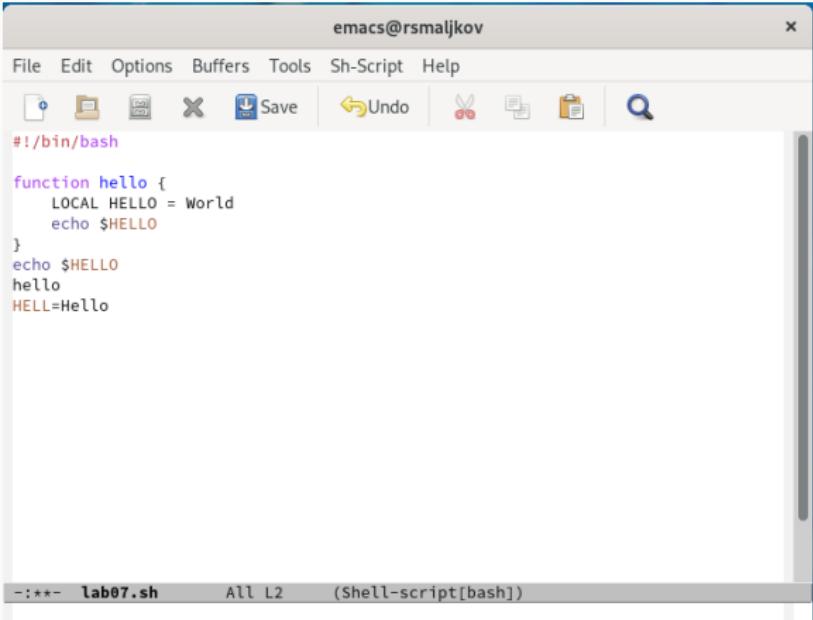
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

The status bar at the bottom shows "-:\*\*\* lab07.sh All L17 (Shell-script[bash])" and "Mark set".

Рис. 6: Screenshot\_5

# Ход работы

- 5.6. Вновь выделяем эту область и на этот раз вырезаем её (C-w).



The screenshot shows a terminal window titled "emacs@rsmailtojkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. Below the menu is a toolbar with icons for file operations like Open, Save, Undo, and Cut/Paste. The main buffer contains the following shell script:

```
#!/bin/bash

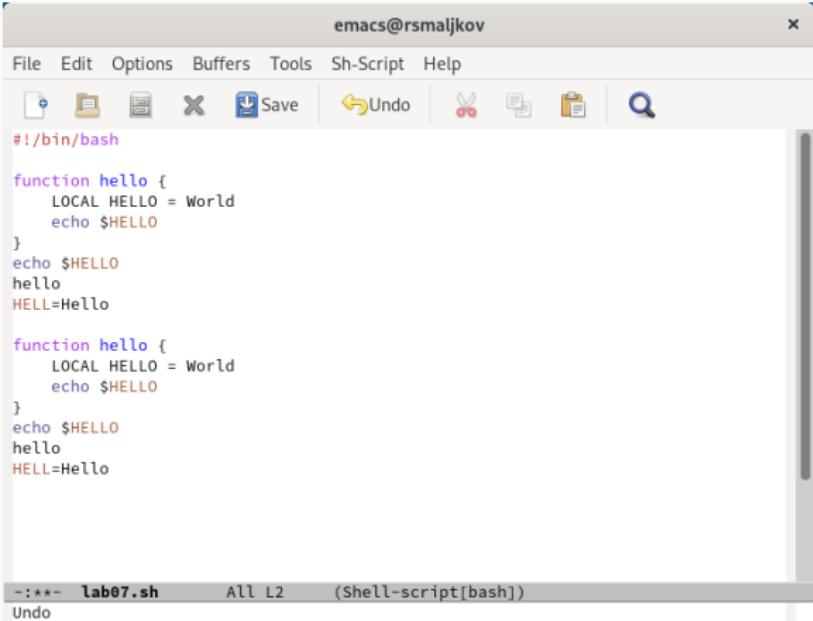
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

The buffer title at the bottom is "-:\*\*\* lab07.sh All L2 (Shell-script[bash])".

Рис. 7: Screenshot \_7

# Ход работы

- 5.7. Отменяем последнее действие (C-/).



The screenshot shows an Emacs window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar contains icons for file operations like Open, Save, Undo, Cut, Copy, Paste, and Find. The main buffer area displays a shell script named "lab07.sh". The script contains two function definitions for "hello" and "HELLO". The bottom status bar shows the file name "lab07.sh", the mode "All L2", and the buffer type "(Shell-script[bash])". There is also an "Undo" button.

```
#!/bin/bash

function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello

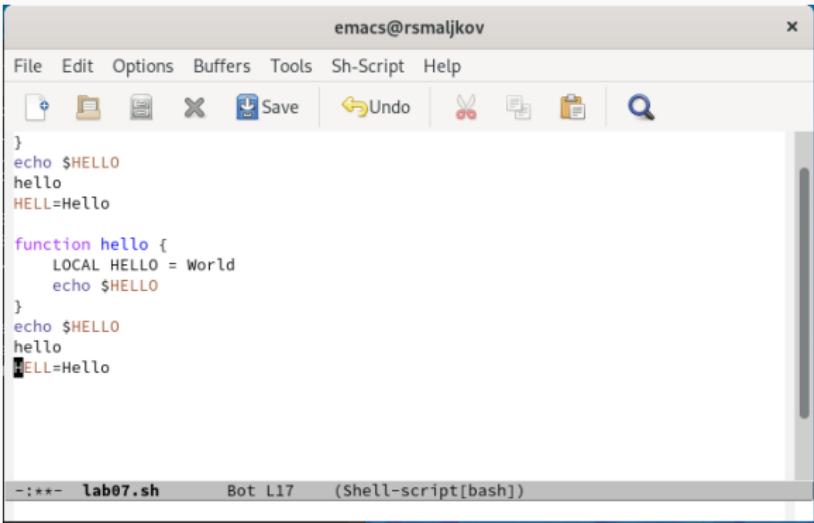
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

Рис. 8: Screenshot\_8

# Ход работы

## 6. Учимся использовать команды по перемещению курсора.

- 6.1. Перемещаем курсор в начало строки (C-a).



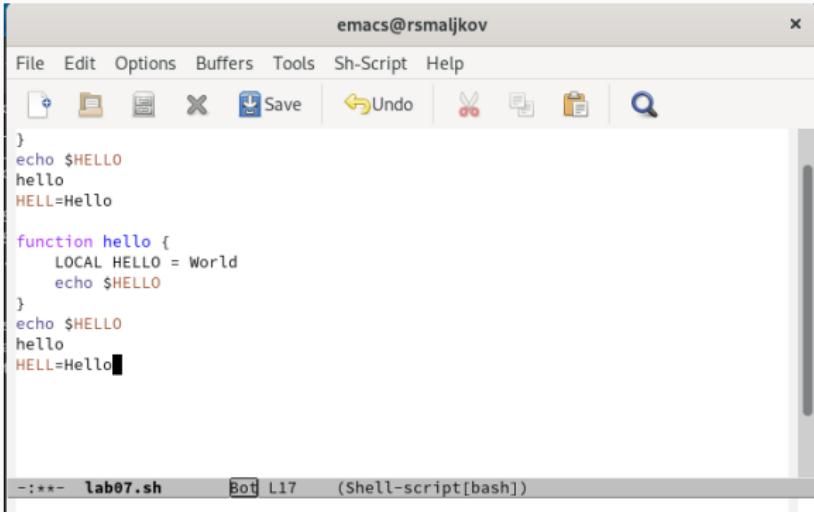
The screenshot shows an Emacs window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar contains icons for file operations like Open, Save, Undo, and Find. The main buffer area displays a shell script:

```
})  
echo $HELLO  
hello  
HELL=Hello  
  
function hello {  
    LOCAL HELLO = World  
    echo $HELLO  
}  
echo $HELLO  
hello  
HELL=Hello
```

The cursor is positioned at the start of the first line of the function definition. At the bottom, the status bar shows "-:\*\*\* lab07.sh Bot L17 (Shell-script[bash])".

# Ход работы

- 6.2. Перемещаем курсор в конец строки (C-e).



The screenshot shows the Emacs text editor interface. The title bar reads "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. Below the menu is a toolbar with icons for new file, open file, save, undo, and others. The main buffer area contains the following shell script code:

```
}
echo $HELLO
hello
HELL=Hello

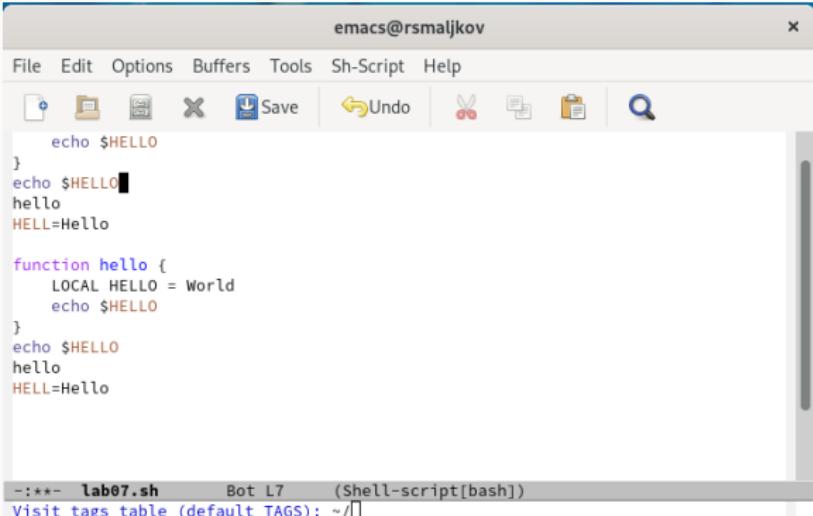
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

The cursor is positioned at the end of the line "HELL=Hello". The status bar at the bottom shows "-:\*\*\*- lab07.sh Bot L17 (Shell-script[bash])".

Рис. 10: Screenshot \_9

# Ход работы

- 6.3. Перемещаем курсор в начало буфера ( $M-<$ ).



The screenshot shows the Emacs editor window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar contains icons for file operations like Open, Save, Undo, and Cut/Paste. The buffer area displays the following shell script:

```
echo $HELLO
}
echo $HELLO
hello
HELL=Hello

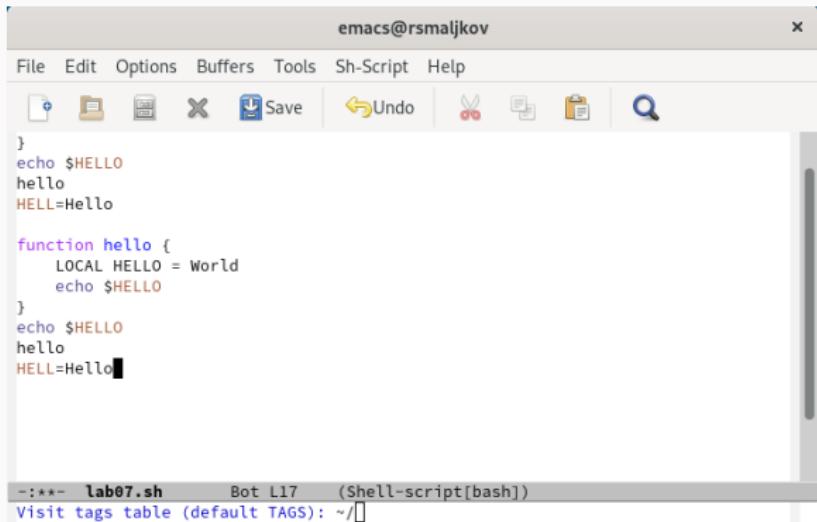
function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL=Hello
```

The status bar at the bottom shows "-:\*\*\* lab07.sh Bot L7 (Shell-script[bash])" and "Visit tags table (default TAGS): ~/[]".

Рис. 11: Screenshot \_ 13

# Ход работы

- 6.4. Перемещаем курсор в конец буфера ( $M->$ ).



The screenshot shows an Emacs window titled "emacs@rsmaljkov". The buffer contains a shell script named "lab07.sh". The script defines a function "hello" that prints the value of the environment variable \$HELLO. It then calls this function twice, once with \$HELLO set to "World" and once with it set to "Hello". The cursor is positioned at the end of the second "echo" command. The Emacs menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. The toolbar below the menu bar includes icons for file operations like Open, Save, Undo, and Cut/Paste.

```
emacs@rsmaljkov
File Edit Options Buffers Tools Sh-Script Help
Open Save Undo Cut Copy Paste Find
}
echo $HELLO
hello
HELL=Hello

function hello {
    LOCAL HELLO = World
    echo $HELLO
}
echo $HELLO
hello
HELL>Hello█

-:***- lab07.sh      Bot L17  (Shell-script[bash])
Visit tags table (default TAGS): ~/
```

Рис. 12: Screenshot \_ 11

# Ход работы

## 7. Управление буферами.

- 7.1. Выводим список активных буферов на экран (C-x C-b).

The screenshot shows the Emacs interface with the title bar "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Sh-Script, and Help. Below the menu bar is a toolbar with icons for file operations like Open, Save, Undo, and Cut/Copy/Paste. The main buffer area contains the following text:

```
echo $HELLO
hello
HELL=Hello
```

Below the buffer area, the mode line shows "-:\*\*\* lab07.sh Bot L19 (Shell-script[bash])". A table provides statistics for buffers:

CRM Buffer	Size	Mode	File
lab07.sh	191	Shell-script[...]	~/lab07.sh
*GNU Emacs*	868	Fundamental	
*scratch*	145	Lisp Interaction	
% *Messages*	2560	Messages	

At the bottom, the status bar displays "U:%%- \*Buffer List\* All L1 (Buffer Menu)" and "Visit tags table (default TAGS):".

Рис. 13: Screenshot\_14

# Ход работы

- 7.2. Перемещаемся во вновь открытое окно (**C-x**) о со списком открытых буферов и переключаемся на другой буфер .

The screenshot shows the Emacs window titled "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, and Help. The toolbar contains icons for file operations like Open, Save, Undo, and Cut/Paste. The left buffer, "lab07.sh", contains the following text:

```
echo $HELLO
hello
HELL=Hello
```

The right buffer, "\*Messages\*", displays the following log output:

```
-;***- lab07.sh      Bot L20  (Shell-script[bash])
Saving file /home/rsmaljkov/lab07.sh...
Wrote /home/rsmaljkov/lab07.sh
C-x <mouse-1> is undefined
delete-backward-char: Text is read-only [2 times]
C-x <down> is undefined
End of buffer
Beginning of buffer [3 times]
U:%*- *Messages*      Bot L16  (Messages)
pattern, RET, C-g or C-h: 
```

## Ход работы

- 7.3. Закрываем это окно (`C-x 0`).
- 7.4. Теперь вновь переключаемся между буферами, но уже без вывода их списка на экран (`C-x b`).

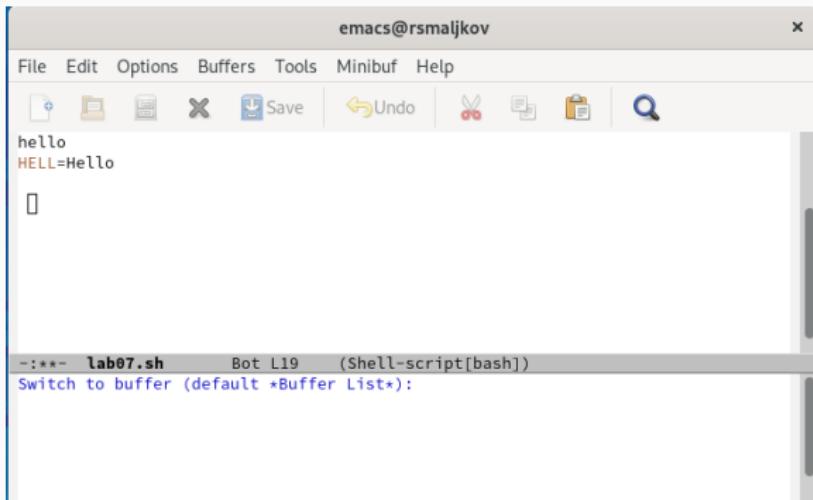


Рис. 15: Screenshot\_16

# Ход работы

## 8. Управление окнами.

- 8.1. Делим фрейм на 4 части: Делим фрейм на два окна по вертикали ( $C-x 3$ ), а затем каждое из этих окон на две части по горизонтали ( $C-x 2$ ).

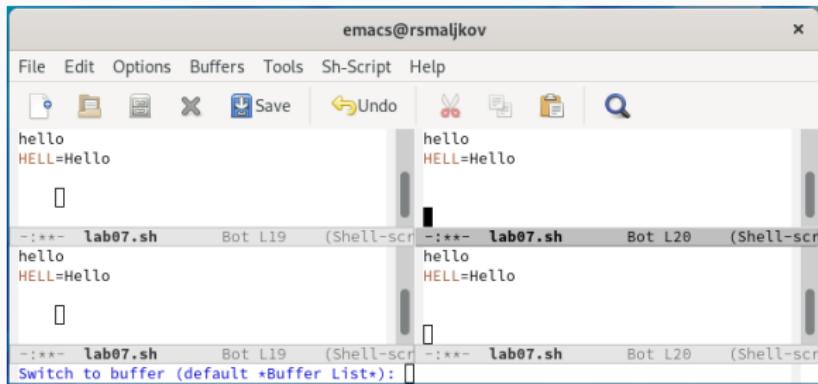


Рис. 16: Screenshot\_17

# Ход работы

- 8.2. В каждом из четырёх созданных окон открываем новый буфер (файл) и вводим несколько строк текста.

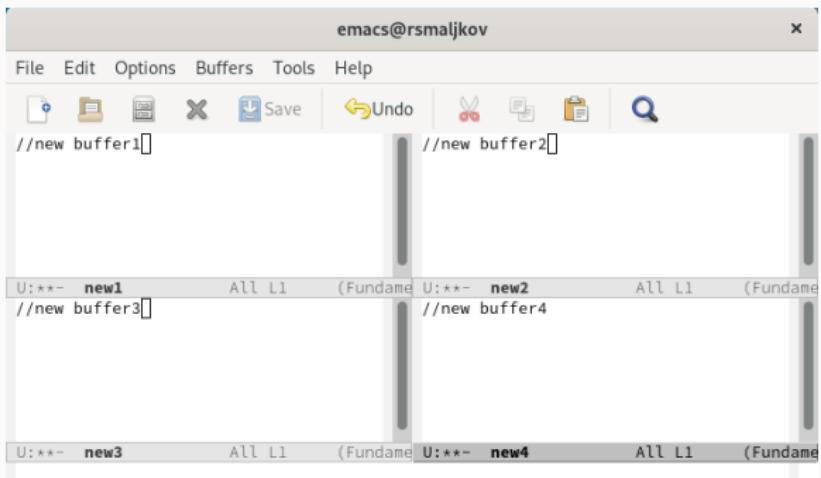


Рис. 17: Screenshot\_18

## 9. Режим поиска

- 9.1. Переключаемся в режим поиска (C-s) и находим несколько слов, присутствующих в тексте.
- 9.2. Переключаемся между результатами поиска, нажимая C-s.

# Ход работы

The screenshot shows the Emacs interface with the title bar "emacs@rsmaljkov". The menu bar includes File, Edit, Options, Buffers, Tools, Isearch, and Help. Below the menu is a toolbar with icons for Repeat Forward, Abort, Finish, Undo, Replace, and Show Hits. The main window displays four search results in a grid:

Buffer	Search Term	Line Count	Type
new1	//new buffer1	L2	(Fundame
new2	//new buffer2	L5	(Fundame
new3	//new buffer3	L4	(Fundame
new4	//new buffer4	L4	(Fundame

At the bottom, the status bar shows "Wrapped I-search: buffer1".

Рис. 18: Screenshot\_19

## Ход работы

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- 9.3. Выходим из режима поиска, нажав C-g.
- 9.4. Переходим в режим поиска и замены (M-%), вводим текст, который следует найти и заменить, нажимаем Enter , затем вводим текст для замены. После того как будут подсвечены результаты поиска, нажимаем SPACE для подтверждения замены.

# Ход работы

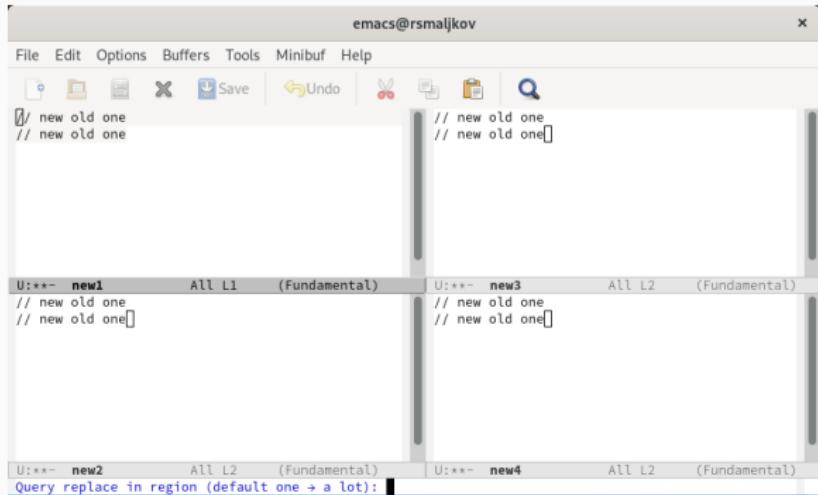


Рис. 19: Screenshot\_20

# Ход работы

The screenshot shows the Emacs interface with four buffers open:

- new1**: Contains the text `// new old one` and `// new old one[]`.
- new2**: Contains the text `// new old one` and `// new old one[]`.
- new3**: Contains the text `// new old one` and `// new old one[]`.
- new4**: A query buffer containing the text `Query replacing one with a lot: (? for help)`.

The top menu bar includes File, Edit, Options, Buffers, Tools, Help, Save, Undo, and search icons.

Рис. 20: Screenshot\_21

# Ход работы

- 9.5. Пробуем другой режим поиска, нажав M-s o. Отличие от предыдущего режима заключается в том что найденный результат записывается в буфер “Occur”.

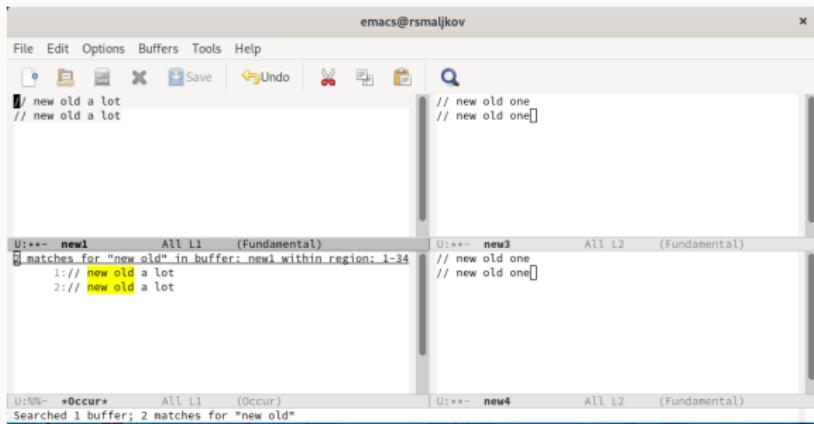


Рис. 21: Screenshot\_22

## Вывод

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Научились работать с операционной системой Linux. Получили практические навыки работы с редактором Emacs.