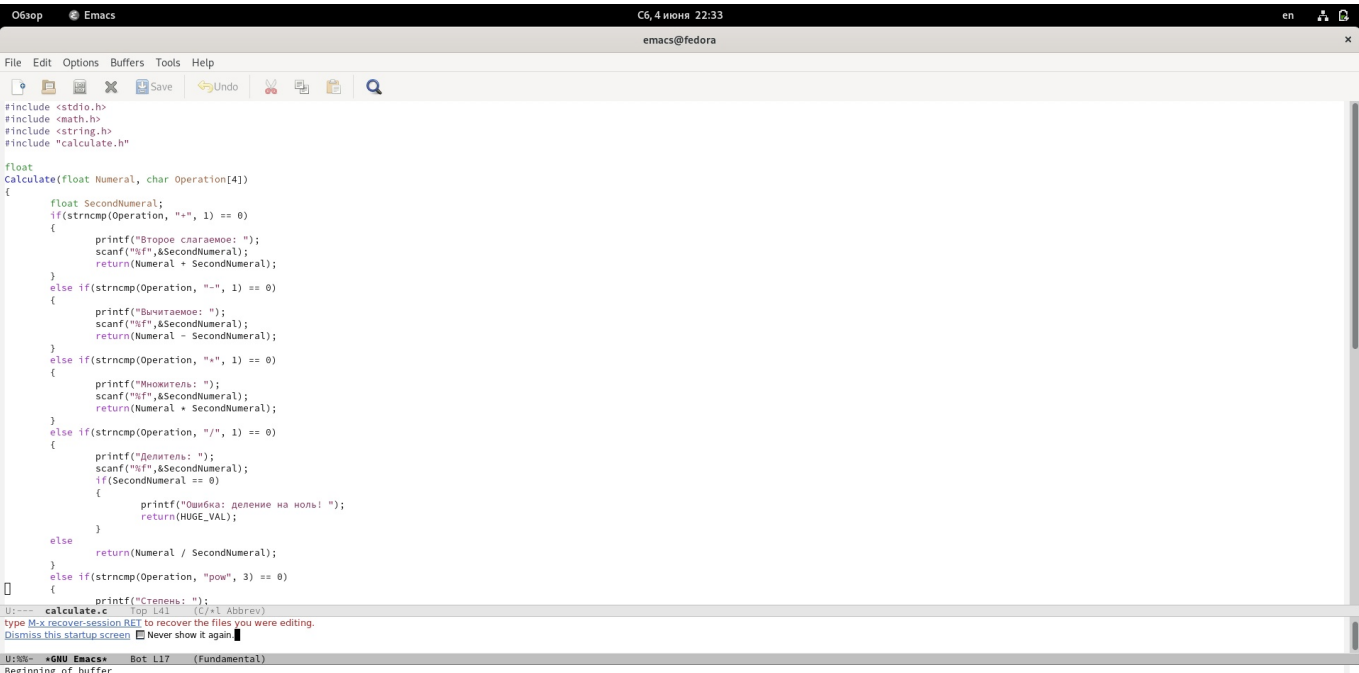


Цель работы

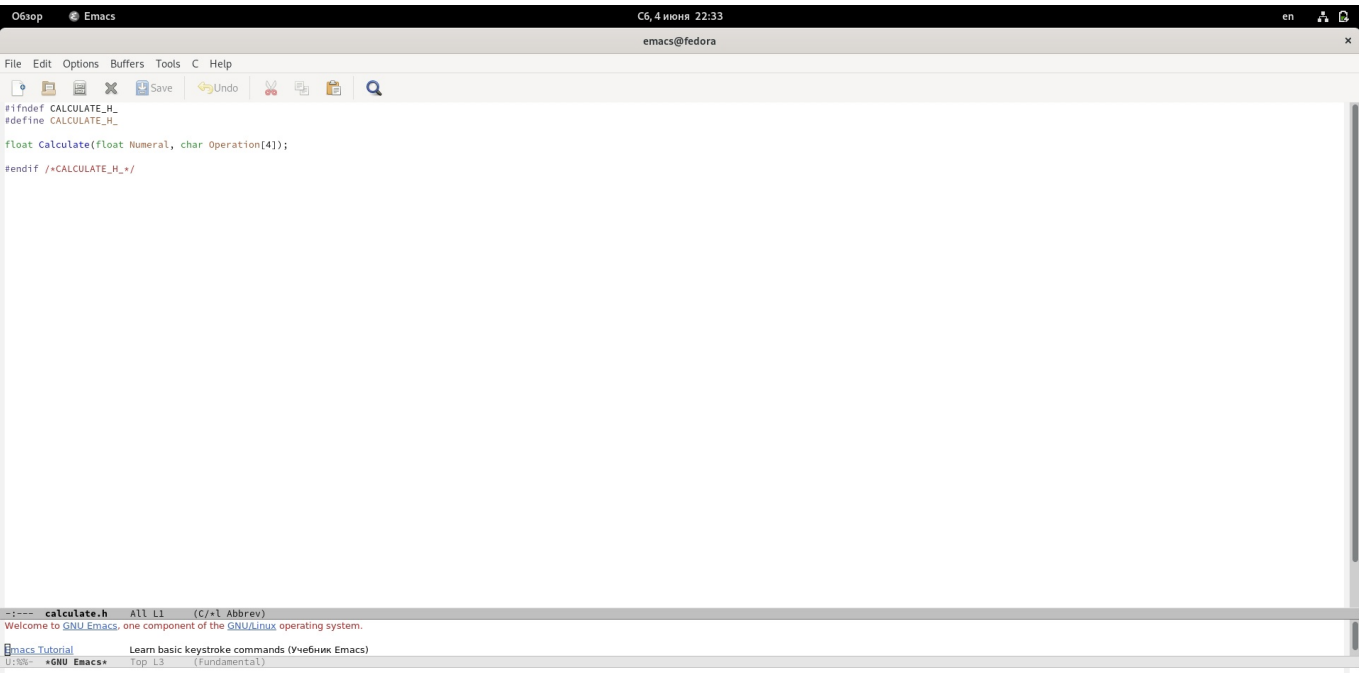
Приобрести простейшие навыки разработки, анализа, тестирования и отладки приложений в ОС типа UNIX/Linux на примере создания на языке программирования с калькулятора с простейшими функциями.

Ход работы

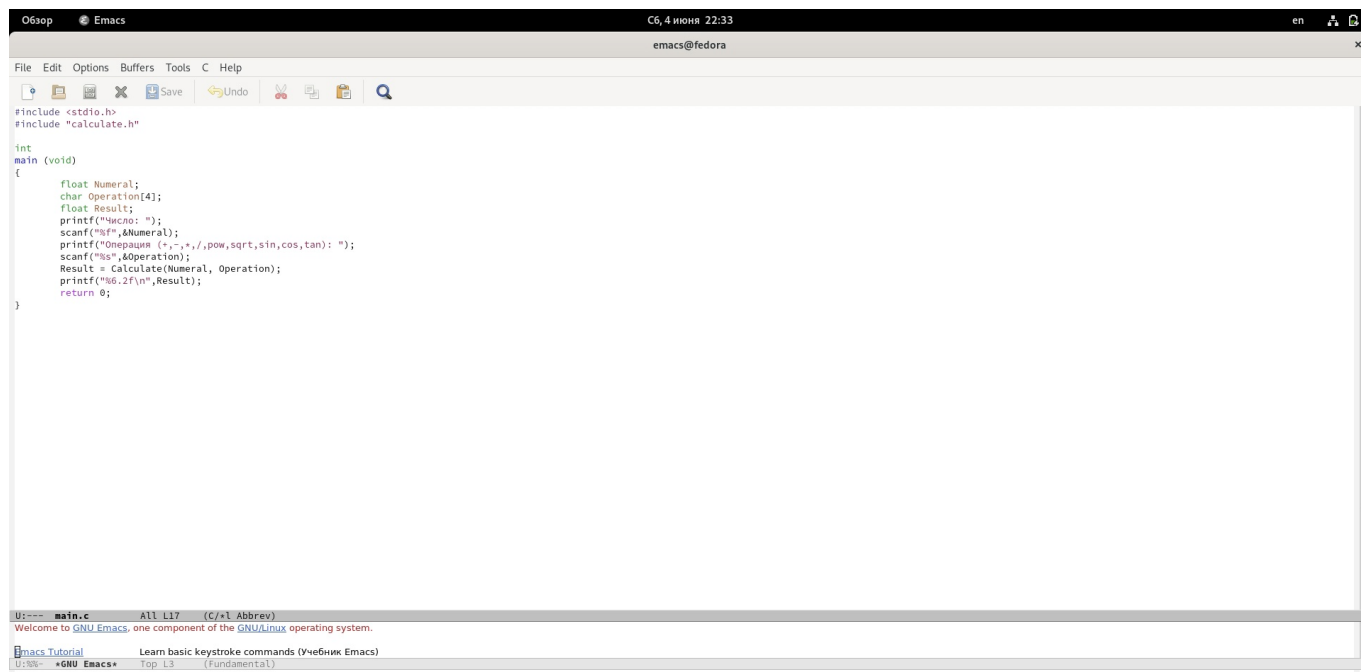
1. Создали подкаталог и файлы в нем (Рис.1-3).



{ #fig:001 width=90% }



{ #fig:002 width=90% }



The screenshot shows the Emacs text editor interface. The title bar at the top indicates the window is titled 'Emacs' and shows the system clock as 'Сб, 4 июня 22:33'. The menu bar includes 'File', 'Edit', 'Options', 'Buffers', 'Tools', 'C', and 'Help'. The toolbar contains icons for opening files, saving, undo, redo, and search. The main text area displays a C program named 'main.c' with the following code:

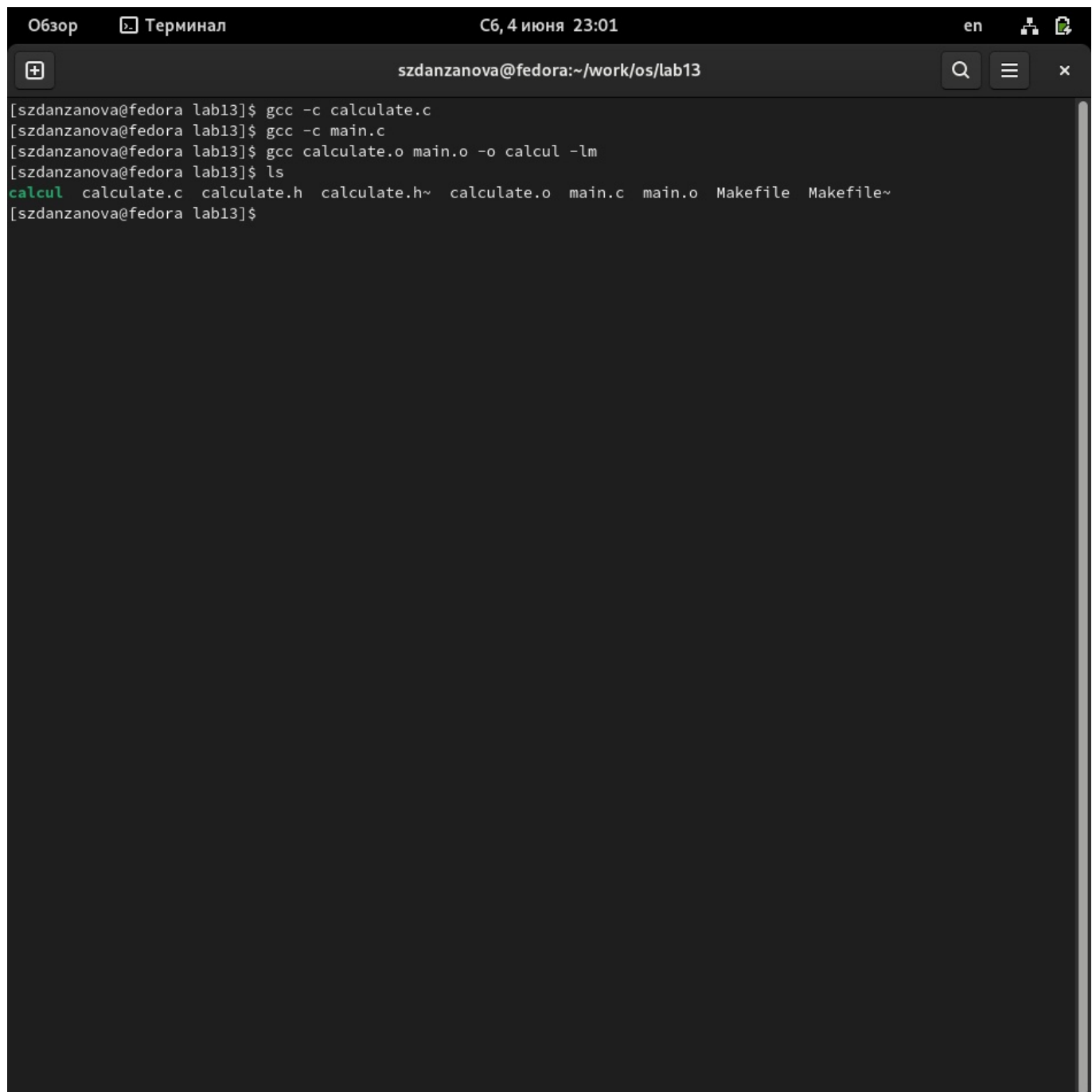
```
#include <stdio.h>
#include "calculate.h"

int
main (void)
{
    float Numeral;
    char Operation[4];
    float Result;
    printf("Введите: ");
    scanf("%f", &Numeral);
    printf("Операция (+, -, *, /, pow, sqrt, sin, cos, tan): ");
    scanf("%s", &Operation);
    Result = Calculate(Numeral, Operation);
    printf("Результат: %.2f\n", Result);
    return 0;
}
```

The status bar at the bottom shows the current file is 'main.c' at line 17, column 1. It also includes a welcome message: 'Welcome to GNU Emacs, one component of the GNU/Linux operating system.' and a link to the Emacs tutorial: 'Emacs Tutorial Learn basic keystroke commands (Учебник Emacs)'.

{ #fig:003 width=90% }

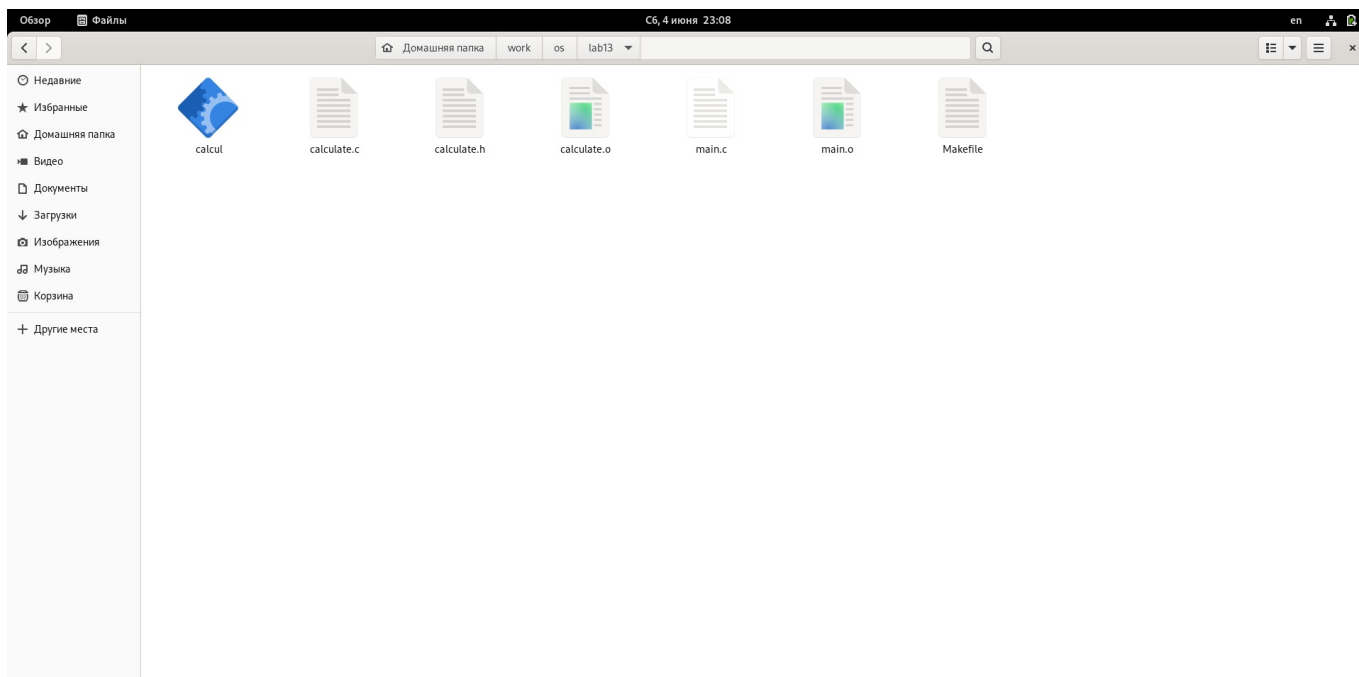
2. Выполнили компиляцию программы посредством gcc (Рис.4,5):



A terminal window titled "Терминал" (Terminal) with the user "szdanzanova@fedora" and the directory "~/work/os/lab13". The terminal shows the following commands and output:

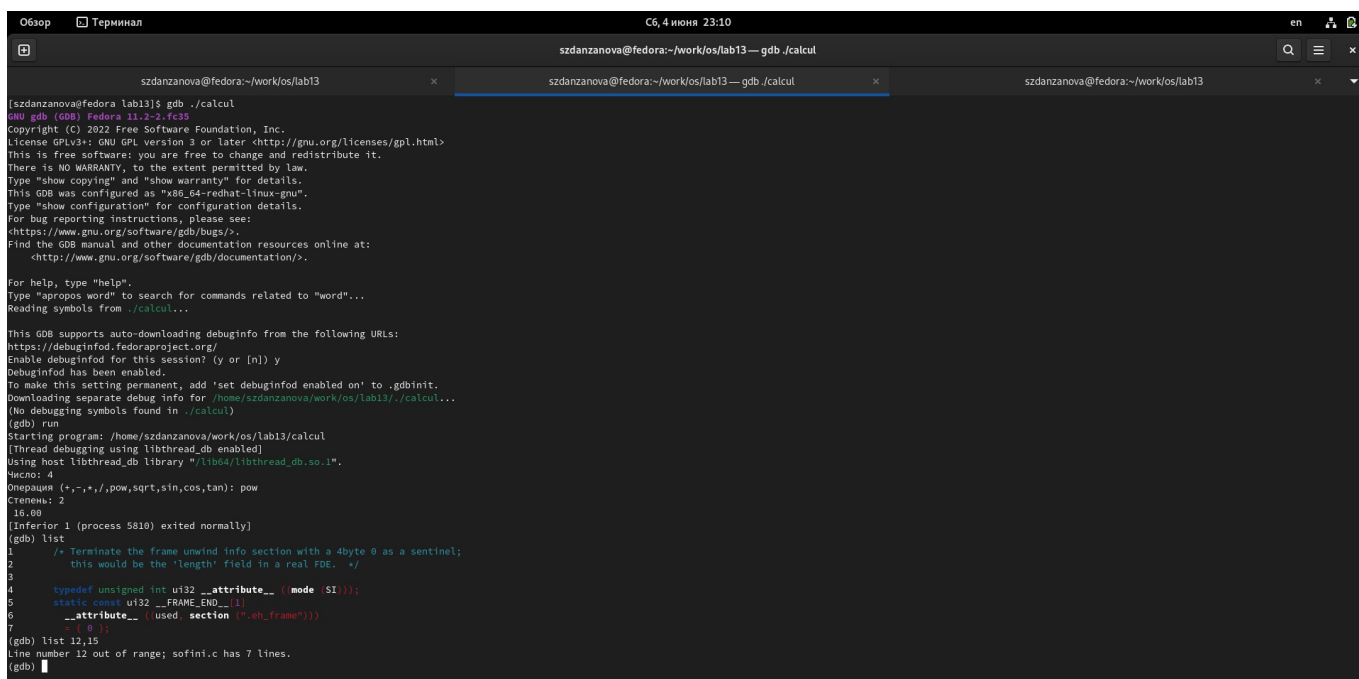
```
[szdanzanova@fedora lab13]$ gcc -c calculate.c
[szdanzanova@fedora lab13]$ gcc -c main.c
[szdanzanova@fedora lab13]$ gcc calculate.o main.o -o calcul -lm
[szdanzanova@fedora lab13]$ ls
calcul calculate.c calculate.h calculate.h~ calculate.o main.c main.o Makefile Makefile~
[szdanzanova@fedora lab13]$
```

{ #fig:004 width=90% }



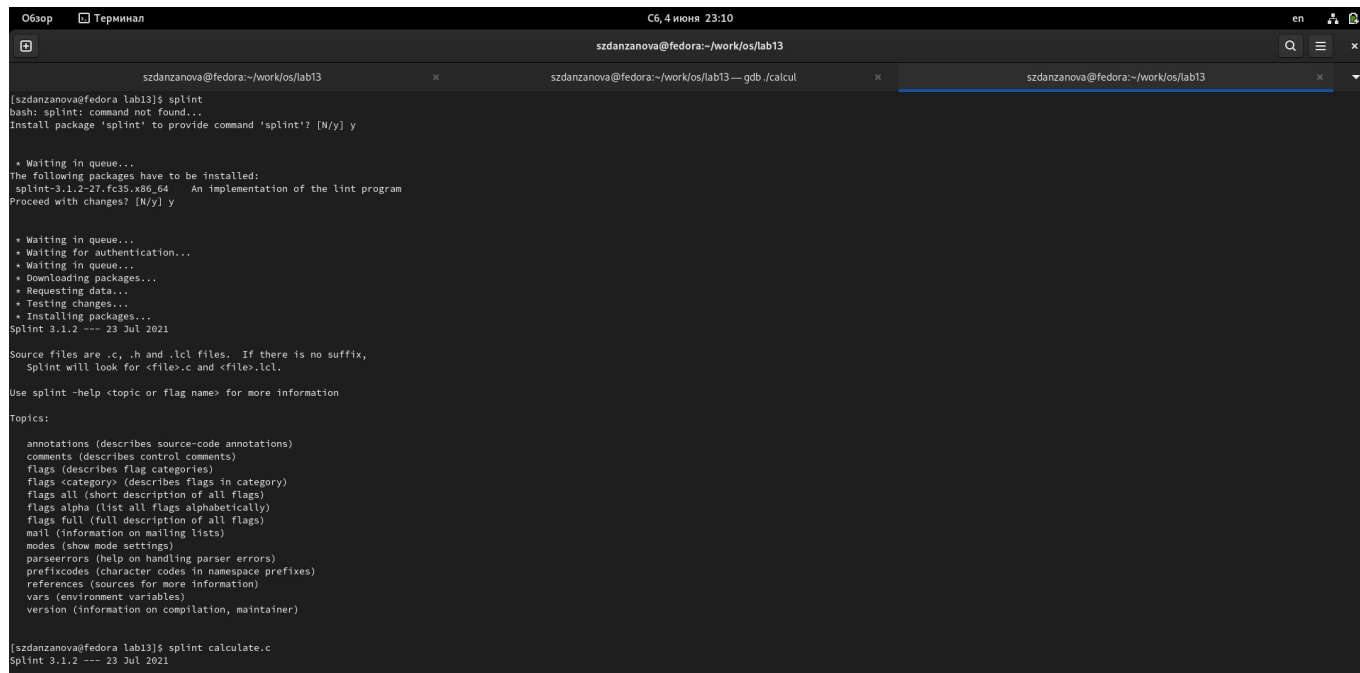
{ #fig:005 width=90% }

3. С помощью gdb выполните отладку программы calcul



{ #fig:006 width=90% }

4. С помощью утилиты splint попробуйте проанализировать коды файлов calculate.c и main.c.



```
Обзор Терминал C6, 4 июня 23:10 en
szdanzanova@fedora:~/work/os/lab13

[szdanzanova@fedora lab13]$ splint
bash: splint: command not found...
install package 'splint' to provide command 'splint'? [N/y] y

+ Waiting in queue...
The following packages have to be installed:
splint-3.1.2-27.fc35.x86_64  An implementation of the lint program
Proceed with changes? [N/y] y

+ Waiting in queue...
+ Waiting for authentication...
+ Waiting in queue...
+ Downloading packages...
+ Requesting data...
+ Testing changes...
+ Installing packages...
Splint 3.1.2 --- 23 Jul 2021

Source files are .c, .h and .lcl files.  If there is no suffix,
splint will look for <file>.c and <file>.lcl.

Use splint -help <topic or flag name> for more information

Topics:
  annotations (describes source-code annotations)
  comments (describes control comments)
  flags (describes flag categories)
  flags <category> (describes flags in category)
  flags all (short description of all flags)
  flags alpha (list all flags alphabetically)
  flags full (full description of all flags)
  mail (information on mailing lists)
  modes (show mode settings)
  parseerrors (help on handling parser errors)
  prefixcodes (character codes in namespace prefixes)
  references (sources for more information)
  vars (environment variables)
  version (information on compilation, maintainer)

[szdanzanova@fedora lab13]$ splint calculate.c
Splint 3.1.2 --- 23 Jul 2021
```

{ #fig:007 width=90% }

Вывод

Приобрели простейшие навыки разработки, анализа, тестирования и отладки приложений в ОС типа UNIX/Linux на примере создания на языке программирования с калькулятора с простейшими функциями.