

**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ  
РОССИЙСКОЙ ФЕДЕРАЦИИ  
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ  
ВЫСШЕГО ОБРАЗОВАНИЯ  
«СЕВЕРО-КАВКАЗСКИЙ ФЕДЕРАЛЬНЫЙ УНИВЕРСИТЕТ»  
ИНСТИТУТ ЦИФРОВОГО РАЗВИТИЯ**

**Отчет о лабораторной работе №2.1 по дисциплине основы  
программной инженерии**

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Отчет защищен с оценкой \_\_\_\_\_ Дата защиты \_\_\_\_\_

Ставрополь, 2021 г.

## ВЫПОЛНЕНИЕ:

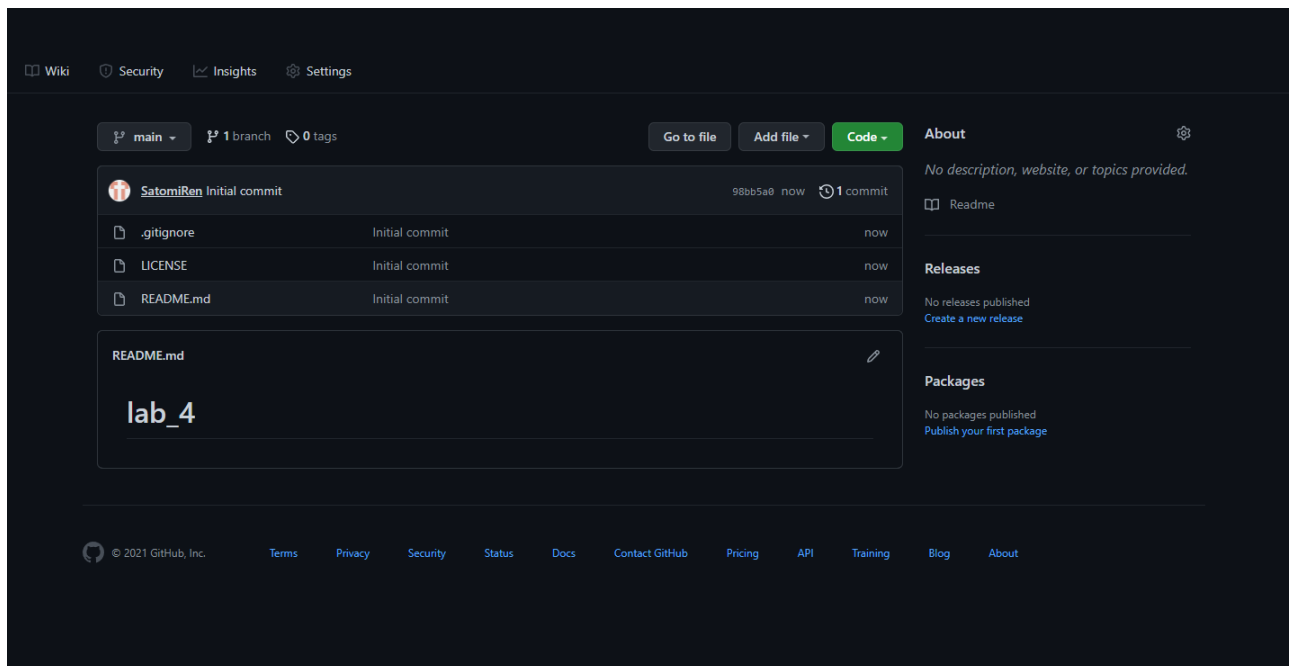


Рисунок 4.1 - Создание репозитория

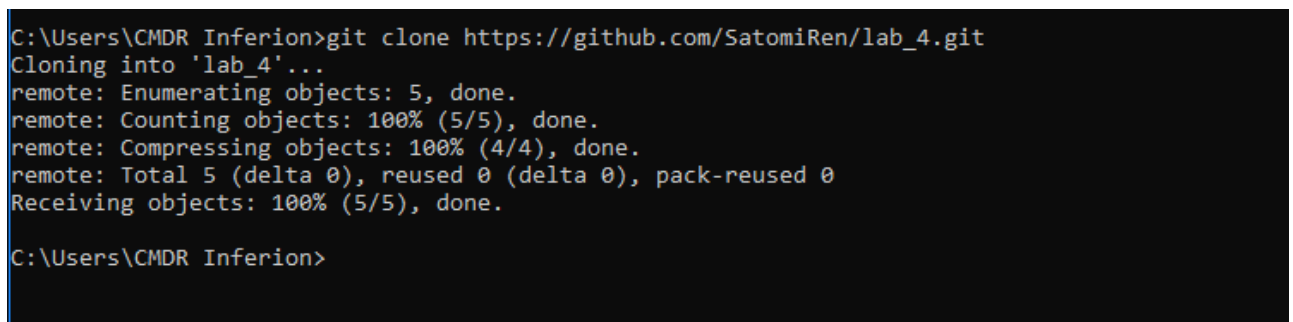


Рисунок 4.2 - Клонирование репозитория

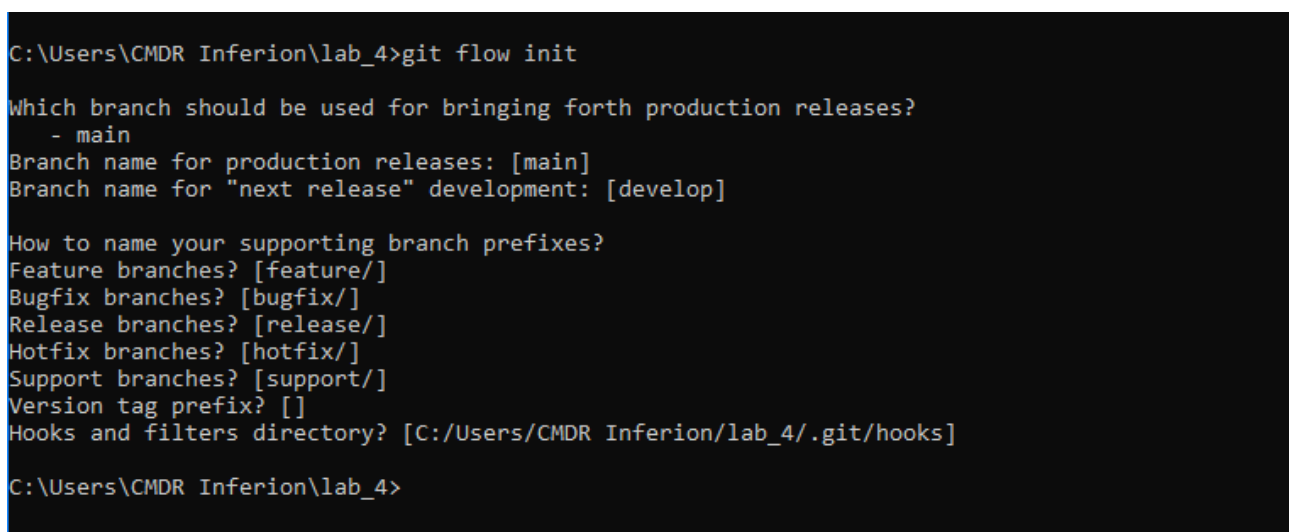


Рисунок 4.3 - Организация репозитория в соответствии с моделью git-flow

Рисунок 4.5 - Создание проекта PyCharm в папке репозитория

Рисунок 4.6 - Программа user.py

Имя	Дата изменения	Тип	Размер
.idea	01.12.2021 10:51	Папка с файлами	
venv	01.12.2021 10:51	Папка с файлами	
.gitignore	30.11.2021 22:39	Текстовый докум...	2 КБ
LICENSE	30.11.2021 22:39	Файл	2 КБ
README.md	30.11.2021 22:39	Файл "MD"	1 КБ

The screenshot shows an IDE window with a Python script named `user.py` and its execution output in the Run console.

```

1 name = input("What's your name? ")
2 old = input("How old are you? ")
3 address = input("Where do you live? ")
4 print("This is", name, ",")
5 print("Who is", old, "years old")
6 print("And lives in", address)

```

The Run console shows the following output:

```

What's your name? Philip
How old are you? 19
Where do you live? Stavropol, Russia
This is Philip ,
Who is 19 years old
And lives in Stavropol, Russia

Process finished with exit code 0

```

Рисунок 4.7 - Программа arithmetic.py

Рисунок 4.8 - Программа numbers.py

Рисунок 4.9 - Программа individual.py

Рисунок 4.10 - Коммит вышеперечисленных файлов

The screenshot shows the Visual Studio Code editor with the file `arithmetic.py` open. The code is as follows:

```
1 print("Solve the mathematical problem: 4 * 100 - 54")
2 answer = input("Your answer: ")
3 correct = 4 * 100 - 54
4 print("Correct answer is", correct)
```

The Run and Debug console at the bottom shows the execution of the script:

```
Run: arithmetic
"C:\Users\CMDR Inferion\lab_4\venv\Scripts\python.exe" "C:/Users/CMDR Inferion/lab_4/venv/Scripts/arithmetic.py"
Solve the mathematical problem: 4 * 100 - 54
Your answer: 346
Correct answer is 346
Process finished with exit code 0
```

Рисунок 4.11 - Слияние веток develop и main

The screenshot shows the Visual Studio Code editor with the file `numbers.py` open. The code is as follows:

```
1 first = int(input("Input 1st number: "))
2 second = int(input("Input 2nd number: "))
3 third = int(input("Input 3rd number: "))
4 fourth = int(input("Input 4th number: "))
5 sum1 = first + second
6 sum2 = third + fourth
7 total = float(sum1 / sum2)
8 print(round(total, 2))
```

The Run and Debug console at the bottom shows the execution of the script:

```
Run: numbers
"C:\Users\CMDR Inferion\lab_4\venv\Scripts\python.exe" "C:/Users/CMDR Inferion/lab_4/venv/Scripts/numbers.py"
Input 1st number: 324
Input 2nd number: 7548
Input 3rd number: 7865
Input 4th number: 384
0.95
Process finished with exit code 0
```

Рисунок 4.12 - Отправка изменений в репозиторий GitHub

The screenshot shows an IDE with a Python script named `individual.py`. The script prompts the user to input coordinates for four points (apexes) and calculates the area of a square formed by these points. The output shows the calculated area as 1913.0.

```
1 print("Input coordinates of apexes: ")
2 x1 = int(input("Point 1: \nx: "))
3 y1 = int(input("y: "))
4 x2 = int(input("Point 2: \nx: "))
5 y2 = int(input("y: "))
6 x3 = int(input("Point 3: \nx: "))
7 y3 = int(input("y: "))
8 x4 = int(input("Point 4: \nx: "))
9 y4 = int(input("y: "))
10 s1 = abs(0.5 * ((x1 - x3) * (y2 - y3) - (x2 - x3) * (y1 - y3)))
11 s2 = abs(0.5 * ((x1 - x3) * (y4 - y3) - (x4 - x3) * (y1 - y3)))
12 print("Square: ", s1 + s2)
```

Run: individual

```
"C:\Users\CMDR Inferion\lab_4\venv\Scripts\python.exe" "C:/Users/CMDR Inferion/lab_4/venv/Scripts/individual.py"
Input coordinates of apexes:
Point 1:
x: 13
y: 14
Point 2:
x: 53
y: 11
Point 3:
x: 54
y: 48
Point 4:
x: 8
y: 67
Square: 1913.0
```

The screenshot shows a command prompt window with the following commands and output:

```
C:\Users\CMDR Inferion\lab_4\venv\Scripts>git branch
* develop
main

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git add -f user.py arithmetic.py numbers.py individual.py

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git status
On branch develop
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   arithmetic.py
    new file:   individual.py
    new file:   numbers.py
    new file:   user.py

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    ../../.idea/

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git commit -m "Added user.py, arithmetic.py, numbers.py and individual.py"
[develop b355ee0] Added user.py, arithmetic.py, numbers.py and individual.py
4 files changed, 30 insertions(+)
create mode 100644 venv/Scripts/arithmetic.py
create mode 100644 venv/Scripts/individual.py
create mode 100644 venv/Scripts/numbers.py
create mode 100644 venv/Scripts/user.py

C:\Users\CMDR Inferion\lab_4\venv\Scripts>
```

Рисунок 4.13 - Добавленные изменения в ветке develop на GitHub

```

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git branch
* develop
  main

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git merge develop
Updating 98bb5a0..b355ee0
Fast-forward
 venv/Scripts/arithmetic.py | 4 ++++
 venv/Scripts/individual.py | 12 ++++++++
 venv/Scripts/numbers.py    | 8 ++++++
 venv/Scripts/user.py       | 6 +++++
 4 files changed, 30 insertions(+)
 create mode 100644 venv/Scripts/arithmetic.py
 create mode 100644 venv/Scripts/individual.py
 create mode 100644 venv/Scripts/numbers.py
 create mode 100644 venv/Scripts/user.py

```

```

C:\Users\CMDR Inferion\lab_4\venv\Scripts>git push --set-upstream origin develop
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 12 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (8/8), 1.04 KiB | 1.04 MiB/s, done.
Total 8 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
remote:
remote: Create a pull request for 'develop' on GitHub by visiting:
remote:   https://github.com/SatomiRen/lab_4/pull/new/develop
remote:
To https://github.com/SatomiRen/lab_4.git
 * [new branch]      develop -> develop
Branch 'develop' set up to track remote branch 'develop' from 'origin'.

C:\Users\CMDR Inferion\lab_4\venv\Scripts>

```

SatomiRen / lab\_4 Public

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develop lab\_4 / venv / Scripts / Go to file Add file ...

This branch is 1 commit ahead of main. Contribute

CMR-Inferion Added user.py, arithmetic.py, numbers.py and individual.py b355ee0 29 minutes ago History

File	Description	Time
arithmetic.py	Added user.py, arithmetic.py, numbers.py and individual.py	29 minutes ago
individual.py	Added user.py, arithmetic.py, numbers.py and individual.py	29 minutes ago
numbers.py	Added user.py, arithmetic.py, numbers.py and individual.py	29 minutes ago
user.py	Added user.py, arithmetic.py, numbers.py and individual.py	29 minutes ago

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