

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ  
ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ АВТОНОМНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ  
ВЫСШЕГО ОБРАЗОВАНИЯ

«Санкт-Петербургский национальный исследовательский университет информационных  
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Мегафакультет трансляционных информационных технологий

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### **Лабораторная работа №5. “Знакомство с CI/CD”**

**По дисциплине «Инструментальные средства разработки ПО»**

Выполнил студент группы №  
М6666

Я такой хороший, я такой

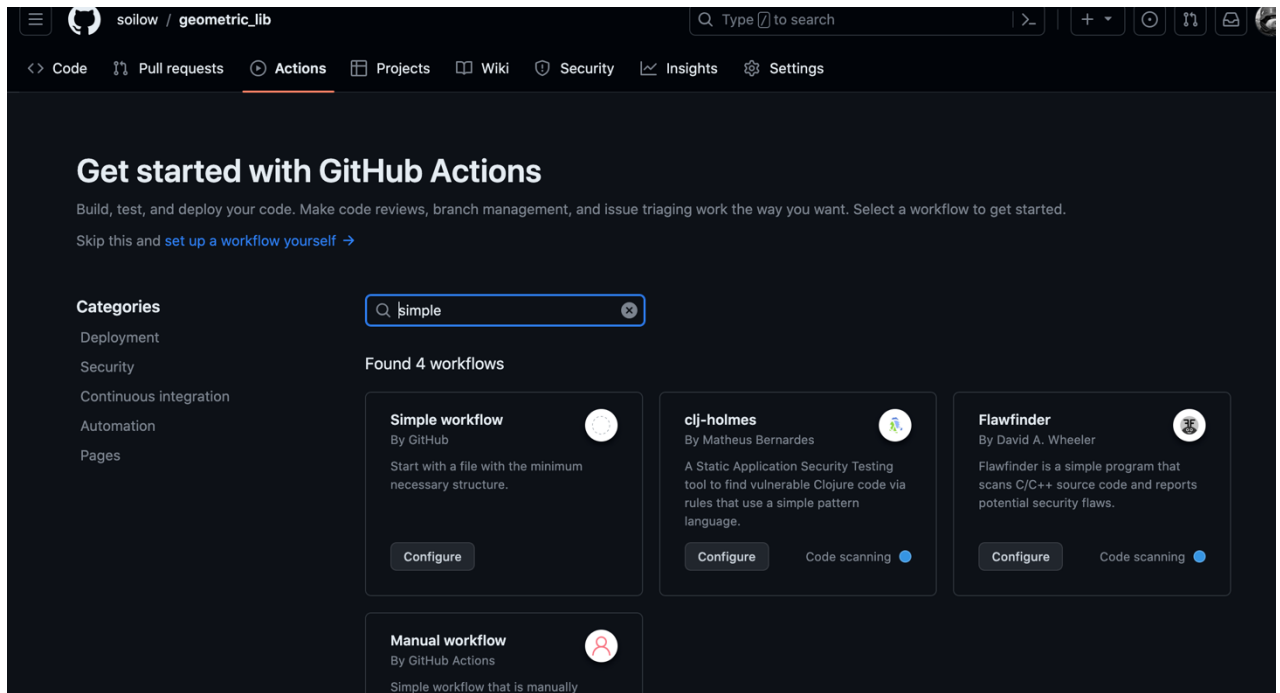
Проверил:

Хороший. На самом деле я

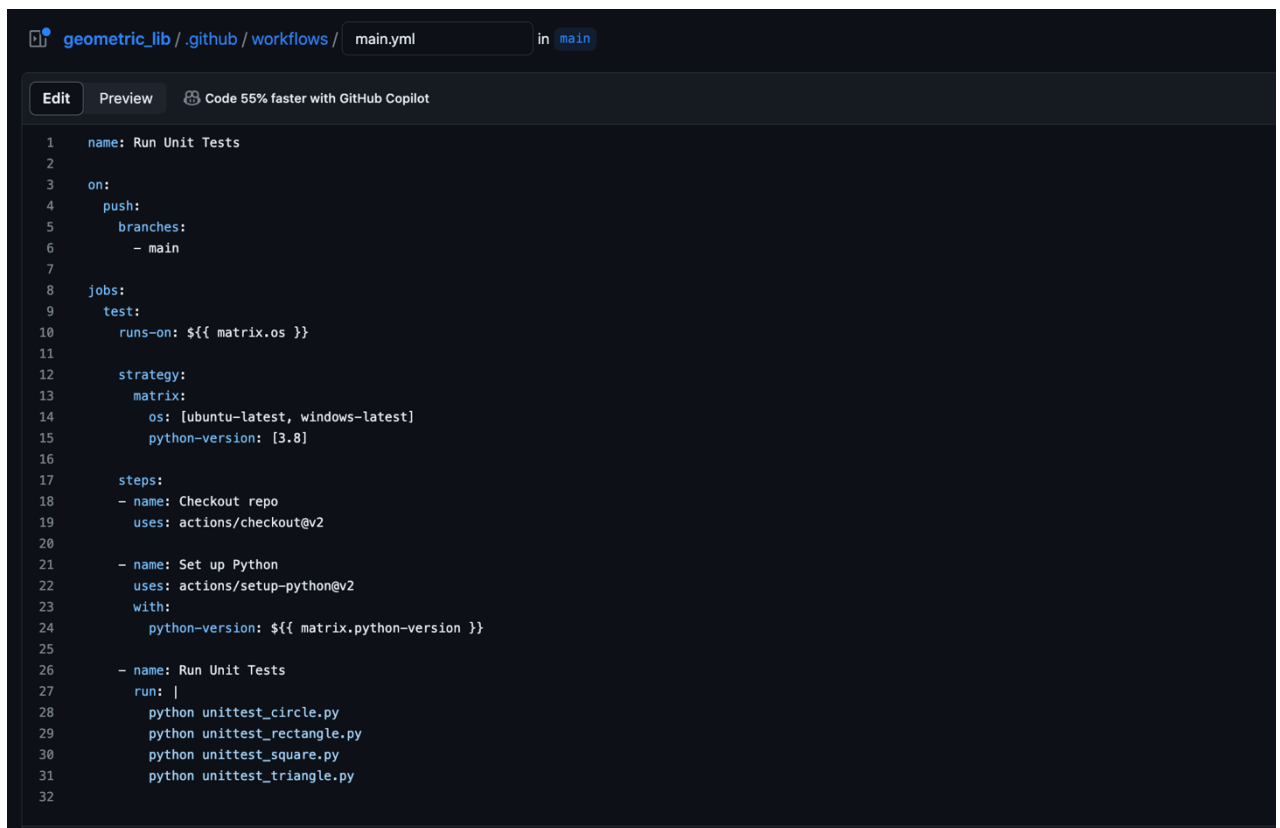
*САНКТ-ПЕТЕРБУРГ*

*2023*

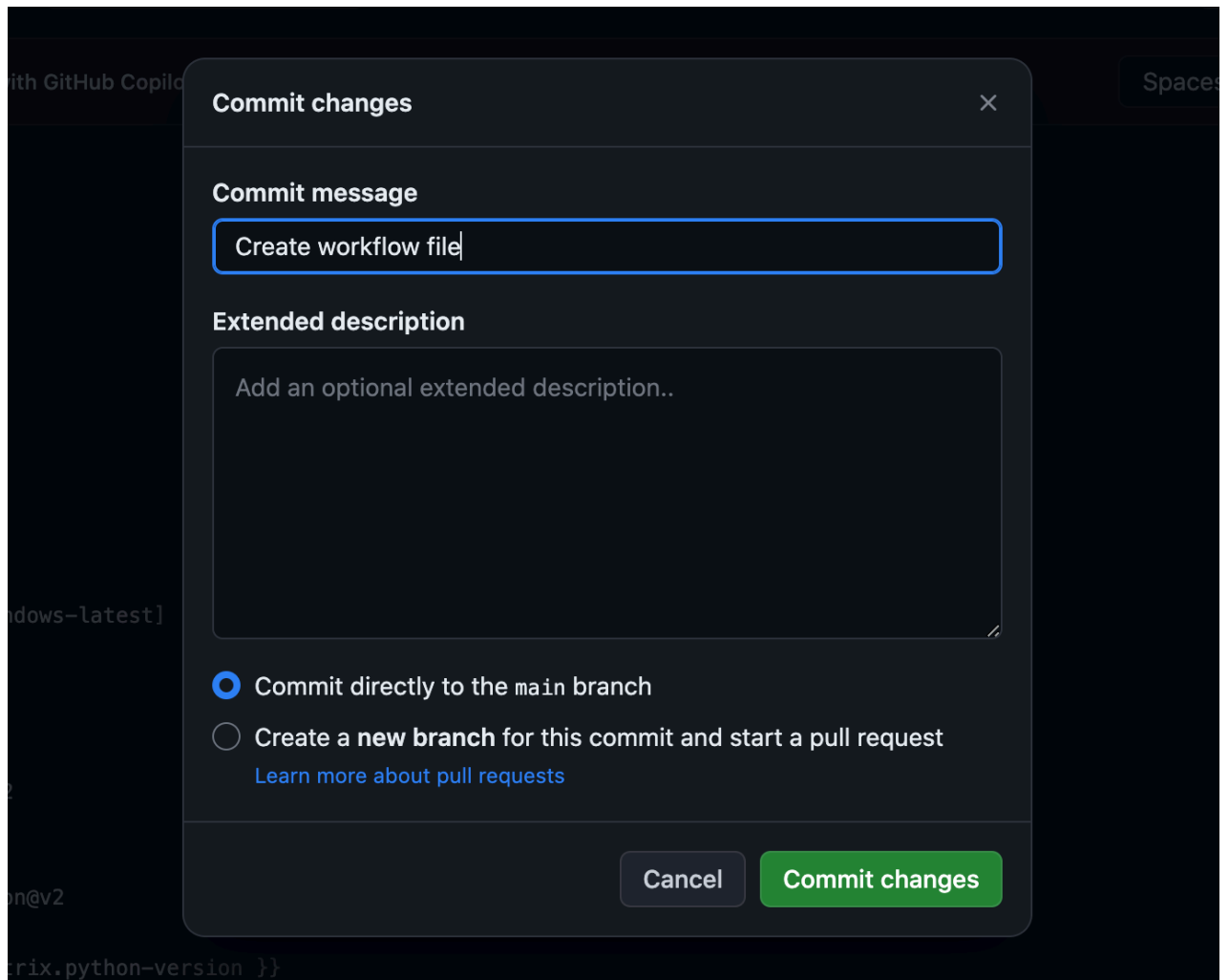
## 1) Создаем Github Action



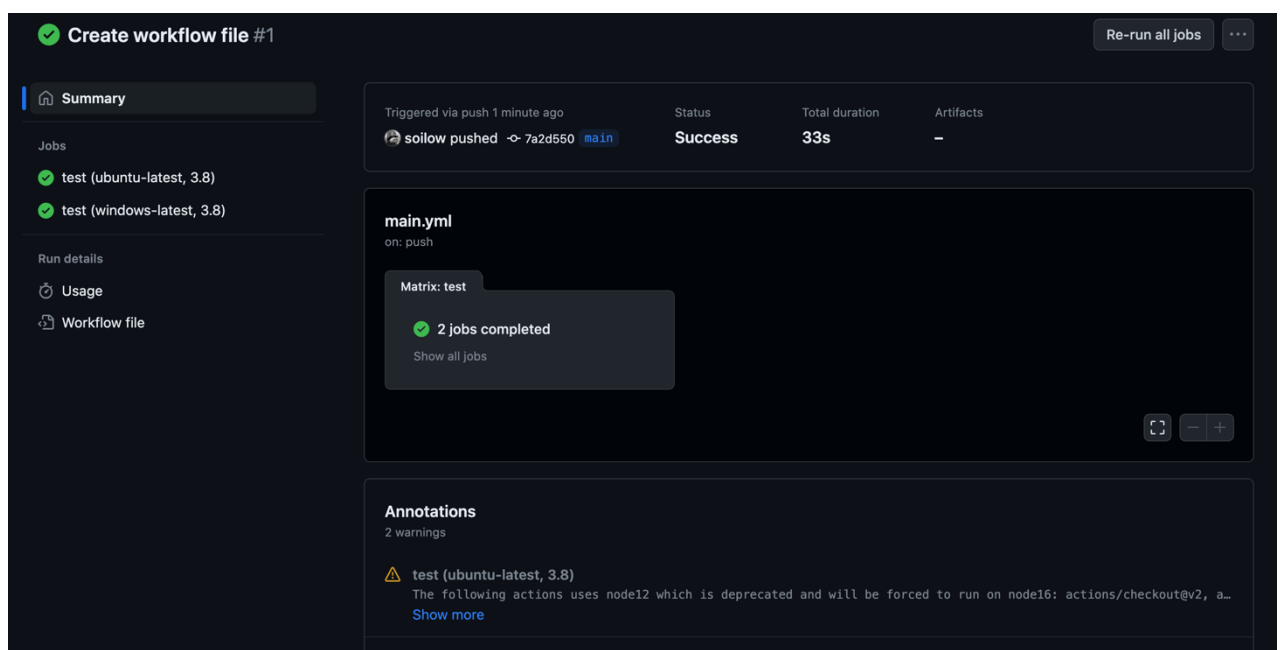
## 2) Пишет наш workflow-файл



### 3) Коммитим в ветку main



### 4) Видим, что Action обрабатывает правильно



5) Загружаю изменения в локальный репозиторий

```
MacBook-Pro-Dmitri:geometric_lib deus$ git pull
Enter passphrase for key '/Users/deus/.ssh/id_rsa':
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 5 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (5/5), 1.16 KiB | 298.00 KiB/s, done.
From github.com:soilow/geometric_lib
   2062cd8..7a2d550  main      -> origin/main
Updating 2062cd8..7a2d550
Fast-forward
 .github/workflows/main.yml | 32 +++++
 1 file changed, 32 insertions(+)
 create mode 100644 .github/workflows/main.yml
MacBook-Pro-Dmitri:geometric_lib deus$
```

6) Вношу изменения в исходники, которые не влияют на работу программы, но покажут нам, что action отработывает корректно

```
import math

def area(r):
    """
    Возвращает площадь круга

    Параметры:
        r (int): радиус круга

    Возвращаемое значение:
        math.pi * r * r: искомая площадь круга
    """

    if (type(r) is not int):
        raise TypeError("Аргумент должен быть int")

    if (r <= 0):
        raise ValueError("Аргумент должны быть больше нуля")

    print("ITMO")

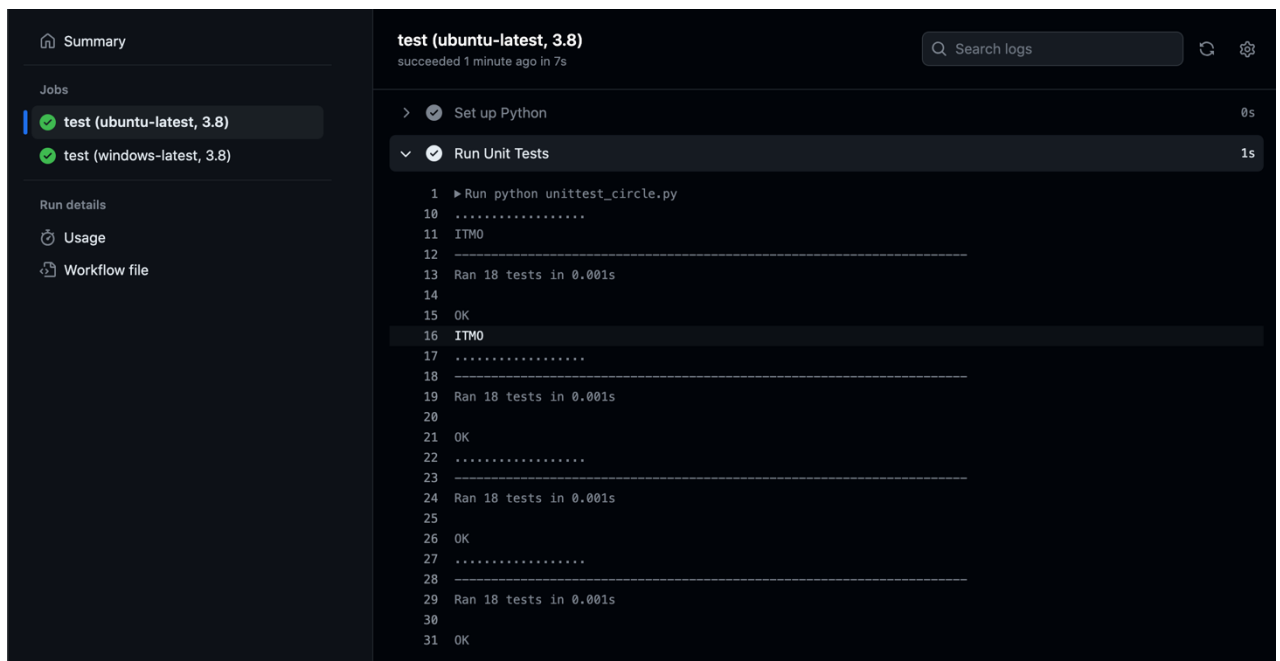
    return math.pi * r * r

def perimeter(r):
```

## 7) Запустил

```
MacBook-Pro-Dmitri:src deus$ git commit -m "Github Action testing 1"
[main dee6b23] Github Action testing 1
 1 file changed, 2 insertions(+), 2 deletions(-)
MacBook-Pro-Dmitri:src deus$ git push
Enter passphrase for key '/Users/deus/.ssh/id_rsa':
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 375 bytes | 375.00 KiB/s, done.
Total 4 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
To github.com:soilow/geometric_lib.git
   7a2d550..dee6b23  main -> main
MacBook-Pro-Dmitri:src deus$
```

## 8) Все работает



The screenshot displays the GitHub Actions interface for a workflow run. On the left, the 'Summary' tab is active, showing a list of jobs: 'test (ubuntu-latest, 3.8)' and 'test (windows-latest, 3.8)', both marked with green checkmarks. Below the jobs list, there are links for 'Run details', 'Usage', and 'Workflow file'. The main panel shows the details for the 'test (ubuntu-latest, 3.8)' job, which succeeded 1 minute ago in 7s. The job steps are 'Set up Python' (0s) and 'Run Unit Tests' (1s). The 'Run Unit Tests' step is expanded, showing a log of test execution. The log includes line numbers and test results, such as 'Run python unittest\_circle.py', 'ITMO', and 'Ran 18 tests in 0.001s'. The tests are all marked as 'OK'.

## 9) Специально вношу ошибку, чтобы посмотреть, что выдаст action

```
import unittest
import math

from src.square import area, perimeter

class SquareAreaTestCases(unittest.TestCase):
    def test_square_int_first(self):
        self.assertEqual(area(5), 5 * 5)

    def test_square_int_second(self):
        self.assertEqual(area(68), 57285 * 57285)
```

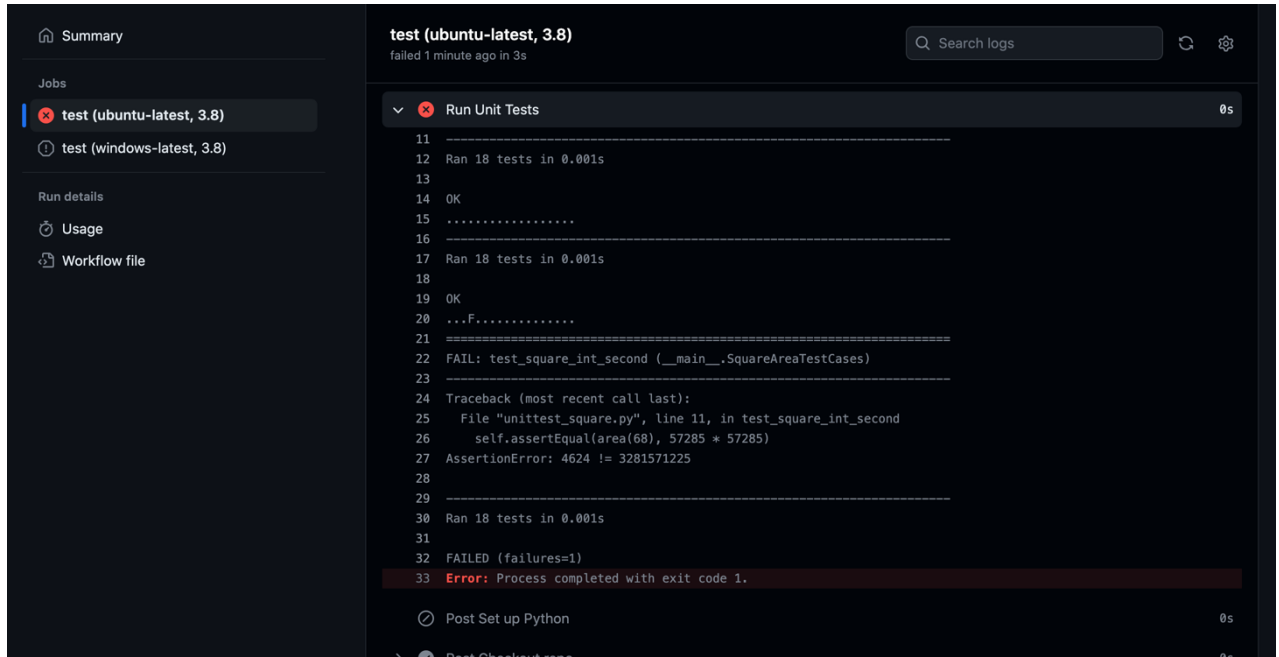
#### 10) Пушим

```
MacBook-Pro-Dmitri:geometric_lib deus$ vi unittest_square.py
MacBook-Pro-Dmitri:geometric_lib deus$ git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   src/circle.py
        modified:   unittest_square.py

no changes added to commit (use "git add" and/or "git commit -a")
MacBook-Pro-Dmitri:geometric_lib deus$ git add .
MacBook-Pro-Dmitri:geometric_lib deus$ git commit -m "Github Action Testing 2"
[main b06efd6] Github Action Testing 2
 2 files changed, 2 insertions(+), 4 deletions(-)
MacBook-Pro-Dmitri:geometric_lib deus$ git push
Enter passphrase for key '/Users/deus/.ssh/id_rsa':
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 436 bytes | 436.00 KiB/s, done.
Total 5 (delta 4), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (4/4), completed with 4 local objects.
To github.com:soilow/geometric_lib.git
   dee6b23..b06efd6  main -> main
MacBook-Pro-Dmitri:geometric_lib deus$
```

#### 11) Видим результат:



```
test (ubuntu-latest, 3.8)
failed 1 minute ago in 3s

Search logs

Jobs

test (ubuntu-latest, 3.8)
test (windows-latest, 3.8)

Run details

Usage
Workflow file

Run Unit Tests 0s

11 -----
12 Ran 18 tests in 0.001s
13
14 OK
15 .....
16 -----
17 Ran 18 tests in 0.001s
18
19 OK
20 ...F.....
21 =====
22 FAIL: test_square_int_second (__main__.SquareAreaTestCases)
23 -----
24 Traceback (most recent call last):
25   File "unittest_square.py", line 11, in test_square_int_second
26     self.assertEqual(area(68), 57285 * 57285)
27   AssertionError: 4624 != 3281571225
28 -----
29
30 Ran 18 tests in 0.001s
31
32 FAILED (failures=1)
33 Error: Process completed with exit code 1.

Post Set up Python 0s
Post Checkout steps 0s
```

12) Даже на почту пришло уведомление:

