

STT Lab 1

Kishan Ved
22110122

1 Introduction, Setup and Tools

1.1 Overview

This lab is based on concepts of version control systems (VCS) and hands-on exercise with Git.

1.2 Objectives

The objective of this lab assignment is to understand the basic concepts of version control system, setting up Git, creating a GitHub repository, push and pull code to and from the GitHub repository and setting up a pylint workflow via GitHub actions.

1.3 Environment Setup

- Download Git
- Sign Up on GitHub
- Install VS Code
- Configure Git with name and email

1.4 Tools and Versions

- **OS:** Ubuntu Version : 22.04.5
- **Git:** Version: 2.34.1
- **Code Editor:** Visual Studio Code (Version 1.96.2)
- **Python:** Version 3.10.12 (for pylint workflow)

2 Methodology and Execution

2.1 Procedure

1. Setup the environment as mentioned above.
2. Create a folder named CS202_Lab1
3. Initialize a local Git repository
4. Create a README.md file
5. Add the file to the staging area
6. Commit the file (along with a commit message)
7. Create a new repository in GitHub named CS202_Lab1
8. Link local repository to GitHub
9. Push changes to GitHub
10. Clone an existing repository
11. Pull changes from the existing repository
12. Create a python file (a.py)
13. Push the python file in our GitHub repository
14. Set up pylint workflow from GitHub actions
15. Resolve errors to pass the pylint check
16. Install PyLint extension in VS Code to resolve errors easily

Link to repository: https://github.com/Kishan-Ved/CS202_Lab1

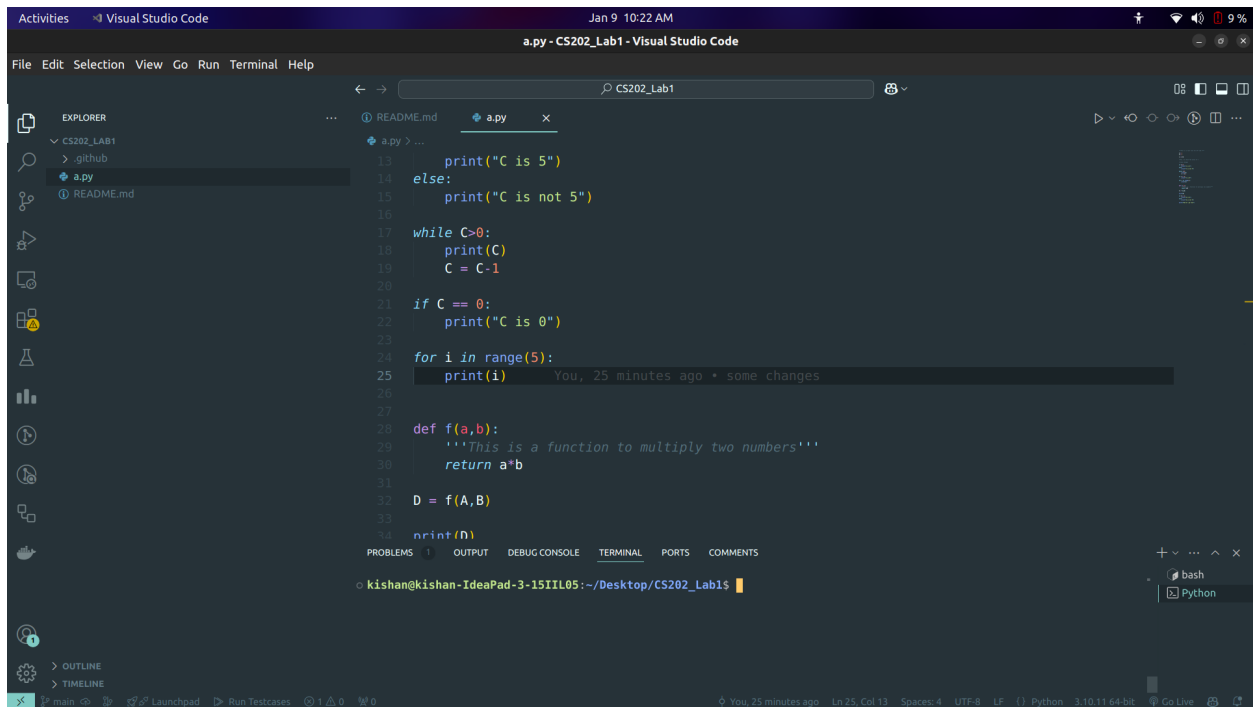


Figure 1: VS Code and local setup with code snippet

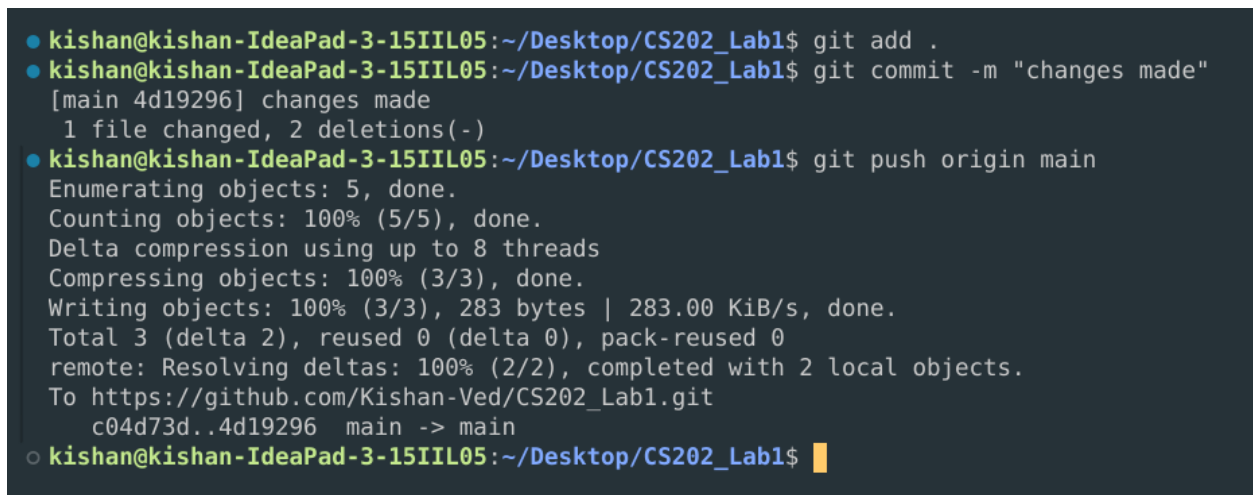


Figure 2: Git commands in terminal

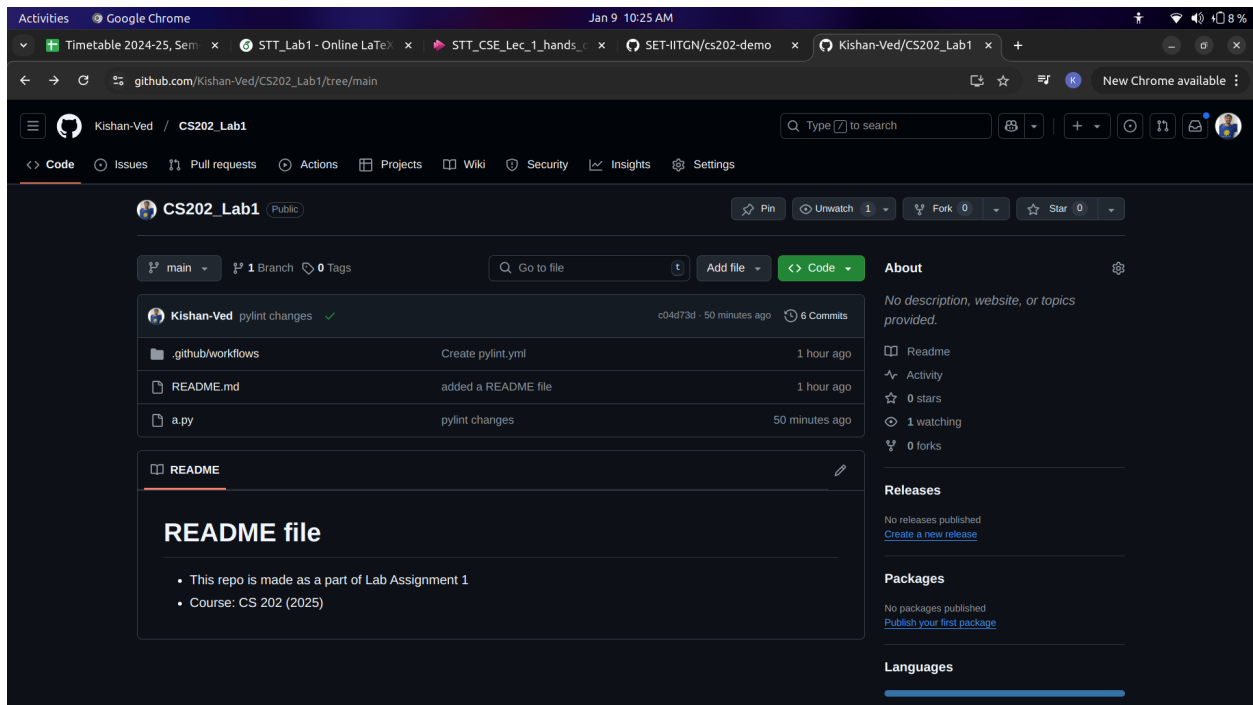


Figure 3: GitHub Repository

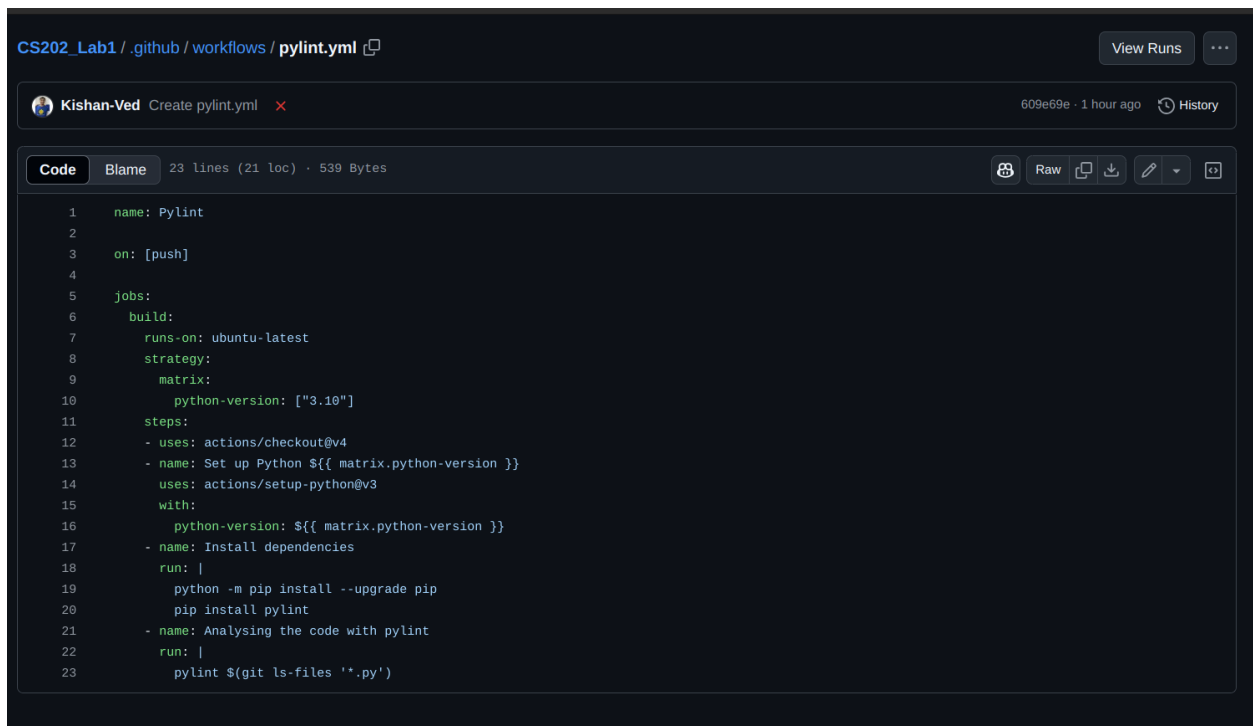


Figure 4: Pylint file

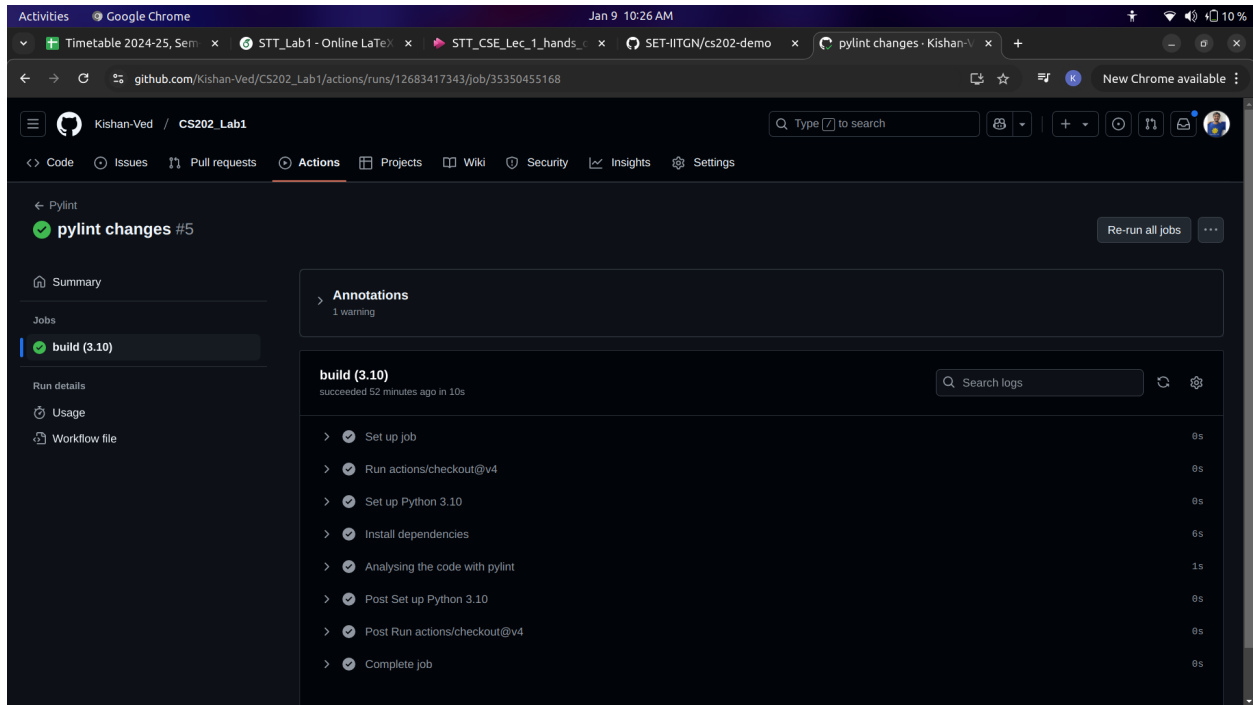


Figure 5: Pylint with all errors resolved

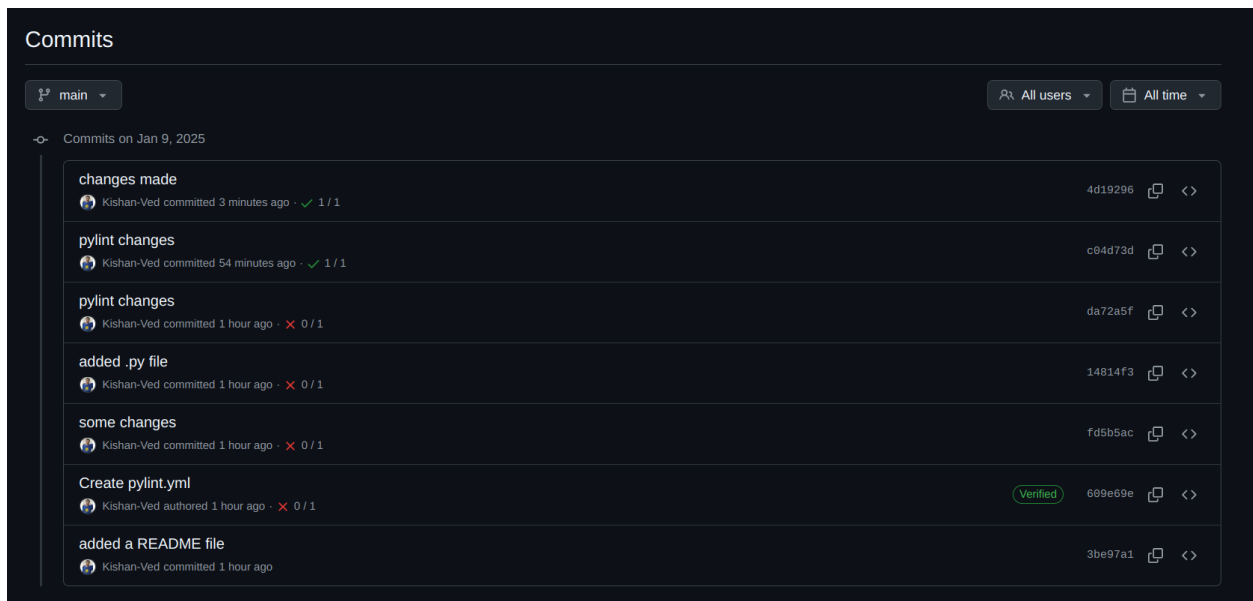
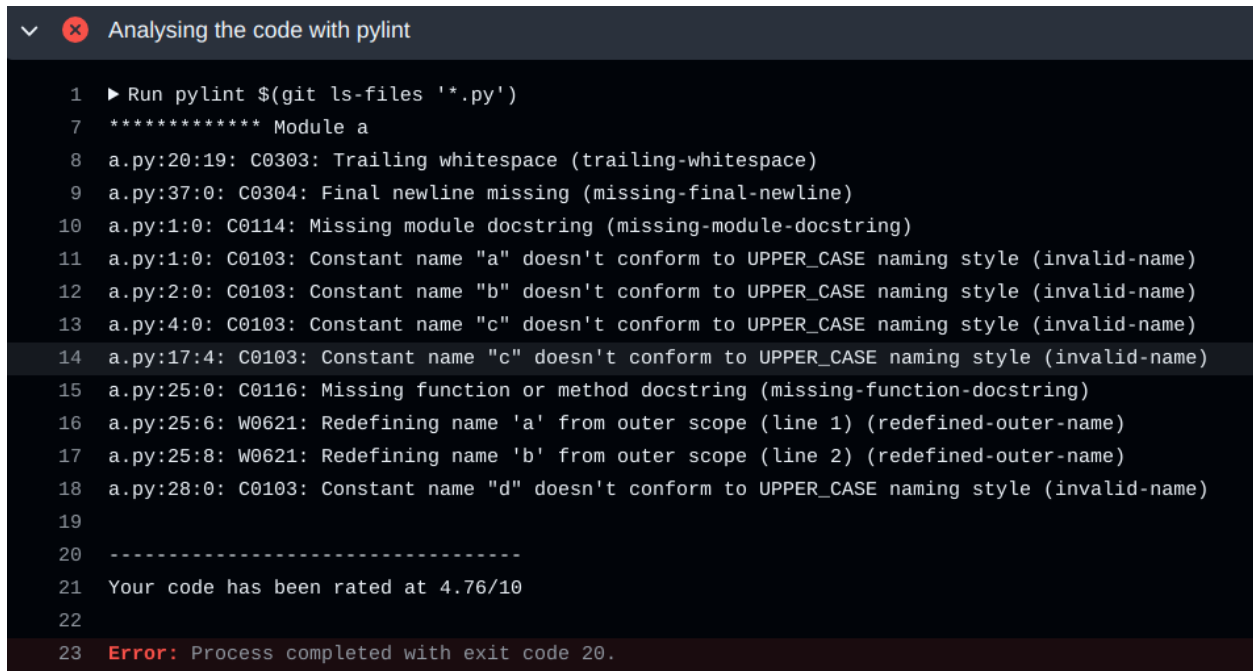


Figure 6: Commits on GitHub

3 Results and Analysis

Initially, the pylint checks were failing:

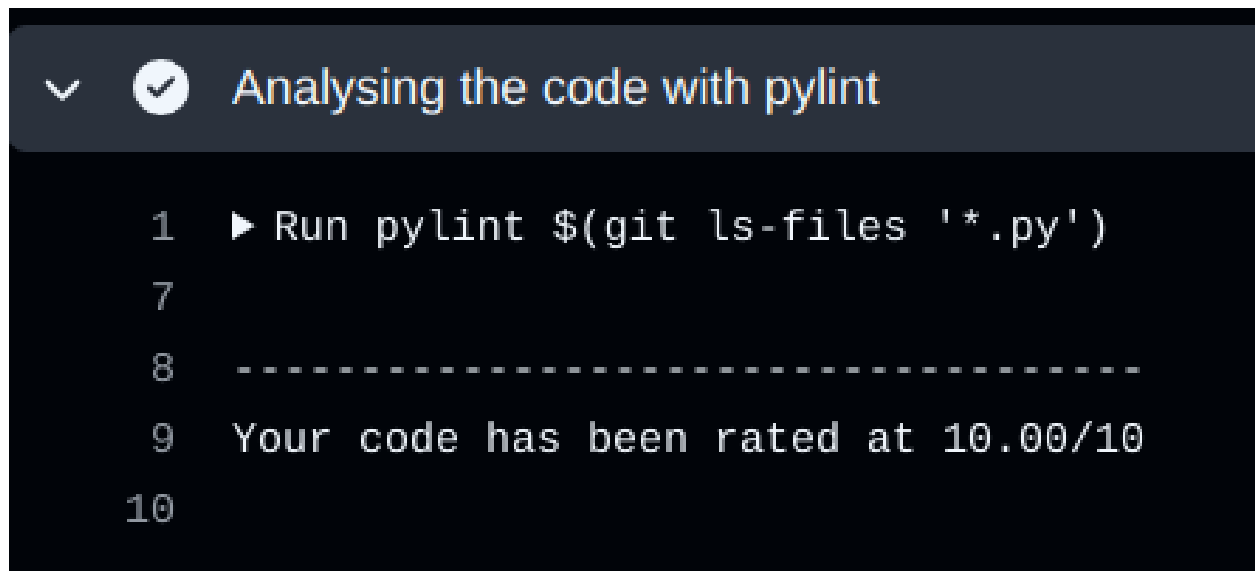


```
1 ▶ Run pylint $(git ls-files '*.py')
7 ***** Module a
8 a.py:20:19: C0303: Trailing whitespace (trailing-whitespace)
9 a.py:37:0: C0304: Final newline missing (missing-final-newline)
10 a.py:1:0: C0114: Missing module docstring (missing-module-docstring)
11 a.py:1:0: C0103: Constant name "a" doesn't conform to UPPER_CASE naming style (invalid-name)
12 a.py:2:0: C0103: Constant name "b" doesn't conform to UPPER_CASE naming style (invalid-name)
13 a.py:4:0: C0103: Constant name "c" doesn't conform to UPPER_CASE naming style (invalid-name)
14 a.py:17:4: C0103: Constant name "c" doesn't conform to UPPER_CASE naming style (invalid-name)
15 a.py:25:0: C0116: Missing function or method docstring (missing-function-docstring)
16 a.py:25:6: W0621: Redefining name 'a' from outer scope (line 1) (redefined-outer-name)
17 a.py:25:8: W0621: Redefining name 'b' from outer scope (line 2) (redefined-outer-name)
18 a.py:28:0: C0103: Constant name "d" doesn't conform to UPPER_CASE naming style (invalid-name)
19
20 -----
21 Your code has been rated at 4.76/10
22
23 Error: Process completed with exit code 20.
```

Figure 7: Failing Pylint checks

I resolved all the mentioned errors. I also installed the Pylint extension in VS Code to make the process easier.

The pylint check was successful with code rating: 10/10

A terminal window with a dark background. At the top, there is a header bar with a downward arrow icon, a checkmark icon, and the text "Analysing the code with pylint". Below the header, the terminal shows a command prompt "1 ► Run pylint \$(git ls-files '*.py')", followed by a blank line "7", a dashed line "8 -----", and the output "9 Your code has been rated at 10.00/10". The terminal prompt "10" is visible at the bottom left.

```
1 ► Run pylint $(git ls-files '*.py')
7
8 -----
9 Your code has been rated at 10.00/10
10
```

Figure 8: Pylint check successful

4 Discussion and Conclusions

4.1 Challenges and lessons

I faced some issues with identifying Pylint errors. This process was streamlined after installing the Pylint extension for VS Code. I learnt that Pylint requires all variables in uppercase and arguments in snake case.

4.2 Summary

In this lab, I understood the basic concepts of version control system, set up Git, created a GitHub repository, pushed and pulled code to and from the GitHub repository and set up a pylint workflow via GitHub actions.