

LECTURE 5 report.

github repo: <https://github.com/kaanzapkinus/Software-Build-Automation-Tools>

KAAN YAZICIOĞLU SD4

TASK 1

Added the .gitignore file and pushed.

The screenshot shows a dark-themed Git commit history interface. The commit details are as follows:

```
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git add .gitignore
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git commit -m "Added .gitignore file"
[main a964985] Added .gitignore file
 1 file changed, 5 insertions(+), 1 deletion(-)
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git push
Nesneler ortaya dökülüyor: 5, bitti.
Nesneler sayılıyor: 100% (5/5), bitti.
Delta sıkıştırması 8 iş parçacığı kullanıyor
Nesneler sıkıştırılıyor: 100% (2/2), bitti.
```

TASK 2

Implementing Git Flow in a Project

- Initialize a Git Flow workflow.
- Create a new feature branch and add a Python script.
- Commit and merge the feature into develop.
- Push all changes to GitHub.

```
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git flow init

Which branch should be used for integration of the "next release"?
  - branch1
  - feature-branch
  - lecture4
Branch name for "next release" development: [] feature-branch

How to name your supporting branch prefixes?
Feature branches? [feature/]
Release branches? [release/]
Hotfix branches? [hotfix/]
Support branches? [support/]
Version tag prefix? []
✧ kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % █
```

```
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git flow feature start new-feature
uyarı: unable to rmdir 'lecture1/clone': Directory not empty
Yeni 'feature/new-feature' dalına geçildi.

Summary of actions:
- A new branch 'feature/new-feature' was created, based on 'feature-branch'
- You are now on branch 'feature/new-feature'

Now, start committing on your feature. When done, use:
  git flow feature finish new-feature
❸ kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git add .
git commit -m "Implement new feature"
git flow feature finish new-feature
git push origin develop
```

The screenshot shows a terminal window with a file explorer sidebar on the left. The terminal has tabs for project.txt, test.py, test_sample.py, pytest.yml, .gitignore (active), and .gitignore !. The .gitignore tab displays a diff between HEAD and feature-hotfix branches. The terminal content shows a git commit for an urgent bug fix, followed by a git push to origin main, and a git log output. The file explorer sidebar shows a directory structure for a project named 'SOFTWARE-BUILD-AUT...', including files like .github, .pytest_cache, v, .gitignore, CACHEDIR.TAG, README.md, lecture1 through lecture6, LICENSE, package.json, and README.md. A 'ANAHAT' (Root) folder is also present.

```
You, 1 saniye önce | 1 author (You) | Geçerli Değişikliği Kabul Et | Gelen Değişikliği Kabul Et | İki Değişikliği de Kabul Et | Değişiklikleri Karşılaştır
<<<<< HEAD (Geçerli Değişiklik)
1 .DS_Store
2 __pycache__/
3 *.pyc
4 .venv/
5 .idea/
6 =====
7 lecture1/clone/
8 >>>> feature-hotfix (Gelen Değişiklik)
9
10
```

Birleştirme Düzenleyicisinde Ç

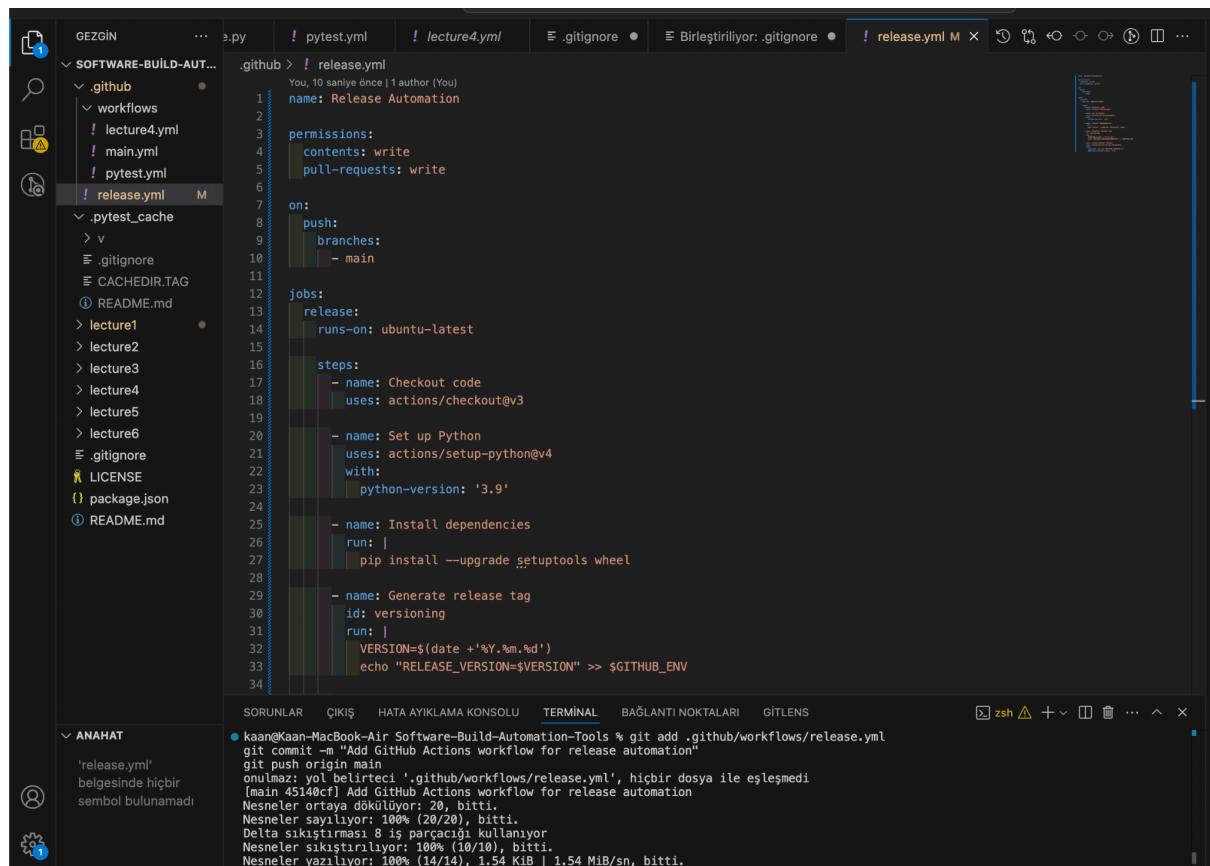
```
SORUNLAR   ÇIKIŞ   HATA AYIKLAMA KONSOLU   TERMINAL   BAĞLANTI NOKTALARI   GİLENS
```

```
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git checkout -b feature-hotfix
# make your changes
git commit -am "Apply hotfix for urgent bug"
git checkout main
git merge feature-hotfix
git push origin main
Yeni 'feature-hotfix' dalına geçildi.
zsh: command not found: #
Üzerinde bulunanın dalı: feature-hotfix
İşlenecek bir şey yok, çalışma ağacı temiz
M     lecture1/clone
'main' dalına geçildi.
Dalınız 'origin/main' dalından 1 işlemeye ileride.
(yerel işlemlerinizi yayılmamak için "git push" kullanın)
.gitignore kendiliğinden birleştiriliyor
ÇAKIŞMA (ekle/ekle): .gitignore içinde birleştirme çakışması
Otomatik birleştirme başarısız; çakışmaları çözün ve sonucu işleyin.
Nesneler ortaya dökülüyor: 5, bitti.
Nesneler sayılıyor: 100% (5/5), bitti.
Delta sıkıştırması 8 iş parçasığı kullanıyor
Nesneler sıkıştırılıyor: 100% (3/3), bitti.
Nesneler yazılıyor: 100% (4/4), 183.76 KiB | 45.94 MiB/sn, bitti.
Toplam 4 (delta 1), yeniden kullanılan 0 (delta 0), yeniden kullanılan paket 0 (0 konumundan)
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/kaanzapkinus/Software-Build-Automation-Tools.git
 a964985..662f4e1 main -> main
diamond kaan@Kaan-MacBook-Air Software-Build-Automation-Tools %
```

TASK 3

Automating Releases with GitHub Actions

- Set up a GitHub Actions workflow for automated releases.
- Push a change to the main branch to trigger a release.
- Verify that a new release tag appears in GitHub.



```
.github > ! release.yml
You, 10 saniye önce | 1 author (You)
name: Release Automation

permissions:
  contents: write
  pull-requests: write

on:
  push:
    branches:
      - main

jobs:
  release:
    runs-on: ubuntu-latest

    steps:
      - name: Checkout code
        uses: actions/checkout@v3

      - name: Set up Python
        uses: actions/setup-python@v4
        with:
          python-version: '3.9'

      - name: Install dependencies
        run: |
          pip install --upgrade setuptools wheel

      - name: Generate release tag
        id: versioning
        run: |
          VERSION=$(date +'%Y.%m.%d')
          echo "RELEASE_VERSION=$VERSION" >> $GITHUB_ENV

  ANAHAT
  'release.yml'
  belgesinde hiçbir
  simbol bulunamadı
```

```
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git add .github/workflows/release.yml
git commit -m "Add Github Actions workflow for release automation"
git push origin main
onulmaz; yol belirtici '.github/workflows/release.yml', hiçbir dosya ile eşleşmedi
[main 45140cf] Add Github Actions workflow for release automation
Nesneler ortaya dökülüyor: 20, bitti.
Nesneler sayılıyor: 100% (20/20), bitti.
Düzen sıklıklandırması 8 iş parçacığı kullanıyor
Nesneler sıkıştırılıyor: 100% (10/10), bitti.
Nesneler yazılıyor: 100% (14/14), 1.54 KiB | 1.54 MiB/sn, bitti.
```

pushed to github and on actions i can see its completed.

The screenshot shows the GitHub Actions interface for a repository named 'Software-Build-Automation-Tools'. The 'Actions' tab is selected. On the left, a sidebar lists various CI and management options, with 'Release Automation' currently selected. The main area displays a 'Release Automation' section for a file named 'release.yml'. It shows one workflow run, which was triggered by a commit pushed by the user 'kaanzapkinus' on the 'main' branch. The run completed successfully, indicated by a green checkmark, and took 19 seconds. A search bar at the top right allows filtering of workflow runs.

and then i checked the releases and i make double confirm it works.

The screenshot shows the GitHub Releases page for the same repository. A specific release is selected, dated '2025.04.09'. The release notes include a message from the user 'github-actions' stating they released the version 1 minute ago. Below this, the 'What's Changed' section lists a single item: a new branch push by the user '@kaanzapkinus' in a recent pull request. The 'New Contributors' section shows that the user '@kaanzapkinus' made their first contribution in this release. A link to the full changelog is provided. The 'Contributors' section shows the user 'kaanzapkinus' has contributed. Finally, the 'Assets' section lists two downloadable files: 'Source code (zip)' and 'Source code (tar.gz)', both uploaded 1 minute ago.

TASK 4

Implementing Code Quality Checks

- Install Black and Flake8.
- Set up GitHub Actions to check code formatting.
- Create a pull request and verify that the checks pass.

I've installed black and flake8

```
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % pip3 install black flake8
Defaulting to user installation because normal site-packages is not writeable
Collecting black
  Downloading black-25.1.0-cp39-cp39-macosx_11_0_arm64.whl.metadata (81 kB)
Collecting flake8
  Downloading flake8-7.2.0-py2.py3-none-any.whl.metadata (3.8 kB)
Requirement already satisfied: click>=8.0.0 in /Users/kaan/Library/Python/3.9/lib/python/site-packages (from black) (8.1.7)
Collecting mypy_extensions>=0.4.3 (from black)
  Downloading mypy_extensions-1.0.0-py3-none-any.whl.metadata (1.1 kB)
Requirement already satisfied: packaging==22.0 in /Users/kaan/Library/Python/3.9/lib/python/site-packages (from black) (24.1)
Collecting pathspec>=0.9.0 (from black)
  Downloading pathspec-0.12.1-py3-none-any.whl.metadata (21 kB)
Collecting platformdirs>=2 (from black)
  Downloading platformdirs-4.3.7-py3-none-any.whl.metadata (11 kB)
Requirement already satisfied: tomli>=1.1.0 in /Users/kaan/Library/Python/3.9/lib/python/site-packages (from black) (2.2.1)
Requirement already satisfied: typing-extensions>=4.0.1 in /Users/kaan/Library/Python/3.9/lib/python/site-packages (from black) (4.12.2)
Collecting mccabe<0.8.0,>=0.7.0 (from flake8)
  Downloading mccabe-0.7.0-py2.py3-none-any.whl.metadata (5.0 kB)
Collecting pycodestyle<2.14.0,>=2.13.0 (from flake8)
  Downloading pycodestyle-2.13.0-py2.py3-none-any.whl.metadata (4.5 kB)
Collecting pyflakes<3.4.0,>=3.3.0 (from flake8)
  Downloading pyflakes-3.3.2-py2.py3-none-any.whl.metadata (3.5 kB)
  Downloading black-25.1.0-cp39-cp39-macosx_11_0_arm64.whl (1.5 MB)
  1.5/1.5 MB 4.7 MB/s eta 0:00:00
Downloaded flake8-7.2.0-py2.py3-none-any.whl (57 kB)
Downloaded mccabe-0.7.0-py2.py3-none-any.whl (7.3 kB)
Downloaded mypy_extensions-1.0.0-py3-none-any.whl (4.7 kB)
Downloaded pathspec-0.12.1-py3-none-any.whl (31 kB)
Downloaded platformdirs-4.3.7-py3-none-any.whl (18 kB)
Downloaded pycodestyle-2.13.0-py2.py3-none-any.whl (31 kB)
Downloaded pyflakes-3.3.2-py2.py3-none-any.whl (63 kB)
Installing collected packages: pyflakes, pycodestyle, platformdirs, pathspec, mypy_extensions, mccabe, flake8, black
Successfully installed black-25.1.0 flake8-7.2.0 mccabe-0.7.0 mypy_extensions-1.0.0 pathspec-0.12.1 platformdirs-4.3.7 pycodestyle-2.13.0 pyflakes-3.3.2
○ kaan@Kaan-MacBook-Air Software-Build-Automation-Tools %
```

and then added the .yml code from pdf and pushed it to github

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows the project structure with files like `sample.py`, `pytest.yml`, `lint.yml`, `lecture4.yml`, `main.yml`, `pytest.yml`, `release.yml`, `.gitignore`, `CACHEDIR.TAG`, `README.md`, `lecture1`, `lecture2`, `lecture3`, `lecture4`, `lecture5`, `lecture6`, `LICENSE`, `package.json`, and `README.md`.
- Code Editor:** Displays the `lint.yml` file content:name: Code Quality Check
on:
 pull_request:
 branches:
 - main
jobs:
 lint:
 runs-on: ubuntu-latest
 steps:
 - name: Checkout code
 uses: actions/checkout@v3
 - name: Set up Python
 uses: actions/setup-python@v4
 with:
 python-version: '3.9'
 - name: Install dependencies
 run: pip install black flake8
 - name: Run Black
 run: black --check .
 - name: Run Flake8
 run: flake8 .
- Terminal:** Shows the command-line history for committing the workflow file:kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git add .github/workflows/lint.yml
git commit -m "Add GitHub Actions workflow for code linting"
git push origin main
[main b9337a5] Add GitHub Actions workflow for code linting
1 file changed, 28 insertions(+)
create mode 100644 .github/workflows/lint.yml
Nesneler ortaya dökülmüyor: 8, bitti.
Nesneler sayılıyor: 100% (8/8), bitti.
Delta sıkıştırması: 8 is parçası kulandırıldı.
Nesneler sıkıştırılıyor: 100% (5/5), bitti.
Nesneler yazılıyor: 100% (5/5), 681 bayt | 681.00 KiB/sn, bitti.
Toplam 5 (delta 2), yeniden kullanılan 0 (delta 0), yeniden kullanılan paket 0 (0 konumundan)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/kaanzapkinus/Software-Build-Automation-Tools.git
 624fd6a..b9337a5 main > main
kaan@Kaan-MacBook-Air Software-Build-Automation-Tools %

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows the project structure with files like `sample.py`, `pytest.yml`, `lecture4.yml`, `main.yml`, `pytest.yml`, `release.yml`, `.gitignore`, `CACHEDIR.TAG`, `README.md`, `lecture1`, `lecture2`, `lecture3`, `lecture4`, `lecture5`, `lecture6`, `1.pdf`, and `main.py`.
- Code Editor:** Displays the `main.py` file content:def greet(name: str) -> str:
 return f"Hello, {name}!"

if __name__ == "__main__":
 print(greet("World"))

and it didn't work on GitHub so I must fix my .py file.

The screenshot shows a GitHub Actions workflow interface. On the left, there's a sidebar with tabs for 'Summary', 'Jobs', 'lint' (which is selected), 'Run details', 'Usage', and 'Workflow file'. The main area is titled 'Annotations' with a note '1 error and 1 warning'. Below that, the 'lint' job is expanded, showing its steps: 'Set up job' (1s), 'Checkout code' (2s), 'Set up Python' (1s), 'Install dependencies' (2s), and 'Run Black' (0s). The 'Run Black' step failed with the following log output:

```
1 ► Run black --check lecture6/
11 would reformat /home/runner/work/Software-Build-Automation-Tools/Software-Build-Automation-Tools/lecture6/main.py
12
13 Oh no! * * *
14 1 file would be reformatted.
15 Error: Process completed with exit code 1.
```

Other steps listed under 'Run Black' include 'Run Flake8' (0s), 'Post Set up Python' (0s), 'Post Checkout code' (0s), and 'Complete job' (0s).

I've fixed my .py file with black and then pushed again to GitHub

```
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % black lecture6/
reformatted /Users/kaan/Desktop/Second Semester/Software-Build-Automation-Tools/lecture6/main.py

All done! ✨ 🎉 ✨
1 file reformatted.
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git add .
● kaan@Kaan-MacBook-Air Software-Build-Automation-Tools % git commit -m "Format Python code with Black"
git push origin main
[main 9d7a6c6] Format Python code with Black
 1 file changed, 2 insertions(+), 1 deletion(-)
Nesneler ortaya dökülüyor: 7, bitti.
Nesneler sayılıyor: 100% (7/7), bitti.
Delta sıkıştırması 8 iş parçacığı kullanıyor
Nesneler sıkıştırılıyor: 100% (4/4), bitti.
Nesneler yazılıyor: 100% (4/4), 382 bayt | 382.00 KiB/sn, bitti.
Toplam 4 (delta 2), yeniden kullanılan 0 (delta 0), yeniden kullanılan paket 0 (0 konumundan)
remote: Resolving deltas: 100% (2/2), completed with 2 local objects.
To https://github.com/kaanzapkinus/Software-Build-Automation-Tools.git
```

And it worked!!

Code Quality Check

Format Python code with Black #3

Summary

Jobs

lint

Run details

Usage

Workflow file

Annotations
1 warning

lint
succeeded now in 8s

Set up job 1s

Checkout code 3s

Set up Python 0s

Install dependencies 2s

Run Black 0s

Run Flake8 1s

Run flake8 lecture6/ 1s

Post Set up Python 0s

Post Checkout code 0s

Complete job 0s

Cleaning up orphan processes 0s

Search logs

Re-run all jobs

github.com/keenzhengkun/Software-Build-Automation-Tools/actions/1402422492