

LECTURE 2 report.

gitlab repo: <https://gitlab.com/kaanzapkinus/sbatools-gitlab-repo>

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

KAAN YAZICIOĞLU SD4

TASK 1

Created a new GitLab repository with a README, providing a brief introduction and license information.

The screenshot shows the 'Sbatools Gitlab Repo' page in GitLab. The repository is newly created and is on the 'main' branch. The page displays the initial commit by 'kaanzapkinus' from 13 minutes ago. A table lists the files in the repository, showing 'README.md' as the only file. The README content is visible, providing instructions on how to get started, add files, integrate with tools, collaborate with a team, and test and deploy. The right sidebar shows project information, including 1 commit, 1 branch, 0 tags, and 3 KiB of project storage. It also lists actions like 'Add LICENSE', 'Add CHANGELOG', 'Add CONTRIBUTING', 'Add Kubernetes cluster', 'Set up CI/CD', 'Add Wiki', and 'Configure Integrations'. The repository was created on March 16, 2025.

Sbatools Gitlab Repo

main sbatools-gitlab-repo

Initial commit
kaanzapkinus authored 13 minutes ago

Name	Last commit	Last update
README.md	Initial commit	13 minutes ago

README.md

Sbatools Gitlab Repo

Getting started

To make it easy for you to get started with GitLab, here's a list of recommended next steps.

Already a pro? Just edit this README.md and make it your own. Want to make it easy? Use the template at the bottom!

Add your files

- ☐ Create or upload files
- ☐ Add files using the command line or push an existing Git repository with the following command:

```
cd existing_repo
git remote add origin https://gitlab.com/kaanzapkinus/sbatools-gitlab-repo.git
git branch -M main
git push -uf origin main
```

Integrate with your tools

- ☐ Set up project integrations

Collaborate with your team

- ☐ Invite team members and collaborators
- ☐ Create a new merge request
- ☐ Automatically close issues from merge requests
- ☐ Enable merge request approvals
- ☐ Set auto-merge

Test and Deploy

Use the built-in continuous integration in GitLab.

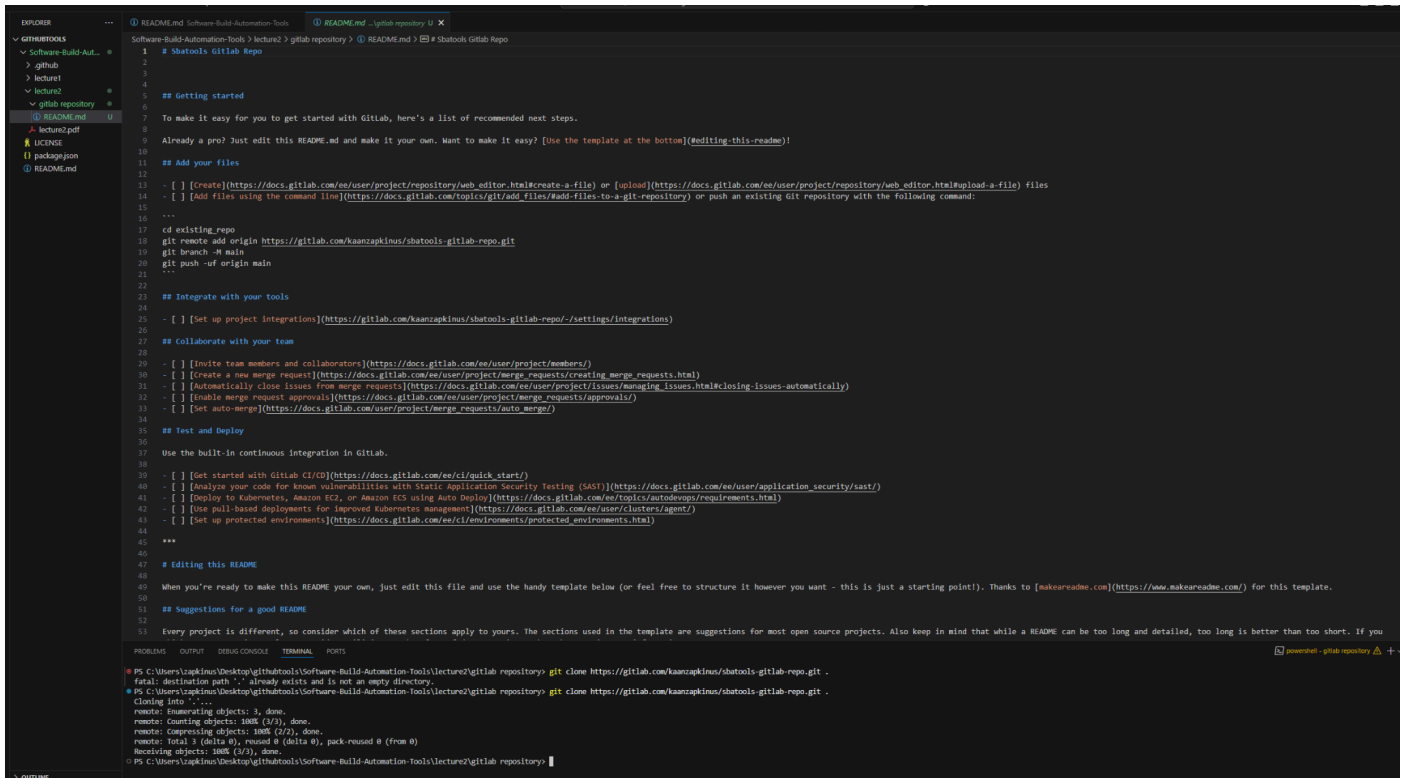
Project information

- 1 Commit
- 1 Branch
- 0 Tags
- 3 KiB Project Storage

Created on
March 16, 2025

Task 1.1

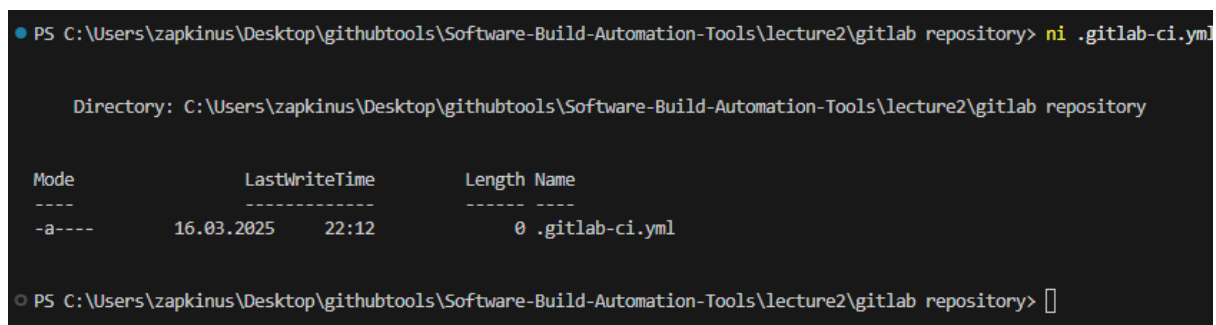
Cloned the repository locally under the GitHub repo, making it ready for direct development on my machine.



```
1 # Shatools GitLab Repo
2
3
4
5 ## Getting started
6
7 To make it easy for you to get started with GitLab, here's a list of recommended next steps.
8
9 Already a pro? Just edit this README.md and make it your own. Want to make it easy? [Use the template at the bottom](#editing-this-readme)!
10
11 ## Add your files
12
13 - [ ] [Create](https://docs.gitlab.com/ee/user/project/repository/web_editor.html#create-a-file) or [upload](https://docs.gitlab.com/ee/user/project/repository/web_editor.html#upload-a-file) files
14 - [ ] [Add files using the command line](https://docs.gitlab.com/ee/user/project/repository/web_editor.html#add-files-to-a-git-repository) or push an existing git repository with the following command:
15
16 ...
17 cd existing_repo
18 git remote add origin https://gitlab.com/kaanazapkinus/shatools-gitlab-repo.git
19 git branch -M main
20 git push -u origin main
21
22
23 ## Integrate with your tools
24
25 - [ ] [Set up project integrations](https://gitlab.com/kaanazapkinus/shatools-gitlab-repo/-/settings/integrations)
26
27 ## Collaborate with your team
28
29 - [ ] [Invite team members and collaborators](https://docs.gitlab.com/ee/user/project/members/)
30 - [ ] [Create a new merge request](https://docs.gitlab.com/ee/user/project/merge_requests/creating_merge_requests.html)
31 - [ ] [Automatically close issues from merge requests](https://docs.gitlab.com/ee/user/project/issues/managing_issues.html#closing-issues-automatically)
32 - [ ] [Enable merge request approvals](https://docs.gitlab.com/ee/user/project/merge_requests/approvals/)
33 - [ ] [Set auto-merge](https://docs.gitlab.com/ee/user/project/merge_requests/auto_merge/)
34
35 ## Test and Deploy
36
37 Use the built-in continuous integration in GitLab.
38
39 - [ ] [Get started with GitLab CI/CD](https://docs.gitlab.com/ee/ci/quick_start/)
40 - [ ] [Analyze your code for known vulnerabilities with Static Application Security Testing (SAST)](https://docs.gitlab.com/ee/user/application_security/sast/)
41 - [ ] [Deploy to Kubernetes, Amazon EC2, or Amazon ECS using Auto Deploy](https://docs.gitlab.com/ee/topics/autodevops/requirements.html)
42 - [ ] [Use pull-based deployments for improved Kubernetes management](https://docs.gitlab.com/ee/user/clusters/agent/)
43 - [ ] [Set up protected environments](https://docs.gitlab.com/ee/ci/environments/protected_environments.html)
44
45 ...
46
47 # Editing this README
48
49 When you're ready to make this README your own, just edit this file and use the handy template below (or feel free to structure it however you want - this is just a starting point!). Thanks to [makeareadme.com](https://www.makeareadme.com/) for this template.
50
51 ## Suggestions for a good README
52
53 Every project is different, so consider which of these sections apply to yours. The sections used in the template are suggestions for most open source projects. Also keep in mind that while a README can be too long and detailed, too long is better than too short. If you
54
55 PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
```

TASK 2

I've created a .gitlab-ci.yml file with a basic build stage

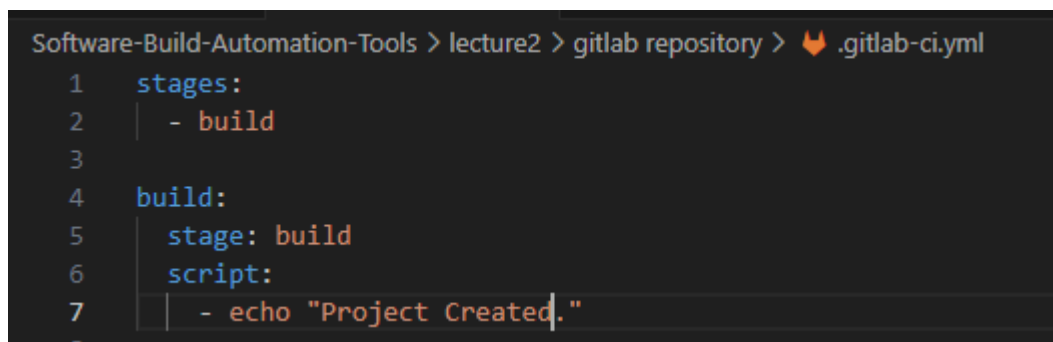


```
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> ni .gitlab-ci.yml

Directory: C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository

Mode                LastWriteTime         Length Name
----                -
-a---             16.03.2025  22:12              0 .gitlab-ci.yml

PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository>
```




```
1 stages:
2   - build
3
4 build:
5   stage: build
6   script:
7     - echo "Project Created."
```




Task 2.1: I've pushed the pipeline to GitLab


```
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git add .
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git commit -m "basic GitLab CI pipeline added"
[main eeedd23] basic GitLab CI pipeline added
1 file changed, 7 insertions(+)
create mode 100644 .gitlab-ci.yml
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git remote
origin
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git push -u origin main
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 371 bytes | 371.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/kaanzapkinus/sbatools-gitlab-repo.git
12c301f..eeedd23 main -> main
branch 'main' set up to track 'origin/main'.
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> |
```

Task 2.2: Then i got an e-mail says its failed.




❌ Pipeline #1719152659 has failed!

Project	kaanzapkinus / Sbatools Gitlab Repo
Branch	 main
Commit	 eeedd234 basic GitLab CI pipeline added
Commit Author	 kaanzapkinus

Pipeline #1719152659 triggered by  kaanzapkinus
had 0 failed jobs

Failed jobs

 **GitLab**

You're receiving this email because of your account on [gitlab.com](#). [Manage all notifications](#) · [Help](#)

Task 2.3: It seems like it happened because i didnt verify my account.

ⓘ Before you can run pipelines, we need to verify your account.
We won't ask you for this information again. It will never be used for marketing purposes.
[Verify my account](#)

All 1 Finished Branches Tags

[View analytics](#) [Clear runner caches](#) [New pipeline](#)

[Show Pipeline ID](#)

Status	Pipeline	Created by	Stages	Actions
<div>Failed</div> <div>3 minutes ago</div>	<div>basic GitLab CI pipeline added</div> <div>#1719152659</div> <div>main eeedd234</div> <div>latest error branch</div>			Download

Task 2.4: I've verified my account and tried to push again. Now it worked and Pipeline passed.

```
branch 'main' set up to track 'origin/main'.
Everything up-to-date
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git add .
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git commit -m "basic GitLab CI pipeline added for second time"
[main 098d420] basic GitLab CI pipeline added for second time
1 file changed, 1 insertion(+), 1 deletion(-)
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository> git push -u origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 12 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 387 bytes | 387.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://gitlab.com/kaanzapkinus/sbatools-gitlab-repo.git
   eeedd23..098d420  main -> main
branch 'main' set up to track 'origin/main'.
PS C:\Users\zapkinus\Desktop\githubtools\Software-Build-Automation-Tools\lecture2\gitlab repository>
```

All 2 Finished Branches Tags

[View analytics](#) [Clear runner caches](#) [New pipeline](#)

[Show Pipeline ID](#)

Status	Pipeline	Created by	Stages	Actions
<div>Passed</div> <div>00:00:28</div> <div>1 minute ago</div>	<div>basic GitLab CI pipeline added for second time</div> <div>#1719155877</div> <div>main 098d4201</div> <div>latest branch</div>			Download
<div>Failed</div> <div>10 minutes ago</div>	<div>basic GitLab CI pipeline added</div> <div>#1719152659</div> <div>main eeedd234</div> <div>error branch</div>			Download

build

Started 30 seconds ago by kaanzapkinus

1 Running with gitlab-runner 17.7.0-pre.103.g04916a8 (094916a8)

2 on green-8-saaz-linux-small-amd64.runners-manager.gitlab.com/default x56vzpro, system ID: s_6b1e4f6b6cfd

3 Preparing the "docker-machine" executor

4 Using Docker executor with image ruby:3.1 ...

5 Pulling docker image ruby:3.1 ...

6 Using docker image sha256:90642ed571b0ba21dd080ff6808dada10c34245d68d73debe59ef0757fc700 for ruby:3.1 with digest ruby@sha256:994c20133d073139e708172b96fa4a73b689f09f4a89f7676ce979584deb08 ...

7 Creating environment

8 Running on runner-x56vzpro-project-680a8063-concurrent-0 via runner-x56vzpro-s-l-s-amd64-1742168321-948d0090...

9 Getting source from Git repository

10 Fetching changes with git depth set to 20...

11 Initialized empty Git repository in /builds/kaanzapkinus/sbatools-gitlab-repo/.git/

12 Created from repository.

13 Checking out 098d4201 as detached HEAD (ref is main)...

14 Skipping Git submodules setup

15 \$ git remote set-url origin "\$CI_REPOSITORY_URL"

16 exporting "stage_script" from the job script

17 Using docker image sha256:90642ed571b0ba21dd080ff6808dada10c34245d68d73debe59ef0757fc700 for ruby:3.1 with digest ruby@sha256:994c20133d073139e708172b96fa4a73b689f09f4a89f7676ce979584deb08 ...

18 \$ echo "Test 2 Project Created."

19 Test 2 Project Created.

20 Cleaning up project directory and file based variables

21 Job succeeded

TASK3

Task 3.1:

Added automated tests using PyTest, updated `.gitlab-ci.yml` with a new test stage, and pushed changes to the GitLab repo.

```
Software-Build-Automation-Tools > lecture2 > gitlab repository > calculator.py > ...
1  def add(x, y):
2      return x + y
3
4  def subtract(x, y):
5      return x - y
6
```

```
Software-Build-Automation-Tools > lecture2 > gitlab repository > test_calculator.py > ...
1  from calculator import add, subtract
2
3  def test_add():
4      assert add(2, 3) == 5
5      assert add(-1, 1) == 0
6
7  def test_subtract():
8      assert subtract(10, 5) == 5
9      assert subtract(-1, -1) == 0
10
```

```
Software-Build-Automation-Tools > lecture2 > gitlab repository > .gitlab-ci.yml
1  stages:
2      - build
3      - test
4
5  build:
6      stage: build
7      script:
8          - echo "Building project"
9          - pip install pytest
10
11  test:
12      stage: test
13      script:
14          - echo "Running tests"
15          - pytest
16
```

Task 3.2: Then, it failed.

Issue: CI pipeline failed due to incorrect Docker environment configuration. The pipeline attempted to execute Python commands (pip, pytest) within a Ruby-based Docker image, causing command failures.

Task 3: Added pytest tests and updated the CI pipeline for testing

parent 098d4201

Branches main

No related tags found

No related merge requests found

Pipeline #1719158842 failed 2 minutes ago

Changes 3 Pipelines 1

Showing 3 changed files with 23 additions and 1 deletion

Hide whitespace changes Inline Side-by-side

gitlab-ci.yml +9 -1 View file @ cb322506

```
1 1  stages:
2 2    - build
3 3    + - test
4 4
5 5    build:
6 6      stage: build
7 7      script:
8 8        - echo "Test 2 Project Created."
9 9        + - echo "Building project"
10 10       + - pip install pytest
11 11    + test:
12 12      stage: test
13 13      script:
14 14        - echo "Running tests"
15 15        + - pytest
```

calculator.py 0 → 100644 +5 -0 View file @ cb322506

```
1 + def add(x, y):
2 +   return x + y
3 +
4 + def subtract(x, y):
5 +   return x - y
```

test_calculator.py 0 → 100644 +9 -0 View file @ cb322506

























```
1 + from calculator import add, subtract
2 +
3 + def test_add():
4 +   assert add(2, 3) == 5
5 +   assert add(-1, 1) == 0
6 +
7 + def test_subtract():
8 +   assert subtract(10, 5) == 5
```

Task 3.3:

Solution: Changed the Docker image to a Python environment (python:latest) in the .gitlab-ci.yml file, then pushed.


```
1  image: python:3.11
2
3  stages:
4    - build
5    - test
6
7  build:
8    stage: build
9    script:
10     - echo "Building project"
11     - pip install pytest
12
13  test:
14    stage: test
15    script:
16     - echo "Running tests"
17     - pip install pytest
18     - pytest
19
```


Now, it works 😊

All 4 Finished Branches Tags		
Filter pipelines		
Status	Pipeline	Created by
 Passed ⌚ 00:01:04 📅 37 seconds ago	Updated CI environment to Python #1719162049  main  c1997432   latest 	
 Failed ⌚ 00:00:28	Task 3: Added pytest tests and updated the CI ... #1719158842  main  cb322506  	
	basic GitLab CI pipeline added for second time #1719155877  main  098d4201  	
	basic GitLab CI pipeline added #1719152659  main  eeedd234   error 	


✓ Pipeline has been fixed and #1719162049 has passed!

Project kaanzapkinus / Sbatools Gitlab Repo

Branch  main

Commit  c1997432
Updated CI environment to Python

Commit Author  kaanzapkinus

Pipeline #1719162049 triggered by  kaanzapkinus
successfully completed 2 jobs in 2 stages.

KAAN YAZICIOĞLU SD4