

Ex. No. 2	Git & GitLab
07/08/2024	

AIM

Algorithm for Implementing GitLab Operations using Git

Algorithm

1. Creating a Repository:

- Log into your GitLab account.
- Click on the **New project** button.
- Select **Create blank project**.
- Fill in the project details and set the visibility level.
- Click on the **Create project** button.

2. Cloning a Repository:

- Copy the repository URL from GitLab.
- Open the terminal.
- Clone the repository using the URL.

3. Making Changes and Creating a Branch:

- Navigate into the cloned repository.
- Create a new text file named **test.txt**.
- Add content to the **test.txt** file.
- Check the repository status.
- Stage the changes for commit.
- Commit the changes with a message.
- Create a new branch named **feature**.
- Switch to the **feature** branch.

4. Pushing Changes to GitLab:

- Add the repository URL to a variable.
- Push the **feature** branch to GitLab.
- Confirm the new branch is available in the GitLab repository.

5. Collaborating through Merge Requests:

- Go to the **Merge Requests** tab in the GitLab repository.
- Click on the **New merge request** button.
- Select the **source branch** as **feature** and the **target branch** as **main**.
- Click on the **Compare branches and continue** button.
- Fill in the merge request details and create the merge request.
- Review and merge the request.

6. Syncing Changes:

- After merging, update the local repository with the latest changes from the remote repository.

Input

```
# Task 1: Creating a Repository
# 1. Log into your GitLab account.
# 2. Click on the `New project` button.
# 3. Select `Create blank project`.
# 4. Fill in the project details:
#   - Project name: `DevOpsLab`
#   - Project slug: `devopslab` (auto-filled)
#   - Visibility level: Choose between Private, Internal, or Public.
# 5. Click on the `Create project` button.

# Task 2: Cloning a Repository
# 1. Copy the repository URL.
# 2. Open terminal.
git clone https://gitlab.com/NakshathraP/devops-ex2.git

# Task 3: Making Changes and Creating a Branch
cd devops-ex2
touch test.txt
echo "This is a test file." > test.txt
git status
git add test.txt
git commit -m "Added test.txt"
git branch feature
git checkout feature

# Task 4: Pushing Changes to GitLab
git push -u origin feature

# Task 5: Collaborating through Merge Requests
# 1. Go to the GitLab repository.
# 2. Click on the `Merge Requests` tab.
# 3. Click on the `New merge request` button.
# 4. Select `source branch` as `feature` and `target branch` as `main`.
# 5. Click on the `Compare branches and continue` button.
# 6. Fill in the merge request details and click `Create merge request`.
# 7. Review and click `Merge` to merge the request.

# Task 6: Syncing Changes
git checkout main
git pull origin main
```

Output

1. Creating a Repository:

- A new GitLab repository named **DevOpsLab** is created with the specified details.

Virtual Classroom Exercise Videos & G... All Bookmarks

Your work / Projects / New project / Create blank project

Project name: DevOps-Ex2

Must start with a lowercase or uppercase letter, digit, emoji, or underscore. Can also contain dots, pluses, dashes, or spaces.

Project URL: https://gitlab.com/ NakshathraP / Project slug: devops-ex2

Project deployment target (optional): Select the deployment target

Visibility Level

- ☐ Private: Project access must be granted explicitly to each user. If this project is part of a group, access is granted to members of the group.
- ☐ Internal: The project can be accessed by any logged in user except external users.
- ☒ Public: The project can be accessed without any authentication.

Project Configuration

- ☒ Initialize repository with a README: Allows you to immediately clone this project's repository. Skip this if you plan to push up an existing repository.

2. Cloning a Repository:

- The repository is successfully cloned to the local machine.

Nakshathra P / DevOps-Ex2

DevOps-Ex2

main devops-ex2

Initial commit: Nakshathra P authored just now

Name	Last commit
README.md	Initial commit

DevOps-Ex2

Getting started

To make it easy for you to get started with GitLab, here's a list of resources:

Already a pro? Just edit this README.md and make it your own. We will show you what to edit in the next steps.

Clone with SSH: git@gitlab.com:NakshathraP/devops-ex2.git

Clone with HTTPS: https://gitlab.com/NakshathraP/devops-ex2.git

Open in your IDE

- Visual Studio Code (SSH)
- Visual Studio Code (HTTPS)
- IntelliJ IDEA (SSH)
- IntelliJ IDEA (HTTPS)

Download source code

- zip
- tar.gz
- tar.bz2

Project information

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

README

- + Add LICENSE
- + Add CHANGELOG
- + Add CONTRIBUTING
- + Add Kubernetes cluster
- + Set up CI/CD
- + Add Wiki
- + Configure Integrations

Created on: November 20, 2024

```
C:\Users\naksh\Downloads>cd DevOpsCode

C:\Users\naksh\Downloads\DevOpsCode>git clone https://gitlab.com/NakshathraP/devops-ex2.git
Cloning into 'devops-ex2'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (3/3), done.

C:\Users\naksh\Downloads\DevOpsCode>cd devops-ex2

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>
```

3. Making Changes and Creating a Branch:

- Navigated into the cloned repository.

- `test.txt` file created and modified.
- Changes staged and committed.
- New branch `feature` created and switched to.

4. Pushing Changes to GitLab:

- `feature` branch pushed to GitLab.
- Verified the new branch `feature` is available in the GitLab repository.

```
C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git branch
* main

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>echo "This is a test file." > test.txt

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git add .

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git commit -m "Added test file"
[main fa26259] Added test file
1 file changed, 1 insertion(+)
create mode 100644 test.txt

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git branch feature

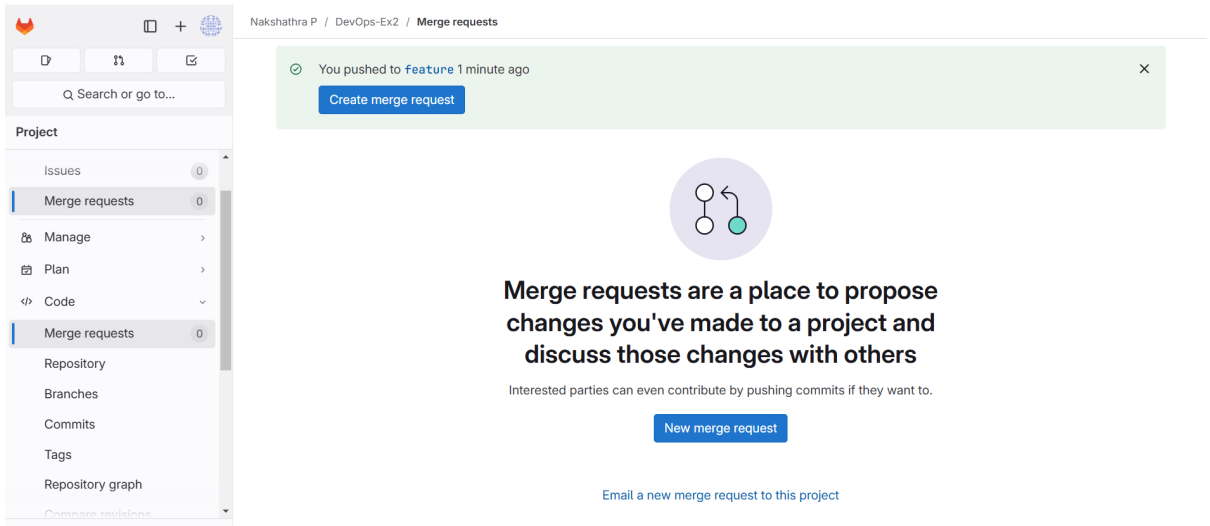
C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git checkout feature
Switched to branch 'feature'

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git push -u origin feature
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 8 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 305 bytes | 305.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: To create a merge request for feature, visit:
remote:   https://gitlab.com/NakshathraP/devops-ex2/-/merge_requests/new?merge_request%5Bsource_branch%5D=feature
remote:
To https://gitlab.com/NakshathraP/devops-ex2.git
 * [new branch]      feature -> feature
branch 'feature' set up to track 'origin/feature'.

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>
```

5. Collaborating through Merge Requests:

- Merge request created, reviewed, and merged on GitLab.



Nakshathra P / DevOps-Ex2 / Merge requests

✓ You pushed to `feature` 1 minute ago

Create merge request

Merge requests are a place to propose changes you've made to a project and discuss those changes with others

Interested parties can even contribute by pushing commits if they want to.

New merge request

Email a new merge request to this project

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6. Syncing Changes:

- Local repository updated with the latest changes from the remote repository.

```
C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)

C:\Users\naksh\Downloads\DevOpsCode\devops-ex2>git pull origin main
remote: Enumerating objects: 1, done.
remote: Counting objects: 100% (1/1), done.
remote: Total 1 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (1/1), 255 bytes | 51.00 KiB/s, done.
From https://gitlab.com/NakshathraP/devops-ex2
* branch          main      -> FETCH_HEAD
   33857da..5e0cbf1  main      -> origin/main
Updating fa26259..5e0cbf1
Fast-forward
```