Experiment 2: Automating Version Control and Code Collaboration of TE Mini Project with Git

Aim: To Perform Code Collaboration of TE Mini Project using GIT workflow

Problem:

TechCo's development team is collaborating on a new feature for their application. However, multiple developers are working on the same parts of the codebase, causing merge conflicts, inconsistent commits, and errors in version control. The team struggles to manage branches effectively and maintain a clean history. The current workflow relies heavily on manual processes, making it difficult to track and resolve issues efficiently.

Implementation:

- Set up a Git repository for a project (either create a new project or use an existing one).
- Collaborate with a team member by creating multiple branches for different features.
- Implement the following:
    - Create a feature branch and make changes to the code.
    - Push changes to the remote repository.
    - Use a Git cheat sheet to commit, merge branches, and resolve conflicts.
    - Create a pull request (PR) and ensure code review processes are followed.

Step 1: Initialize a Git Repository and Push It to GitHub

1.1 Initialize a Git Repository Locally

- Navigate to your project directory on your local machine (or create a new project folder).
- Open your terminal and run the following command to initialize a Git repository:

```
git init
```

1.2 Add Files to the Repository

- Add a new file or make changes to existing files. For example, create a `README.md` file in the project folder:

```
echo "# My Project" > README.md
```

1.3 Stage and Commit Files

- Stage the files for commit using:

```
git add .
```

- Commit the staged files with a message:

git commit -m "Initial commit"

1.4 Create a GitHub Repository

- Go to GitHub and create a new repository. You can name it something like "my-project".
- Copy the URL of the GitHub repository, e.g., `https://github.com/your-username/my-project.git`.

1.5 Push to GitHub

- Set the remote repository URL:

```
git remote add origin https://github.com/your-username/my-project.git
```

- Push the local repository to GitHub:

```
git push -u origin master
```

Step 2: Create and Merge Multiple Feature Branches

2.1 Create a New Feature Branch

- Create a new branch for a feature. For example, create a `feature-login` branch:

```
git checkout -b feature-login
```

2.2 Make Changes in the Feature Branch

- Add a new file or modify an existing file in the `feature-login` branch. For example, modify `README.md`:

```
echo "Login feature" >> README.md
```

2.3 Stage and Commit Changes

- Stage the changes and commit them:

```
git add README.md
git commit -m "Add login feature to README"
```

2.4 Push the Feature Branch to GitHub

- Push the feature branch to GitHub:

```
git push origin feature-login
```

2.5 Create Another Feature Branch

- Create another branch for a different feature, for example, `feature-registration`:

```
git checkout -b feature-registration
```

2.6 Make Changes in the `feature-registration` Branch

- Modify the same file (`README.md`), but with content related to registration:

```
echo "Registration feature" >> README.md
```

2.7 Stage and Commit Changes

- Stage and commit the changes:

```
git add README.md
git commit -m "Add registration feature to README"
```

2.8 Push the `feature-registration` Branch to GitHub

- Push the registration branch to GitHub:

```
git push origin feature-registration
```

Step 3: Simulate a Merge Conflict and Resolve It

3.1 Switch to `master` Branch

- Now switch back to the `master` branch:

```
git checkout master
```

3.2 Merge `feature-login` into `master`

- Merge the `feature-login` branch into the `master` branch:

```
git merge feature-login
```

- Since the changes are in different parts of the file, the merge will succeed without conflict.

3.3 Merge `feature-registration` into `master`

- Now, try to merge the `feature-registration` branch:

```
git merge feature-registration
```

- Since the `feature-registration` branch made changes to the same file (`README.md`) at the same location as `feature-login`, Git will raise a merge conflict.

3.4 Resolve the Merge Conflict

- Open the `README.md` file. You will see something like this:

```
<<<<<<< HEAD
Login feature
=======
Registration feature
>>>>>>> feature-registration
```

- Edit the file to resolve the conflict. For example, you might combine both features like this:

```
markdown

Login feature
Registration feature
```

3.5 Stage the Resolved Conflict

- Once the conflict is resolved, stage the file:

```
git add README.md
```

3.6 Commit the Merge

- Commit the merge with a message:

```
git commit -m "Resolve merge conflict between feature-login and
feature-registration"
```

Step 4: Perform a Pull Request Review and Handle the Integration Process

4.1 Create a Pull Request (PR) on GitHub

- Go to your repository on GitHub.
- You should see a button to create a Pull Request for the branches you've pushed (`feature-login` and `feature-registration`).
- Click on "New Pull Request" and select the `feature-login` branch and compare it with `master`.
- After reviewing the changes, click "Create Pull Request."
- Add a description of the changes and create the PR.

4.2 Review the Pull Request

- Review the changes in the pull request.
- You can see the changes made and leave comments on specific lines of code if necessary.
- You can ask a team member to review it as well or approve it yourself.

4.3 Merge the Pull Request

- After the PR review, click the "Merge pull request" button.
- Choose "Confirm merge" to integrate the changes from `feature-login` into `master`.

4.4 Repeat the Process for `feature-registration`

- Repeat the same process for the `feature-registration` branch.
- Create a new PR for `feature-registration`, review it, and merge it into `master`.

4.5 Clean Up the Branches

- After successfully merging the feature branches, delete them from GitHub (optional):

```
git push origin --delete feature-login
git push origin --delete feature-registration
```

Step 5: Connect GitHub Cloud to Jira

These instructions are for connecting **GitHub Cloud** or **GitHub Enterprise Cloud** to Jira. Show me how to connect GitHub Enterprise Server

When you connect a GitHub Cloud organization to Jira, your team can link their development activity to Jira issues. This lets you track branches, commits, and pull requests in the context of your Jira issues, on your Jira board, in the releases feature, and more.

Before you begin

To install and set up the GitHub for Jira app, you need:

- Site administrator permission for your Jira site.
- Organization owner permission for your GitHub organization.

For some organizations, the task of connecting GitHub to Jira might involve multiple team members:

- A Jira site admin will install the GitHub for Jira app.
- A GitHub organization owner will connect a GitHub organization to your Jira site.

5.1 Install the GitHub for Jira app

1. In Jira, select **Apps**, then select **Explore more apps**.
2. Search for **GitHub for Jira**, then select it from the results.
3. Select **Get app**, then **Get it now**.

5.2 Connect a GitHub organization

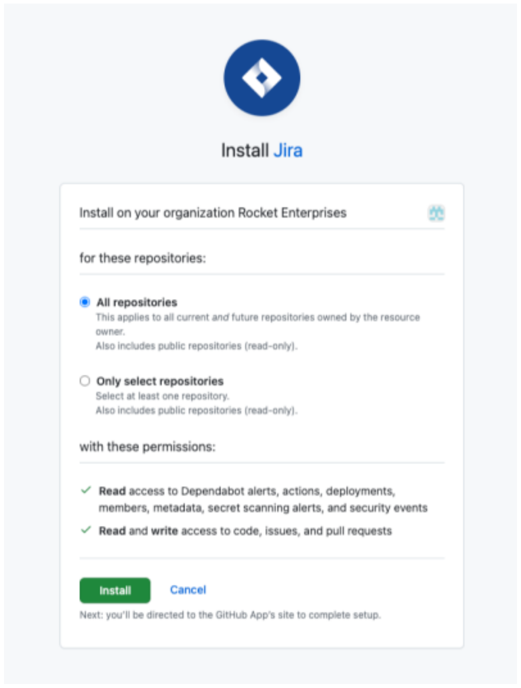
1. After the app is installed, select **Get started**. If the app is already installed on your Jira site, you can find this section by selecting **Apps**, then **Manage your apps**, and then **GitHub for Jira**.
2. Select **Continue**.
3. Select **GitHub Cloud**, then **Next**.
4. Enter your GitHub username and password, then **Sign in**.
5. Find the organization you want to connect to Jira, then select **Connect**.

To check your permissions for a GitHub organization, open your GitHub organization settings and look for your permission level next to the organization name. Organization owners can review and accept permission requests from Jira in your organization settings. More about required permissions for GitHub for Jira

5.3 Add the Jira app to a new GitHub organization

If no organizations are available to connect to Jira, you'll need to install the Jira app on a new GitHub organization.

1. From step five in the instructions above, **Select an organization in GitHub.**
2. The GitHub site will open in a new tab and show a list of all the organizations available in your GitHub account. Select the organization you want to connect to Jira.
3. Choose the repositories you want to give Jira access to by selecting either **All repositories** or **Only select repositories**.
4. Select **Install.**


Install Jira

Install on your organization Rocket Enterprises

for these repositories:

● **All repositories**
This applies to all current and future repositories owned by the resource owner.
Also includes public repositories (read-only).

○ **Only select repositories**
Select at least one repository.
Also includes public repositories (read-only).

with these permissions:

✓ **Read** access to Dependabot alerts, actions, deployments, members, metadata, secret scanning alerts, and security events
✓ **Read** and **write** access to code, issues, and pull requests

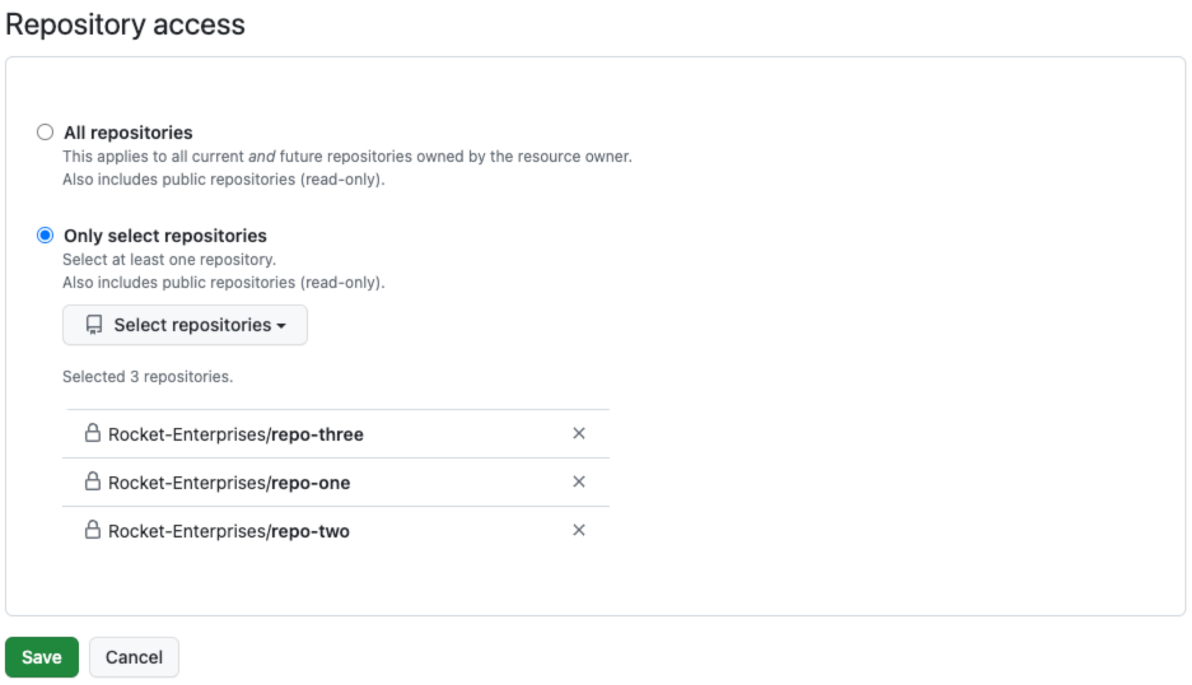
Install Cancel

Next: you'll be directed to the GitHub App's site to complete setup.

5.4 Connect a new GitHub repository

- If you selected **All repositories** when you connected a GitHub organization, Jira will be able to access all the repositories in that organization, including any new repositories you create.
- If you selected **Only select repositories**, any new repositories you create won't be added automatically. Here's how to add them:

1. In Jira, select **Apps**, then select **Manage apps**.
2. In the sidebar, under **GitHub for Jira**, select **Configure.**
3. Find the organization that contains the repo you want to add and select the three-dot menu (**...**) to view available actions.
4. Select **Configure**.
5. A new tab will open with your GitHub organization settings. Under **Repository access**, select the dropdown **Select repositories**.
6. Select the repository you want to connect to, then **Save.**


Repository access

All repositories
This applies to all current *and* future repositories owned by the resource owner.
Also includes public repositories (read-only).

Only select repositories
Select at least one repository.
Also includes public repositories (read-only).

Selected 3 repositories.

- Rocket-Enterprises/**repo-three**
- Rocket-Enterprises/**repo-one**
- Rocket-Enterprises/**repo-two**

If you use IP allowlists in your GitHub organization, you might have issues using GitHub for Jira, even if the correct IP addresses are in your IP allowlist. Here's the workaround: How to update your GitHub IP allowlist configuration

Still need help? Raise an issue with our team.

5.5 Link your development information to Jira issues

To link branches, commits, and pull requests to Jira, your team must include Jira issue keys in their development actions.

1. Find the issue key for the Jira issue you want to link to, for example "JRA-123". You can find the key in several places in Jira:
   • On the board, issue keys appear at the bottom of a card.
   • On the issue's details, issue keys appear in the navigation at the top of the page.
2. Check out a new branch in your repo, using the issue key in the branch name. For example, `git checkout -b JRA-123-<branch-name>`.

3. When committing changes to your branch, use the issue key in your commit message to link those commits to the development panel in your Jira issue.
   For example, `git commit -m "JRA-123 <summary of commit>"`.
4. When you create a pull request, use the issue key in the pull request title.

- After you push your branch, you'll see development information in your Jira issue.

How to use the GitHub for Jira app

- Link GitHub development information to Jira issues
- Link GitHub workflows and deployments to Jira

Post lab exercise:

Instructions:

1. Initialize a Git repository and push it to GitHub.
2. Create and merge multiple feature branches.
3. Simulate a merge conflict and resolve it.
4. Perform a pull request review and handle the integration process.

1. Initial Setup:

Each developer should clone the repository and create a feature branch as instructed.

```
# Clone the repository
git clone https://github.com/TechCo/your-repo.git

# Navigate into the project directory
cd your-repo

# Create a feature branch
git checkout -b feature/john-does-feature
```

Developer 1 and **Developer 2** should create separate feature branches based on the above instructions. For example:

- Developer 1 creates the branch: `feature/john-feature`
- Developer 2 creates the branch: `feature/jane-feature`
- `Paste the Output here:`

2. Collaborative Changes:

Both developers will make changes to the same file (`app.js`), but in different parts of the code.

Developer 1's changes:

```
// Modify a function in app.js
function greetUser() {
    console.log("Hello, user!");
    console.log("Welcome to TechCo's new app.");
}
```

Commit the changes:

```
git add app.js
git commit -m "Add greeting message for new users"
git push origin feature/john-feature
```

Developer 2's changes (on the same line):

```
// Modify the same function in app.js
function greetUser() {
    console.log("Hello, user!");
    console.log("We hope you enjoy using TechCo's app.");
}
```

Commit the changes:

```
git add app.js
git commit -m "Update greeting with a new message"
git push origin feature/jane-feature
```

- <u>`Paste the Output here:`</u>

3. Merge Conflict:

Once both developers have pushed their changes, it’s time to merge their feature branches into `main`. This will result in a merge conflict since both developers modified the same lines of code in `app.js`.

Steps for Merging and Resolving the Conflict:

- Switch to the `main` branch:
  ```
  git checkout main
  git pull origin main  # Fetch the latest changes from the main
  branch
  ```

- Try merging one of the feature branches into `main` (e.g., Developer 1’s branch):
  ```
  git merge feature/john-feature
  ```

- At this point, Git will notify that a conflict exists in `app.js`. The conflicted file will be marked as having conflicts. To resolve it:

1. Open `app.js` in a code editor. You will see something like this:
   ```
   function greetUser() {
       console.log("Hello, user!");
   <<<<<<< HEAD
       console.log("Welcome to TechCo's new app.");
   =======
       console.log("We hope you enjoy using TechCo's app.");
   >>>>>>> feature/jane-feature
   }
   ```

2. The conflict markers (<<<<<<<, =======, >>>>>>>) indicate where the conflict occurs. You need to decide which version to keep or how to merge the changes. Here's how you can resolve it:

```
function greetUser() {
    console.log("Hello, user!");
    console.log("Welcome to TechCo's new app.");
    console.log("We hope you enjoy using TechCo's app.");
}
```

3. After resolving the conflict, remove the conflict markers and save the file.

- Add the resolved file and commit the changes:

-
  ```
  git add app.js
  git commit -m "Resolve merge conflict in app.js"
  git push origin main
  ```
  Paste the Output here:

4. Rebasing Practice:

Now, Developer 1 and Developer 2 will fetch the latest changes from the `main` branch and rebase their feature branches onto `main` to ensure that their code is up-to-date.

Developer 1 Rebasing:

```
# Fetch the latest changes from the main branch
git fetch origin

# Rebase the feature branch onto main
git rebase origin/main

# Resolve any conflicts if necessary, following the same conflict
resolution process above
# After resolving conflicts, continue the rebase
git rebase --continue
```

```
# Push the rebased branch
git push origin feature/john-feature --force
```

Developer 2 Rebasing:

Developer 2 will repeat the same steps to rebase their branch.

```
git fetch origin
git rebase origin/main
git rebase --continue
git push origin feature/jane-feature --force
```

5. Reviewing Commit History:

Once the merge and rebasing are complete, both developers should inspect the commit history to ensure that their commits are clear and meaningful.

```
git log --oneline --graph
```

Ensure that each commit message follows a clear and consistent format, e.g., "Fix bug in the greeting function" or "Add new user welcome message."

6. Final Task: Creating Pull Requests (PRs):

- Developer 1 and Developer 2 should now open pull requests on GitHub to merge their feature branches into the `main` branch.

Developer 1's PR:

- Title: `Merge feature/john-feature into main`
- Description: "Added a new greeting message for first-time users."

Developer 2's PR:

- Title: `Merge feature/jane-feature into main`
- Description: "Updated the greeting message to include additional text for users."

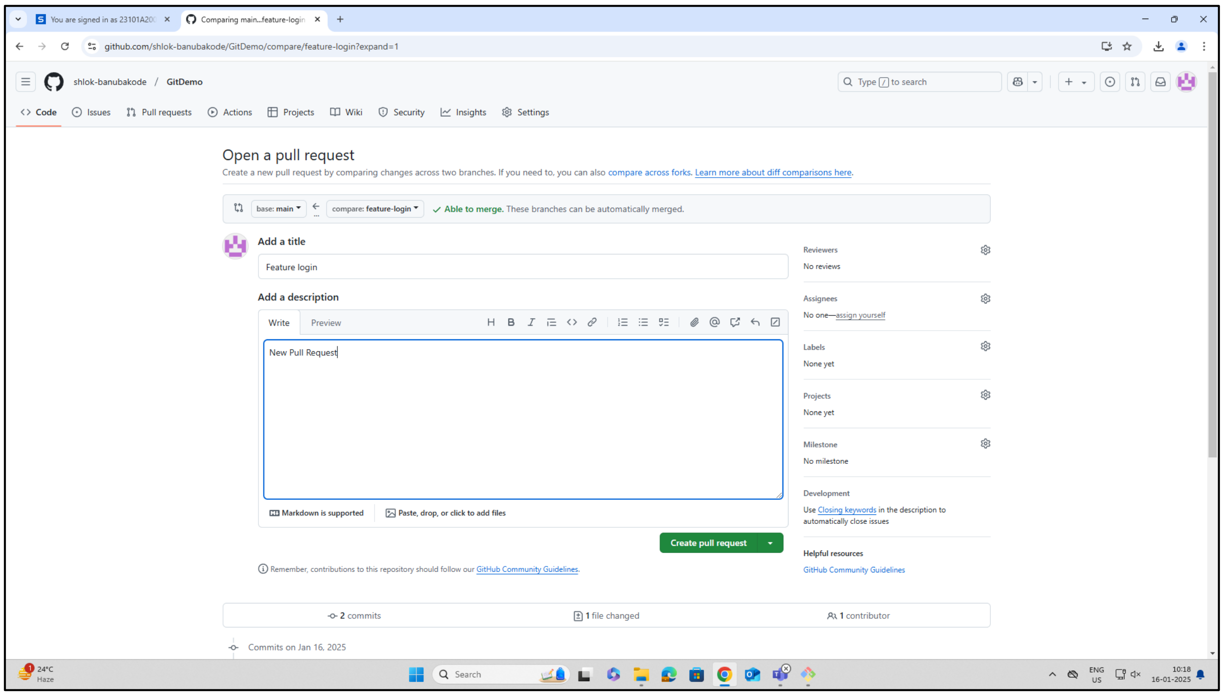
Once both pull requests are reviewed by the team, they can be merged into the `main` branch.

Conclusion: By following these steps, the developers will:

- Learn how to resolve merge conflicts effectively.
- Practice using rebase to keep their branches up to date with `main`.
- Understand how to maintain clean commit histories and write meaningful commit messages.
- Gain hands-on experience with Git workflows that are crucial for collaborative development.

Shlok Banubakode – 23101A2001 – INFT-A

Screenshots:



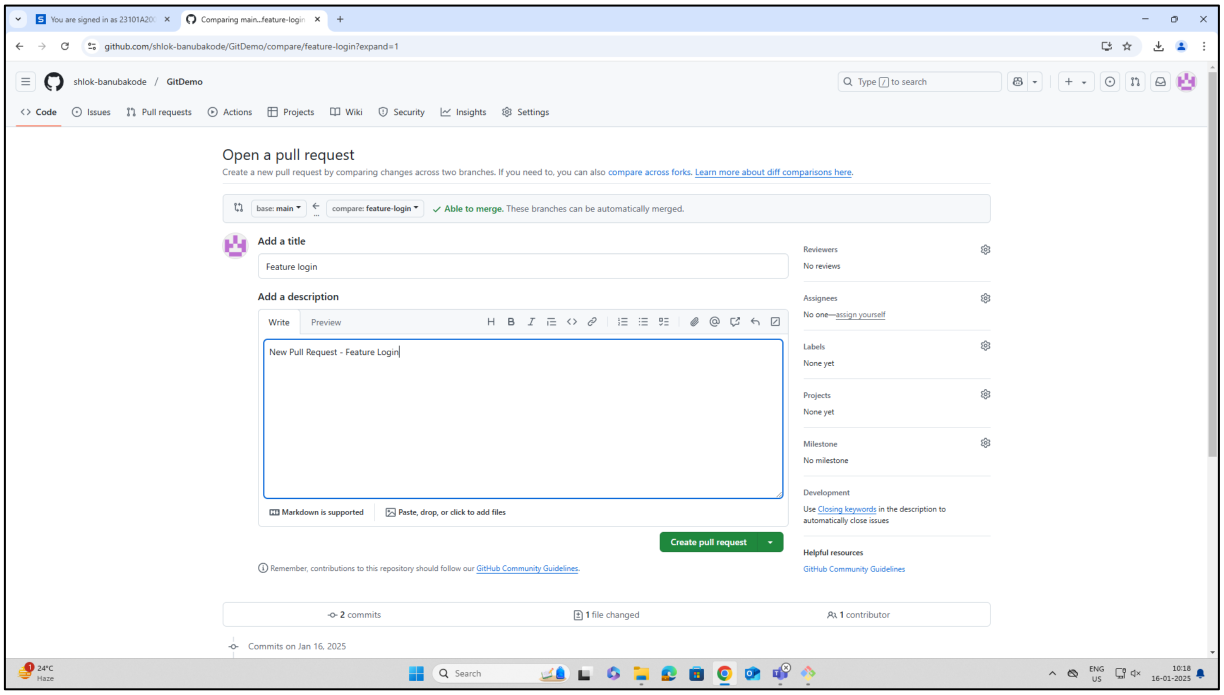
Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also compare across forks. Learn more about diff comparisons here.

base: main ← compare: feature-login ✓ Able to merge. These branches can be automatically merged.

Add a title: Feature login

Add a description: New Pull Request



Open a pull request

base: main ← compare: feature-login ✓ Able to merge. These branches can be automatically merged.

Add a title: Feature login

Add a description: New Pull Request - Feature Login

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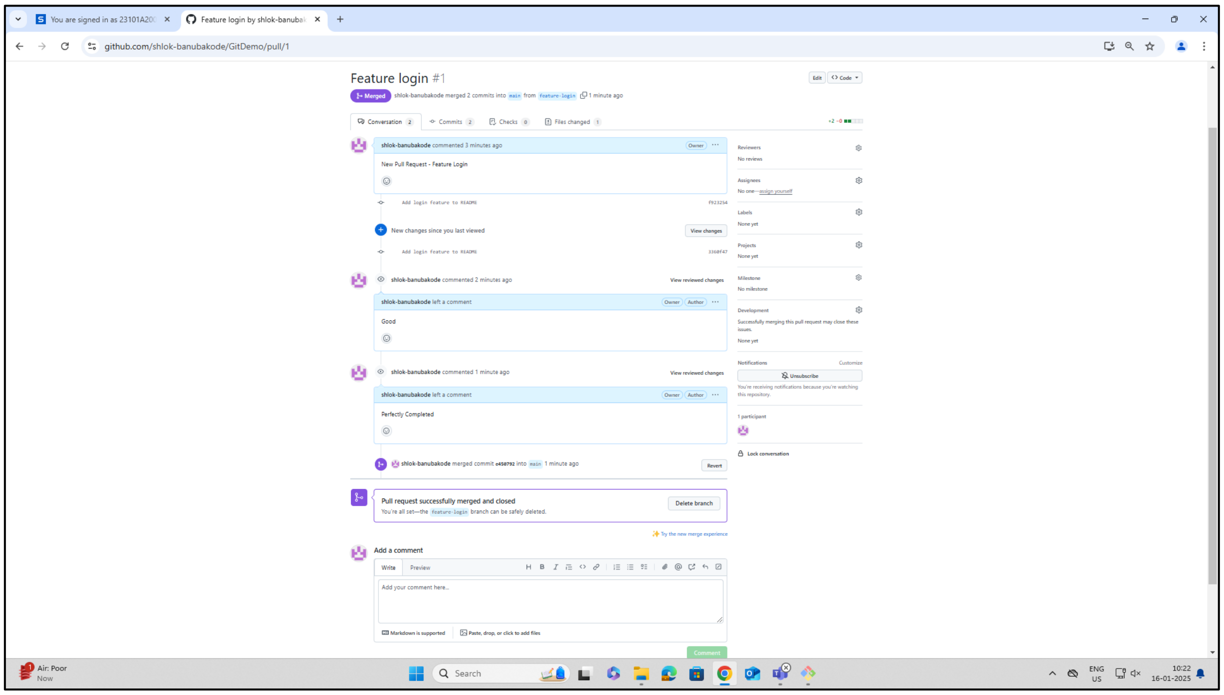

You are signed in as 23101A20 | Feature login by shlok-banuba
github.com/shlok-banubakode/GitDemo/pull/1

Feature login #1

Merged shlok-banubakode merged 2 commits into `main` from `feature-login` 1 minute ago

Conversation 2 | Commits 2 | Checks 0 | Files changed 1 | +2 −0

shlok-banubakode commented 3 minutes ago (Owner)

New Pull Request - Feature Login

```
Add login feature to README                f923254
```

New changes since you last viewed — View changes

```
Add login feature to README                3360f47
```

shlok-banubakode commented 2 minutes ago — View reviewed changes

shlok-banubakode left a comment (Owner, Author)

Good

shlok-banubakode commented 1 minute ago — View reviewed changes

shlok-banubakode left a comment (Owner, Author)

Perfectly Completed

shlok-banubakode merged commit e450792 into `main` 1 minute ago — Revert

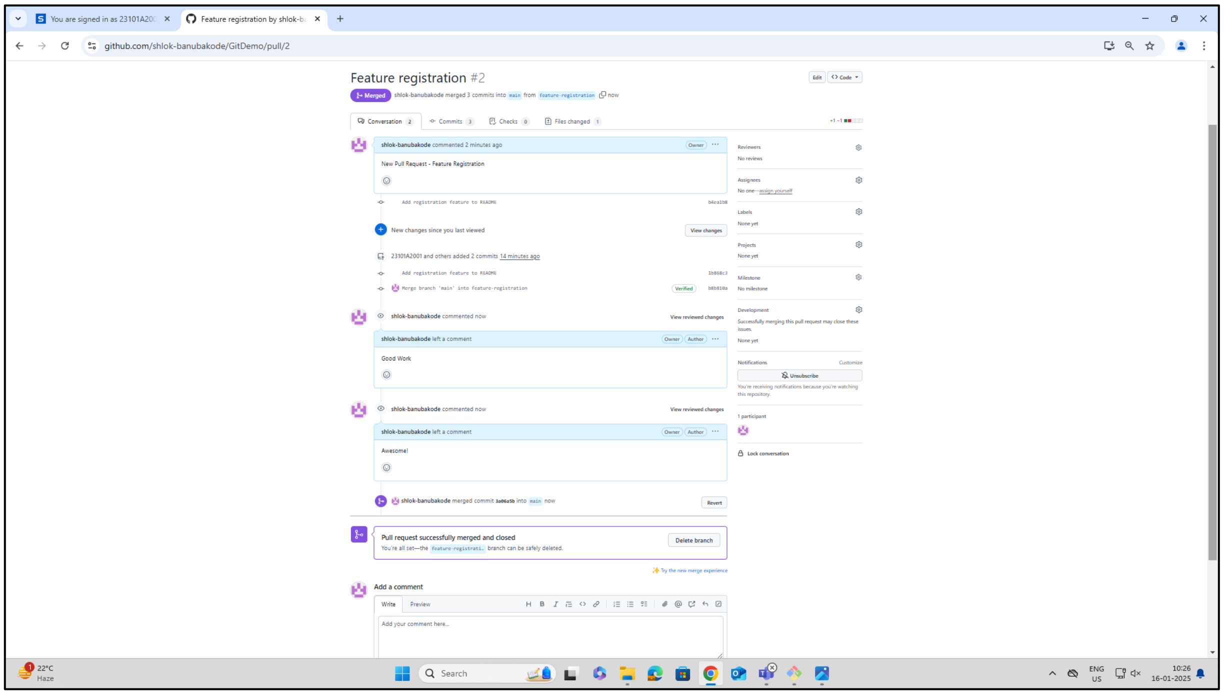
Pull request successfully merged and closed — Delete branch
You're all set—the `feature-login` branch can be safely deleted.

Try the new merge experience

Add a comment
Write | Preview
Add your comment here...
Markdown is supported | Paste, drop, or click to add files
Comment

Reviewers: No reviews
Assignees: No one—assign yourself
Labels: None yet
Projects: None yet
Milestone: No milestone
Development: Successfully merging this pull request may close these issues. None yet
Notifications (Customize): Unsubscribe — You're receiving notifications because you're watching this repository.
1 participant
Lock conversation

Air: Poor Now | Search | ENG US | 10:22 16-01-2025


You are signed in as 23101A20 | Feature registration by shlok-b
github.com/shlok-banubakode/GitDemo/pull/2

Feature registration #2

Merged shlok-banubakode merged 3 commits into `main` from `feature-registration` now

Conversation 2 | Commits 3 | Checks 0 | Files changed 1 | +1 −1

shlok-banubakode commented 2 minutes ago (Owner)

New Pull Request - Feature Registration

```
Add registration feature to README         b4ea1b8
```

New changes since you last viewed — View changes

23101A2001 and others added 2 commits 14 minutes ago

```
Add registration feature to README         1b868c3
Merge branch 'main' into feature-registration   Verified   b8b810a
```

shlok-banubakode commented now — View reviewed changes

shlok-banubakode left a comment (Owner, Author)

Good Work

shlok-banubakode commented now — View reviewed changes

shlok-banubakode left a comment (Owner, Author)

Awesome!

shlok-banubakode merged commit 3a06a5b into `main` now — Revert

Pull request successfully merged and closed — Delete branch
You're all set—the `feature-registrati…` branch can be safely deleted.

Try the new merge experience

Add a comment
Write | Preview
Add your comment here...

Reviewers: No reviews
Assignees: No one—assign yourself
Labels: None yet
Projects: None yet
Milestone: No milestone
Development: Successfully merging this pull request may close these issues. None yet
Notifications (Customize): Unsubscribe — You're receiving notifications because you're watching this repository.
1 participant
Lock conversation

22°C Haze | Search | ENG US | 10:26 16-01-2025

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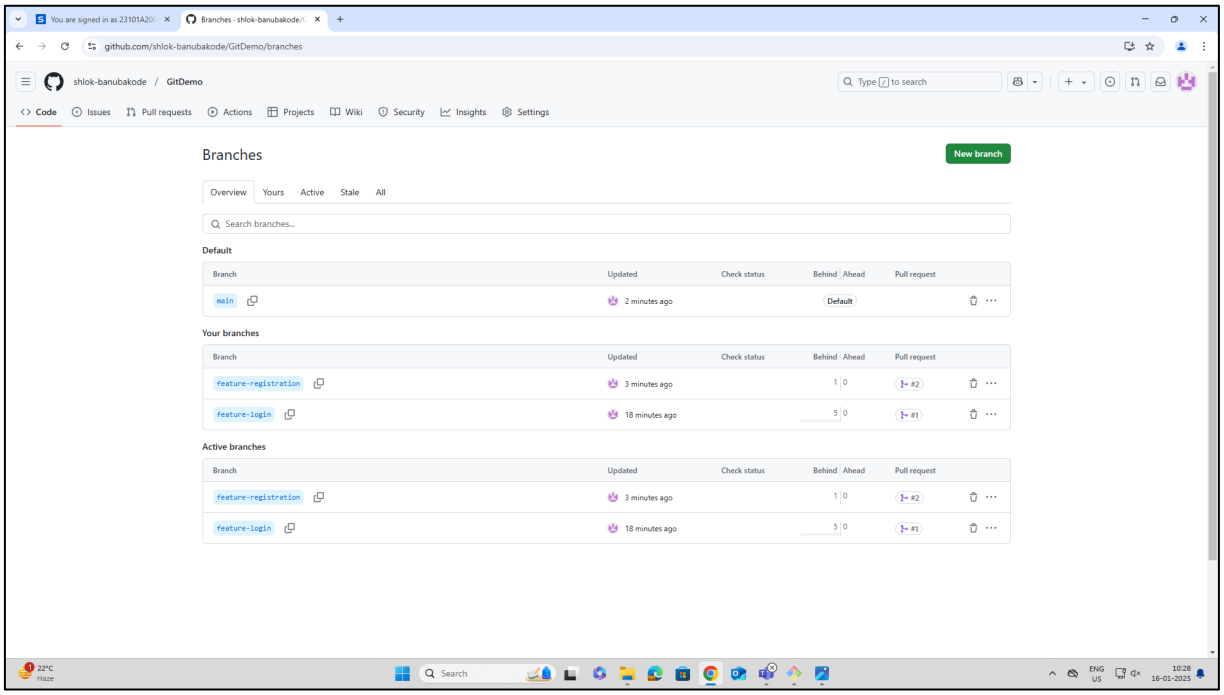


Branches

Default

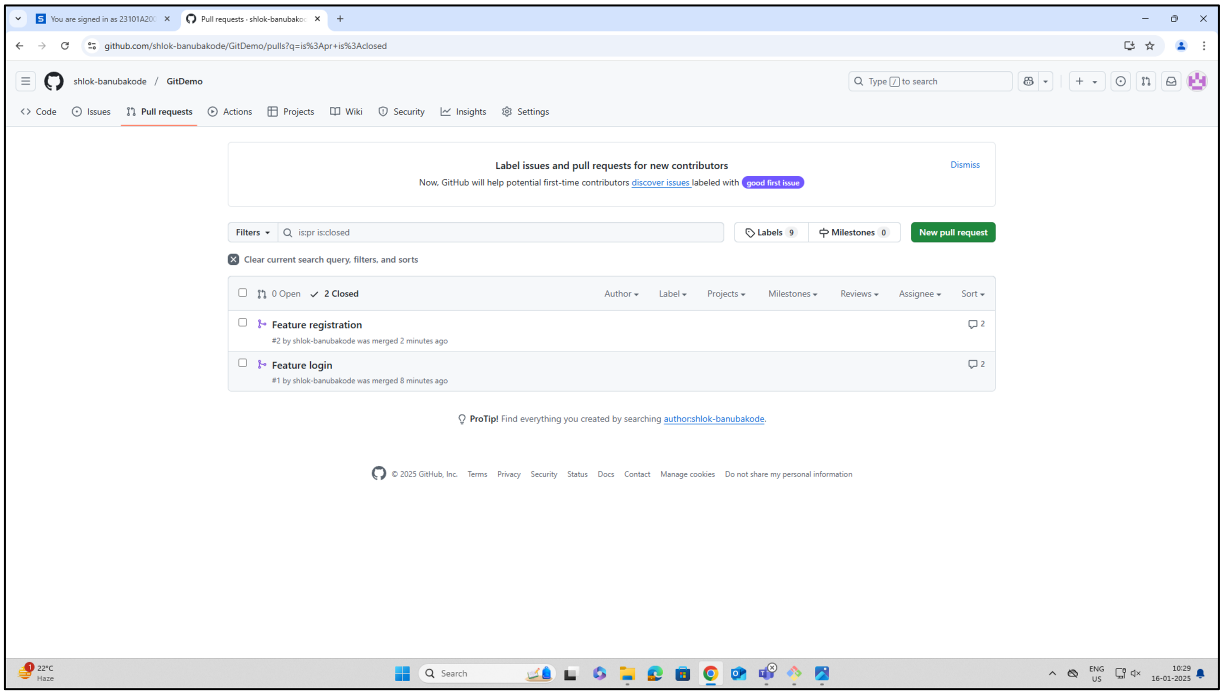
Branch	Updated	Check status	Behind	Ahead	Pull request
`main`	2 minutes ago		Default		

Your branches

Branch	Updated	Check status	Behind	Ahead	Pull request
`feature-registration`	3 minutes ago		1	0	#2
`feature-login`	18 minutes ago		5	0	#1

Active branches

Branch	Updated	Check status	Behind	Ahead	Pull request
`feature-registration`	3 minutes ago		1	0	#2
`feature-login`	18 minutes ago		5	0	#1



Label issues and pull requests for new contributors

Now, GitHub will help potential first-time contributors discover issues labeled with good first issue

is:pr is:closed

Clear current search query, filters, and sorts

0 Open ✓ 2 Closed

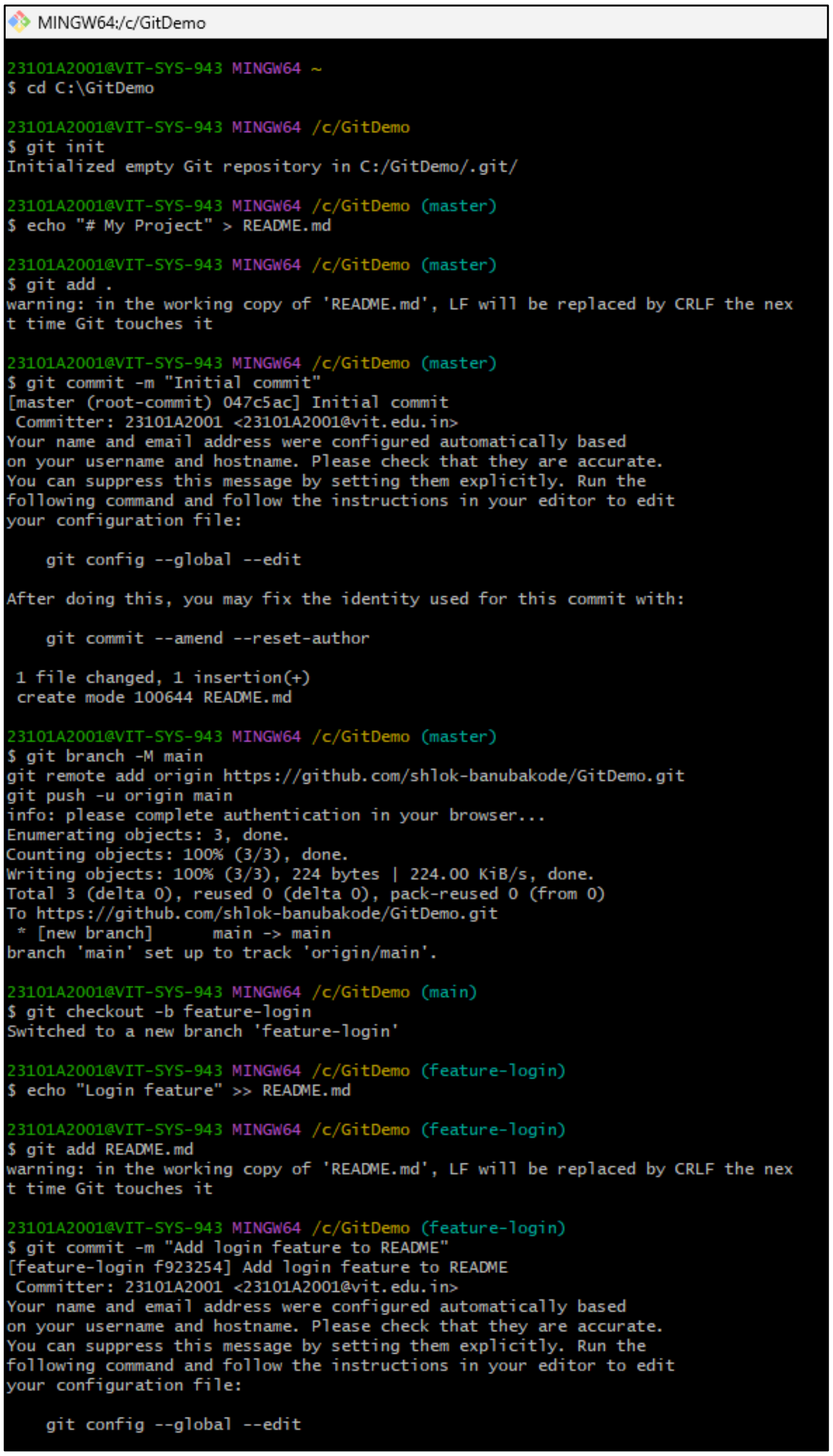
Feature registration 2
#2 by shlok-banubakode was merged 2 minutes ago

Feature login 2
#1 by shlok-banubakode was merged 8 minutes ago

ProTip! Find everything you created by searching author:shlok-banubakode.

© 2025 GitHub, Inc. Terms Privacy Security Status Docs Contact Manage cookies Do not share my personal information

Shlok Banubakode – 23101A2001 – INFT-A

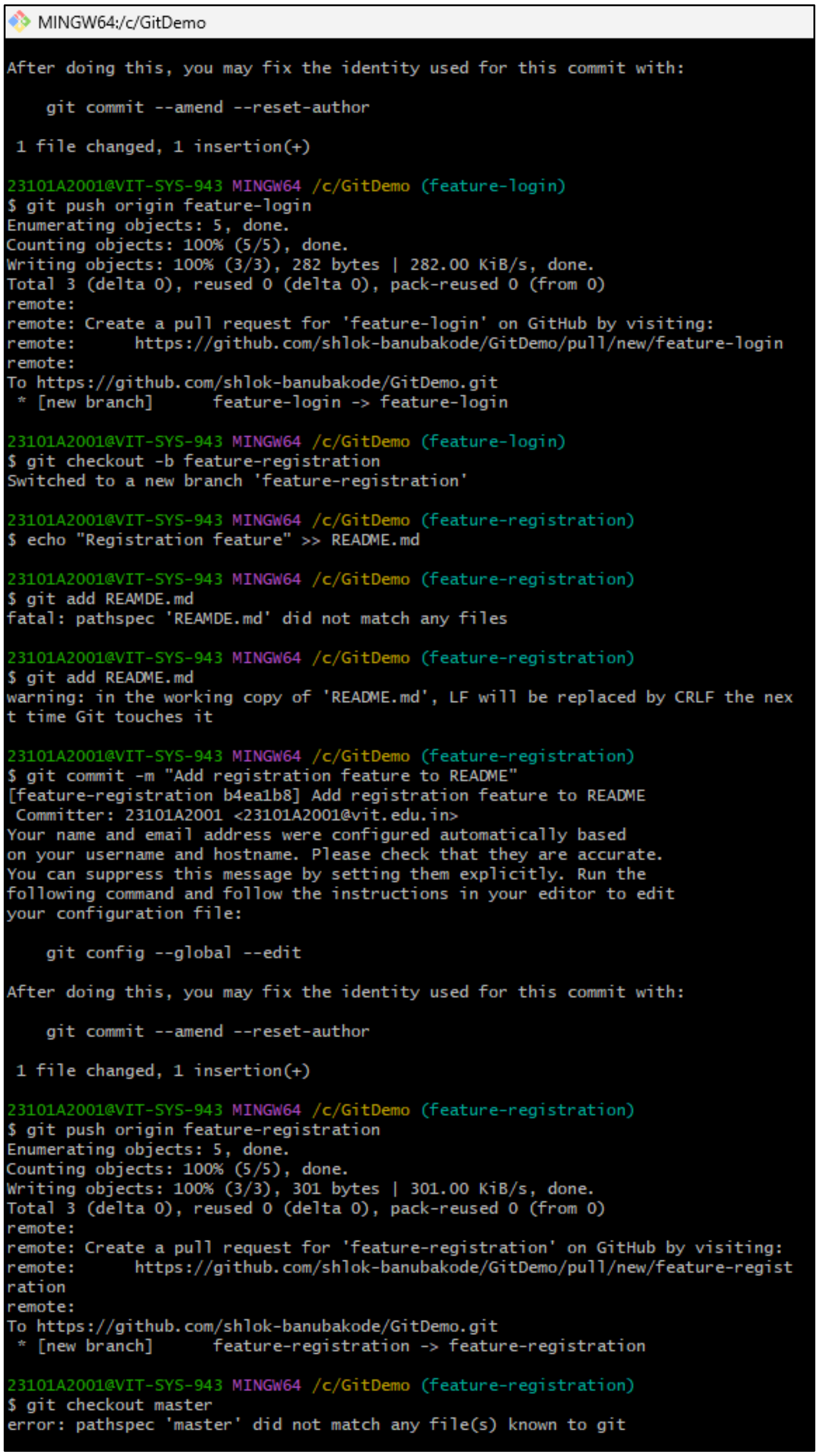


MINGW64:/c/GitDemo

```
23101A2001@VIT-SYS-943 MINGW64 ~
$ cd C:\GitDemo

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo
$ git init
Initialized empty Git repository in C:/GitDemo/.git/

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (master)
$ echo "# My Project" > README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (master)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the nex
t time Git touches it

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (master)
$ git commit -m "Initial commit"
[master (root-commit) 047c5ac] Initial commit
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)
 create mode 100644 README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (master)
$ git branch -M main
git remote add origin https://github.com/shlok-banubakode/GitDemo.git
git push -u origin main
info: please complete authentication in your browser...
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Writing objects: 100% (3/3), 224 bytes | 224.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/shlok-banubakode/GitDemo.git
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git checkout -b feature-login
Switched to a new branch 'feature-login'

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ echo "Login feature" >> README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git add README.md
warning: in the working copy of 'README.md', LF will be replaced by CRLF the nex
t time Git touches it

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git commit -m "Add login feature to README"
[feature-login f923254] Add login feature to README
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit
```

Shlok Banubakode – 23101A2001 – INFT-A

Shlok Banubakode – 23101A2001 – INFT-A


MINGW64:/c/GitDemo

```
After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git push origin feature-login
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Writing objects: 100% (3/3), 282 bytes | 282.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-login' on GitHub by visiting:
remote:      https://github.com/shlok-banubakode/GitDemo/pull/new/feature-login
remote:
To https://github.com/shlok-banubakode/GitDemo.git
 * [new branch]      feature-login -> feature-login

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git checkout -b feature-registration
Switched to a new branch 'feature-registration'

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ echo "Registration feature" >> README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git add REAMDE.md
fatal: pathspec 'REAMDE.md' did not match any files

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git add README.md
warning: in the working copy of 'README.md', LF will be replaced by CRLF the nex
t time Git touches it

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git commit -m "Add registration feature to README"
[feature-registration b4ea1b8] Add registration feature to README
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git push origin feature-registration
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Writing objects: 100% (3/3), 301 bytes | 301.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'feature-registration' on GitHub by visiting:
remote:      https://github.com/shlok-banubakode/GitDemo/pull/new/feature-regist
ration
remote:
To https://github.com/shlok-banubakode/GitDemo.git
 * [new branch]      feature-registration -> feature-registration

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git checkout master
error: pathspec 'master' did not match any file(s) known to git
```

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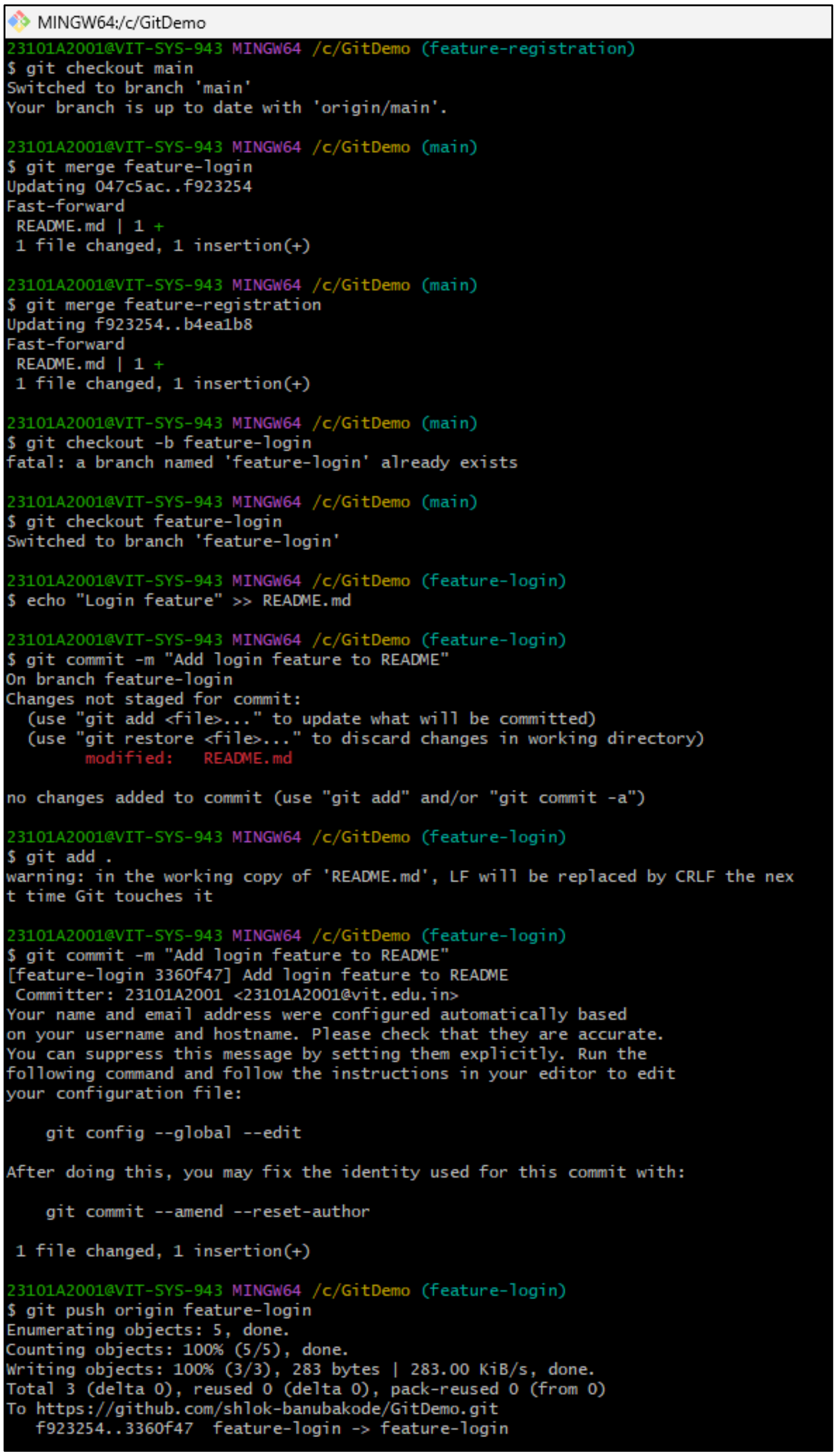

```
MINGW64:/c/GitDemo
23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git merge feature-login
Updating 047c5ac..f923254
Fast-forward
 README.md | 1 +
 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git merge feature-registration
Updating f923254..b4ea1b8
Fast-forward
 README.md | 1 +
 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git checkout -b feature-login
fatal: a branch named 'feature-login' already exists

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git checkout feature-login
Switched to branch 'feature-login'

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ echo "Login feature" >> README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git commit -m "Add login feature to README"
On branch feature-login
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:   README.md

no changes added to commit (use "git add" and/or "git commit -a")

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the nex
t time Git touches it

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git commit -m "Add login feature to README"
[feature-login 3360f47] Add login feature to README
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git push origin feature-login
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Writing objects: 100% (3/3), 283 bytes | 283.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/shlok-banubakode/GitDemo.git
   f923254..3360f47  feature-login -> feature-login
```

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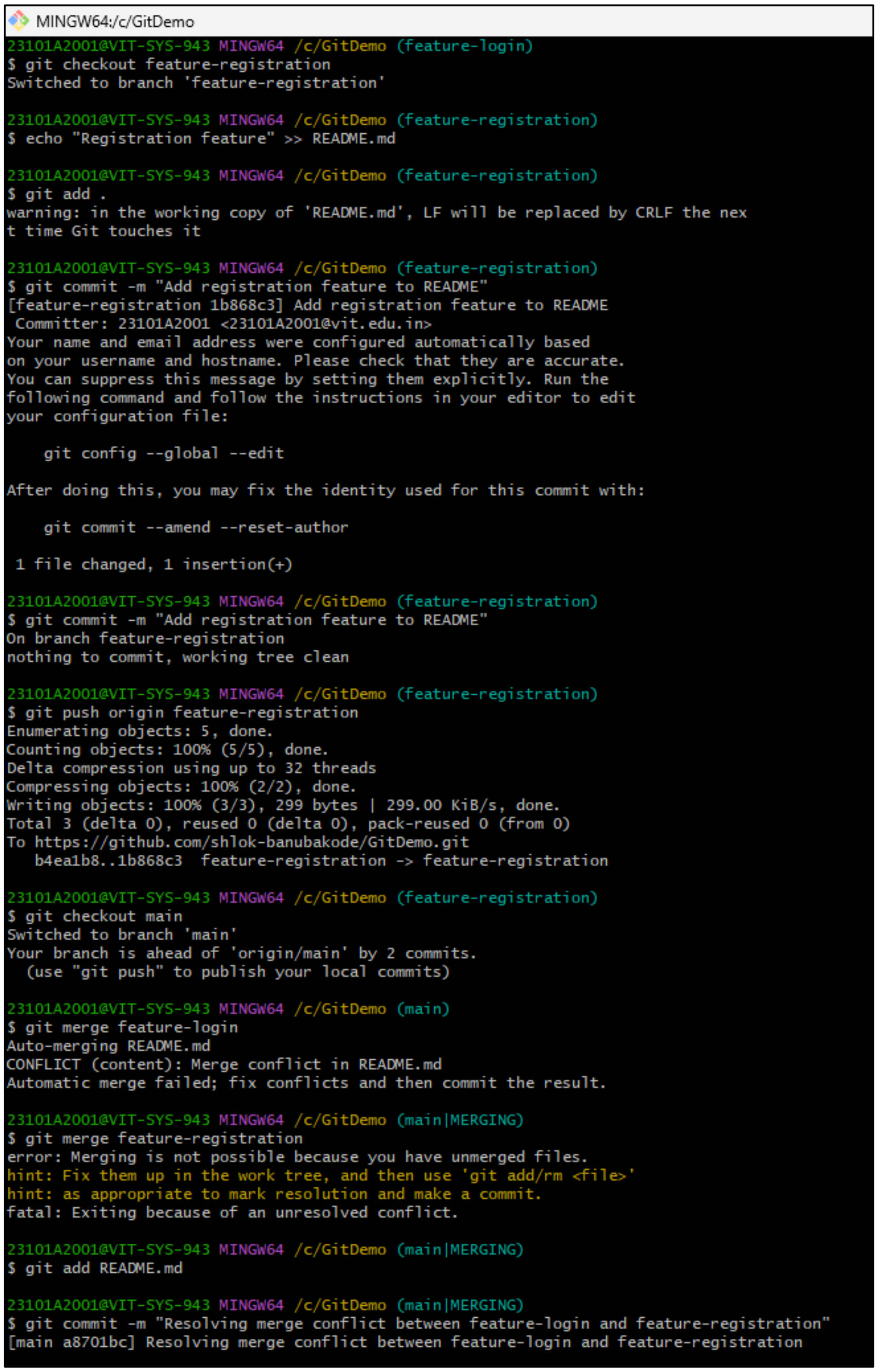

MINGW64:/c/GitDemo

```
23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-login)
$ git checkout feature-registration
Switched to branch 'feature-registration'

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ echo "Registration feature" >> README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git add .
warning: in the working copy of 'README.md', LF will be replaced by CRLF the nex
t time Git touches it

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git commit -m "Add registration feature to README"
[feature-registration 1b868c3] Add registration feature to README
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git commit -m "Add registration feature to README"
On branch feature-registration
nothing to commit, working tree clean

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git push origin feature-registration
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 32 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 299 bytes | 299.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/shlok-banubakode/GitDemo.git
   b4ea1b8..1b868c3  feature-registration -> feature-registration

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git merge feature-login
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the result.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git merge feature-registration
error: Merging is not possible because you have unmerged files.
hint: Fix them up in the work tree, and then use 'git add/rm <file>'
hint: as appropriate to mark resolution and make a commit.
fatal: Exiting because of an unresolved conflict.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git add README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git commit -m "Resolving merge conflict between feature-login and feature-registration"
[main a8701bc] Resolving merge conflict between feature-login and feature-registration
```

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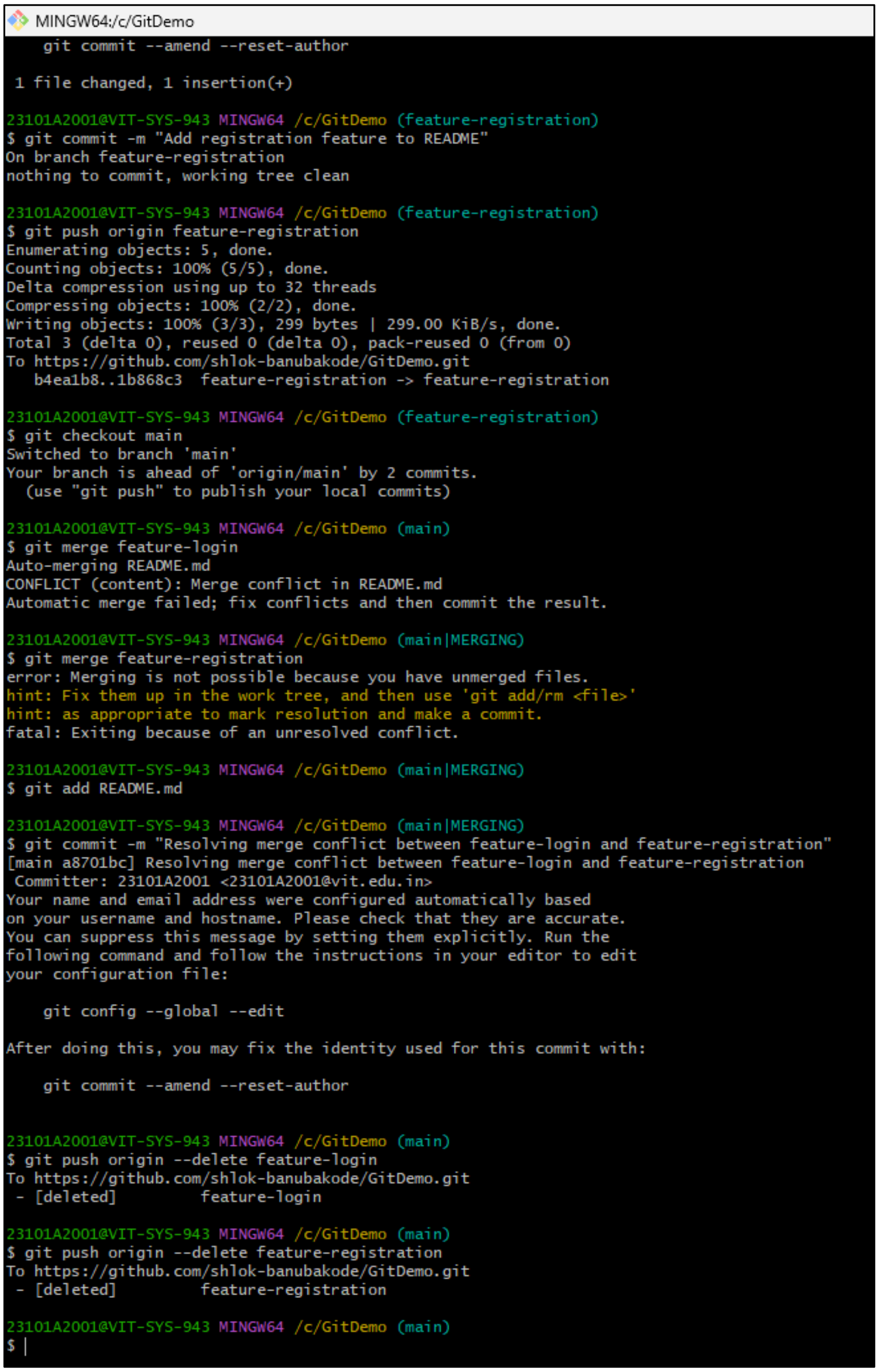
MINGW64:/c/GitDemo

```
    git commit --amend --reset-author

 1 file changed, 1 insertion(+)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git commit -m "Add registration feature to README"
On branch feature-registration
nothing to commit, working tree clean

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git push origin feature-registration
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 32 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 299 bytes | 299.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
To https://github.com/shlok-banubakode/GitDemo.git
   b4ea1b8..1b868c3  feature-registration -> feature-registration

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (feature-registration)
$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git merge feature-login
Auto-merging README.md
CONFLICT (content): Merge conflict in README.md
Automatic merge failed; fix conflicts and then commit the result.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git merge feature-registration
error: Merging is not possible because you have unmerged files.
hint: Fix them up in the work tree, and then use 'git add/rm <file>'
hint: as appropriate to mark resolution and make a commit.
fatal: Exiting because of an unresolved conflict.

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git add README.md

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main|MERGING)
$ git commit -m "Resolving merge conflict between feature-login and feature-registration"
[main a8701bc] Resolving merge conflict between feature-login and feature-registration
 Committer: 23101A2001 <23101A2001@vit.edu.in>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author


23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git push origin --delete feature-login
To https://github.com/shlok-banubakode/GitDemo.git
 - [deleted]         feature-login

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ git push origin --delete feature-registration
To https://github.com/shlok-banubakode/GitDemo.git
 - [deleted]         feature-registration

23101A2001@VIT-SYS-943 MINGW64 /c/GitDemo (main)
$ |
```

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