

**A2.** Demonstrate to create a project in remote repository and apply fork, merge, diff, merge conflict, branch and pull request concepts on repository using GitHub

Git **fork** command: git fork

Description

Creates a copy of another user's repository in your GitHub account for independent changes.

Syntax : git fork <URL-of-repository>

URL of Repository: <https://github.com/lohithbandla/test>

Git **merge** command:

Description

Combines changes from one branch into another.

Syntax : git merge <branch-name>

Example : git merge feature-branch

Git **diff** command:

Description

Shows differences between two branches, commits, or files.

Syntax : git diff <branch1> <branch2>

Example : git diff main feature-branch

Git **branch** command:

Description

Creates or lists branches for parallel development.

Syntax : git branch <branch-name>

Example : git branch feature-branch

## Git merge conflict demonstration :

### Description

Occurs when two branches edit the same part of a file. Conflicts must be resolved manually before committing.

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

- EXPLORER**: Shows a folder named "test" containing "a.txt".
- EDITOR**: Displays the content of "a.txt" with a merge conflict. The first four lines are from the main branch (HEAD), and the last two lines are from the feature branch (Incoming Change). The conflict markers are shown as <<<< HEAD (Current Change) and >>>> feature (Incoming Change).
- TERMINAL**: Shows the command line history:
 

```
Lohith@LAPTOP-DHC2QLGZ MINGW64 /d/devops/test (main)
$ git add a.txt
$ git commit -m "Changed a.txt in main branch"
[main 38f7969] Changed a.txt in main branch
 1 file changed, 1 insertion(+), 1 deletion(-)

Lohith@LAPTOP-DHC2QLGZ MINGW64 /d/devops/test (main)
$ git merge feature
Auto-merging a.txt
CONFLICT (content): Merge conflict in a.txt
Automatic merge failed; fix conflicts and then commit the result.

```
- CHAT**: A sidebar with the message "Build with agent mode" and "All responses may be inaccurate. Generate Agent Instructions to onboard AI onto your codebase.".
- STATUS BAR**: Shows "a.txt" is tracked and has changes.

## Create pull request demonstration:

### Description

Used to propose merging changes from one branch or fork into another on GitHub.

Example : Create a PR from feature-branch to main in GitHub.

