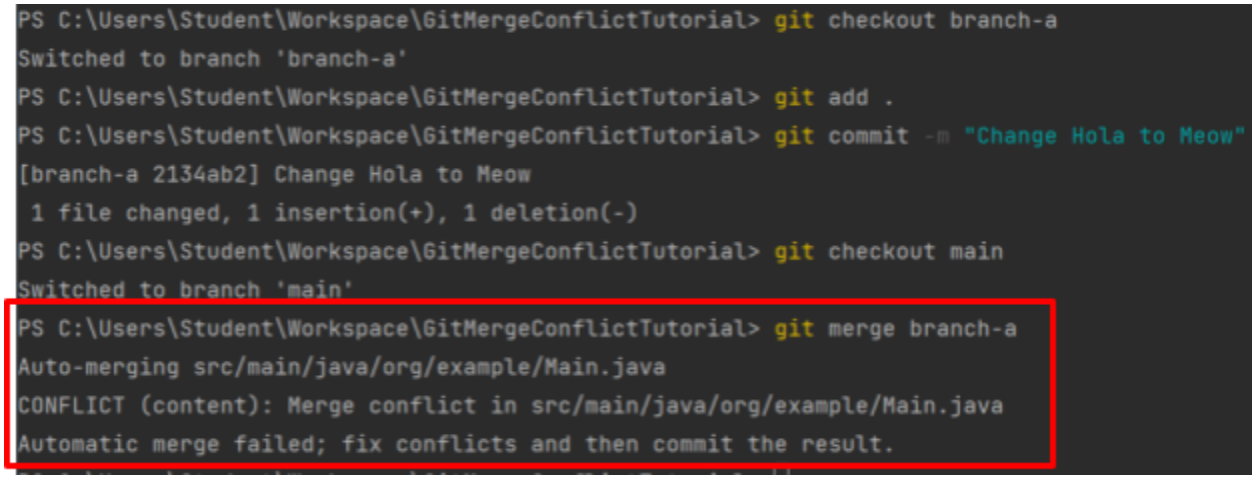
Git merge conflict basics quick reference

Merge conflict indication



Most common cause and prevention

- Cause - One developer attempts to merge their personal branch into the main branch when changes were already on remote on the remote `main` (`origin`).
- Prevention - Each developer should do a `git pull` before they (1) begin working and (2) before they attempt to merge into `main`.

Merge conflict resolution steps:

Important: Do not add any new code while in the middle of a merge conflict! Wait to resolve it before changing anything else.

(1) Open the project in VSCode.

- Make sure you are on the main branch.
  - Use `git branch` to see which branch you're on.
  - Use `git checkout` main to get onto the main branch.

(2) Open the file that the console output indicated as in conflict.

(2) Look for the lines marked with angle brackets.

- The angles/arrows pointing left (<<<<<<<) are the current changes at the `HEAD` of your branch. These are your changes.

- The angles/arrows pointing right (`>>>>>>>`) indicate the incoming changes from the conflicting branch. These are the other developer's changes.
- The changes are separated by equals signs (`=======`).

(3) Look at the options listed about the Current Change at `HEAD`. Select one of the following:

- *Accept Current Change* (your changes)
- *Accept Incoming Change* (the other developer's changes)
- *Accept Both Changes* - To do this, you'll have to manually merge them together.
- *Compare Changes* - See what is contained in each version of the file.

(4) Do an `add`, `commit`, and `push` to get the changes into the remote repository (`origin`).

(5) Both developers should now `pull` the changes from `main` into their respective branches.

Undoing a merge

If you aren't sure how to handle a merge conflict and think you may need assistance, use `git merge --abort` to cancel it. This won't fix the conflict, but it will allow you to backtrack and wait for help.