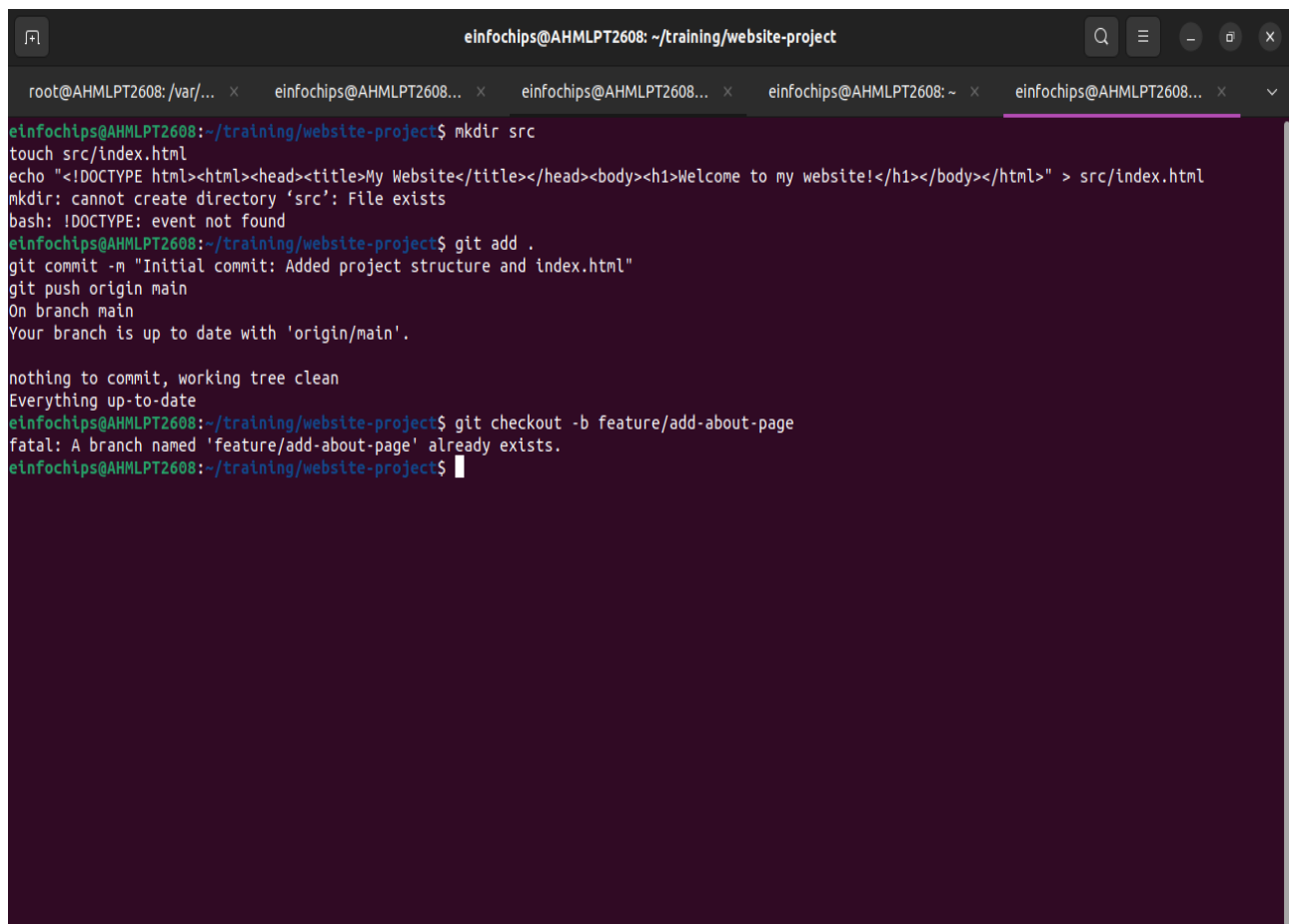


Git Project

Install Git:

- 1 Set Up Git:
- 2 Create a GitHub Repository:
- 3 Initialize the Project:

A terminal window titled 'einfochips@AHMLPT2608: ~/training/website-project' showing the steps to initialize a Git project. The user creates a 'src' directory, creates an 'index.html' file with a simple HTML structure, adds the files to Git, commits them with the message 'Initial commit: Added project structure and index.html', and pushes to the 'main' branch. The terminal shows the output of each command, including 'mkdir', 'touch', 'echo', 'git add', 'git commit', 'git push', and 'git checkout'.

```
einfochips@AHMLPT2608: ~/training/website-project
root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x
einfochips@AHMLPT2608:~/training/website-project$ mkdir src
touch src/index.html
echo "<!DOCTYPE html><html><head><title>My Website</title></head><body><h1>Welcome to my website!</h1></body></html>" > src/index.html
mkdir: cannot create directory 'src': File exists
bash: !DOCTYPE: event not found
einfochips@AHMLPT2608:~/training/website-project$ git add .
git commit -m "Initial commit: Added project structure and index.html"
git push origin main
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$ git checkout -b feature/add-about-page
fatal: A branch named 'feature/add-about-page' already exists.
einfochips@AHMLPT2608:~/training/website-project$
```

Exercise 1: Branching and Basic Operations

Create a New Branch:

Add a New Page:

Exercise 2: Merging and Handling Merge Conflicts

Create Another Branch:

Update the Homepage:

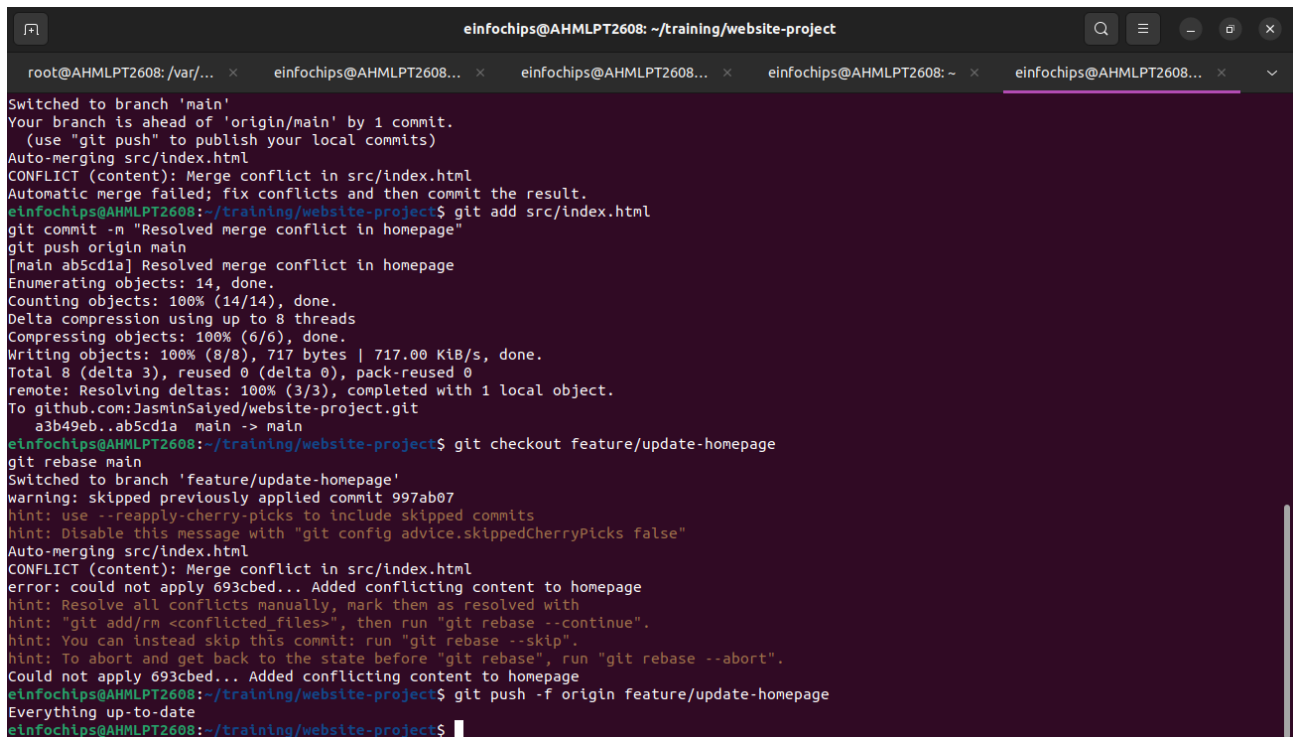
Create a Merge Conflict:

Merge and Resolve Conflict:

Exercise 3: Rebasing

Rebase a Branch:

Push the Rebased Branch:

A terminal window titled 'einfochips@AHMLPT2608: ~/training/website-project' showing a series of Git commands and their outputs. The user is on the 'main' branch, which is ahead of 'origin/main' by one commit. They attempt to merge 'src/index.html' but encounter a conflict. After resolving the conflict and committing, they push to 'origin main'. Then, they checkout 'feature/update-homepage' and attempt to rebase 'main'. This results in another conflict. After resolving it, they push with '-f' to 'origin feature/update-homepage'.

```
einfochips@AHMLPT2608: ~/training/website-project
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)
Auto-merging src/index.html
CONFLICT (content): Merge conflict in src/index.html
Automatic merge failed; fix conflicts and then commit the result.
einfochips@AHMLPT2608:~/training/website-project$ git add src/index.html
git commit -m "Resolved merge conflict in homepage"
git push origin main
[main ab5cd1a] Resolved merge conflict in homepage
Enumerating objects: 14, done.
Counting objects: 100% (14/14), done.
Delta compression using up to 8 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (8/8), 717 bytes | 717.00 KiB/s, done.
Total 8 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 1 local object.
To github.com:JasminSaiyed/website-project.git
   a3b49eb..ab5cd1a  main -> main
einfochips@AHMLPT2608:~/training/website-project$ git checkout feature/update-homepage
git rebase main
Switched to branch 'feature/update-homepage'
warning: skipped previously applied commit 997ab07
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config advice.skippedCherryPicks false"
Auto-merging src/index.html
CONFLICT (content): Merge conflict in src/index.html
error: could not apply 693cbcd... Added conflicting content to homepage
hint: Resolve all conflicts manually, mark them as resolved with
hint: "git add/rm <conflicted_files>", then run "git rebase --continue".
hint: You can instead skip this commit: run "git rebase --skip".
hint: To abort and get back to the state before "git rebase", run "git rebase --abort".
Could not apply 693cbcd... Added conflicting content to homepage
einfochips@AHMLPT2608:~/training/website-project$ git push -f origin feature/update-homepage
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$
```

Exercise 4: Pulling and Collaboration

Pull Changes from Remote:

Simulate a Collaborator's Change:

Pull Collaborator's Changes:

Exercise 5: Versioning and Rollback

Tagging a Version:

Make a Change that Needs Reversion:

Revert to a Previous Version:

```
einfochips@AHMLPT2608: ~/training/website-project

root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x

einfochips@AHMLPT2608:~/training/website-project$ git pull origin main
error: Pulling 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.
einfochips@AHMLPT2608:~/training/website-project$ nano index.html
einfochips@AHMLPT2608:~/training/website-project$ git pull origin main
error: Pulling 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.
einfochips@AHMLPT2608:~/training/website-project$ git tag -a v1.0 -m "Version 1.0: Initial release"
einfochips@AHMLPT2608:~/training/website-project$ git push origin v1.0
Enumerating objects: 1, done.
Counting objects: 100% (1/1), done.
Writing objects: 100% (1/1), 199 bytes | 199.00 KiB/s, done.
Total 1 (delta 0), reused 0 (delta 0), pack-reused 0
To github.com:JasminSaiyed/website-project.git
 * [new tag]          v1.0 -> v1.0
einfochips@AHMLPT2608:~/training/website-project$ echo "<p>Incorrect update</p>" >> src/index.html
git add src/index.html
git commit -m "Incorrect update"
git push origin main
[detached HEAD 82d9de0] Incorrect update
 1 file changed, 5 insertions(+)
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$ git revert HEAD
git push origin main
[detached HEAD 948a11f] Revert "Incorrect update"
 1 file changed, 5 deletions(-)
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$ git reset --hard v1.0
git push -f origin main
HEAD is now at ab5cd1a Resolved merge conflict in homepage
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$
```

```
einfochips@AHMLPT2608: ~/training/website-project

root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x

einfochips@AHMLPT2608:~/training/website-project$ git log --oneline
ab5cd1a (HEAD, tag: v1.0, origin/main, main) Resolved merge conflict in homepage
9f02cc4 (origin/feature/add-about-page, feature/add-about-page) Added conflicting content to homepage
0edaed5 Updated homepage content
a3b49eb Resolved merge conflict in homepage
9d15079 Added conflicting content to homepage
d6ce364 Updated homepage content
9f20623 Added about page
00e4c22 Initial commit: Added project structure and index.html
einfochips@AHMLPT2608:~/training/website-project$ git checkout -b feature/cherry-pick
git cherry-pick <commit-hash>
git push origin feature/cherry-pick
Switched to a new branch 'feature/cherry-pick'
bash: syntax error near unexpected token 'newline'
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'feature/cherry-pick' on GitHub by visiting:
remote:   https://github.com/JasminSaiyed/website-project/pull/new/feature/cherry-pick
remote:
To github.com:JasminSaiyed/website-project.git
 * [new branch]      feature/cherry-pick -> feature/cherry-pick
einfochips@AHMLPT2608:~/training/website-project$ git checkout main
git rebase -i HEAD~3
M       src/index.html
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
fatal: It seems that there is already a rebase-merge directory, and
I wonder if you are in the middle of another rebase. If that is the
case, please try
    git rebase (--continue | --abort | --skip)
If that is not the case, please
    rm -fr ".git/rebase-merge"
and run me again. I am stopping in case you still have something
valuable there.
einfochips@AHMLPT2608:~/training/website-project$
```

Extra Activities

Stashing Changes:

Viewing Commit History:

Cherry-Picking Commits:

Interactive Rebase:

```
einfochips@AHMLPT2608: ~/training/website-project

root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x v

einfochips@AHMLPT2608:~/training/website-project$ git log --oneline
ab5cd1a (HEAD, tag: v1.0, origin/main, main) Resolved merge conflict in homepage
9f02cc4 (origin/feature/add-about-page, feature/add-about-page) Added conflicting content to homepage
0edaed5 Updated homepage content
a3b49eb Resolved merge conflict in homepage
9d15079 Added conflicting content to homepage
d6ce364 Updated homepage content
9f20623 Added about page
00e4c22 Initial commit: Added project structure and index.html
einfochips@AHMLPT2608:~/training/website-project$ git checkout -b feature/cherry-pick
git cherry-pick <commit-hash>
git push origin feature/cherry-pick
Switched to a new branch 'feature/cherry-pick'
bash: syntax error near unexpected token 'newline'
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'feature/cherry-pick' on GitHub by visiting:
remote: https://github.com/JasminSaiyed/website-project/pull/new/feature/cherry-pick
remote:
To github.com:JasminSaiyed/website-project.git
 * [new branch] feature/cherry-pick -> feature/cherry-pick
einfochips@AHMLPT2608:~/training/website-project$ git checkout main
git rebase -i HEAD~3
M src/index.html
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
fatal: It seems that there is already a rebase-merge directory, and
I wonder if you are in the middle of another rebase. If that is the
case, please try
    git rebase (--continue | --abort | --skip)
If that is not the case, please
    rm -fr ".git/rebase-merge"
and run me again. I am stopping in case you still have something
valuable there.
einfochips@AHMLPT2608:~/training/website-project$
```

```
einfochips@AHMLPT2608: ~/training/website-project

root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x v

git push origin feature/add-about-page
On branch main
Your branch is up to date with 'origin/main'.

Last command done (1 command done):
  pick 693cbcd Added conflicting content to homepage
No commands remaining.
You are currently editing a commit while rebasing branch 'feature/update-homepage' on 'ab5cd1a'.
  (use "git commit --amend" to amend the current commit)
  (use "git rebase --continue" once you are satisfied with your changes)

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:   src/index.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html

no changes added to commit (use "git add" and/or "git commit -a")
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$ git checkout main
git checkout -b feature/update-homepage
M src/index.html
Already on 'main'
Your branch is up to date with 'origin/main'.
fatal: A branch named 'feature/update-homepage' already exists.
einfochips@AHMLPT2608:~/training/website-project$ echo '<p>Updated homepage content</p>' >> src/index.html
einfochips@AHMLPT2608:~/training/website-project$ git add src/index.html
git commit -m "Updated homepage content"
git push origin feature/update-homepage
[main 897502a] Updated homepage content
 1 file changed, 2 insertions(+)
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$
```

Collaborative Blogging Platform

Create a GitHub Repository:

Initialize the Project:

Exercise 1: Branching and Adding Features (

Create a New Branch for Blog Post Feature:

Add a Blog Post Page:

Exercise 2: Collaborating with Merging and Handling Merge Conflicts (25 minutes)

Create Another Branch for Author Info:

Add Author Info to Blog Page:

Create a Merge Conflict:

Merge and Resolve Conflict:

Exercise 3: Rebasing and Feature Enhancement

Exercise 4: Pulling and Simulating Collaboration

Exercise 5: Versioning and Rollback

```
einfochips@AHMLPT2608: ~/training/website-project
root@AHMLPT2608: /var/... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608... x einfochips@AHMLPT2608: ~ x einfochips@AHMLPT2608... x
Already on 'main'
Your branch is up to date with 'origin/main'.
fatal: A branch named 'feature/update-homepage' already exists.
einfochips@AHMLPT2608:~/training/website-project$ echo '<p>Updated homepage content</p>' >> src/index.html
einfochips@AHMLPT2608:~/training/website-project$ git add src/index.html
git commit -m "Updated homepage content"
git push origin feature/update-homepage
[main 897502a] Updated homepage content
1 file changed, 2 insertions(+)
Everything up-to-date
einfochips@AHMLPT2608:~/training/website-project$ git checkout feature/add-about-page
echo '<p>Conflict content</p>' >> src/index.html
Switched to branch 'feature/add-about-page'
einfochips@AHMLPT2608:~/training/website-project$ git add src/index.html
git commit -m "Added conflicting content to homepage"
git push origin feature/add-about-page
[feature/add-about-page fb63e3e] Added conflicting content to homepage
1 file changed, 1 insertion(+)
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 8 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (4/4), 385 bytes | 385.00 KiB/s, done.
Total 4 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:JasminSaiyed/website-project.git
9f02cc4..fb63e3e feature/add-about-page -> feature/add-about-page
einfochips@AHMLPT2608:~/training/website-project$ git checkout main
git merge feature/add-about-page
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 1 commit.
(use "git push" to publish your local commits)
Auto-merging src/index.html
CONFLICT (content): Merge conflict in src/index.html
Automatic merge failed; fix conflicts and then commit the result.
einfochips@AHMLPT2608:~/training/website-project$
```

