

# Git Branching

## The Main Branch

In Git, the main project is completed on the `main` branch. Making your first commit in a new git repository will automatically create a `main` branch. Create new branches from the `main` branch to develop new features for a project. These branches can be merged into `main` at a later time to incorporate the new features. You can use `git branch` to check what branch you're on.

```
$ git init
Initialized empty Git repository in
/home/ccuser/new-project/.git/
$ echo "Hello World!" >> hello.txt
$ git add hello.txt
$ git commit -m 'initial commit'
[master (root-commit) bb0e565] initial
commit
1 file changed, 1 insertion(+)
create mode 100644 hello.txt
$ git branch
* master
```

## Creating a New Branch

In Git, the `git branch branch-name` command is used to create a new branch called `branch-name`. Branches should be named something that describes the purpose of the branch.

Note that branch names can't contain whitespace: `new-feature` and `new_feature` are valid branch names, but `new feature` is not.

## Viewing the Current Branch

In Git, the `git branch` command will display all of the branches. The current branch will display `*` before its name.

## Merge Conflicts

In Git, a merge conflict occurs when the same file is changed on the current branch and the branch that is being merged. An error will appear displaying: `CONFLICT (content): Merge conflict in [filename]`.

Git will automatically edit the file with the conflict to show where the conflict is. The current branch's text will be between `<<<<<< HEAD` and `=====`. The text from the branch that is being merged into the current branch will be between `=====` and `>>>>>> branch-name`.

To resolve a merge conflict, edit the file with the conflict, decide which parts of each branch's edits should be kept, then add and commit the file.

```
PETE PAN
<<<<<< HEAD
Address: No 31 Kensington Hill Park,
London, England
=====
Address: 113 Gloucester Rd Patchway,
Bristol, England
>>>>>> resume-edits
-----
```

## Deleting a Branch

In Git, the `git branch -d branch_name` command is used to delete the `branch_name` branch. It's good practice to delete a branch after it has been merged into the `master` branch.

## Merging Branches

In Git, the `git merge branch-name` command will add the changes from `branch-name` into the current branch. Use this command when you have finished building a feature in a separate branch and want to bring those changes into your current branch.