# Git Workflow: main/dev vs origin/main/origin/dev

## Step 1 — Clone the repo

git clone https://github.com/user/repo.git

**Result:**

(main) A---B---C  
(dev) A---B---C---D  
(origin/main) A---B---C  
(origin/dev) A---B---C---D

Git stores these pointers inside .git/:

.git/  
 refs/  
 heads/  
 main ← your local main branch pointer  
 dev ← your local dev branch pointer  
 remotes/  
 origin/  
 main ← remote tracking branch for main  
 dev ← remote tracking branch for dev

## Step 2 — Make changes in dev

git checkout dev  
# edit files  
git add file1 file2  
git commit -m "Dev changes"

**Result:**

(dev) A---B---C---D---E  
(origin/dev) A---B---C---D

dev is ahead of origin/dev by 1 commit.

## Step 3 — Push dev changes

git push origin dev

**Result:**

(dev) A---B---C---D---E  
(origin/dev) A---B---C---D---E

Both dev branches are now in sync.

## Step 4 — Merge dev into main locally

git checkout main  
git merge dev

**Result:**

(main) A---B---C-------M  
 \ /  
 D---E----   
(dev) A---B---C---D---E  
(origin/main) A---B---C  
(origin/dev) A---B---C---D---E

Here, M is the merge commit.

## Step 5 — Push merged main

git push origin main

**Result:**

(main) A---B---C-------M  
 \ /  
 D---E---  
(dev) A---B---C---D---E  
(origin/main) A---B---C-------M  
 \ /  
 D---E----  
(origin/dev) A---B---C---D---E

Now remote main is updated with the merge.

## Step 6 — Creating a merge request locally (simulation)

You can prepare changes locally before pushing for a remote Merge Request:

git checkout main  
git merge dev  
# test, review locally  
git push origin main

On platforms like GitHub/GitLab/Bitbucket, you would then open a **Pull Request** or **Merge Request** for dev → main. Locally, the merge is already done; the MR is for review and approval on the remote.

✅ **Key Recap:**

* Local main and dev have their own history.
* Remote tracking branches origin/main and origin/dev update via **fetch**.
* **Push** sends your local commits to the corresponding remote branch.
* **Merge** combines histories locally; push afterward to update remote.
* Merge requests are remote-side review processes; local merges can be pushed directly if review isn’t needed.