# Git Merging & Safety Guide

This document summarizes important information and safe practices when working with Git branches, merging, and tags.

## 1. Will I lose my changes if I pull main?

No, you will not lose your changes if you have committed them to your branch. When you run:  
 git pull origin main  
You are pulling the latest changes from main into your current branch. Git will attempt to merge them. If there are conflicts, Git will pause and allow you to resolve them manually.

## 2. How to Safely Merge main into Your Branch

1. Ensure your changes are committed:  
 git add .  
 git commit -m "my latest changes before merging main"  
  
2. Merge main into your branch:  
 git pull origin main  
  
3. If there are conflicts, Git will mark them. Open the conflicted files and manually resolve them. Then run:  
 git add .  
 git commit -m "Resolved conflict with main"

## 3. Extra Safety Tips

- Create a backup branch before merging:  
 git checkout -b backup-before-merge  
  
- Tag your current state:  
 git tag before-merge  
  
- Push your backup branch and tag (optional):  
 git push origin backup-before-merge  
 git push origin before-merge

## 4. What is a Git Tag?

A tag is a fixed label pointing to a specific commit. It’s commonly used to mark version releases or safe points in history.  
  
Use cases:  
- Marking a version:  
 git tag v1.0  
  
- Creating a restore point before merging:  
 git tag before-merge  
  
- Checking out a tag:  
 git checkout before-merge  
  
- Listing tags:  
 git tag  
  
- Pushing a tag to GitHub:  
 git push origin before-merge

## 5. Summary Table

| Purpose | Command |  
|-------------------------------|----------------------------------|  
| Tag current state | git tag before-merge |  
| See all tags | git tag |  
| Checkout a tag (read-only) | git checkout before-merge |  
| Push tag to GitHub | git push origin before-merge |