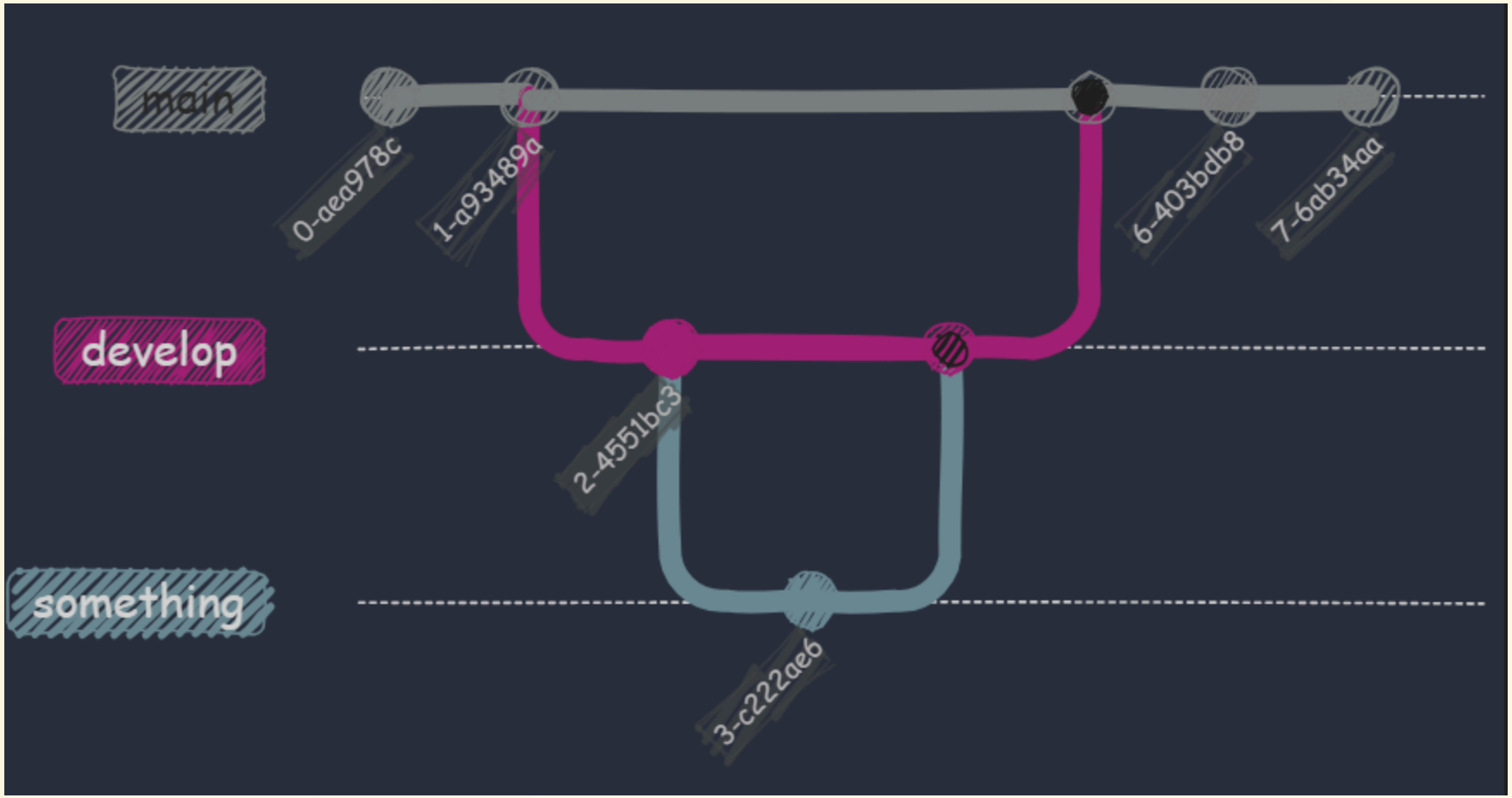
What is Git?

- A version control system (VCS)
- Tracks changes in files over time
- Allows multiple people to collaborate on a project
- Enables you to revert to previous versions if needed

Understanding Branches

- A branch is a separate line of development
- Create a branch to work on a new feature without affecting the main codebase
- Multiple branches can exist simultaneously

Understanding Branches



Creating and Switching Branches

```
git branch <branch_name>  # Create a new branch
git checkout <branch_name> # Switch to an existing branch
```

Alternate way

```
git switch <branch_name>
```

Merging Branches

- Combine changes from one branch into another
- Use `git merge <branch_name>` to merge
- Resolves conflicts if necessary

Common Branching Strategies

- **Git Flow:** Strict rules for feature, release, and hotfix branches
- **GitHub Flow:** Simpler, based on pull requests
- **Trunk-Based Development:** All work happens on the main branch

Best Practices

- Keep branches up-to-date with the main branch
- Use descriptive branch names
- Review code before merging
- Use pull requests for code collaboration
- Consider using a branching model that fits your team's needs

Demo Time!

- Live coding demonstration of creating, switching, and merging branches
- Showcasing conflict resolution

Thanks