# Amending the Last Commit

- To change the last commit we use below command
- $ git commit --amend -m "New and correct message“
- Simply put, this *overwrites* your last commit with a new one. This also means that you're not limited to just editing the commit's *message*: you could also add another couple of changes you forgot. Use below command
- $ git add another/changed/file.txt
- $ git commit --amend -m "message"

- keep two important details in mind:
- Amend only works with the very last commit. If you notice your mistake only after adding another commit, amend won't help you much.
- Amend rewrites the commit history in your repository: the old commit is replaced by a completely new one (a new and different commit *object*). This makes it very important that you don’t amend (=rewrite0 commits that you already published to a remote repository! Because in that case, your colleagues might have already based their work on this commit - which you would try to replace using "amend".
- Therefore, use "amend" whenever you want to change / edit your very last and unpushed commit.

- **Changing Older Commits**
- If you want to change older commits, Git also has a tool for this use case:
- $ git rebase –interactive
- The "interactive rebase" command, however, is quite an advanced tool: very powerful and a tiny bit dangerous. You should definitely understand what you're doing before applying it!

# Git repository hosting

- Hosting a repository
- A repository hosting service is an organization management tool which offers a transparent view into the traditionally opaque workflow process of software development.
- Services are :
- GitLab
- Bit Bucket
- Source Forge.
- Launchpad
- Google Cloud Source Repositories
- AWS Code Commit
- Phabricator
- Gogs (Self-Hosted)

- Function of Github
- GitHub is a Git repository hosting service, but it adds many of its own features. While Git is a command line tool, GitHub provides a Web-based graphical interface. It also provides access control and several collaboration features such as a wikis and basic task management tools for every project
- Git hosting tool
- GerritForge is a code review service, that can also host your git repository. An open source plan is available for free git is public git hosting site for both public, open source projects and private, proprietary codes

# Git hosting services

- **Bitbucket:-**
- It is considered as more than just Git hosting solution. Bitbucket gives teams one place to plan projects, collaborate on code, test, and deploy. This tool is loved by users based on multiple facts such as – Free version, Competitive pricing, Small teams, Developer collaboration. And Bitbucket is available for Mac, Windows Linux, iOS, and Android.
- **GitHub:-**
- GitHub is an open-source hosting platform, which provides the software development version control to the users. Github is a cloud-based service platform where developers manage and store their codes. Its help to change and track code with the possession of full authority. Nowadays GitHub is the largest online storage space of collaborative works that exists in the world. GitHub is a free open-source and clean interface with the powerful and useful features that a developer can leverage on. GitHub becomes the go-to hosting platform for projects using Git.

- **Key-features of GitHub**
- Integrated issue and bug tracking.
- Graphical representation of branches.
- Approximately 6 million hosted git repositories
- Field-tested project tools
- Integrated issue tracking functionalities
- Collaborative code review
- Team and organization management features
- Supports over 200 programming languages
- **GitLab:-**
- GitLab is an open-source code repository and collaborative development platform. GitLab launched in 2011 is written in Ruby and GO. GitLab supports both public and unlimited private development branches, its a more trusted brand which is also used by even NASA. GitLab has more than 1400 contributors which make it one of the most reliable service provider. GitLab is an open-source code repository and collaborative development platform.

- **Amazon AWS CodeCommit**
- Amazon AWS CodeCommit is hosted and completely managed by Amazon, it can be used to privately host data and manage them in the cloud. It gives high scalability, security and helps manage source control service, which is used to host private Git repositories. Generally, it supports all the standard functionalities that can be done via Git, which means it eliminates the requirement for the user to know Git and manage their own source control system or worry about scaling up or down their infrastructure.
- **Microsoft Azure Repos**
- One of the Microsoft Azure DevOps components – “Azure Repos” provides private and unlimited Git repository hosting in the cloud. In addition to GiT hosting, this platform includes its own Continuous Integration service and tracks work, and ships software for any language, all in a single package.

# Finding merging branch

- Branch git
- A **branch** in **Git** is simply a lightweight movable pointer to one of these commits. The default **branch** name in **Git** is master . As you start making commits, you're given a master **branch** that points to the last commit you made. Every time you commit, the master **branch** pointer moves forward automatically.
- To know if a branch has been merged into master or not you can use the below two commands:
- git branch --merged – It lists the branches that have been merged into the current branch.
- git branch --no-merged – It lists the branches that have not been merged.
- **The command to list all branches in local and remote repositories is:**
- $ git branch -a. If you require only listing the remote branches from Git Bash then use this command:
- $ git branch -r. You may also use the show-branch command for seeing the branches and their commits as follows:
- $ git show-branch.