



# GITHUB under microscope

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Sponsored by (SmartAcademyVienna)



# What is Github

GitHub is a website and cloud-based service that helps developers store and manage their code, as well as track and control changes to their code.

To understand exactly what GitHub is, you need to know two connected principles:

- Version control.
- Git.



# 1. What is version control.

Version control helps developers track and manage changes to a software project's code. As a software project grows, version control becomes essential.

version control lets developers safely work through **branching** and **merging**.



# What is branch ??

With branching, a developer duplicates part of the source code (called the repository). The developer can then safely make changes to that part of the code without affecting the rest of the project.

Repository is like a folder in your computer but just different name with github.

Then, once the developer gets his or her part of the code working properly, he or she can merge that code back into the main source code to make it official.

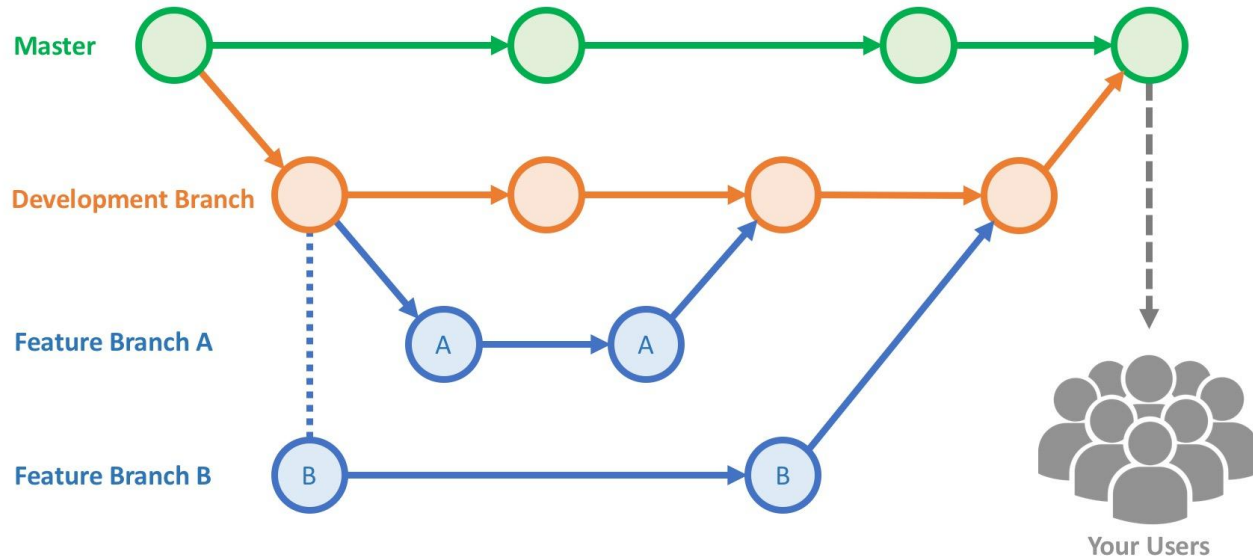
All of these changes are then tracked and can be reverted if need be.



# What is merging?

**Merging** is a process to make codes united in one branch. Merging is done after making a robust code that has no errors and faulty mistakes.

# Feature Branching





## 2. What is Git?

Git is a **distributed version control system**, which means that the entire codebase and history is available on every developer's computer, which allows for easy branching and merging.

According to a [Stack Overflow developer survey](#), over 87.2% of developers use Git.

**Wait what!!!**



**Then what is Github?**





# GitHub is

A for-profit company that offers a cloud-based Git repository hosting service. It makes it a lot easier for individuals and teams to use Git for version control and collaboration.

# Smart Academy repository

The screenshot shows the GitHub organization page for SMART Academy. The page layout includes a header with navigation links (Pull requests, Issues, Marketplace, Explore), a search bar, and user avatars. The main content area features the organization's profile (SMART Academy, Vienna - Austria, http://smartacademy.at) and a tabbed interface for Repositories (2), People (8), Teams (2), Projects (0), and Settings. A search bar for repositories is present, along with filters for Type (All) and Language (All). A green 'New' button is visible. The repository list shows 'JavaScript\_course' and 'Java\_course', both updated 5 days ago. A sidebar on the right displays 'Top languages' (HTML) and 'People as collaborations' (8 people). A footer contains copyright information and links to GitHub resources.

Organization name

My settings

New Repository

Repositories

JavaScript\_course

SMARTACADEMY JavaScript course program.

HTML 1 Updated 5 days ago

Java\_course

1 Updated 5 days ago

Top languages

HTML

People as collaborations

People

8

Invite someone

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# XXX Repository

The screenshot shows the GitHub interface for the repository 'SmartAcademyVienna / JavaScript\_course'. Red arrows and text labels point to specific features:

- Repo options**: Points to the navigation tabs (Code, Issues, Pull requests, Projects, Wiki, Insights, Settings).
- Watch notifications**: Points to the 'Watch' button.
- People that stared the repo**: Points to the 'Star' button.
- People that copied forked the project**: Points to the 'Fork' button.
- Edit description (Important)**: Points to the 'Edit' button next to the repository description.
- Commit number**: Points to the '8 commits' link.
- Download or clone using Git**: Points to the 'Clone or download' button.
- Project folder and files**: Points to the file list showing folders like 'Chapter\_00', 'Chapter\_01', 'Chapter\_02' and 'README.md'.
- Documentation**: Points to the 'README.md' content area.

The repository details shown include:

- Repository name: SmartAcademyVienna / JavaScript\_course
- Description: SMARTACADEMY JavaScript course program.
- Manage topics: (empty)
- Stats: 8 commits, 1 branch, 0 releases, 1 contributor.
- Buttons: Branch: master, New pull request, Create new file, Upload files, Find File, Clone or download.
- Recent commits table:

Commit	Author	Message	Time
Chapter_00	AhmedBHameed	Chapter 0,1,2 added	5 days ago
Chapter_01	AhmedBHameed	Chapter 0,1,2 added	5 days ago
Chapter_02	AhmedBHameed	Chapter 0,1,2 added	5 days ago
README.md	AhmedBHameed	modify readme file	5 days ago

The README content includes:

## JavaScript-learning-curve

This is a practical learning curve of JavaScript.

### Syllabus

- Chapter\_00
  - 001- Introduction
  - 002- Environment
- Chapter\_01



# Let us play around with Github

To be active uploading/downloading latest code of your repo, you have to do few steps in advance. That would also including requesting for “PULL REQUEST” or “MERGE REQUEST” in gitlab platform.

- Fork your target repo from the webpage.
- Go to your repositories (In your account repos). You will find the new forked repo that already forked.
- Clone it with “https” using => `git clone REPOSITORY_URL`
- Remember `[DO NOT WORK ON MASTER BRANCH]`. So create a new branch and give it descriptive name using => `git checkout -b "BRANCH NAME"`.



## CONTINUE\_1...

- Checkout to your new branch. (It might be when creating new branch, Git will attach it automatically) using => `git checkout "BRANCH NAME"`
- Check out that you are on the new branch using => `git status`
- If everything ok, then start developing till you finish implementing your new feature.
- Finished, then add your changes using => `git add.` => Don't forget DOT
- Then follow it with commit to make a history log using => `git commit -m "Nice descriptive here"`
- Finally push your code to GitHub using => `git push`
- Sometimes git ask you to provide email and username to save it in the configuration. So follow the same info in the message.
- Now again try to push.

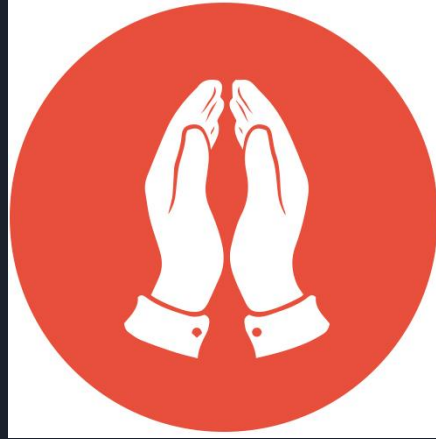


## CONTINUE\_2...

- LOL, yes you will get annoying message (Only for the new branch, first time push) telling that your branch is new and you have to push using the following code => `git push --set-upstream origin BRANCH NAME`
- IF the code needed to be merged, then create go to the same repo in your github account, from there create a pull request.

This is only what we need at this level.

Raise your hand and pray for me...



BECAUSE...



*I have got a third asylum interview*

...

*Thank you.*