# Who "gits" it?

Raise Your Hand if...

- ✓ you've ever had issues working with code sent to you as an email attachment?

- ✓ you've ever had issues determining which version of a program is the "most recent"?

- ✓ you've ever suspected the word "final" in a filename is a lie?

# But what is "git"?



distributed version control software that runs locally on nearly any computer, created in 2005



Git-based software development platform that runs in a web browser, founded in 2008

Workshop files: https://github.com/saspy-bffs

# Common Workflows for GitHub

**Theme**. GitHub lowers the friction of collaboration, even when working alone!

**Workflow 1. Commits** in "Main **Branch**"

**Workflow 2.** Commits in "Feature Branch" + **Pull Request**

**Workflow 3**. **Fork** + Commits in "Feature Branch" + Pull Request

**Workflow 4**. Fork + **Clone** + Commits in "Feature Branch" + **Push** + Pull Request

# Common Workflows for GitHub

**Theme**. GitHub lowers the friction of collaboration, even when working alone!

**Workflow 1. Commits** in "Main **Branch**"

**commit**
changes

main
**branch** → main
**branch**

**Advantages**
- **Uses the fewest Git concepts**
- **Commit history provides a detailed project audit trail**

**Disadvantages**
- **Discourages "exploratory coding"**
- **Difficult to simultaneously collaborate on the same file**
- **Everyone has the same permissions to change the main branch**

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**Workflow 2.** Commits in "Feature Branch" + **Pull Request**



main **branch**

**branch**

feature **branch**

**commit** changes

main **branch**

open **PR**

feature **branch**
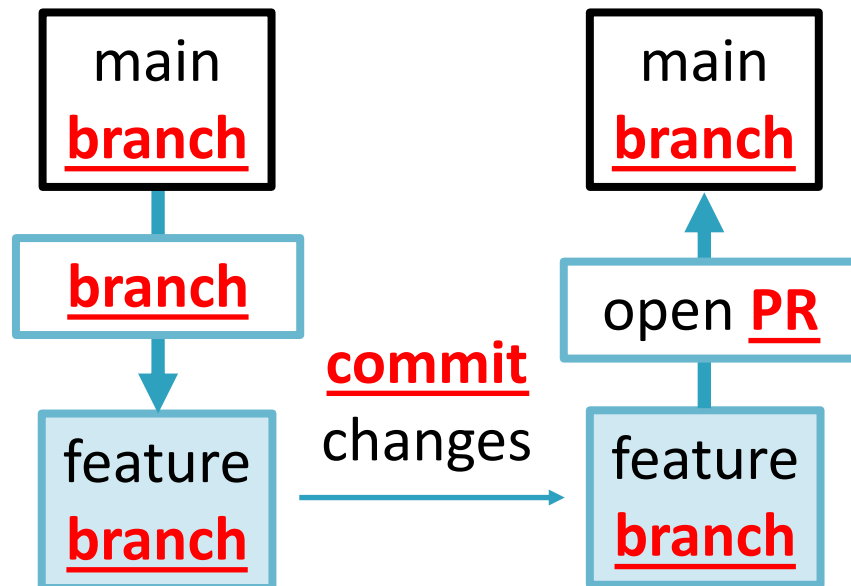
**Advantages**
- Commit history provides audit trail
- Enables "exploratory coding"
- Enables simultaneous collaboration
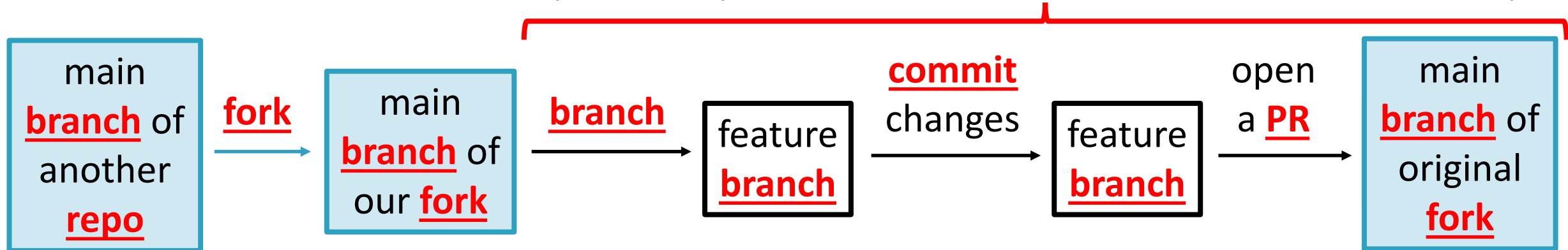- Enables differentiated permissions (controlling changes to main branch)

**Main Disadvantage: Added complexity**

# Common Workflows for GitHub

**Theme**. GitHub lowers the friction of collaboration, even when working alone!

**Workflow 3**. **Fork** + Commits in "Feature Branch" + Pull Request

Repeat the steps of Workflow 2: Commits in "Feature Branch" + Pull Request

main **branch** of another **repo** → **fork** → main **branch** of our **fork** → **branch** → feature **branch** → **commit** changes → feature **branch** → open a **PR** → main **branch** of original **fork**
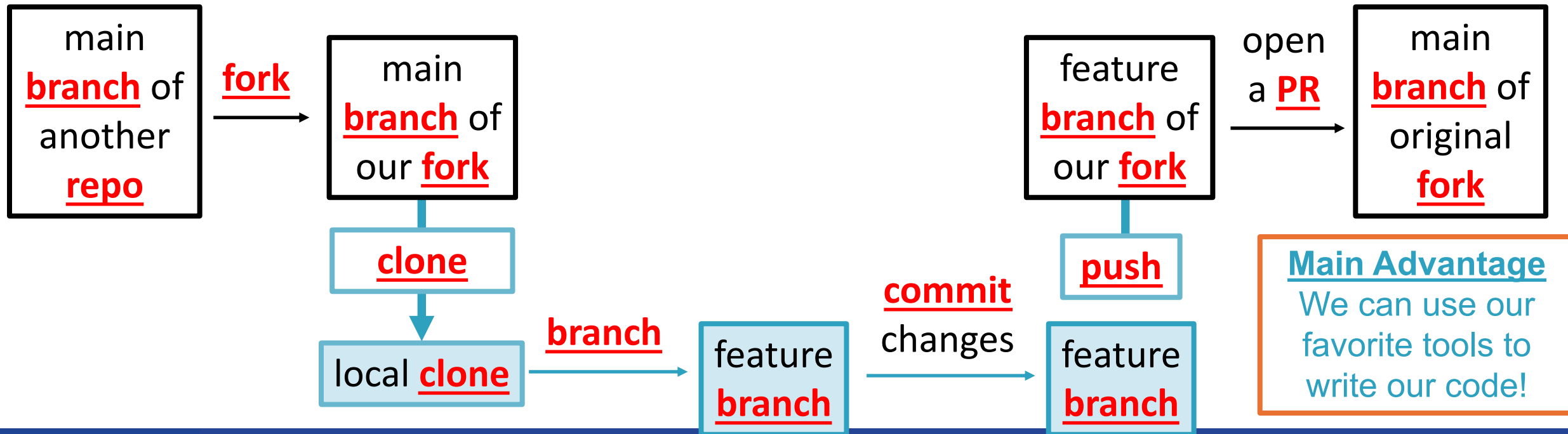
**Main Advantage**: This enables us to "suggest" unsolicited changes to someone's project (e.g., open-source projects on GitHub).

# Common Workflows for GitHub

**Theme**. GitHub lowers the friction of collaboration, even when working alone!

**Workflow 4**. Fork + **Clone** + Commits in "Feature Branch" + **Push** + Pull Request



main **branch** of another **repo** → **fork** → main **branch** of our **fork**

**clone** → local **clone** → **branch** → feature **branch** → **commit** changes → feature **branch** → **push** → feature **branch** of our **fork** → open a **PR** → main **branch** of original **fork**

**Main Advantage**
We can use our favorite tools to write our code!

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**Workflow 1. Commits** in "Main **Branch**"

**Workflow 2.** Commits in "Feature Branch" + **Pull Request**

**Workflow 3**. **Fork** + Commits in "Feature Branch" + Pull Request

**Workflow 4**. Fork + **Clone** + Commits in "Feature Branch" + **Push** + Pull Request

# Call to Action!

**Main takeaway**. Git and GitHub are amazingly flexible tools for lowering the friction of collaboration, even when working alone.

**Commit to it**. Install Git on a local computer and start pushing code for personal projects to GitHub, even if the code isn't polished.

**Embrace the Open Source Ethos**. Go fork a GitHub repo, make a small change (e.g., fix a typo), and open a pull request (PR) today.
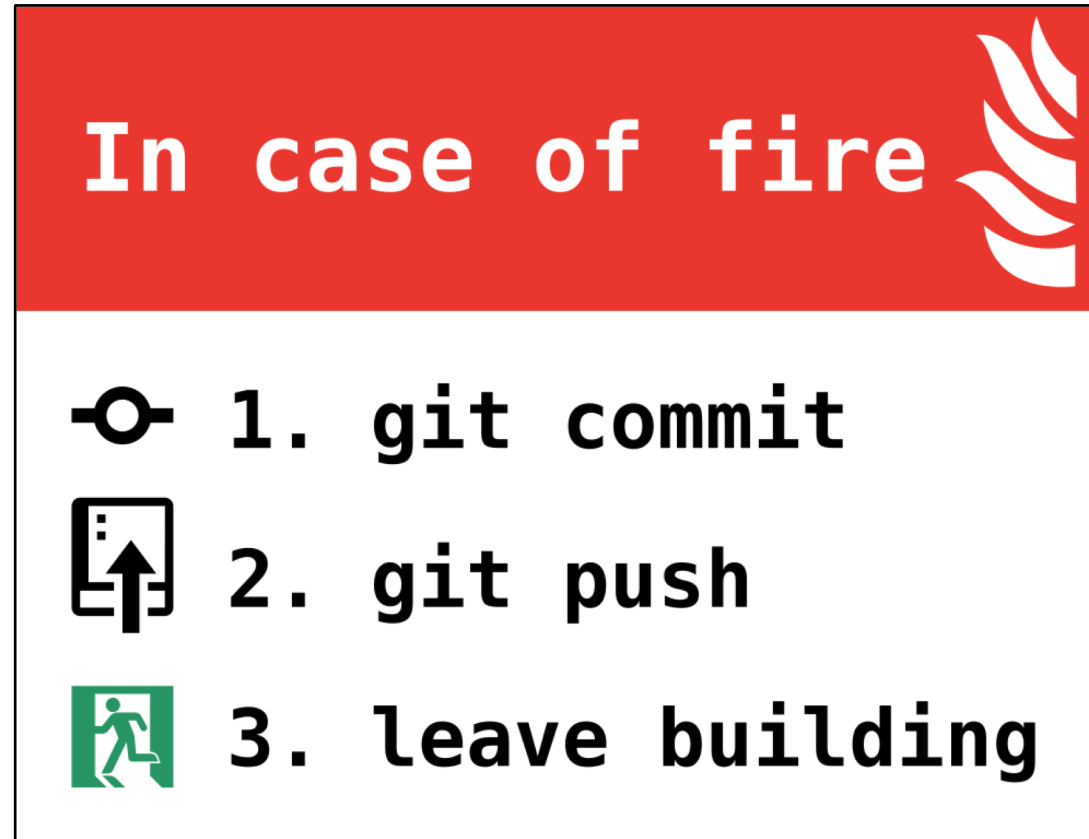
**Practice all four Workflows**. All workshop materials, including a full tutorial for practicing Workflow 4 inside Colab, are on GitHub.

# Today I Learned...



Source: https://xkcd.com/1597



Source: https://github.com/hendrixroa/in-case-of-fire