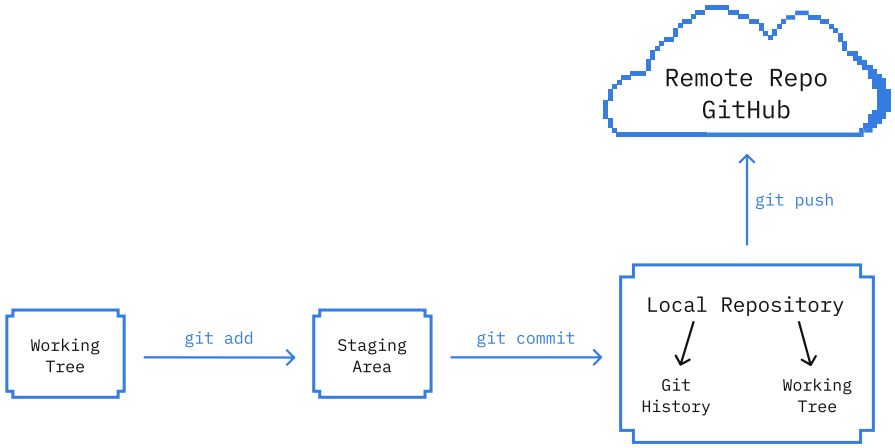
Basic Git Workflow

Git and GitHub



How to set up a new project with Git and GitHub

1. Go to GitHub and create a new repo

2. Make a new local git repo

```
mkdir PROJECT_NAME
cd PROJECT_NAME
git init
```

3. Make changes to your local project (example change shown below)

```
echo 'Hello World' > README.md
```

4. Add and commit all changes

```
git add -A
git commit -m "initial commit"
```

5. Connect local repo to remote and push changes

```
# if you are using HTTPS authentication
git remote add origin https://github.com/USERNAME/REMOTE_REPO_NAME.git
git push -u origin main

# if you are using SSH authentication
git remote add origin git@github.com:USERNAME/REMOTE_REPO_NAME.git
git push -u origin main
```

Authenticating with SSH

```
ssh-keygen -t ed25519 -b 4096 -C "YOUR_EMAIL@GMAIL.COM"    # generates a new SSH key pair
                                                           # by default this saves your keys to `~/.ssh/`.

ps -ax | grep ssh-agent | grep -v grep    # checks if ssh-agent is running
                                          # on Git Bash, change `ps -ax` to `ps -a`

eval $(ssh-agent -s)    # starts ssh-agent if it isn't running

eval $(ssh-agent -s)    # starts ssh-agent if it isn't running
                        # you may have to do this when restarting your computer

ssh-add ~/.ssh/id_ed25519     # bind private key to ssh-agent
                              # you may have to do this when opening a new terminal
```

Basic Git Commands

Git and GitHub

`git init`	Initializes the current working directory as a git repo
`git add FILENAME`	Adds `./FILENAME` to the staging area
`git add -A`	Adds all files with changes to the staging area
`git add .`	Adds all files in the current working directory to the staging area
`git commit`	Commits staged files and prompts you to enter a message
`git commit -m "MESSAGE"`	Commits staged files with the commit message "MESSAGE"
`git commit --amend`	Updates the most recent commit
`git log`	Shows a sequential list of all of your commits
`git status`	Shows info about the repo, including which files have been staged and whether they have been added to the staging area
`git status -sb`	The `-sb` flag shows a shortened version of `git status`
`git push -u origin main`	Pushes local commits to remote repo (the `-u` is only necessary the first time you use it)
`git remote add origin REPO_URL`	Links the local repo with the remote repo on github
`git clone REPO_URL`	Downloads a copy of the repo to your local computer

Remote Repository URLs

GitHub repository URLs depend on the authentication strategy that you use:

- SSH – `git@github.com:USERNAME/REMOTE_REPO_NAME.git`
- HTTPS – `https://github.com/USERNAME/REMOTE_REPO_NAME.git`