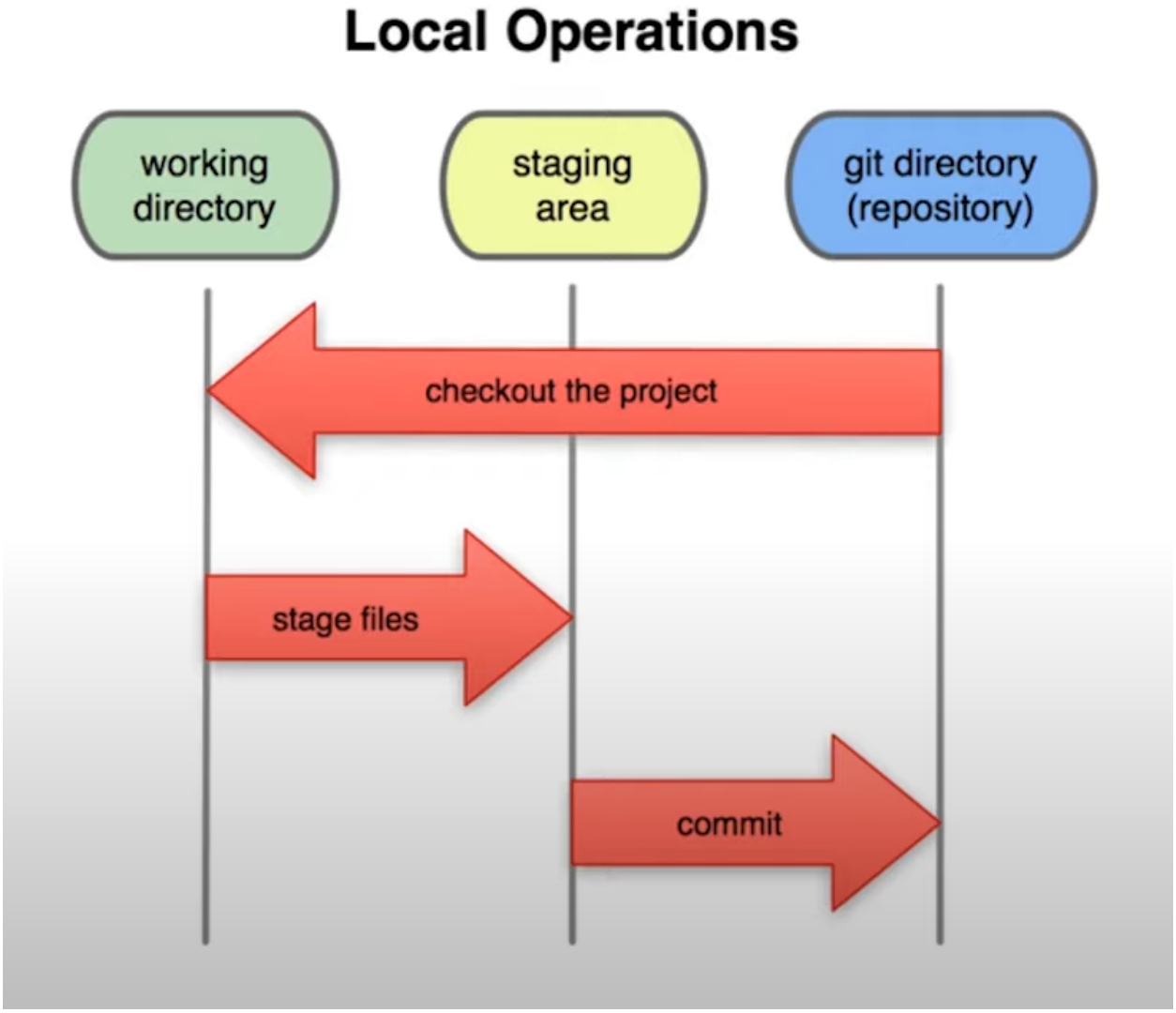
Git

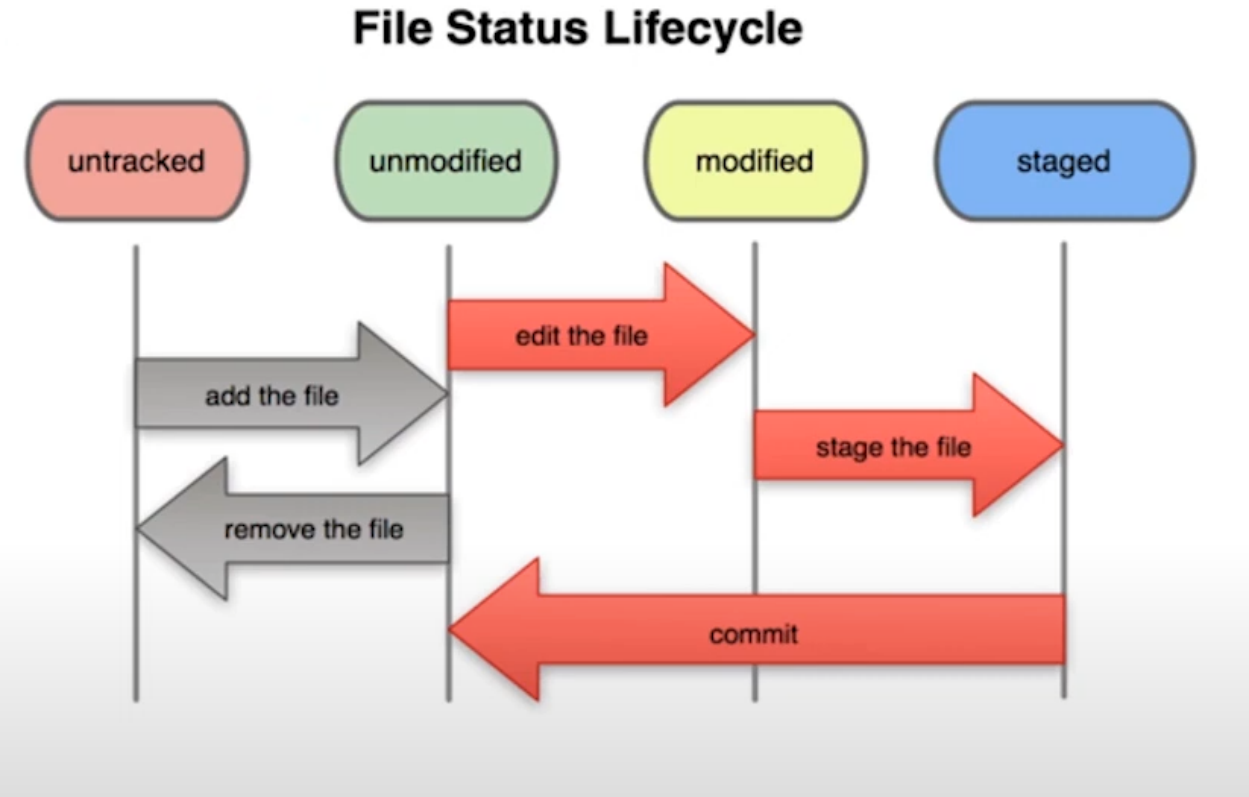
Create a new repository on the command line

```
git init
git add README.md
git commit -m "first commit"
git remote add origin git@github.com:Capt-SumitDas/test.git
git push -u origin master
```

Push an existing repository from the command line

```
git remote add origin git@github.com:Capt-SumitDas/test.git
git push -u origin master
```


Local Operations
working directory
staging area
git directory (repository)
checkout the project
stage files
commit



git status # to check git status

git init # to create git repo

git add --a # all file go to staging area or tracking

git add . # all file go to staging area or tracking

git add <file_name> # chosing file go to staging area

git restore --staged <file_name> #Unstage the file

git checkout -- <file_name> #Unmodify the change

git checkout -f #Unchange and go the last commit

git commit -m "first commit" # take a file screenshot

git commit -a -m “update message” #direct commit which already in tracking

git commit --amend #Change old commit

git mv file.txt fileRenamed.txt #Rename the file and already staged

git rm --cached file_name #untrack the file

rm -rf .git # to delete the .git file (git repo)

git rm file.txt # remove the file

git clone <URL> <foldername_which_you_want> # to clone repo

ignore file in **Git**

- Create a **.gitignore** file
- write into file which which you want to hide
- if you want to ignore specific file like log file then write in **.gitignore** file the * and the file extension name ex: ***.log**
- if you want to ignore specific folder then write the name of folder(ex: **foldername/**) in the **.gitignore** file.

- if you have 2 folders with same name but 1 in into another folder and you want to ignore outer file then you write ex: **/foldername/**
- if you want to ignore under the folder directory then first write folder name and then directory name ex: **FolderName/DirectoryName**

git log # to see commits

- **git log -p** #show what is add and what is remove
- **git log -p -2** #show to commits only
- **git log --stat** #show summary of add or delete
- **git log --pretty=oneline** #show commits in one line
- **git log --pretty=short** #show commits in shorts
- **git log --pretty=full** #show commits in more details(author and commit)
- **git log --since=2.days** #last 2 days commits
- **git log --since=2.weeks** #last 2 weeks commits
- **git log --since=2.months** #last 2 months commits
- **git log --since=2.years** #last 2 years commits

How to deploy a SSH key to connect with Github account

1. Open Git Bash.
2. Paste the text below, substituting in your GitHub email address.

```
$ ssh-keygen -t ed25519 -C "your_email@example.com"

Note: If you are using a legacy system that doesn't support the Ed25519 algorithm, use:

$ ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
```

3. Firstly type yes and then if you want to fill the option or skip this to Press the ENTER.
4. Adding your SSH key to the ssh-agent
    a. Ensure the ssh-agent is running. You can use the "Auto-launching the ssh-agent" instructions in "Working with SSH key passphrases
    ", or start it manually:

```
# start the ssh-agent in the background
$ eval "$(ssh-agent -s)"
> Agent pid 59566
```

    b. Add your SSH private key to the ssh-agent. If you created your key with a different name, or if you are adding an existing key that has a different name, replace *id_ed25519*
     in the command with the name of your private key file.

```
$ ssh-add ~/.ssh/id_ed25519
```

    c. 1. Add the SSH key to your account on GitHub. For more information, see "Adding a new SSH key to your GitHub account.

5. Copy the SSH key to your clipboard

```
clip < ~/.ssh/id_rsa.pub
```

6. Go to setting > SSH and GPG keys > New SSH key and paste

Note:

you also follow this page to configure the remote access.

https://docs.github.com/en/authentication/connecting-to-github-with-ssh/generating-a-new-ssh-key-and-adding-it-to-the-ssh-agent

git remote #show which is repo is add

git remote -v #show URL

git remote add origin git@github.com:Capt-SumitDas/test.git #add a repo and give a name origin

git push -u origin master #to push your work into Github repo

git diff # compare the staging to working area

git diff --staged #compare last commit to current staging area

git config --global alias.st status #use st as status, means we attach st as status. alias means use custom command a original command or want to short command.

one more example

git config —global alias.unstage ‘restore --staged --’

GIT BASICS

`git init <directory>`	Create empty Git repo in specified directory. Run with no arguments to initialize the current directory as a git repository.
`git clone <repo>`	Clone repo located at `<repo>` onto local machine. Original repo can be located on the local filesystem or on a remote machine via HTTP or SSH.
`git config user.name <name>`	Define author name to be used for all commits in current repo. Devs commonly use `--global` flag to set config options for current user.
`git add <directory>`	Stage all changes in `<directory>` for the next commit. Replace `<directory>` with a `<file>` to change a specific file.
`git commit -m "<message>"`	Commit the staged snapshot, but instead of launching a text editor, use `<message>` as the commit message.
`git status`	List which files are staged, unstaged, and untracked.
`git log`	Display the entire commit history using the default format. For customization see additional options.
`git diff`	Show unstaged changes between your index and working directory.

UNDOING CHANGES

`git revert <commit>`	Create new commit that undoes all of the changes made in `<commit>`, then apply it to the current branch.
`git reset <file>`	Remove `<file>` from the staging area, but leave the working directory unchanged. This unstages a file without overwriting any changes.
`git clean -n`	Shows which files would be removed from working directory. Use the `-f` flag in place of the `-n` flag to execute the clean.

REWRITING GIT HISTORY

`git commit --amend`	Replace the last commit with the staged changes and last commit combined. Use with nothing staged to edit the last commit's message.
`git rebase <base>`	Rebase the current branch onto `<base>`. `<base>` can be a commit ID, branch name, a tag, or a relative reference to `HEAD`.
`git reflog`	Show a log of changes to the local repository's `HEAD`. Add `--relative-date` flag to show date info or `--all` to show all refs.

GIT BRANCHES

`git branch`	List all of the branches in your repo. Add a `<branch>` argument to create a new branch with the name `<branch>`.
`git checkout -b <branch>`	Create and check out a new branch named `<branch>`. Drop the `-b` flag to checkout an existing branch.
`git merge <branch>`	Merge `<branch>` into the current branch.

REMOTE REPOSITORIES

`git remote add <name> <url>`	Create a new connection to a remote repo. After adding a remote, you can use `<name>` as a shortcut for `<url>` in other commands.
`git fetch <remote> <branch>`	Fetches a specific `<branch>`, from the repo. Leave off `<branch>` to fetch all remote refs.
`git pull <remote>`	Fetch the specified remote's copy of current branch and immediately merge it into the local copy.
`git push <remote> <branch>`	Push the branch to `<remote>`, along with necessary commits and objects. Creates named branch in the remote repo if it doesn't exist.

GIT CONFIG

`git config --global user.name <name>`	Define the author name to be used for all commits by the current user.
`git config --global user.email <email>`	Define the author email to be used for all commits by the current user.
`git config --global alias. <alias-name> <git-command>`	Create shortcut for a Git command. E.g. `alias.glog "log --graph --oneline"` will set `"git glog"` equivalent to `"git log --graph --oneline.`
`git config --system core.editor <editor>`	Set text editor used by commands for all users on the machine. `<editor>` arg should be the command that launches the desired editor (e.g., vi).
`git config --global --edit`	Open the global configuration file in a text editor for manual editing.

GIT LOG

`git log -<limit>`	Limit number of commits by `<limit>`. E.g. `"git log -5"` will limit to 5 commits.
`git log --oneline`	Condense each commit to a single line.
`git log -p`	Display the full diff of each commit.
`git log --stat`	Include which files were altered and the relative number of lines that were added or deleted from each of them.
`git log --author="<pattern>"`	Search for commits by a particular author.
`git log --grep="<pattern>"`	Search for commits with a commit message that matches `<pattern>`.
`git log <since>..<until>`	Show commits that occur between `<since>` and `<until>`. Args can be a commit ID, branch name, `HEAD`, or any other kind of revision reference.
`git log -- <file>`	Only display commits that have the specified file.
`git log --graph --decorate`	`--graph` flag draws a text based graph of commits on left side of commit msgs. `--decorate` adds names of branches or tags of commits shown.

GIT DIFF

`git diff HEAD`	Show difference between working directory and last commit.
`git diff --cached`	Show difference between staged changes and last commit

GIT RESET

`git reset`	Reset staging area to match most recent commit, but leave the working directory unchanged.
`git reset --hard`	Reset staging area and working directory to match most recent commit and **overwrites all changes** in the working directory.
`git reset <commit>`	Move the current branch tip backward to `<commit>`, reset the staging area to match, but leave the working directory alone.
`git reset --hard <commit>`	Same as previous, but resets both the staging area & working directory to match. **Deletes** uncommitted changes, and **all commits after** `<commit>`.

GIT REBASE

`git rebase -i <base>`	Interactively rebase current branch onto `<base>`. Launches editor to enter commands for how each commit will be transferred to the new base.

GIT PULL

`git pull --rebase <remote>`	Fetch the remote's copy of current branch and rebases it into the local copy. Uses git rebase instead of merge to integrate the branches.

GIT PUSH

`git push <remote> --force`	Forces the `git push` even if it results in a non-fast-forward merge. Do not use the `--force` flag unless you're absolutely sure you know what you're doing.
`git push <remote> --all`	Push all of your local branches to the specified remote.
`git push <remote> --tags`	Tags aren't automatically pushed when you push a branch or use the `--all` flag. The `--tags` flag sends all of your local tags to the remote repo.