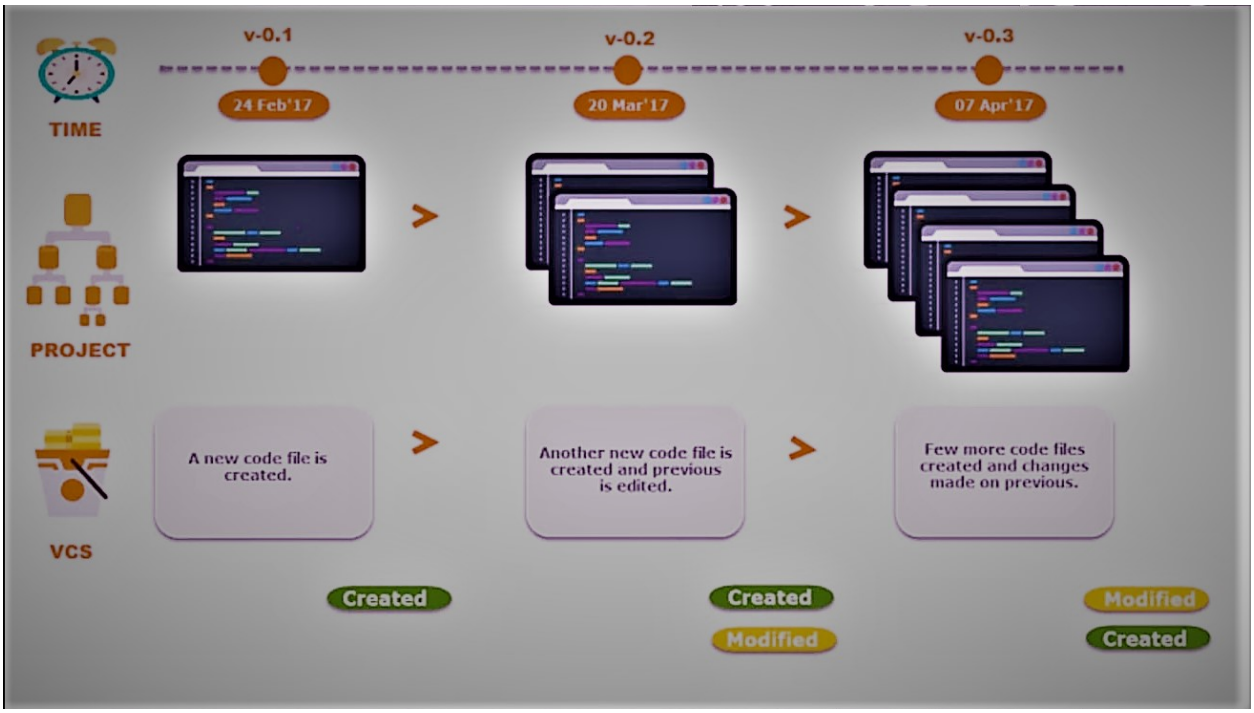
Git and Github

- **Git** is a version control system used to track changes made to your code.
- It is called a version control system because the main feature of git is to manage the different versions of your application.
- You can also revert (return) back to any previous version.
- Using branches, we can work on new features and bug fixes independently without affecting the main code base that might be running on your application.
- Once we are done, you can then merge that Branch into the main code base to make sure that your application is working properly with the new version of your code.
- Git allows multiple developers to collaborate or work as a team on a single code base.
- The difference between git and GitHub is that git is a command-line tool used for version control system that is in your computer but GitHub is a web-based platform that is used to host and collaborate on git repositories online.
- There are different alternatives for GitHub, such as gitlab or bitbucket.




```
git --version
```

```
clear
```

```
                                    Git Blash

mkdir learnGit                                          To create Respository / Folder
cd learnGit                                             cd - change directory
```

```
code .                                                  Open VS Code
```

```
Create a new repository

Respository Name : learnGit
```

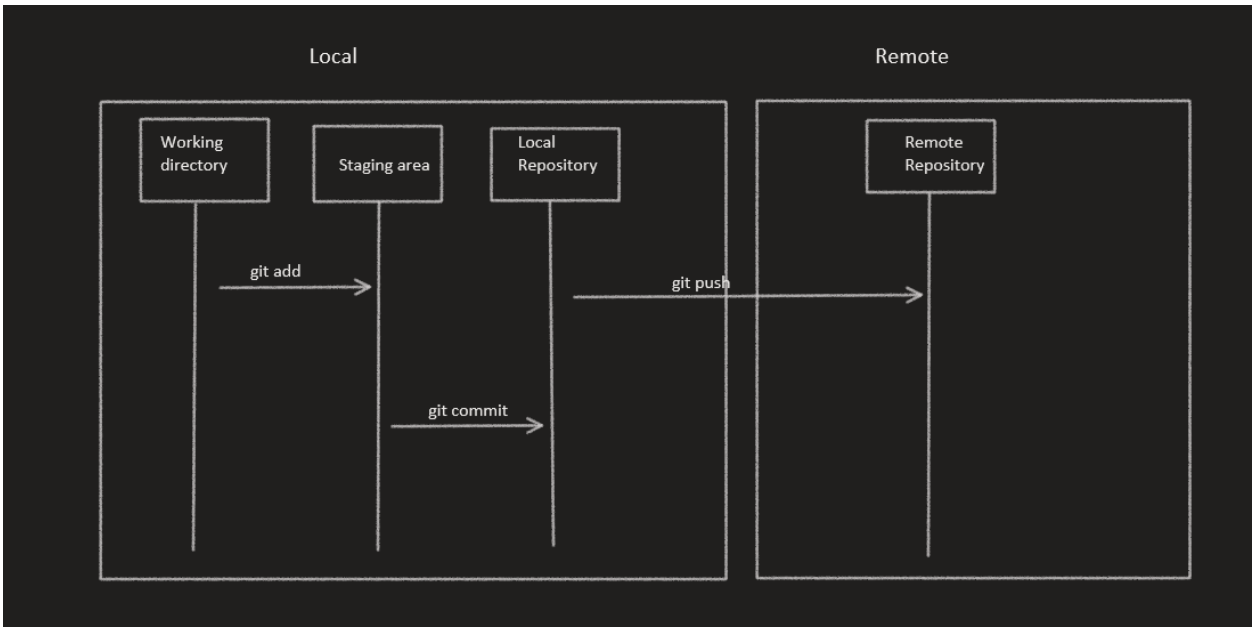
- A `README.md` is a plain text file that provides essential information and instructions about a project or repository.

- A `README.md` is a text file that explains what a project is about.
- A `.gitignore` is a file that tells Git which files to ignore when tracking changes in a project.
- `ls` is a command that lists files and directories in the current folder.

```
echo "# learnGit" >> README.md

ls
README.md
```

- `git init` : When you run the git init command, it initialises a new Git repository in the current directory.
  - This means that Git will start tracking changes and version histories for the files within that directory and its subdirectories.
  - It creates a hidden .git folder that contains the necessary repository files and data.



- `git add` : Adds specified files or directories to the staging area, preparing them to be included in the next commit.

```
git add README.md
```

```
git status
```

- `git status` : Displays the current state of the Git repository, showing information such as tracked and untracked files, branch information, and the status of changes (e.g., modified, staged, or committed).

```
git commit -m "Initial commit"
```

- `git push`: Pushes the committed changes from the local Git repository to a remote repository, typically on a Git hosting service like Github or GitLab. This updates the remote repository with the latest commits and makes them accessible to others who have access to the remote repository.
- `git branch` : Displays a list of branches in the Git repository, indicating the current branch with an asterisk(*).
- `git remote -v` shows the remote repositories linked to your Git project.
- `git remote add origin url` connects your Git repository to a remote location specified by the URL.

```
git remote -v
```

```
git remote add origin https://github.com/devHarsh98/learnGit.git
```

```
git remote -v

origin  https://github.com/devHarsh98/learnGit.git (fetch)
origin  https://github.com/devHarsh98/learnGit.git (push)
```

```
get push -u origin master
```

```
                                        README.md
#learning_Git
```

```
                                          app.js
console.log('This is my second version);
```

```
git status

modified:   README.md
Untracked files:  app.js
```

```
git add .
```

```
git status

Changes to be committed:  modified:   README.md
                          new file:   app.js
```

- `git branch [branch name]`: Creates a new branch with the specified name in the Git repository.

```
git branch mybranch
```

```
git branch
```

```
* master
  mybranch
```

- `git checkout [branch name]`: Switches the current branch to the specified branch name in the Git repository.

```
git checkout mybranch

Switched to branch 'mybranch'
```

```
git branch

  master
* mybranch
```

```
                                        app.js
console.log('This is my third version in mybranch );
```

```
git add .

git commit -m "Add app.js in mybranch"

git push -u origin mybranch
```

```
Pull Request = Merge Request
```

- `git clone [repository url]` : Creates a copy of a remote Git repository on your local machine.

```
git clone https://github.com/fsojitra/Node.js-Register-Login-App.git
```

- `git config --global user.name [username]`: Sets the global user name for Git commits to the specified username.

- `git config --global user.email [email]`: Sets the global email address for Git commits to the specified username.