GIT & GITHUB ALL COMMANDS BY SPS

GIT ALL COMMANDS:

1. Setting Up Git

Install and Configure Git:

```
sudo apt install git          # Install Git (Linux)
git --version                 # Verify Git installation
git config --global user.name "Your Name"    # Set username
git config --global user.email "your_email@example.com"  # Set email
git config --list             # View global config settings
```

2. Repository Management

Initialize and Clone Repositories:

```
git init                      # Initialize a new local Git repository
git clone <repository-URL>    # Clone an existing remote repository
```

3. Working with Files

Track and Stage Files:

```
git add <file>                # Stage a specific file
git add .                     # Stage all changes
git rm <file>                 # Remove a file from the working directory and index
```

Check Repository Status:

```
git status                    # View changes and staged files
```

4. Committing Changes:

```
git commit -m "Commit message"  # Commit staged changes with a message
git commit -a -m "Message"      # Stage and commit all changes in one step
git commit --amend              # Edit the last commit (message or staged files)
```

5. Branch Management

Create, Switch, and Merge Branches:

```
git branch                    # List branches
```

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git branch <branch-name> # Create a new branch

git checkout <branch-name> # Switch to a branch

git checkout -b <branch-name> # Create and switch to a new branch

git merge <branch-name> # Merge a branch into the current branch

git branch -d <branch-name> # Delete a branch

6. Working with Remotes

Link and Manage Remotes:

git remote add origin <remote-URL> # Link a remote repository

git remote -v # View remote repositories

git remote remove origin # Remove a remote repository

Push and Pull Changes:

git push origin <branch-name> # Push changes to a remote branch

git push -u origin <branch-name> # Push changes and set the upstream branch

git pull origin <branch-name> # Pull changes from the remote branch

git fetch # Fetch updates from the remote without merging

7. Viewing Logs and History

Check Commit History:

git log # View commit history

git log --oneline # View concise commit history

git show <commit-hash> # View details of a specific commit

8. Undoing Changes

Revert or Reset Changes:

git reset <file> # Unstage a file

git reset --soft <commit-hash> # Undo commits but keep changes staged

git reset --hard <commit-hash> # Undo commits and discard all changes

git revert <commit-hash> # Create a new commit that undoes a specific commit

9. Stashing Changes

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Save and Apply Temporary Changes:

```
git stash                # Save uncommitted changes temporarily
git stash apply          # Apply the latest stashed changes
git stash drop           # Delete the latest stash
git stash list           # View all stashes
```

10. Collaborating with GitHub

Fork and Pull Requests:

Fork a repository from the GitHub web interface.

Pull Request:

Push changes to your forked repository.

Go to the original repository and create a pull request via GitHub.

11. Git Tags

Mark Versions:

```
git tag <tag-name>           # Create a lightweight tag
git tag -a <tag-name> -m "Message"  # Create an annotated tag
git push origin <tag-name>   # Push a tag to the remote repository
git tag                      # List all tags
```

12. GitHub-Specific Commands

Using GitHub CLI:

Install GitHub CLI:

```
brew install gh          # macOS
sudo apt install gh      # Linux
```

Login and Manage GitHub Repositories:

```
gh auth login            # Authenticate to GitHub
gh repo create <repo-name>   # Create a new GitHub repository
gh repo clone <repo-name>    # Clone a repository
```

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gh issue create # Create a new GitHub issue

gh pr create # Create a new pull request