



**Placement Empowerment Program**  
***Cloud Computing and DevOps Centre***

***60 Days of DevOps Challenge***

***Day 3: Git & GitHub - Basics, Branching, Merging, PRs***

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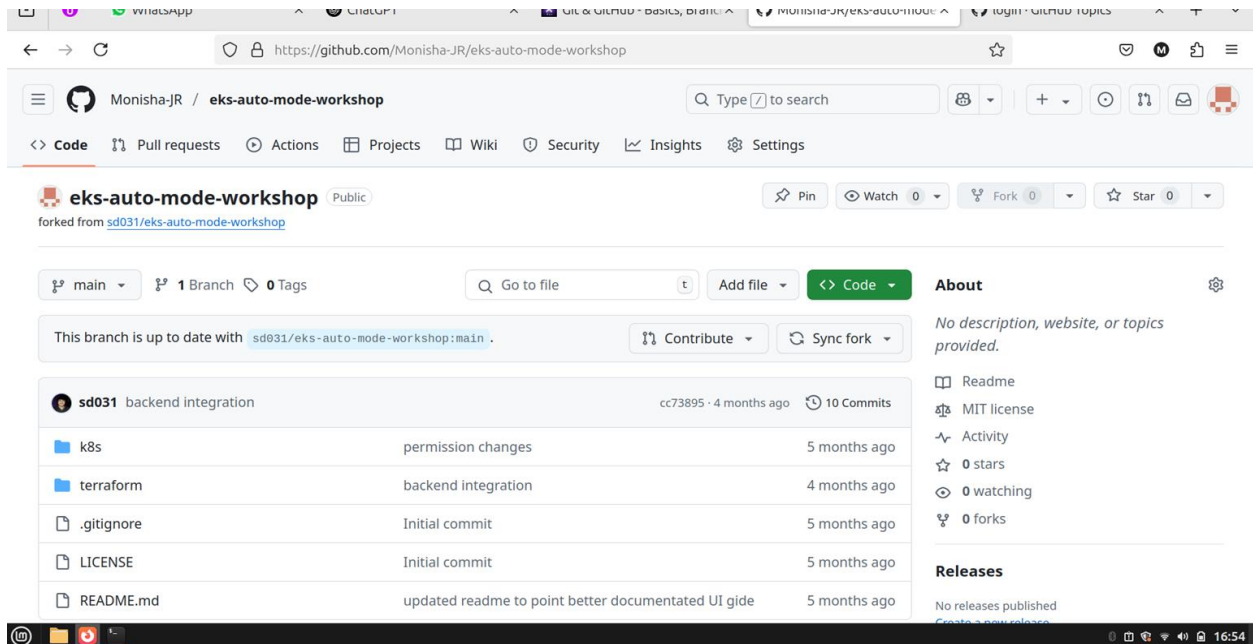


This PoC will showcase **how to automatically provision and manage EKS (Elastic Kubernetes Service) clusters on AWS** using Infrastructure-as-Code and automation tools.

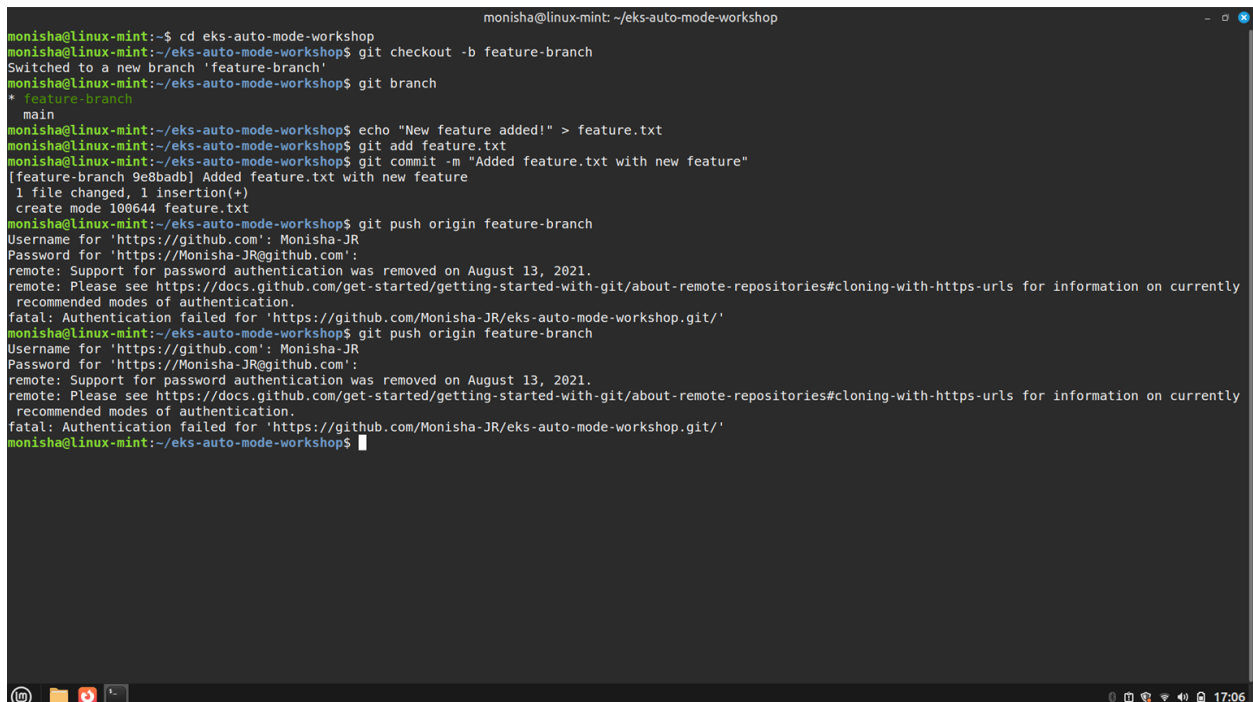
## Challenge 1: Fork and clone an open-source project (Sample Project Link)

The screenshot shows the GitHub repository page for 'eks-auto-mode-workshop' by user 'sd031'. The repository is public and has 1 Watch, 53 Forks, and 3 Stars. The main branch is 'main'. The repository contains several files and folders: 'k8s' (permission changes, 5 months ago), 'terraform' (backend integration, 4 months ago), '.gitignore' (Initial commit, 5 months ago), 'LICENSE' (Initial commit, 5 months ago), and 'README.md' (updated readme to point better documented UI glide, 5 months ago). The 'About' section states 'No description, website, or topics provided.' and lists 'Readme', 'MIT license', 'Activity', '3 stars', '1 watching', and '53 forks'. The 'Releases' section shows 'No releases published'.

The screenshot shows the 'Create fork' page for the repository 'eks-auto-mode-workshop'. The 'Owner' is 'Monisha-JR' and the 'Repository name' is 'eks-auto-mode-workshop'. A green checkmark indicates 'eks-auto-mode-workshop is available.' Below this, a note states: 'By default, forks are named the same as their upstream repository. You can customize the name to distinguish it further.' There is a 'Description (optional)' text box. A checkbox labeled 'Copy the main branch only' is checked, with a note: 'Contribute back to sd031/eks-auto-mode-workshop by adding your own branch. [Learn more.](#)' Below this, a note states: 'You are creating a fork in your personal account.' A green 'Create fork' button is at the bottom right. The footer shows '© 2025 GitHub, Inc. Terms Privacy Security Status Docs Contact Manage cookies Do not share my personal information'.



## Challenge 2: Create a new branch (feature-branch), switch, and commit changes.



### Challenge 3: Merge feature-branch into main and push the changes.

```
monisha@linux-mint: ~/eks-auto-mode-workshop
monisha@linux-mint:~/eks-auto-mode-workshop$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
monisha@linux-mint:~/eks-auto-mode-workshop$ git pull origin main
From https://github.com/Monisha-JR/eks-auto-mode-workshop
* branch      main      -> FETCH_HEAD
Already up to date.
monisha@linux-mint:~/eks-auto-mode-workshop$ git merge feature-branch
Updating cc73895..9e8badb
Fast-forward
 feature.txt | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 feature.txt
monisha@linux-mint:~/eks-auto-mode-workshop$ git push origin main
Username for 'https://github.com': Monisha-JR
Password for 'https://Monisha-JR@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently
recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Monisha-JR/eks-auto-mode-workshop.git/'
monisha@linux-mint:~/eks-auto-mode-workshop$ git push origin --delete feature-branch
Username for 'https://github.com': Monisha-JR
Password for 'https://Monisha-JR@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently
recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Monisha-JR/eks-auto-mode-workshop.git/'
monisha@linux-mint:~/eks-auto-mode-workshop$
```

### Challenge 4: Use git reset or git revert to undo a commit.

```
monisha@linux-mint: ~/eks-auto-mode-workshop
monisha@linux-mint:~/eks-auto-mode-workshop$ git reset --hard HEAD~1
HEAD is now at 0292501 updated readme to point better documented UI glide
monisha@linux-mint:~/eks-auto-mode-workshop$ git reset --soft HEAD~1
monisha@linux-mint:~/eks-auto-mode-workshop$ git reset --soft HEAD~1
monisha@linux-mint:~/eks-auto-mode-workshop$ git log --oneline
13c75d6 (HEAD -> main) removed required provider version not needed
5c6503e updated read me
25cd61a updated codes
3926ccf disabling the rds output
cc19a0f Initial commit
fc2c86c Initial commit
monisha@linux-mint:~/eks-auto-mode-workshop$
```

### Challenge 5: Rebase feature-branch onto main and understand the difference.

```
monisha@linux-mint: ~/eks-auto-mode-workshop
monisha@linux-mint:~/eks-auto-mode-workshop$ git checkout feature-branch
Switched to branch 'feature-branch'
monisha@linux-mint:~/eks-auto-mode-workshop$ git rebase main
Current branch feature-branch is up to date.
monisha@linux-mint:~/eks-auto-mode-workshop$ git rebase --abort
fatal: No rebase in progress?
monisha@linux-mint:~/eks-auto-mode-workshop$ git add <file>
bash: syntax error near unexpected token `newline'
monisha@linux-mint:~/eks-auto-mode-workshop$ git rebase --continue
fatal: No rebase in progress?
monisha@linux-mint:~/eks-auto-mode-workshop$
```

## Challenge 6: Create a PR on GitHub from a feature branch.

```
monisha@linux-mint:~/eks-auto-mode-workshop$ git push origin feature-branch
Username for 'https://github.com': Monisha-JR
Password for 'https://github.com': 
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently
recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Monisha-JR/eks-auto-mode-workshop.git/'
monisha@linux-mint:~/eks-auto-mode-workshop$
```

## Challenge 7: Create conflicting changes in different branches and resolve them.

```
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git init conflict-demo && cd conflict-demo
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/monisha/eks-auto-mode-workshop/conflict-demo/.git/
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ echo "Hello, DevOps!" > file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git add file.txt && git commit -m "Initial commit"
[master (root-commit) 11c4cab] Initial commit
1 file changed, 1 insertion(+)
 create mode 100644 file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ echo "Feature branch change" > file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git add file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git commit -m "feature-branch edit"
[feature-branch blb2751] feature-branch edit
1 file changed, 1 insertion(+), 1 deletion(-)
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git checkout main
error: pathspec 'main' did not match any file(s) known to git
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ echo "Main branch change" > file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git add file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git commit -m "main branch edit"
[feature-branch 5344645] main branch edit
1 file changed, 1 insertion(+), 1 deletion(-)
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git merge feature-branch
Already up to date.
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git add file.txt
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git commit -m "Resolved merge conflict"
On branch feature-branch
nothing to commit, working tree clean
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git push origin main
error: src refspec main does not match any
error: failed to push some refs to 'origin'
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$
```

## Challenge 8 : git stash to save and restore uncommitted changes.

```
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git status
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git status
On branch feature-branch
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   file.txt

no changes added to commit (use "git add" and/or "git commit -a")
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git stash
Saved working directory and index state WIP on feature-branch: 5344645 main branch edit
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git stash pop # or git stash apply
On branch feature-branch
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   file.txt

no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (e8be9b6bcd2cd206ced36b9a7ee703524c7ac3fd)
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git stash list
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git stash drop stash@{0}
error: stash@{0} is not a valid reference
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$ git stash clear
monisha@linux-mint:~/eks-auto-mode-workshop/conflict-demo$
```

## Challenge 9 : Add version tags to commits and push them.

```
monisha@linux-mint: ~/eks-auto-mode-workshop
monisha@linux-mint:~/eks-auto-mode-workshop$ git tag v1.0.0
monisha@linux-mint:~/eks-auto-mode-workshop$ git tag -a v1.0.0 -m "Version 1.0.0 release"
fatal: tag 'v1.0.0' already exists
monisha@linux-mint:~/eks-auto-mode-workshop$ git push origin v1.0.0
Username for 'https://github.com': Monisha-JR
Password for 'https://Monisha-JR@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently
recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Monisha-JR/eks-auto-mode-workshop.git/'
monisha@linux-mint:~/eks-auto-mode-workshop$ git push --tags
Username for 'https://github.com': Monisha-JR
Password for 'https://Monisha-JR@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information on currently
recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/Monisha-JR/eks-auto-mode-workshop.git/'
monisha@linux-mint:~/eks-auto-mode-workshop$ git tag -d v1.0.0
Deleted tag 'v1.0.0' (was 9e8badb)
monisha@linux-mint:~/eks-auto-mode-workshop$
```

## Challenge 10 : Use git commit --amend and git rebase -i to edit past commits.

```
monisha@linux-mint: ~/eks-auto-mode-workshop
monisha@linux-mint:~/eks-auto-mode-workshop$ echo "Edit line" >> file.txt
monisha@linux-mint:~/eks-auto-mode-workshop$ git add file.txt
monisha@linux-mint:~/eks-auto-mode-workshop$ git commit --amend -m "Updated last commit"
[feature-branch b73fe99] Updated last commit
Date: Mon Jul 14 17:03:11 2025 +0530
2 files changed, 2 insertions(+)
create mode 100644 feature.txt
create mode 100644 file.txt
monisha@linux-mint:~/eks-auto-mode-workshop$ git push --force
fatal: The current branch feature-branch has no upstream branch.
To push the current branch and set the remote as upstream, use

    git push --set-upstream origin feature-branch

To have this happen automatically for branches without a tracking
upstream, see 'push.autoSetupRemote' in 'git help config'.
monisha@linux-mint:~/eks-auto-mode-workshop$
```