Day 12: Advance Git & GitHub

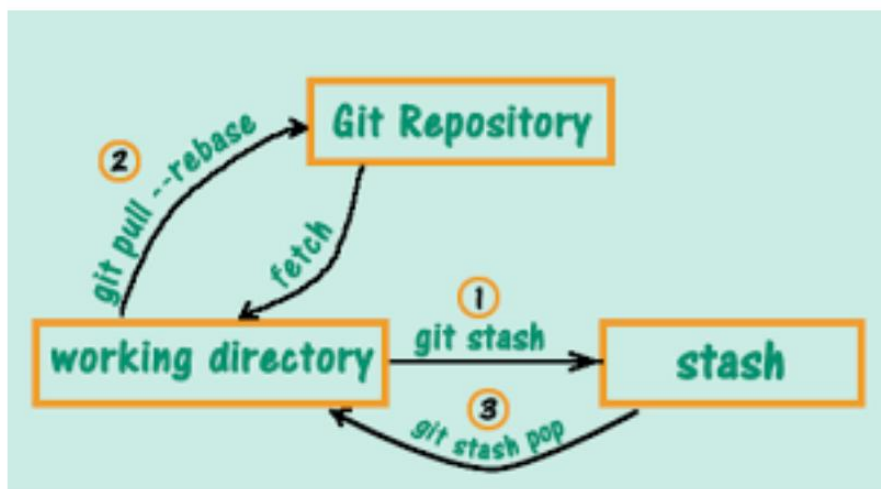**This is #90DaysofDevops challenge under the guidance of Shubham Londhe sir.**

Day 12 TASK

check this for task:

https://github.com/LondheShubham153/90DaysOfDevOps/blob/master/2023/day11/tasks.md

Git Stash:

Git stash is a command that allows you to temporarily save changes you have made in your working directory, without committing them. This is useful when you need to switch to a different branch to work on something else, but you don't want to commit the changes you've made in your current branch yet.
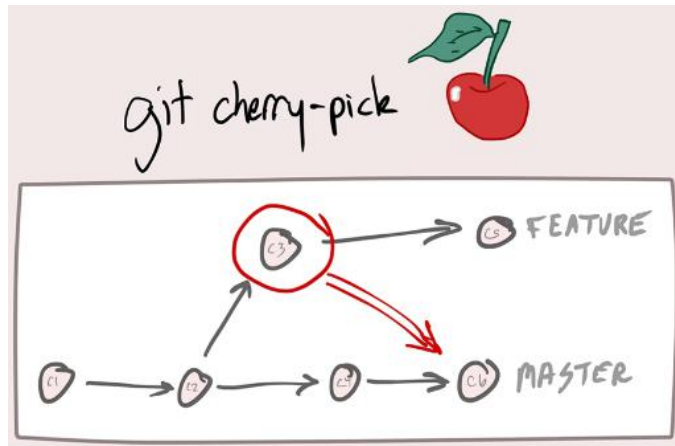

To use Git stash, you first create a new branch and make some changes to it. Then you can use the command git stash to save those changes. This will remove the changes from your working directory and record them in a new stash. You can apply these changes later. git stash list command shows the list of stashed changes.

You can also use git stash drop to delete a stash and git stash clear to delete all the stashes.

Cherry-pick:

Git cherry-pick is a command that allows you to select specific commits from one branch and apply them to another. This can be useful when you want to selectively apply changes that were made in one branch to another.

To use git cherry-pick, you first create two new branches and make some commits to them. Then you use git cherry-pick <commit_hash> command to select the specific commits from one branch and apply them to the other.

Resolving Conflicts:

Conflicts can occur when you merge or rebase branches that have diverged, and you need to manually resolve the conflicts before git can proceed with the merge/rebase. git status command shows the files that have conflicts, git diff command shows the difference between the conflicting versions and git add command is used to add the resolved files.

Task-01

- Create a new branch and make some changes to it.

- Use git stash to save the changes without committing them.

- Switch to a different branch, make some changes and commit them.

```
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch new_feature_2
nothing to commit, working tree clean
ubuntu@ip-172-31-83-182:~/Devops-project$ vi new_stash_branch2.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -a -m "add new file in branch 2"
On branch new_feature_2
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        new_stash_branch2.txt

nothing added to commit but untracked files present (use "git add" to track)
ubuntu@ip-172-31-83-182:~/Devops-project$ git add .
ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -m "add new file in branch 2"
[new_feature_2 8f7b724] add new file in branch 2
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 2 insertions(+)
 create mode 100644 new_stash_branch2.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch new_feature_2
```

Use git stash pop to bring the changes back and apply them on top of the new commits.

#git checkout new_branch_1

#git stash pop

#Git commit

```
ubuntu@ip-172-31-83-182:~/Devops-project$ git checkout new_feature_1
Switched to branch 'new_feature_1'
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch new_feature_1
nothing to commit, working tree clean
ubuntu@ip-172-31-83-182:~/Devops-project$ git stash pop
On branch new_feature_1
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   stash_Demo.txt

Dropped refs/stash@{0} (d5e4fef229052bbff85b8ebae66fd09483e91eea)
ubuntu@ip-172-31-83-182:~/Devops-project$ git stash apply
On branch new_feature_1
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   stash_Demo.txt

ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -m "added file branch 1"
[new_feature_1 d6c52b4] added file branch 1
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 4 insertions(+)
 create mode 100644 stash_Demo.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch new_feature_1
nothing to commit, working tree clean
ubuntu@ip-172-31-83-182:~/Devops-project$ git log
commit d6c52b49c8d466921c399bd649e97787b6196468 (HEAD -> new_feature_1)
Author: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
```

Task-02

- In version01.txt of development branch add below lines after "This is the bug fix in development branch" that you added in Day10 and reverted to this commit.

- Line2>> After bug fixing, this is the new feature with minor alteration"

- Commit this with message " Added feature2.1 in development branch"

```
ubuntu@ip-172-31-83-182:~/Devops-project$ git branch
  main
  new_feature_1
  new_feature_2
ubuntu@ip-172-31-83-182:~/Devops-project$ git checkout new_feature_1
Switched to branch 'new_feature_1'
ubuntu@ip-172-31-83-182:~/Devops-project$ ls
README.md  new_file.txt  stash_Demo.txt  version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ vi version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ vi version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -a -m "Added feature2.1 in development branch"
[new_feature_1 1535462] Added feature2.1 in development branch
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 3 insertions(+), 1 deletion(-)
```

- Line3>> This is the advancement of previous feature

- Commit this with message " Added feature2.2 in development branch"

```
buntu@ip-172-31-83-182:~/Devops-project$ vi version01.txt
buntu@ip-172-31-83-182:~/Devops-project$ git commit -a -m "Added feature2.2 in development branch"
new_feature_1 e82461f] Added feature2.2 in development branch
Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
our name and email address were configured automatically based
n your username and hostname. Please check that they are accurate.
ou can suppress this message by setting them explicitly. Run the
ollowing command and follow the instructions in your editor to edit
our configuration file:

    git config --global --edit

fter doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

1 file changed, 1 insertion(+)
```

- Line4>> Feature 2 is completed and ready for release

- Commit this with message " Feature2 completed"

```
ubuntu@ip-172-31-83-182:~/Devops-project$ vi version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -a -m "Feature2 completed"
[new_feature_1 69255e9] Feature2 completed
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)
```

- All these commits messages should be reflected in Production branch too which will come out from Master branch (Hint: try rebase).

```
ubuntu@ip-172-31-83-182:~/Devops-project$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)
ubuntu@ip-172-31-83-182:~/Devops-project$ git rebase new_feature_1
Successfully rebased and updated refs/heads/main.
ubuntu@ip-172-31-83-182:~/Devops-project$ git rebase new_feature_2
warning: skipped previously applied commit 629eda0
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config advice.skippedCherryPicks false"
Successfully rebased and updated refs/heads/main.
ubuntu@ip-172-31-83-182:~/Devops-project$ git push origin
Username for 'https://github.com': CodeWithRushi
Password for 'https://CodeWithRushi@github.com':
Enumerating objects: 17, done.
Counting objects: 100% (17/17), done.
Compressing objects: 100% (14/14), done.
Writing objects: 100% (15/15), 1.54 KiB | 1.54 MiB/s, done.
Total 15 (delta 6), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (6/6), done.
To https://github.com/CodeWithRushi/Devops-project.git
   212faab..5c8b768  main -> main
```

Task-03

• In Production branch Cherry pick Commit "Added feature2.2 in development
branch" and added below lines in it:

• Line to be added after Line3>> This is the advancement of previous feature

• Line4>>Added few more changes to make it more optimized.

• Commit: Optimized the feature

```
ubuntu@ip-172-31-83-182:~/Devops-project$ ls
README.md  stash_Demo.txt  version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ vi version01.txt
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch main
Your branch is ahead of 'origin/main' by 3 commits.
  (use "git push" to publish your local commits)

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:   version01.txt

no changes added to commit (use "git add" and/or "git commit -a")
ubuntu@ip-172-31-83-182:~/Devops-project$ git commit -a -m "Optimized the feature"  ←
[main a43d063] Optimized the feature
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 2 insertions(+)
ubuntu@ip-172-31-83-182:~/Devops-project$ git status
On branch main
Your branch is ahead of 'origin/main' by 4 commits.
  (use "git push" to publish your local commits)
```

After committing in main branch, switch to the different branch And run the cherry-
pick command git cherry-pick

```
ubuntu@ip-172-31-83-182:~/Devops-project$ git log --oneline
a43d063 (HEAD -> main) Optimized the feature
38e095a Revert "Added New File"
e019979 commit
2910abc Revert "add new file in branch 2"
5c8b768 (origin/main, origin/HEAD) Feature2 completed
1bbb025 Added feature2.2 in development branch
3e3a51b Added feature2.1 in development branch
f228bee (new_feature_2) add new file in branch 2
d6c52b4 added file branch 1
212faab Git Reset Done Successfully
9c0faf9 This is the bug fix in development branch
af56aa3 Added new feature
e414254 Added New File
b8caa8a Initial commit
ubuntu@ip-172-31-83-182:~/Devops-project$ git checkout new_feature_1
Switched to branch 'new_feature_1'
ubuntu@ip-172-31-83-182:~/Devops-project$ cat version01.txt
This is first feature of our application
This is the bug fix in development branch
After bug fixing, this is the new feature with minor alteration
This is the advancement of previous feature
Feature 2 is completed and ready for release
This feature will gadbad everything from now.


ubuntu@ip-172-31-83-182:~/Devops-project$ git cherry-pick a43d063
[new_feature_1 a20d0c5] Optimized the feature
 Date: Thu Jan 12 15:20:05 2023 +0000
 Committer: Ubuntu <ubuntu@ip-172-31-83-182.ec2.internal>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit
```

Please, feel free to drop any questions in the comments below. I would be happy to answer them.

If this post was helpful, please do follow and click the clap

_Thank you for reading

_Rajani