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LAB EXERCISE 3- WORKING WITH GIT REBASE

LAB EXERCISE: GIT REBASE

THIS EXERCISE DEMONSTRATES THE USE OF GIT REBASE IN A SCENARIO WHERE NO CONFLICTS OCCUR.

OBJECTIVE

1. LEARN HOW TO REBASE BRANCHES WHEN THERE ARE NO CONFLICTING CHANGES.
2. UNDERSTAND THE CLEAN, LINEAR HISTORY CREATED BY GIT REBASE.

PREREQUISITES

1. INSTALL GIT ON YOUR SYSTEM.
2. INITIALIZE A GIT REPOSITORY:
GIT INIT GIT-REBASE-LAB

CD GIT-REBASE-LAB

```
$ git init git-rebase-lab
Initialized empty Git repository in C:/Users/HP/git-rebase-lab/.git/

HP@LAPTOP-LG8FVM2R MINGW64 ~
$ cd git-rebase-lab

HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (master)
$ |
```

STEP-BY-STEP INSTRUCTIONS

1. SET UP THE REPOSITORY

1. CREATE THE MAIN BRANCH AND MAKE THE INITIAL COMMIT:
ECHO "LINE 1 FROM MAIN BRANCH" > FILE.TXT

GIT ADD FILE.TXT

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (master)
$ echo "Line 1 from main branch" > file.txt

HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (master)
$ git add file.txt
warning: in the working copy of 'file.txt', LF will be replaced by CRLF the next time Git touches it
```

GIT COMMIT -M "INITIAL COMMIT: ADD LINE 1 FROM MAIN BRANCH"

2. CREATE A NEW BRANCH FEATURE-BRANCH:

GIT CHECKOUT -B FEATURE-BRANCH

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (master)
$ git checkout -b feature-branch
Switched to a new branch 'feature-branch'
```

3. ADD A NEW LINE TO FILE.TXT IN FEATURE-BRANCH:

ECHO "LINE 2 FROM FEATURE BRANCH" >> FILE.TXT

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ echo "Line 2 from feature branch" >> file.txt
```

GIT ADD FILE.TXT

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ git add file.txt
warning: in the working copy of 'file.txt', LF will be replaced by CRLF the next time Git touches it
```

GIT COMMIT -M "ADD LINE 2 FROM FEATURE BRANCH"

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ git commit -m "Add Line 2 from feature branch"
[feature-branch (root-commit) ff9fe1b] Add Line 2 from feature branch
1 file changed, 2 insertions(+)
create mode 100644 file.txt
```

4. SWITCH BACK TO THE MAIN BRANCH AND ADD ANOTHER LINE:

GIT CHECKOUT MAIN

ECHO "LINE 3 FROM MAIN BRANCH" >> FILE.TXT

GIT ADD FILE.TXT

GIT COMMIT -M "ADD LINE 3 FROM MAIN BRANCH"

2. REBASE FEATURE-BRANCH ONTO MAIN

1. SWITCH TO FEATURE-BRANCH:

GIT CHECKOUT FEATURE-BRANCH

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ git checkout feature-branch
Already on 'feature-branch'
```

2. REBASE FEATURE-BRANCH ONTO MAIN:

GIT REBASE MAIN

3. GIT WILL REPLAY THE COMMIT FROM FEATURE-BRANCH ONTO THE MAIN BRANCH. SINCE THERE ARE NO CONFLICTS, THE REBASE COMPLETES AUTOMATICALLY.

3. VERIFY THE REBASE

1. VIEW THE COMMIT HISTORY:

GIT LOG --ONELINE

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ git log --oneline
2da8c40 (HEAD -> feature-branch) Add Line 3 from main branch
ff9fe1b Add Line 2 from feature branch
```

GIT LOG --ONELINE --GRAPH

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ git log --oneline --graph
* 2da8c40 (HEAD -> feature-branch) Add Line 3 from main branch
* ff9fe1b Add Line 2 from feature branch
```

EXAMPLE OUTPUT:

2. CHECK THE CONTENTS OF FILE.TXT:

CAT FILE.TXT

O U T P U T :

```
HP@LAPTOP-LG8FVM2R MINGW64 ~/git-rebase-lab (feature-branch)
$ cat file.txt
Line 1 from main branch
Line 2 from feature branch
Line 3 from main branch
```

```
(base) jeetbiswas@Jeets-MacBook-Air Gaurav % git checkout main
git pull origin main
git checkout my-feature
```

```
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
From github.com:Jeetbiswas23/GauravDas
 * branch      main      -> FETCH_HEAD
Already up to date.
Switched to branch 'my-feature'
(base) jeetbiswas@Jeets-MacBook-Air Gaurav % git rebase main

Current branch my-feature is up to date.
```

```
(base) jeetbiswas@Jeets-MacBook-Air Gaurav % git add Gaurav.txt
git rebase --continue


fatal: No rebase in progress?
(base) jeetbiswas@Jeets-MacBook-Air Gaurav % git push origin my-feature --force

Enumerating objects: 8, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 8 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 658 bytes | 658.00 KiB/s, done.
Total 6 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To github.com:Jeetbiswas23/GauravDas.git
 e10b285..183393f  my-feature -> my-feature
(base) jeetbiswas@Jeets-MacBook-Air Gaurav % git push origin my-feature


Everything up-to-date
```



Ignore .DS_Store

 Jeetbiswas23 committed 6 minutes ago

183393f  

ALL

 Jeetbiswas23 committed 7 minutes ago

7e06d9c  

Save current changes before rebase

 Jeetbiswas23 committed 10 minutes ago

e10b285  



Save current changes

 Jeetbiswas23 committed 11 minutes ago


e75ea10  



Add Line 1

 Jeetbiswas23 committed 25 minutes ago


3cf8de3  



Revert "This is my old Commit"

 Jeetbiswas23 committed 38 minutes ago


8aff39b  

This is my new Commit

 Jeetbiswas23 committed 40 minutes ago

7e62e1d  

This is my old Commit

 Jeetbiswas23 committed 41 minutes ago

727fc8c 