Lab Exercise 3- Working with Git Rebase

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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:

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps> git init git-rebase-lab

Initialized empty Git repository in C:/Users/ASUS/OneDrive/Desktop/DevSecOps/git-rebase-lab/.git/
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps> cd git-rebase-lab
```

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
```

git commit -m "Initial commit: Add Line 1 from main branch"

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab> echo "Line 1 from master branch" > file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab> git add file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab> git commit -m "Initial commit: Add Line 1 from master branch"
[master (root-commit) 58ec874] Initial commit: Add Line 1 from master branch
 1 file changed, 0 insASUSns(+), 0 deletions(-)
 create mode 100644 file.txt
```

2. Create a new branch feature-branch:

```
git checkout -b feature-branch
```

3. Add a new line to file.txt in feature-branch:

```
echo "Line 2 from feature branch" >> file.txt

git add file.txt

git commit -m "Add Line 2 from feature branch"
```

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab> git checkout -b feature-branch
Switched to a new branch 'feature-branch'
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab> echo "Line 2 from feature branch" >> file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-rebase-lab>
```

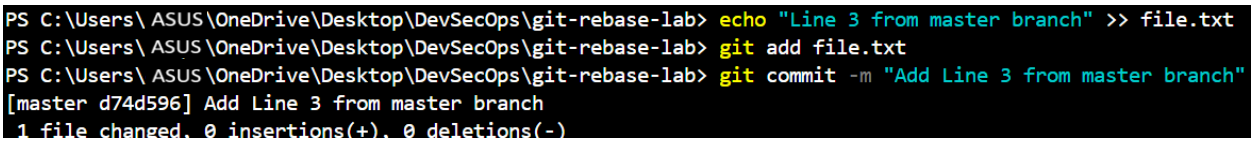
4. Switch back to the main branch and add another line:

```
git checkout main

echo "Line 3 from main branch" >> file.txt

git add file.txt

git commit -m "Add Line 3 from main branch"
```



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2. Rebase feature-branch onto main

1. Switch to feature-branch:

```
git checkout 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.

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3. Verify the Rebase

1. View the commit history:

```
git log --oneline

git log --oneline --graph
```

2. Check the contents of file.txt:

```
cat file.txt
```

Output: