

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.
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Prerequisites

1. Install Git on your system.
2. Initialize a Git repository:

```
git init git-rebase-lab
```

```
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"
```

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"
```

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
```

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
```

```
git log --oneline --graph
```

Example output:

```
* Add Line 2 from feature branch
```

```
* Add Line 3 from main branch
```

```
* Initial commit: Add Line 1 from main branch
```

2. Check the contents of file.txt:

```
cat file.txt
```

Output:

```
Successfully rebased and updated refs/heads/feature-branch.  
PS D:\DevSecOps Lab\git-rebase-lab> git log --oneline --graph  
* 713dc8b (HEAD -> feature-branch) Add Line 2 from feature branch  
* 8b49863 (main) Add Line 3 from main branch  
* fbd5e9f Initial commit: Add Line 1 from main branch  
PS D:\DevSecOps Lab\git-rebase-lab> cat .\file.txt  
Line 1 from main branch  
Line 3 from main branch  
Line 2 from feature branch  
PS D:\DevSecOps Lab\git-rebase-lab> █
```

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