

Lab Exercise 1- Working with Git Revert

Name: Ayush Bhardwaj

Sap ID: 500124917

Roll no.: R2142231775

Batch -2

Exercise: Git Revert

This exercise will guide you through reverting changes in Git. The git revert command is used to create a new commit that undoes the changes introduced by a previous commit without modifying the history.

Objective

- Learn how to use git revert to undo changes from specific commits.
 - Practice handling merge conflicts during a revert.
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Prerequisites

1. Install Git on your system.
2. Set up a Git repository:

```
git init git-revert-lab
```

```
cd git-revert-lab
```

Steps

1. Set Up the Repository

1. Create a file:

```
echo "Line 1" > file.txt
```

2. Stage and commit the file:

```
git add file.txt
```

```
git commit -m "Initial commit: Add file.txt with Line 1"
```

3. Add more changes:

```
echo "Line 2" >> file.txt
```

```
git commit -am "Add Line 2 to file.txt"
```

4. Add another change:

```
echo "Line 3" >> file.txt
```

```
git commit -am "Add Line 3 to file.txt"
```

5. Verify the commit history:

```
git log --oneline
```

Output:

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

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps> cd git-revert-lab
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab>
```

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> echo "Line 1" > file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git add file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git commit -m "Initial commit"
[master (root-commit) 67a9125] Initial commit
1 file changed, 0 insertions(+), 0 deletions(-)
create mode 100644 file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> echo "Line 2" >> file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git commit -am "Add Line 2 to file.txt"
[master fc5a639] Add Line 2 to file.txt
1 file changed, 0 insertions(+), 0 deletions(-)
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> echo "Line 3" >> file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git commit -am "Add Line 3 to file.txt"
[master 2bcf7aa] Add Line 3 to file.txt
1 file changed, 0 insertions(+), 0 deletions(-)
```

```
1 file changed, 0 insertions(+), 0 deletions(-)
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git log --oneline
>>
2bcf7aa (HEAD -> master) Add Line 3 to file.txt
fc5a639 Add Line 2 to file.txt
67a9125 Initial commit
```

2. Revert the Last Commit

1. Revert the most recent commit:

```
git revert HEAD
```

2. Git will open a text editor for the commit message. Save and close the editor to complete the revert.

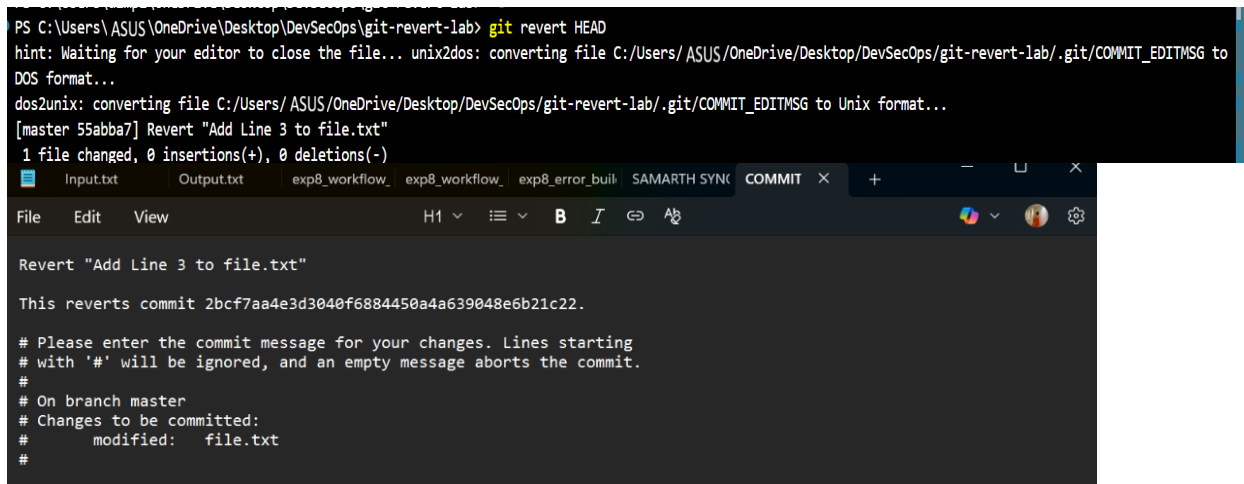
3. Verify the contents of file.txt:

```
cat file.txt
```

4. Check the commit history:

```
git log --oneline
```

Output:



```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git revert HEAD
hint: Waiting for your editor to close the file... unix2dos: converting file C:/Users/ASUS/OneDrive/Desktop/DevSecOps/git-revert-lab/.git/COMMIT_EDITMSG to
DOS format...
dos2unix: converting file C:/Users/ASUS/OneDrive/Desktop/DevSecOps/git-revert-lab/.git/COMMIT_EDITMSG to Unix format...
[master 55abba7] Revert "Add Line 3 to file.txt"
1 file changed, 0 insertions(+), 0 deletions(-)
```

The screenshot shows a terminal window with the command `git revert HEAD` executed. The output indicates that the file `.git/COMMIT_EDITMSG` was converted from DOS to Unix format. The commit message editor is open, showing the revert of commit `2bcf7aa4e3d3040f6884450a4a639048e6b21c22`. The editor prompt asks for a commit message, with instructions that lines starting with `#` are ignored and an empty message aborts the commit. The changes to be committed are listed as `modified: file.txt`.

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> cat file.txt
Line 1
Line 2
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git log --oneline
55abba7 (HEAD -> master) Revert "Add Line 3 to file.txt"
2bcf7aa Add Line 3 to file.txt
fc5a639 Add Line 2 to file.txt
67a9125 Initial commit
```

3. Handle Merge Conflicts During Revert

1. Modify file.txt:

```
echo "Conflict Line" >> file.txt

git commit -am "Add Conflict Line"
```

2. Revert the second commit (8b2a1c1 again) to trigger a conflict:

```
git revert 8b2a1c1
```

3. Git will indicate a conflict. Resolve it:
 - Open file.txt and remove conflict markers.
 - Keep the desired lines.

4. Stage the resolved file:

```
git add file.txt
```

5. Complete the revert:

```
git revert --continue
```

Output:

```
● PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> echo "Conflict Line" >> file.txt
● PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git commit -am "Add Conflict Line"
[master c7ba200] Add Conflict Line
 1 file changed, 0 insertions(+), 0 deletions(-)
● PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git log --oneline
c7ba200 (HEAD -> master) Add Conflict Line
55abba7 Revert "Add Line 3 to file.txt"
2bcf7aa Add Line 3 to file.txt
fc5a639 Add Line 2 to file.txt
67a9125 Initial commit
⊗ PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git revert fc5a639
warning: Cannot merge binary files: file.txt (HEAD vs. parent of fc5a639 (Add Line 2 to file.txt))
Auto-merging file.txt
CONFLICT (content): Merge conflict in file.txt
error: could not revert fc5a639... Add Line 2 to file.txt
hint: After resolving the conflicts, mark them with
hint: "git add/rm <paths>", then run
hint: "git revert --continue".
hint: run "git revert --abort".
hint: Disable this message with "git config advice.mergeConflict false"
```

```
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git add file.txt
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git revert --continue
● On branch master
⊗ You are currently reverting commit fc5a639.
  (all conflicts fixed: run "git revert --continue")
  (use "git revert --skip" to skip this patch)
  (use "git revert --abort" to cancel the revert operation)

nothing to commit, working tree clean
PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> git log --oneline
c7ba200 (HEAD -> master) Add Conflict Line
55abba7 Revert "Add Line 3 to file.txt"
2bcf7aa Add Line 3 to file.txt
fc5a639 Add Line 2 to file.txt
67a9125 Initial commit
○ PS C:\Users\ASUS\OneDrive\Desktop\DevSecOps\git-revert-lab> █
```