

Lab Exercise 1- Working with Git Revert

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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
```

```
C:\Users\manis>git init git-revert-lab
Reinitialized existing Git repository in C:/Users/manis/git-revert-lab/.git/

C:\Users\manis> 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"
```

```
C:\Users\manis\git-revert-lab> echo "line1">file.txt  
C:\Users\manis\git-revert-lab>git add file.txt  
C:\Users\manis\git-revert-lab>git commit -m "line1:file.txt  
Author identity unknown  
*** Please tell me who you are.
```

3. Add more changes:

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

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

```
C:\Users\manis\git-revert-lab>echo "Line 2" >> file.txt  
C:\Users\manis\git-revert-lab>git add file.txt  
C:\Users\manis\git-revert-lab>git commit -am "Line 2:file.txt"  
[master 374bc43] Line 2:file.txt  
1 file changed, 1 insertion(+)
```

3. Add another change:

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

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

```
C:\Users\manis\git-revert-lab>echo "Line 3" >> file.txt  
C:\Users\manis\git-revert-lab>git add file.txt  
C:\Users\manis\git-revert-lab>git commit -m "Line 3:file.txt"  
[master 56c0885] line 3:file.txt  
1 file changed, 1 insertion(+)
```

4. Verify the commit history:

```
git log --oneline
```

```
C:\Users\manis\git-revert-lab>git log --oneline  
56c0885 (HEAD -> master) line 3:file.txt  
374bc43 Line 2:file.txt  
c8bbb5a line1:file.txt
```

2. Revert the Last Commit

1. Revert the most recent commit:

git revert HEAD

```
C:\Users\manis\git-revert-lab>git revert HEAD
hint: Waiting for your editor to close the file...
[master 0c3407d] Revert "line 3:file.txt"
1 file changed, 1 deletion(-)
```

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

```
Revert "add line3 to file.txt"

This reverts commit 61e1d16599989777266e3a3122fed20c0ce6f51e.

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch master
# Changes to be committed:
#   modified:   file.txt
#
```

3. Verify the contents of file.txt:

cat file.txt

```
C:\Users\manis\git-revert-lab>
C:\Users\manis\git-revert-lab> type file.txt
"line1"
"Line 2"
```

4. Check the commit history:

```
git log --oneline
```

```
C:\Users\manis\git-revert-lab> git log --oneline
0c3407d (HEAD -> master) Revert "line 3:file.txt"
56c0885 line 3:file.txt
374bc43 Line 2:file.txt
c8bbb5a line1:file.txt
```

3. Handle Merge Conflicts During Revert

1. Modify file.txt:

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

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

```
C:\Users\manis\git-revert-lab>echo "conflict line" >>file.txt
C:\Users\manis\git-revert-lab>git add file.txt
C:\Users\manis\git-revert-lab>git commit -am "conflict line:file.txt"
[master 728bfa2] conflict line:file.txt
1 file changed, 1 insertion(+)
```

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

```
git revert 8b2a1c1
```

```
C:\Users\manis\git-revert-lab>git commit -am "conflict line:file.txt"
[master 728bfa2] conflict line:file.txt
1 file changed, 1 insertion(+)

C:\Users\manis\git-revert-lab> git add file.txt

C:\Users\manis\git-revert-lab>git revert -- continue
fatal: bad revision 'continue'

C:\Users\manis\git-revert-lab>
```

2. Git will indicate a conflict. Resolve it:

- Open file.txt and remove conflict markers.
- Keep the desired lines.

```
PS C:\Users\Misha\git-revert-lab> get-content -path "C:\Users\Misha\git-revert-lab\file.txt"
Line1
line2
conflict line
PS C:\Users\Misha\git-revert-lab> start-process -filepath "C:\Users\Misha\git-revert-lab\file.txt"
PS C:\Users\Misha\git-revert-lab> git add file.txt
```

2. Stage the resolved file:

git add file.txt

```
Revert "add line2 to file.txt"

This reverts commit b444084e1d4332b7bc604176e4896dced0581e37.

# Conflicts:
#   file.txt

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch master
# You are currently reverting commit b444084.
#
# Changes to be committed:
#   modified:   file.txt
#
```

3. Complete the revert:

git revert --continue

```
C:\Users\manis\git-revert-lab>git commit -am "conflict line:file.txt"
[master 728bfa2] conflict line:file.txt
1 file changed, 1 insertion(+)
```