#### **Introduction to Version Control**

#### **Assignment**

## 1. Git Setup

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment

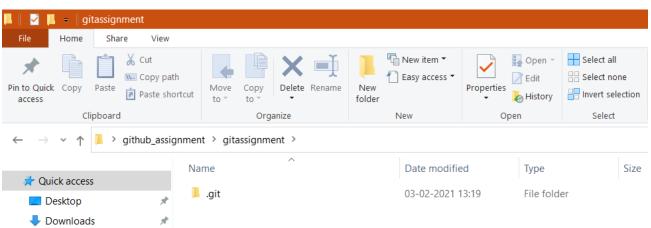
$ git --version
git version 2.20.1.windows.1

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment

$ |
```

- 2. Initialize a Git Repository
  - ⇒ Open git bash inside the project folder (gitassignment is the name of my project folder)
  - **⇒** git init

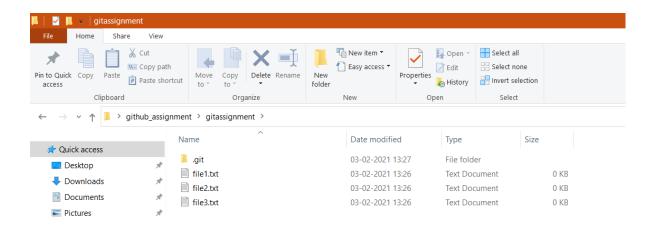




## 3. Add files to the repository

- **⇒** Using touch filename create files
- ⇒ Git add.

```
MINGW64:/c/Users/LENOVO/Desktop/github assignment/gitassignment
_ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ touch file1.txt
_ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
 touch file2.txt
.ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ touch file3.txt
.ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
nothing added to commit but untracked files present (use "git add" to track)
_ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
No commits yet
Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
                    file2.txt
```



# 4. Unstage 1 file

#### **⇒** Git rm --cached filename

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
No commits yet
Changes to be committed:
(use "git rm --cached <file>..." to unstage)
         new file:
new file:
new file:
                       file2.txt
file3.txt
 _ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git rm --cached file3.txt
rm 'file3.txt'
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
No commits yet
Changes to be committed:
(use "git rm --cached <file>..." to unstage)
         new file: file1.txt
new file: file2.txt
Untracked files:
(use "git add <file>..." to include in what will be committed)
 ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
```

#### 5. Commit the file

**⇒** Git commit –m "message"

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

S git status
on branch master

No commits yet

Changes to be committed:
    (use "git rm --cached <file>..." to unstage)
        new file: file1.txt
        new file: file2.txt

Untracked files:
    (use "git add <file>..." to include in what will be committed)

file3.txt

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

S git commit -m "Initial commit"
[master (root-commit) a759349] Initial commit
2 files changed, 0 insertions(+), 0 deletions(-)
    create mode 100644 file1.txt
    create mode 100644 file2.txt

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
```

#### 6. Add a remote

- **⇒** Create a repository on github and the copy the https url
- **⇒** In gitbash write
- **⇒** Git remote add origin <url>
- ⇒ <a href="https://github.com/damineesaini/MyRepository">https://github.com/damineesaini/MyRepository</a> (link of my git repository)

```
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git remote add origin https://github.com/damineesaini/MyRepository.git

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git remote -v
origin https://github.com/damineesaini/MyRepository.git (fetch)
origin https://github.com/damineesaini/MyRepository.git (push)

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$
```

### 7. Undo changes to a particular file

⇒ Git checkout -- <filename>

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ vi file2.txt

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git status

On branch master

Changes not staged for commit:

(use "git add <file>..." to update what will be committed)
(use "git checkout -- <file>..." to discard changes in working directory)

modified: file2.txt

no changes added to commit (use "git add" and/or "git commit -a")

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git status

On branch master

nothing to commit, working tree clean

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ |
```

# 8. Push changes to Github

**⇒** Git push origin master

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git push origin master
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 217 bytes | 54.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/damineesaini/MyRepository.git
 * [new branch] master -> master

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$
```

- 9. Clone the repository
- **⇒** Git clone <url of repository from github>
  - **⇒** Cloned the repository (MyRepository) in gitclone folder

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitclone

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone

git clone https://github.com/damineesaini/MyRepository.git
Cloning into 'MyRepository'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone

$ |
```

- 10. Add changes to one of the copies and pull the changes in the other.
  - ⇒ Gitclone is the folder where I cloned my github repository (MyRepository). I did some changes in file1 here and pushed them

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitclone/MyRepository
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone
  cd MyRepository/
 _ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone/MyRepository (master)
$ git status
 On branch master
 Your branch is up to date with 'origin/master'.
 Changes not staged for commit:
(use "git add <file>..." to update what will be committed)
(use "git checkout -- <file>..." to discard changes in worl
                                                     ' to discard changes in working directory)
no changes added to commit (use "git add" and/or "git commit -a")
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone/MyRepository (master)
 $ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone/MyRepository (master)

$ git commit -m "made some changes"

[master d649980] made some changes
 1 file changed, 2 insertions(+)
 .ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone/MyRepository (master)
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/
$ git push origin master
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Delta compression using up to 4 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 292 bytes | 41.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/damineesaini/MyRepository.git
a759349..d649980 master -> master
  ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitclone/MyRepository (master)
```

- ⇒ Gitassignment is my main project folder which I created initially.
- ⇒ Pulled changes in it using => git pull origin master

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment (master)

$ git pull origin master
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), done.
From https://github.com/damineesaini/MyRepository

* branch master -> FETCH_HEAD
a759349..d649980 master -> origin/master
Updating a759349..d649980
Fast-forward
file1.txt | 2 ++
1 file changed, 2 insertions(+)

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ |
```

#### 11. Check differences between a file and its staged version

**⇒** Git diff

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master
$ vi file2.txt
 _ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
warning: LF will be replaced by CRLF in file2.txt.
The file will have its original line endings in your working directory diff --git a/file2.txt b/file2.txt index e69de29..b9f36e0 100644
--- a/file2.txt
+++ b/file2.txt
@@ -0,0 +1 @@
 trying to change content
 _ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git add .
warning: LF will be replaced by CRLF in file2.txt.
The file will have its original line endings in your working directory
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master) $ git commit -m_"changes"
[master 8d56d12] changes
 2 files changed, 1 insertion(+) create mode 100644 .file5.txt.swp
 .ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$
```

### 12. Ignore a few files to be checked in

- ⇒ Created .gitignore and mentioned the filename in it that you want to be ignored.
- **⇒** Then commit

```
ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
 touch trial.txt
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ touch .gitignore
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ vi .gitignore
ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
(use "git checkout -- <file>..." to discard changes in working directory)
Untracked files:
  (use "git add <file>..." to include in what will be committed)
no changes added to commit (use "git add" and/or "git commit -a")
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git add .
warning: LF will be replaced by CRLF in .gitignore.
The file will have its original line endings in your working directory
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git commit -m "adding gitignore"
[master bb56c66] adding gitignore
3 files changed, 3 insertions(+), 1 deletion(-) create mode 100644 .gitignore create mode 100644 file3.txt
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
```

#### 13. Create a new branch.

- ⇒ Git checkout –b <br/>branchname> master
- **⇒** And also added some files to the new branch

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment
ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git checkout -b firstbranch master
Switched to a new branch 'firstbranch'
_ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)
$ touch branchfile.txt
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)
$ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)

§ git commit -m "adding a branch"
[firstbranch 27a3c60] adding a branch
 1 file changed, 0 insertions(+), 0 deletions(-) create mode 100644 branchfile.txt
.ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)
$ touch file5.txt
ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)
$ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)

$ git commit -m "adding another file"
[firstbranch f82d8af] adding another file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 file5.txt
```

#### 14. Diverge them with commits

- **⇒** Git checkout master
- **⇒** Git merge firstbranch

```
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstbranch)

$ git checkout master
Switched to branch 'master'

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ git merge firstbranch
Updating 12bf8f2..f82d8af
Fast-forward
branchfile.txt | 0
file5.txt | 0
2 files changed, 0 insertions(+), 0 deletions(-)
create mode 100644 branchfile.txt
create mode 100644 file5.txt

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)

$ |
```

### 15. Edit the same file at the same line on both branches and commit

- **⇒** Switched to newbrand and edited file5 and commit change
- ⇒ Switch to master edit file5 and commit change

```
MINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment
 .ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git checkout firstbranch
Switched to branch 'firstbranch'
 ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstb
ranch)
$ vi file5.txt
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstb
ranch)
S git add .

warning: LF will be replaced by CRLF in file5.txt.

The file will have its original line endings in your working directory
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstb
ranch)
$ git commit -m "from firstbranch"
[firstbranch 5c158d3] from firstbranch
 1 file changed, 2 insertions(+)
 .ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (firstb
ranch)
$ git checkout master
Switched to branch 'master'
 .ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master
$ vi file5.txt
 .ENOVO@LAPTOP-UR011HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master) $ git commit -m "from master"
[master 595488b] from master
1 file changed, 1 insertion(+), 1 deletion(-)
```

### 16. Try merging and resolve merge conflicts

- **⇒** Try to merge new branch created with master
- **⇒** Conflict is shown and merge is failed
- **⇒** The edit the file5 choose to keep the correct content and then add and commit

```
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git merge firstbranch
Auto-merging file5.txt
CONFLICT (content): Merge conflict in file5.txt
Automatic merge failed; fix conflicts and then commit the result.
```

```
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master|MERGING)
$ vi file5.txt

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master|MERGING)
$ git merge firstbranch
error: Merging is not possible because you have unmerged files.
hint: Fix them up in the work tree, and then use 'git add/rm <file>'
hint: as appropriate to mark resolution and make a commit.
fatal: Exiting because of an unresolved conflict.

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master|MERGING)
$ git add .

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master|MERGING)
$ git commit -m "after correcting conflict"
[master 6f4244b] after correcting conflict

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git merge firstbranch
Already up to date.

LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git merge firstbranch
Already up to date.
```

Below is the file5.txt with merge conflict

```
<<<<<< HEAD
editing i the jshlkdjsah
trying to edit it in firstbranch >>>>> firstbranch
```

### 17. Stash the changes and pop them

- **⇒** Git stash
- **⇒** Git pop

```
NINGW64:/c/Users/LENOVO/Desktop/github_assignment/gitassignment
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ vi file3.txt
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git status
On branch master
Changes nasted for commit:

(use "git add <file>..." to update what will be committed)

(use "git checkout -- <file>..." to discard changes in working directory)
no changes added to commit (use "git add" and/or "git commit -a")
 ENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git stash
warning: LF will be replaced by CRLF in file3.txt.
The file will have its original line endings in your working directory
Saved working directory and index state WIP on master: 6f4244b after correcting conflict
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git stash pop
On branch master
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
(use "git checkout -- <file>..." to discard changes in working directory)
no changes added to commit (use "git add" and/or "git commit -a")
Dropped refs/stash@{0} (11516cef47536113a8715d3dfa62307872b7b738)
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git add .
LENOVO@LAPTOP-URO11HCJ MINGW64 ~/Desktop/github_assignment/gitassignment (master)
$ git commit -m "last one"
[master 0621b22] last one
1 file changed, 2 insertions(+)
```

```
18. Add the following code to your .bashrc file : color_prompt="yes" parse_git_branch() { git branch 2> /dev/null | sed -e '/^[^*]/d' -e 's/* \(.*\)/(\1)/' } if [ ''$color_prompt'' = yes ]; then PS1='\u@\h\[\033[00m\]:\[\033[01;34m\]\W\[\033[01;31m\] $(parse\_git\_branch)\[\033[00m\]\$'$ else <math display="block">PS1='\u@\h:\W $(parse\_git\_branch)\$'$ fi unset color_prompt force\_color_prompt $$
```

- **□** In windows gitbash bashrc file was created initially.
- ⇒ And that's why it showed warning after reopening the gitbash and then bashrc\_profile was reated automatically

```
color_prompt="yes"
parse_git_branch() {
git branch 2> /dev/null | sed -e '/^[^*]/d' -e 's/* \(.*\)/(\1)/'
if [ "$color_prompt" = yes ]; then
PS1='\u@\h\[\033[00m\]:\[\033[01;34m\]\W\[\033[01;31m\] $(parse_git_branch)\[\033[00m\]\$ '
 S1='\u@\h:\W $(parse_git_branch)\$ '
 inset color_prompt force_color_prompt
~/.bashrc [unix] (22:59 03/02/2021)
"~/.bashrc" [unix] 10L, 319C
```

# warning: Found ~/.bashrc but no ~/.bash\_profile, ~/.bash\_login or ~/.profile. This looks like an incorrect setup. A ~/.bash\_profile that loads ~/.bashrc will be created for you. LENOVO@LAPTOP-UR011HCJ:MyRepository (master)\$ |

```
🚸 /usr/bin/bash --login -i
```

LENOVO@LAPTOP-URO11HCJ:MyRepository (master)\$

#### Bashrc file in Ubuntu (linux)

```
daminee@LAPTOP-URO11HCJ: ~
 color_prompt="
           git branch 2> /dev/null | sed -e '/^[^*]/d' -e 's/* \(.*\)/(\1)/'
  If not running interactively, don't do anything
ise $- in
   *i*) ;;
   *) return;;
HISTCONTROL=ignoreboth
shopt -s histappend
IISTFILESIZE=2000
shopt -s checkwinsize
  -x /usr/bin/lesspipe ] && eval "$(SHELL=/bin/sh lesspipe)"
# set variable identifying the chroot you work in (used in the pro
if [ -z "${debian_chroot:-}" ] && [ -r /etc/debian_chroot ]; then
    debian_chroot=$(cat /etc/debian_chroot)
 - INSERT --
```