**GIT [By Linus Torvalds - 2005]**

1.What is GIT ?

GIT is a Distributed Version Control System (VCS).

2.USES :

* Easy File Recovery.
* Roll back to the previously working stage.
* Can easily find out what, when and who did the changes.

3. What is version control system?

1.**Local version control system** : [A server is maintained to keep track of files].

Project is deployed only in our local system.

Pros : Can track files and rollback easily.

Cons : If you lose your hard disk everything is lost.

Local Server

2. **Centralized Version Control System** : [A server is maintained where pulling of files and

modifying it and pushing back to the server].

File Pulled

Server

File Pushed

3. **Distributed Version Control System** : [A Complete backup of repository can be taken from

distributed server].

Commit/Replace

Local System

Server Repository

File Pushed

File Pulled

Server

4.What is GITHUB?

* GitHub is a hosting service(website).
* GITHUB is a website that hosts git repositories.

5.CHECKSUM : It is used to verify whether the downloaded file is authentic or not.

Using : SHA (eg : 3IUE32142).

How to make Author of Git Repository ?

Open folder 🡪 right click 🡪 open git bash terminal :

Commands :

$git config --global user.name “Syed” - [For creating author]

$git config --global user.email “[zrsyed03@gmail.com](mailto:zrsyed03@gmail.com)” - [For creating Email]

$git config --list - [To Print details of repository author name, email , date]

$git config user.name - [To Print only username]

$git config user.email - [To Print only email]

$git status - [To check the status of repository]

$git init - [To initialize the repository]

$git add --a / . - [To add the files in repository]

$git commit -m “initial commit” - [To commit the changes done along with msg]

$git commit - [A vim editor will open bttr to use above cmd]

$git log - [Displays history of changes done on your project]

$git add file\_name.txt - [To add single file]

$git commit file\_name.txt - [To commit singlr file]

$git rm -rf .git - [To delete whole repository]

$pwd (Present Working Directory) - [To check in which directory u r present]

Note : if the path contains /.git that means ur are in git repository.

$ls - [Displays list of files, folders]

$cd tensorflow/ - [Moves to the desired folder]

$touch file\_name.ext - [To create blank file]

$touch .gitignore - [Create this file and add the file names to ignore those   
 files,those files will be untracked now].

$git diff -staging - [It shows the differences made in files.]

$git commit -a -m “Direct Commit” - [To commit the Files which are modified by skipping the  
 Staging Area].

$git rm file\_name.ext - [To remove/delete file]

$git mv file\_name.ext - [To move/rename file]

$git rm --cached file\_name.ext - [To untrack file externally]  
(After adding filename in .gitignore file and still terminal shows that modification has been done, so to untrack that file and ignore it explicitly using above cmd).

$git log - [History of changes done in directories]

$git log -p -1 - [What changes made before and after will be displayed]

$git log -p -3 - [Displays only 3 commit based on no. we enter]

$git log --stat - [Display’s summary of whole data of author]

$git log --pretty=oneline - [Display’s all the commit done in whole repository in   
 single line]

$git log --pretty=short - [Display’s author ,commit,message only].

$git log --pretty=full - [Display’s author,date ,commit,message only].

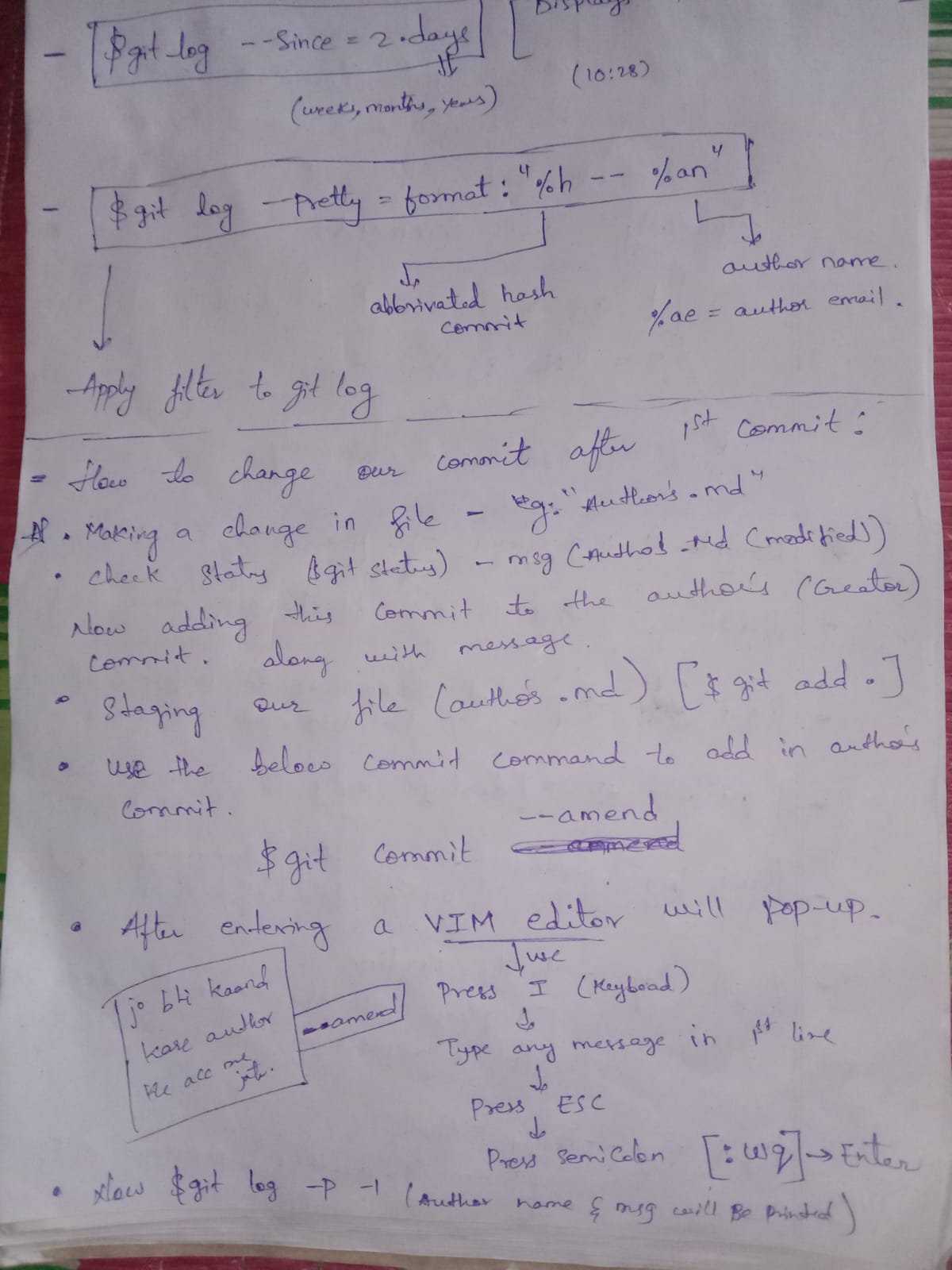
$git.log --since=2.days - [Display’s the 2 days history]

$git log --pretty=format:”%h -- %an” - [Apply filter to git log, only these details are displayed]

(%h-abbrivated hash commit %an- author name, %ae – author email).

$git commit --amend - [changes made are added to author’s commit]  
(While using this command a VIM editor will open 🡪 press I 🡪 type msg in 1st line 🡪 press ESC 🡪 press semicolon [:wq] to exit from VIM editor).

$git log -p -1 - [Display’s author name and msg will be printed]



**How to ignore , unsatge and unmodify git ?**

$git checkout --file\_name.ext - [To Unstage a file after modification to previous stage]  
  
$git restore --staged file\_name.ext - [previous changes are retrived after using this command]

$git checkout -f - [To retrive the changes done for number of files].

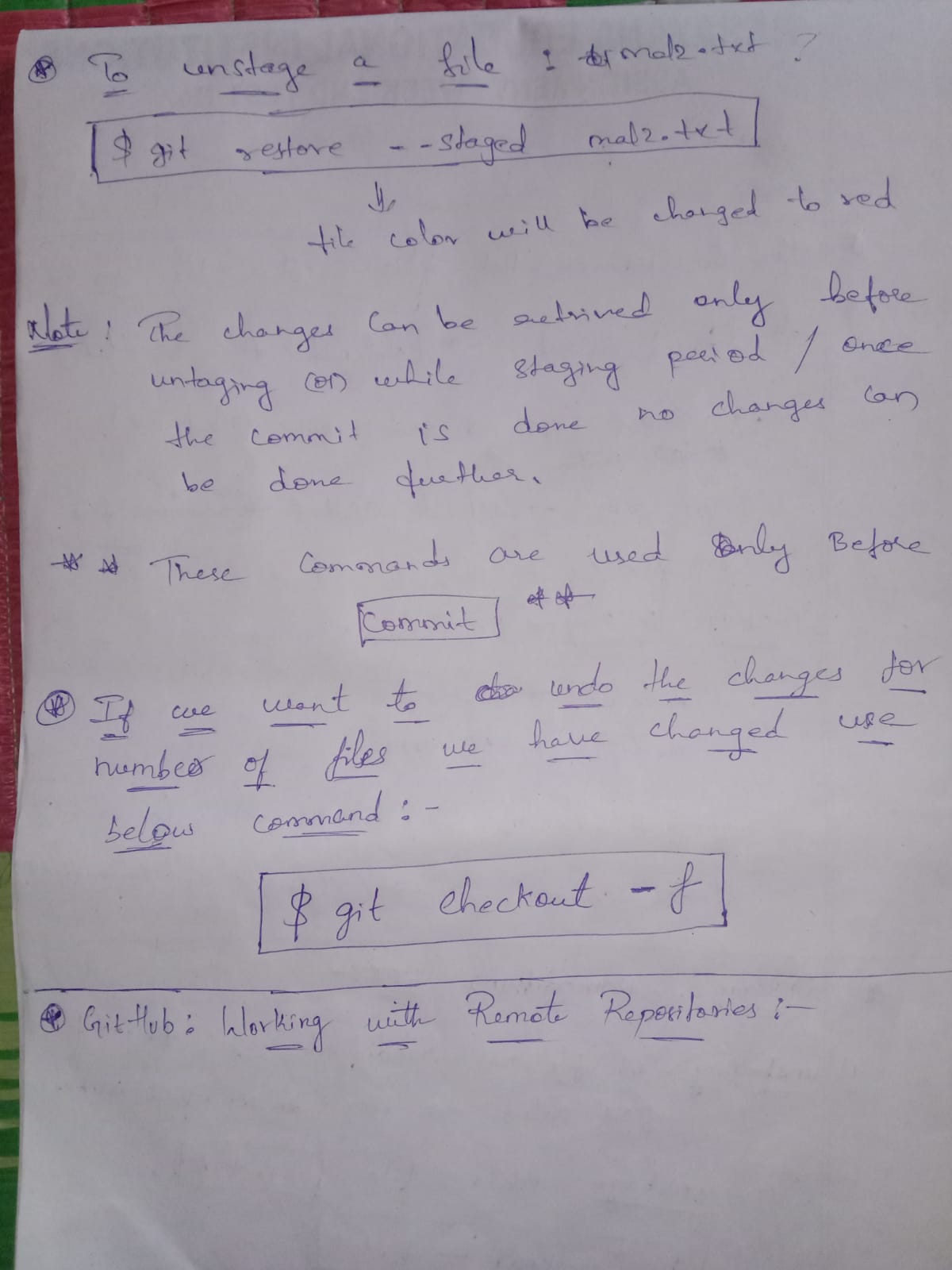
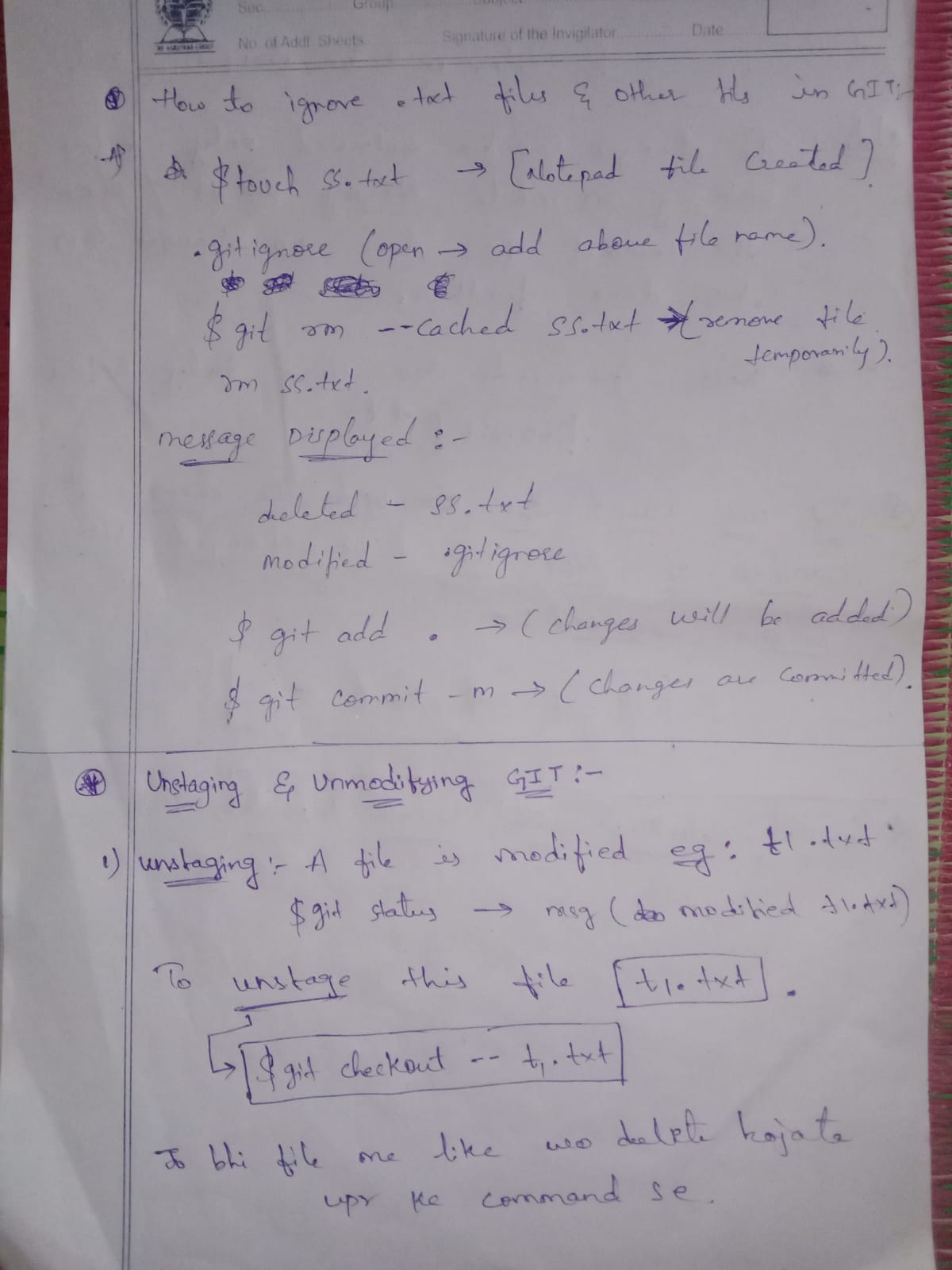
**What is .gitignore?**

.gitignore is a file created using $tocuh .gitignore, it automatically creates a file in your local repository.

Features :  
1.what all the files you want to ignore in your repository write their names in .gitignore file.

2.If you want to ignore all the text files (write eg : \*.txt,\*.log), these all files will be ignored.

3. Files are ignored before they are added (i.e when they are in untracked stage)



How to Clone remote GIT repository (from GITHUB)?

Copy link from GITHUB project [eg : tensorflow project]

Commands :

$git clone “<https://tensorflow/project>” ternsoflow\_copy (given name)

[The above cmd will copy whole project repository in our local system].

If any changes done in above repository :

$git status - [To check the status of repository]

$git add --a - [To add the files in repository]

$git commit -m “initial commit” - [To commit the changes done along with msg]

$git log - [Displays history of changes done on your project ]

**Creating and switching branches in GIT**

Changing directory from master to develop :

$git checkout -b develop (given name) -[to create a branch of the repository]

Note : [the develop repository will not be created separately inspite like “$git checkout -f” to retrive changes in files similarly the folders we added or removed will be restored if we change the repository from develop to master].

$git checkout master -[To go back to master repository]

Note : We can commit the changes in develop repository and still can retrive the master repository files.