

```
FILES=$(patsubst%.md,%.docx, $(wildcard*.md))FILES+=(patsubst%.md,%.pdf,
$(wildcard*.md))
LATEX_FORMAT =
FILTER =--filterpandoc-crossref
%.docx: %.md -pandoc"< "(FILTER)-o "$@"
%.pdf: %.md -pandoc"< "(LATEX_FORMAT) (FILTER) -o"$@"
all: (FILES)@echo(FILES)
clean: -rm $(FILES)*~
```

2

David Michael Francis

. git.

1. - , git gh, dnf install git dnf install gh

```
and without modifying the system state.
midavid@vbox:~$ sudo -i
[sudo] password for midavid:
root@vbox:~# dnf install git
Updating and loading repositories:
  google-chrome           100% | 4.4 KiB/s | 1.3 KiB | 00m00s
  Copr repo for PyCharm owned by phracek 100% | 2.8 KiB/s | 2.1 KiB | 00m01s
  RPM Fusion for Fedora 41 - Nonfree - S 100% | 13.0 KiB/s | 8.7 KiB | 00m01s
  RPM Fusion for Fedora 41 - Nonfree - N 100% | 34.3 KiB/s | 9.1 KiB | 00m00s
  Fedora 41 - x86_64 - Updates           100% | 55.7 KiB/s | 25.1 KiB | 00m00s
  google-chrome           100% | 8.4 KiB/s | 3.2 KiB | 00m00s
  RPM Fusion for Fedora 41 - Nonfree - N 100% | 31.4 KiB/s | 18.2 KiB | 00m01s
  Fedora 41 - x86_64 - Updates           100% | 2.6 MiB/s | 7.2 MiB | 00m03s
Repositories loaded.
Package "git-2.48.1-1.fc41.x86_64" is already installed.

Nothing to do.
root@vbox:~# git config --global Ushie47 "Michael david"
error: key does not contain a section: Ushie47
root@vbox:~# dnf install gh
Updating and loading repositories:
Repositories loaded.
Package Arch Version Repository Size
Installing:
```

Figure 1: -

git- . *ssh-*

```
complete!
root@vbox:~# git config --global user.name "Michael David"
root@vbox:~# git config --global user.email "ukanadaushie@gmail.com"
root@vbox:~# git config --global core.quotepath false
root@vbox:~# git config --global init.defaultBranch master
root@vbox:~# git config --global core.autocrlf input
root@vbox:~# git config --global core.safecrlf warn
root@vbox:~# ssh-keygen -t rsa -b 4096
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase for "/root/.ssh/id_rsa" (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:PqD2qYvtkCIW5BI0DaVhIAJ4pbZmr8RB/YVlouyTDIE root@vbox
The key's randomart image is:
+----[RSA 4096]-----+
|==+*. . o          |
|E.* . =            |
|o+.=. + . .        |
|o+.= o .           |
|.o.= o o S         |
|.+ + o o           |
|o.= + o            |
```

Figure 2: Screenshot 2

3. *pgp*, *gpg -full-generate-key*.
4. *pgp* *github*
5. *git* *git config --global user.signingkey git config --global commit.gpgsign true git config --global gpg.program \$(which gpg2)*
6. *:*, *git*.
ssh- pgp- . *github*

1. (VCS) (VCS) , , , .
2. VCS : , commit, , .
: , . : , , : , .
3. $VCS?$ VCS .

```

root@vbox:~# gpg --full-generate-key
gpg (GnuPG) 2.4.5; Copyright (C) 2024 g10 Code GmbH
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Please select what kind of key you want:
  (1) RSA and RSA
  (2) DSA and Elgamal
  (3) DSA (sign only)
  (4) RSA (sign only)
  (9) ECC (sign and encrypt) *default*
 (10) ECC (sign only)
 (14) Existing key from card
Your selection? 1
RSA keys may be between 1024 and 4096 bits long.
What keysize do you want? (3072) 4096
Requested keysize is 4096 bits
Please specify how long the key should be valid.
    0 = key does not expire
<n>  = key expires in n days
<n>w = key expires in n weeks
<n>m = key expires in n months

```

Figure 3: Screenshot 3

```

We need to generate a lot of random bytes. It is a good idea to perform
some other action (type on the keyboard, move the mouse, utilize the
disks) during the prime generation; this gives the random number
generator a better chance to gain enough entropy.
We need to generate a lot of random bytes. It is a good idea to perform
some other action (type on the keyboard, move the mouse, utilize the
disks) during the prime generation; this gives the random number
generator a better chance to gain enough entropy.
gpg: /root/.gnupg/trustdb.gpg: trustdb created
gpg: directory '/root/.gnupg/openpgp-revocs.d' created
gpg: revocation certificate stored as '/root/.gnupg/openpgp-revocs.d/0E9F96A906BAF43
16C1D8D28E27DFA4588FD67F8.rev'
public and secret key created and signed.

pub   rsa4096 2025-03-02 [SC]
       0E9F96A906BAF4316C1D8D28E27DFA4588FD67F8
uid           Michael <omotole47@gmail.com>
sub    rsa4096 2025-03-02 [E]

root@vbox:~# gpg --list-secret-keys --keyid-format LONG
gpg: checking the trustdb
gpg: marginals needed: 3  completes needed: 1  trust model: pgp
gpg: depth: 0  valid:   1  signed:   0  trust: 0-, 0q, 0n, 0m, 0f, 1u
[keyboxd]
-----
sec   rsa4096/E27DFA4588FD67F8 2025-03-02 [SC]

```

Figure 4: Screenshot 4

```
pub  rsa4096 2025-03-02 [SC]
    0E9F96A906BAF4316C1D8D28E27DFA4588FD67F8
uid      Michael <omotole47@gmai.com>
sub  rsa4096 2025-03-02 [E]

root@vbox:~# gpg --list-secret-keys --keyid-format LONG
gpg: checking the trustdb
gpg: marginals needed: 3 completes needed: 1 trust model: pgp
gpg: depth: 0 valid: 1 signed: 0 trust: 0-, 0q, 0n, 0m, 0f, 1u
[keyboxd]
-----
sec  rsa4096/E27DFA4588FD67F8 2025-03-02 [SC]
    0E9F96A906BAF4316C1D8D28E27DFA4588FD67F8
uid      [ultimate] Michael <omotole47@gmai.com>
ssb  rsa4096/29A1F451E7B997DF 2025-03-02 [E]


root@vbox:~# gpg --armor --export <PGP Fingerprint> | xclip -sel clip
-bash: syntax error near unexpected token `|'
root@vbox:~# sudo apt install xclip
sudo: apt: command not found
root@vbox:~# gpg --armor --export E27DFA4588FD67F8
bash: gpg: command not found...
root@vbox:~# gpg --armor --export E27DFA4588FD67F8
-----BEGIN PGP PUBLIC KEY BLOCK-----
mQINBGfE0ggBEADfTc6zu@vEx3DdEXV30EHwst176qKuMhSTZu5MdeoEgnToRiAN
```

Figure 5: Screenshot 5

GPG keys

New GPG key

This is a list of GPG keys associated with your account. Remove any keys that you do not recognize.



Gpg key
Email address: omotole47@gmail.com Unverified
Key ID: E27DFA4588FD67F8
Subkeys: 29A1F451E7B997DF
Added on Mar 2, 2025

Delete

Learn how to [generate a GPG key and add it to your account](#).

Figure 6: Screenshot 6

```

-----END PGP PUBLIC KEY BLOCK-----
root@vbox:~# git config --global user.signingkey <E27DFA4588FD67F8>
-bash: syntax error near unexpected token `newline'
root@vbox:~# git config --global user.signingkey <E27DFA4588FD67F8>
-bash: syntax error near unexpected token `newline'
root@vbox:~# git config --global user.signingkey E27DFA4588FD67F8
root@vbox:~# git config --global commit.gpgsign true
root@vbox:~# git config --global gpg.program $(which gpg2)
root@vbox:~# gh auth login
? Where do you use GitHub? GitHub.com
? What is your preferred protocol for Git operations on this host? SSH
? Upload your SSH public key to your GitHub account? /root/.ssh/id_ed25519.pub
? Title for your SSH key: Ssh key
? How would you like to authenticate GitHub CLI? Login with a web browser

! First copy your one-time code: AE5C-EFF6
Press Enter to open https://github.com/login/device in your browser...
Running Firefox as root in a regular user's session is not supported. ($XAUTHORITY
is /run/user/1000/.mutter-Xwaylandauth.ADVQ22 which is owned by midavid.)
✓ Authentication complete.
- gh config set -h github.com git_protocol ssh
✓ Configured git protocol
! Authentication credentials saved in plain text
✓ Uploaded the SSH key to your GitHub account: /root/.ssh/id_ed25519.pub
✓ Logged in as Ushie47
root@vbox:~# mkdir -p ~/study-2024-2025/"operations systems"

```

Figure 7: Screenshot 7

```

root@vbox:~/study-2024-2025_os-intro# cd operations systems
root@vbox:~/study-2024-2025_os-intro/operations systems# mkdir os-intro
root@vbox:~/study-2024-2025_os-intro/operations systems# echo os-intro > COURSE
root@vbox:~/study-2024-2025_os-intro/operations systems# git add .
root@vbox:~/study-2024-2025_os-intro/operations systems# cd ~
root@vbox:~# git add .
fatal: not a git repository (or any of the parent directories): .git
root@vbox:~# cd study-2024-2025_os-intro
root@vbox:~/study-2024-2025_os-intro# git add .
root@vbox:~/study-2024-2025_os-intro# git commit -am 'feat(main): make course struct
ure'
midavid@vbox:~$

```

Figure 8: Screenshot 8

(CVCS):
Subversion (SVN), Perforce.
 (DVCS):
: Git, Mercurial.

4. VCS

5. VCS Shared Storage

Clone/pull the latest version. Make changes and commit them locally. Push changes to the shared repository. Resolve conflicts if necessary.

6. Git

7. Git

Developers: Write and commit code. Maintainers: Review and merge changes. Release Managers: Manage versions and releases.

8. - :

```
git init
git add .
git commit -m "Initial commit"
```

```
• :
git remote add origin <repo_url>
git push origin main
git pull origin main
```

9. :

```
git branch feature-branch
git checkout feature-branch
```

10. Git

```
node_modules/
*.log
```

This prevents unnecessary files from being committed.