SOFTWARE CONSTRUCTION AND DEVELOPMENT

PROJECT

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Question no 1:

What is Git?

Git is software for tracking changes in any set of files, usually used for coordinating work among programmers collaboratively developing source code during software development. A Git repository is a virtual storage of your project. It allows you to save versions of your code, which you can access when needed.

Git helps you in following

- Creating/initializing new git repository
- Versioning project with new git repository
- Cloning existing git repository
- Saving changes to the repository

Question no 2:

What are git workflows?

Some common Git workflow are following

- Centralized workflow
- Feature Branching
- Gitflow workflow
- Forking workflow

1)Centralized Workflow

There is one central repository. Each developer clones the repo, works locally on the code, creates a commit with changes, and pushes it to the central repository for other developers to pull and use in their work.Centralized Workflow uses a central repository to serve as the single point-of-entry for all changes to the project.

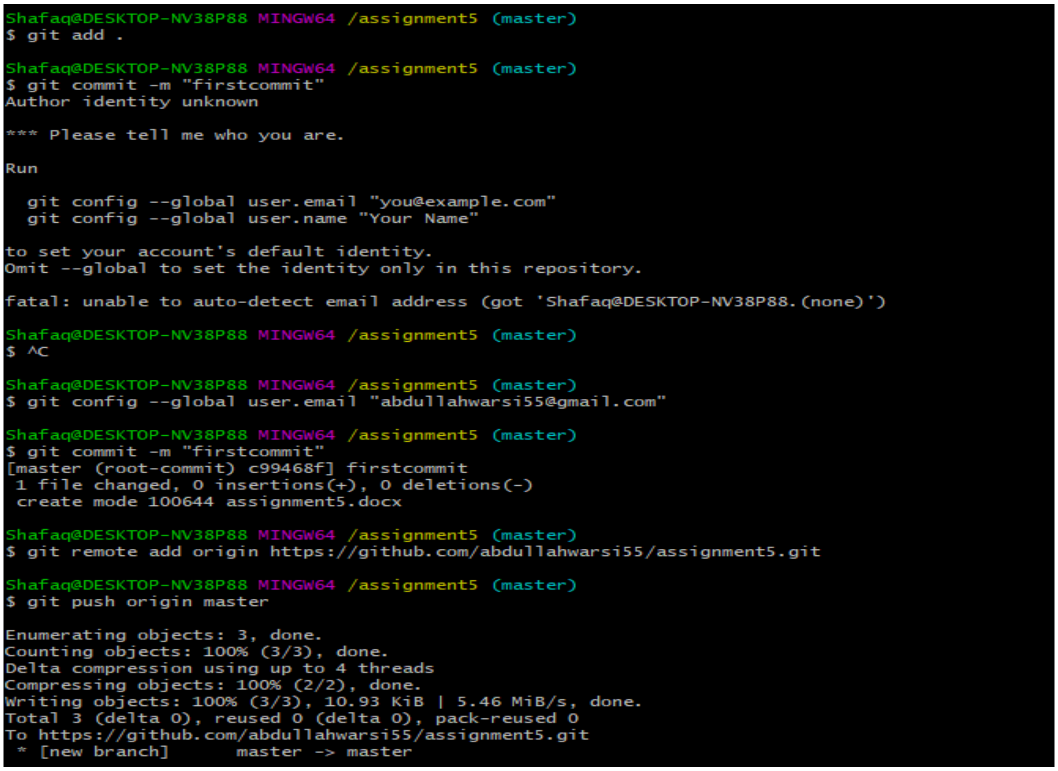
How it works?

Developers start by cloning the central repository. In their own local copies of the project, they edit files and commit changes, however, these new commits are stored locally. To publish changes to the official project, developers "push" their local repository to the central repository.

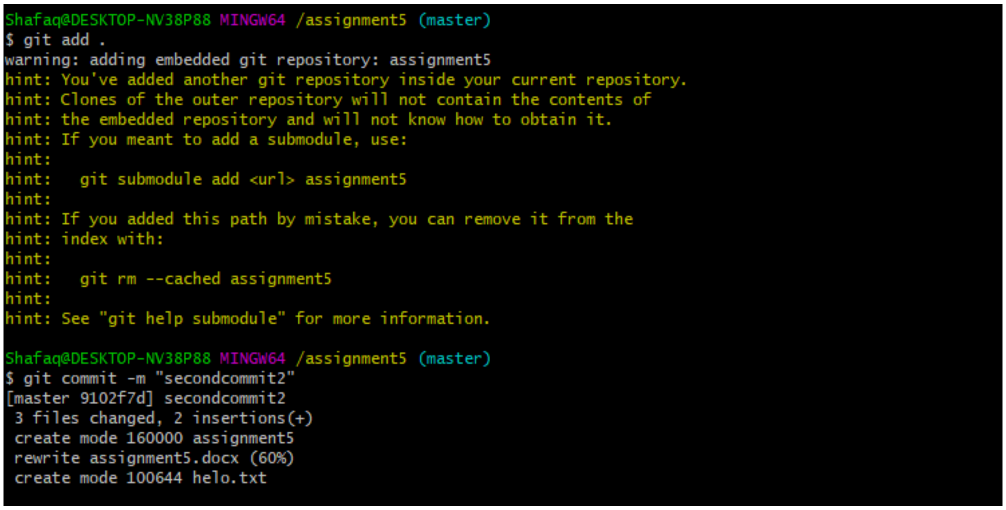
The central repository represents the official project, so its commit history should be treated as sacred and immutable. If a developer’s local commits diverge from the central repository, Git will refuse to push their changes because this would overwrite official commits.

Example

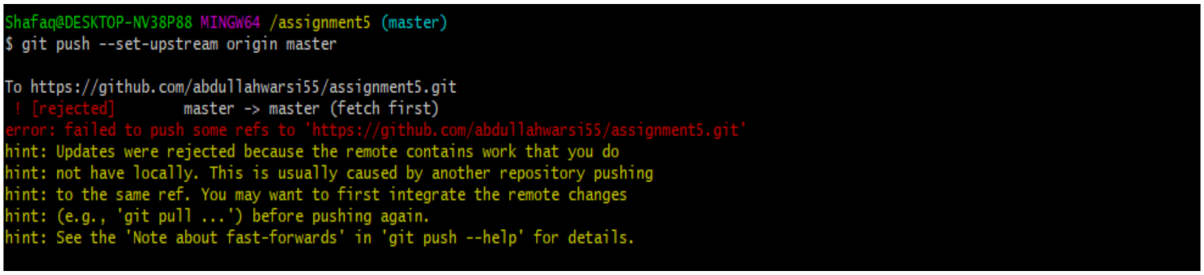
In his local repository, Ali can develop features using the standard Git commit process: edit, stage, and commit. Remember that since these commands create local commits, Ali can repeat this process as many times as he wants without worrying about what’s going on in the central repository. Meanwhile, Ahmed is working on her own feature in her own local repository using the same edit/stage/commit process. Like ali, he doesn’t care what’s going on in the central repository, and he really doesn’t care what ali is doing in his local repository, since all local repositories are private. Once ali finishes his feature, he should publish his local commits to the central repository so other team members can access it. He can do this with the git push command, like so if Ahmed tries to push her feature after ali has successfully published his changes to the central repository. but, since her local history has diverged from the central repository, Git will refuse the request with a rather verbose error message This prevents ahmed from overwriting official commits. he needs to pull ali’s updates into her repository, integrate them with her local changes, and then try again.



```
Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git add .

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git commit -m "firstcommit"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'Shafaq@DESKTOP-NV38P88.(none)')

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ ^C

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git config --global user.email "abdullahwarsi55@gmail.com"

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git commit -m "firstcommit"
[master (root-commit) c99468f] firstcommit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 assignment5.docx

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git remote add origin https://github.com/abdullahwarsi55/assignment5.git

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (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), 10.93 KiB | 5.46 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/abdullahwarsi55/assignment5.git
 * [new branch]      master -> master
```



```
Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git add .
warning: adding embedded git repository: assignment5
hint: You've added another git repository inside your current repository.
hint: Clones of the outer repository will not contain the contents of
hint: the embedded repository and will not know how to obtain it.
hint: If you meant to add a submodule, use:
hint:
hint:   git submodule add <url> assignment5
hint:
hint: If you added this path by mistake, you can remove it from the
hint: index with:
hint:
hint:   git rm --cached assignment5
hint:
hint: See "git help submodule" for more information.

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git commit -m "secondcommit2"
[master 9102f7d] secondcommit2
 3 files changed, 2 insertions(+)
 create mode 160000 assignment5
 rewrite assignment5.docx (60%)
 create mode 100644 helo.txt
```

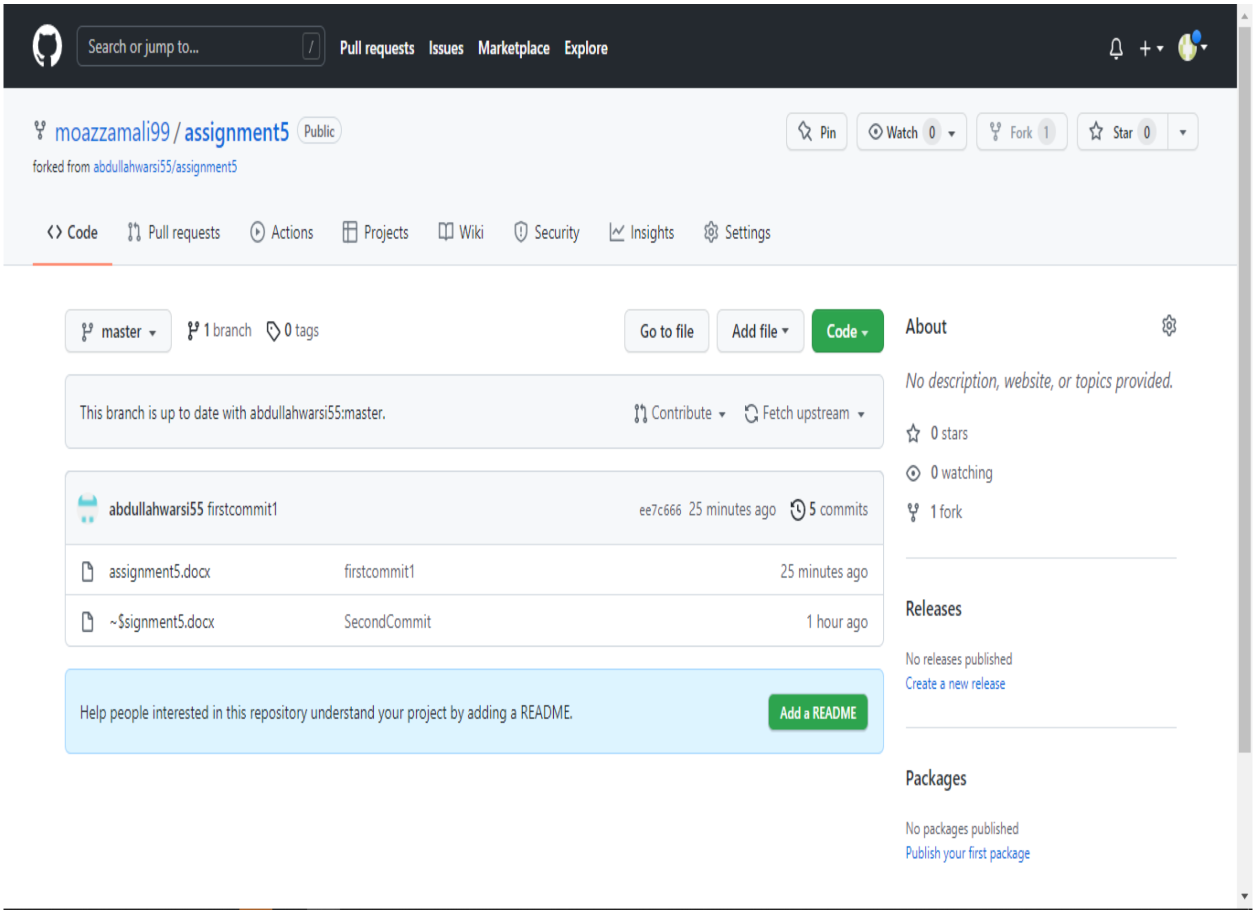


```
Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git push --set-upstream origin master

To https://github.com/abdullahwarsi55/assignment5.git
 ! [rejected]        master -> master (fetch first)
error: failed to push some refs to 'https://github.com/abdullahwarsi55/assignment5.git'
hint: Updates were rejected because the remote contains work that you do
hint: not have locally. This is usually caused by another repository pushing
hint: to the same ref. You may want to first integrate the remote changes
hint: (e.g., 'git pull ...') before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
```

2) Forking workflow

A fork is a copy of a repository that you manage. Forks let you make changes to a project without affecting the original repository. You can fetch updates from or submit changes to the original repository with pull requests. Forking a repository is similar to copying a repository, with two major differences:

- You can use a pull request to suggest changes from your user-owned fork to the original repository, also known as the upstream repository.
- You can bring changes from the upstream repository to your local fork by synchronizing your fork with the upstream repository
.



Search or jump to... / Pull requests Issues Marketplace Explore

moazzamali99 / assignment5 Public

forked from abdullahwarsi55/assignment5

Pin Watch 0 Fork 1 Star 0

Code Pull requests Actions Projects Wiki Security Insights Settings

master 1 branch 0 tags Go to file Add file Code

This branch is up to date with abdullahwarsi55:master. Contribute Fetch upstream

abdullahwarsi55 firstcommit1 ee7c666 25 minutes ago 5 commits

assignment5.docx firstcommit1 25 minutes ago

~$signment5.docx SecondCommit 1 hour ago

Help people interested in this repository understand your project by adding a README. Add a README

About

No description, website, or topics provided.

0 stars

0 watching

1 fork

Releases

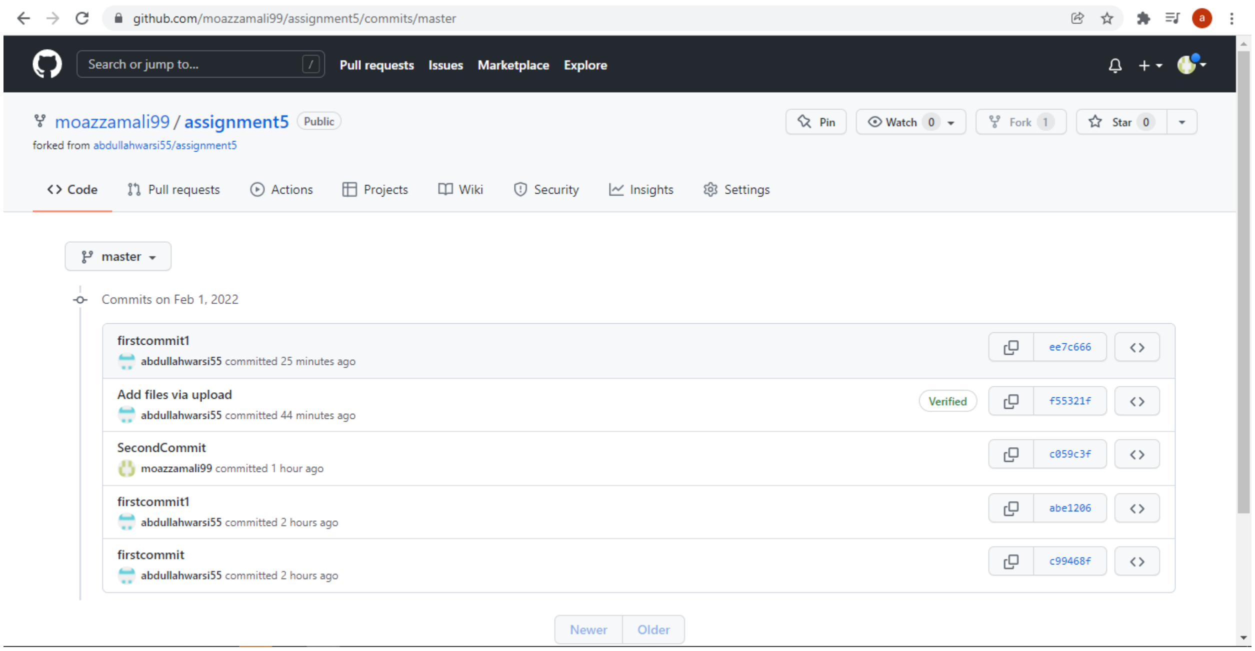
No releases published

Create a new release

Packages

No packages published

Publish your first package



github.com/moazzamali99/assignment5/commits/master

Search or jump to... / Pull requests Issues Marketplace Explore

moazzamali99 / assignment5 Public

forked from abdullahwarsi55/assignment5

Pin Watch 0 Fork 1 Star 0

Code Pull requests Actions Projects Wiki Security Insights Settings

master

Commits on Feb 1, 2022

firstcommit1
abdullahwarsi55 committed 25 minutes ago ee7c666

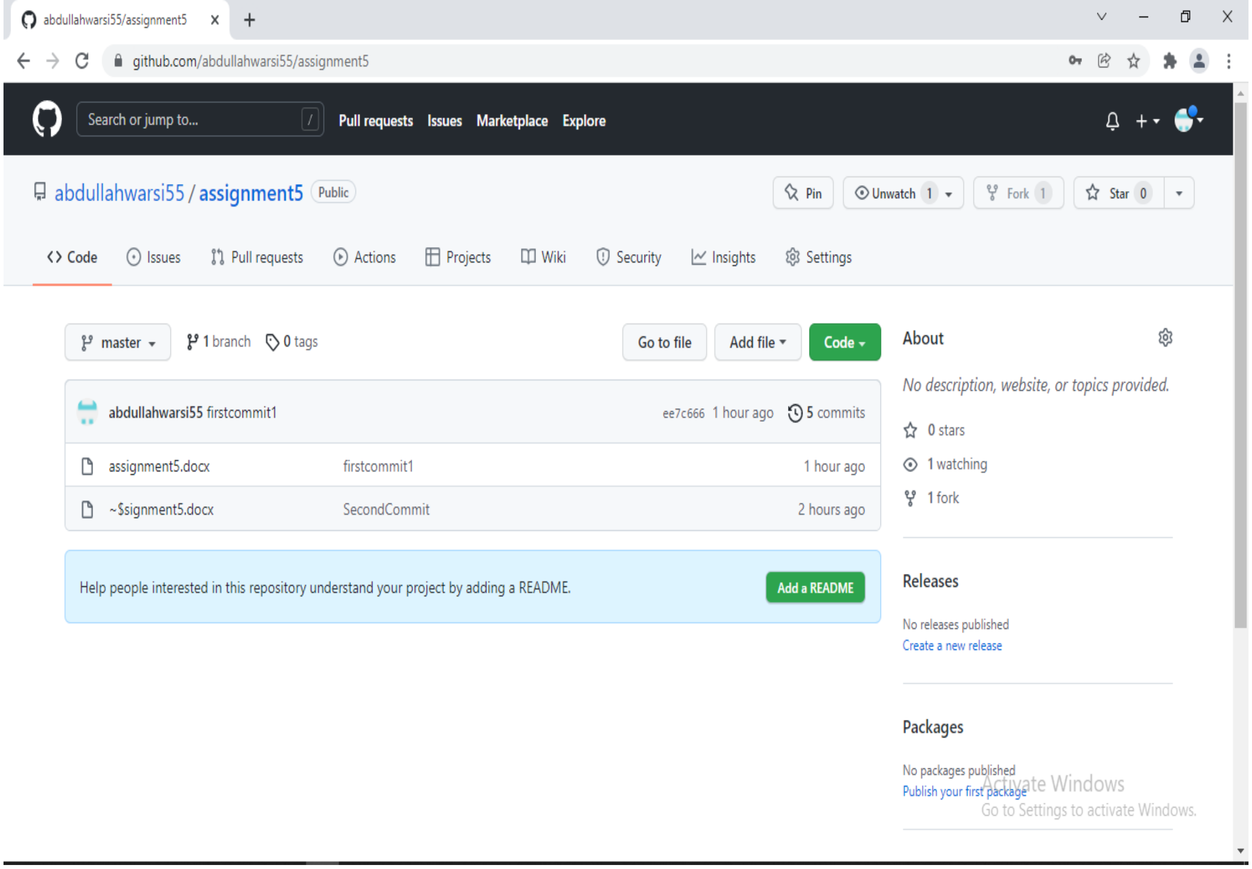
Add files via upload
abdullahwarsi55 committed 44 minutes ago Verified f55321f

SecondCommit
moazzamali99 committed 1 hour ago c059c3f

firstcommit1
abdullahwarsi55 committed 2 hours ago abe1206

firstcommit
abdullahwarsi55 committed 2 hours ago c99468f

Newer Older



github.com/abdullahwarsi55/assignment5

abdullahwarsi55 / assignment5 Public

abdullahwarsi55 firstcommit1 ee7c666 1 hour ago 5 commits

assignment5.docx	firstcommit1	1 hour ago
~$signment5.docx	SecondCommit	2 hours ago

Help people interested in this repository understand your project by adding a README.

About

No description, website, or topics provided.

0 stars

1 watching

1 fork

Releases

No releases published

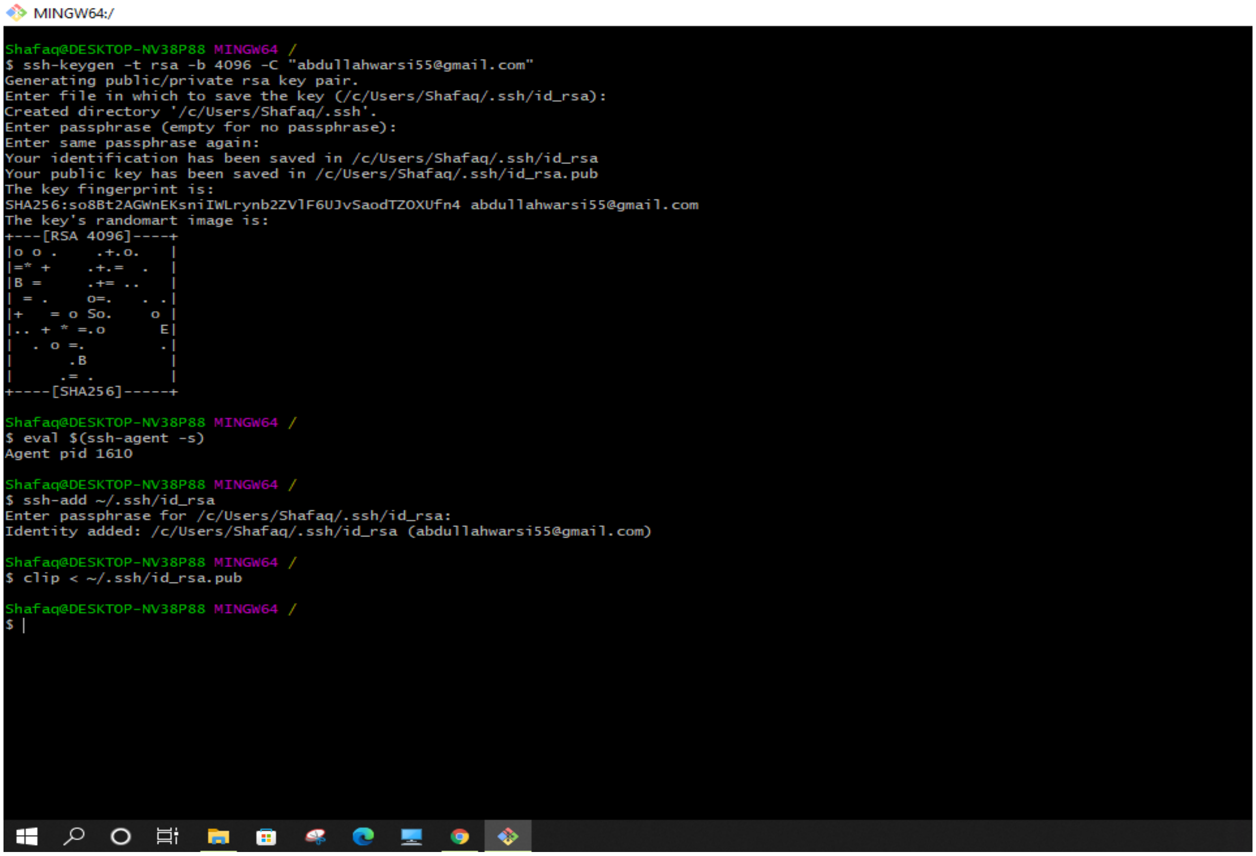
Create a new release

Packages

No packages published

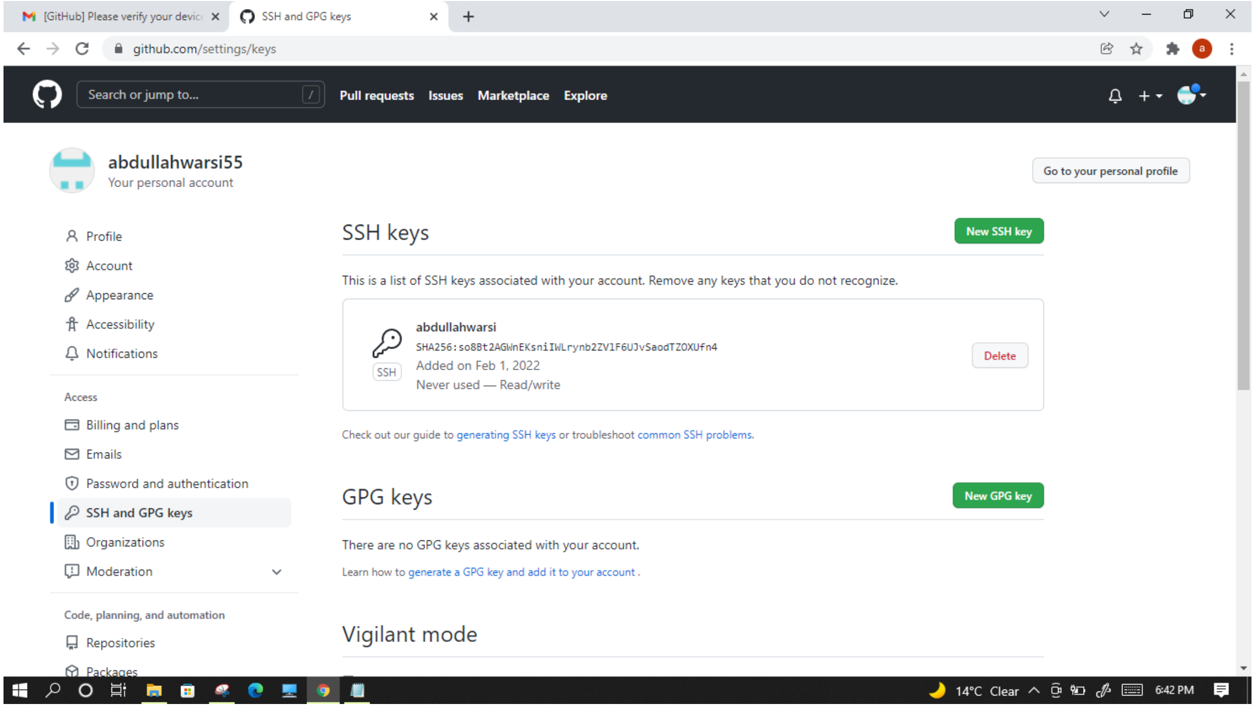
Publish your first package

Simple push, clone and pull



MINGW64:/

```
Shafaq@DESKTOP-NV38P88 MINGW64 /
$ ssh-keygen -t rsa -b 4096 -C "abdullahwarsi55@gmail.com"
Generating public/private rsa key pair.
Enter file in which to save the key (/c/Users/Shafaq/.ssh/id_rsa):
Created directory '/c/Users/Shafaq/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /c/Users/Shafaq/.ssh/id_rsa
Your public key has been saved in /c/Users/Shafaq/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:so8Bt2AGWnEKsniIWLrynb2ZVlF6UJvSaodTZOXUfn4 abdullahwarsi55@gmail.com
The key's randomart image is:
+---[RSA 4096]----+
|o o .    .+.o.   |
|=* +    .+.=  .  |
|B =     .+= ..   |
| = .    o=.   . .|
|+   = o So.    o |
|.. + * =.o      E|
|  . o =.        .|
|       .B        |
|      .= .       |
+----[SHA256]-----+

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ eval $(ssh-agent -s)
Agent pid 1610

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ ssh-add ~/.ssh/id_rsa
Enter passphrase for /c/Users/Shafaq/.ssh/id_rsa:
Identity added: /c/Users/Shafaq/.ssh/id_rsa (abdullahwarsi55@gmail.com)

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ clip < ~/.ssh/id_rsa.pub

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ |
```



abdullahwarsi55

Your personal account

SSH keys

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

abdullahwarsi
SHA256:so8Bt2AGWnEKsniIWLrynb2ZVlF6UJvSaodTZOXUfn4
SSH
Added on Feb 1, 2022
Never used — Read/write

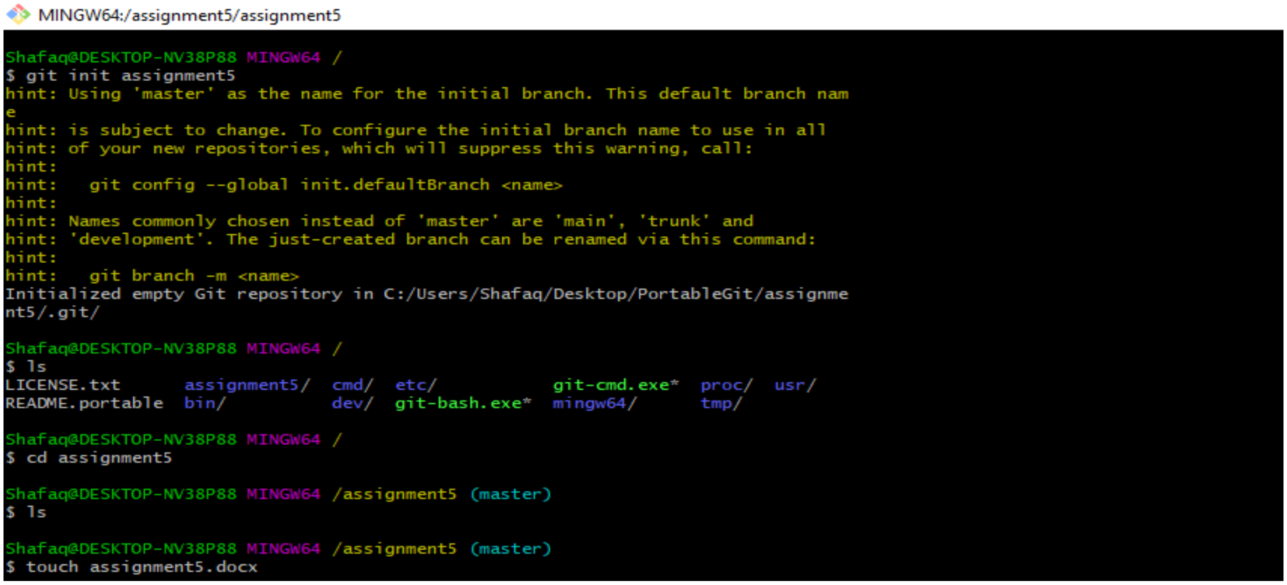
Check out our guide to generating SSH keys or troubleshoot common SSH problems.

GPG keys

There are no GPG keys associated with your account.

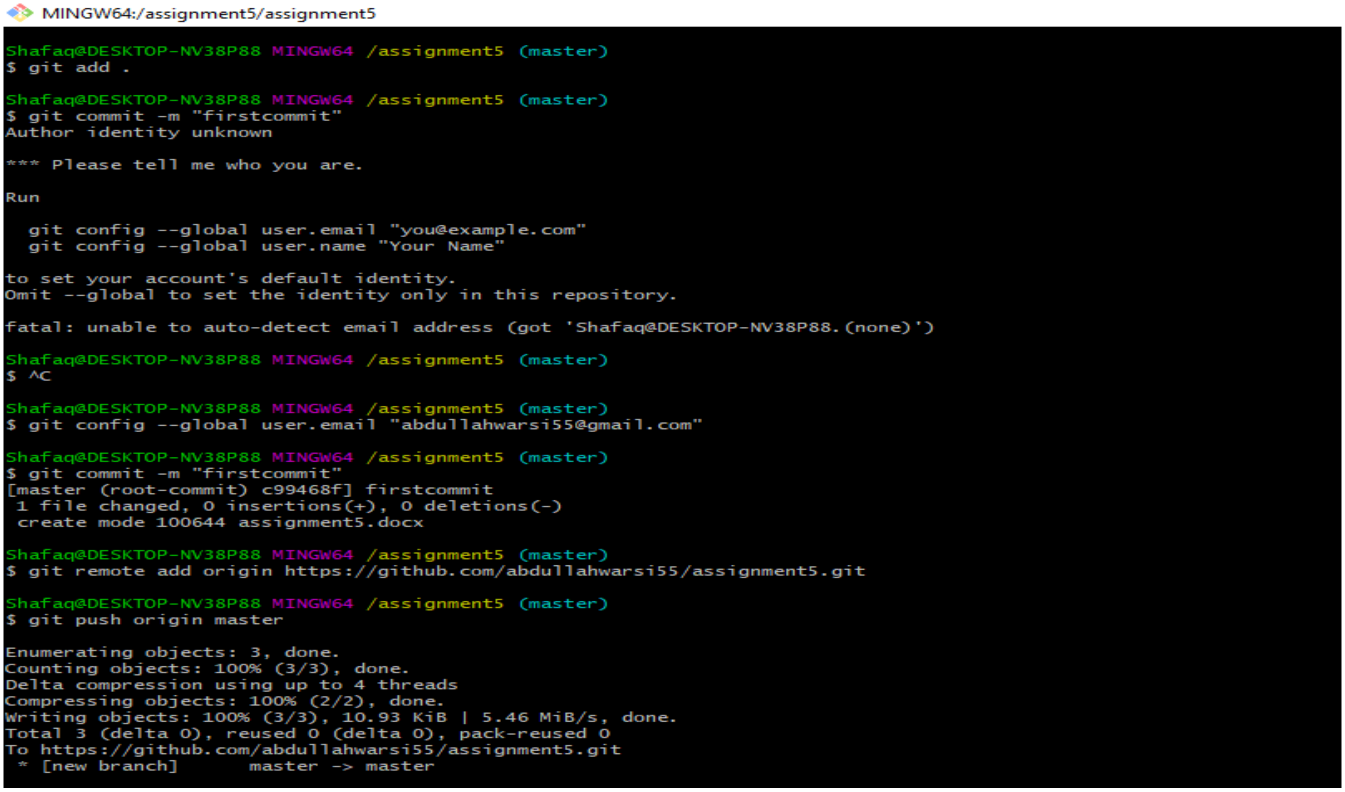
Learn how to generate a GPG key and add it to your account .

Vigilant mode



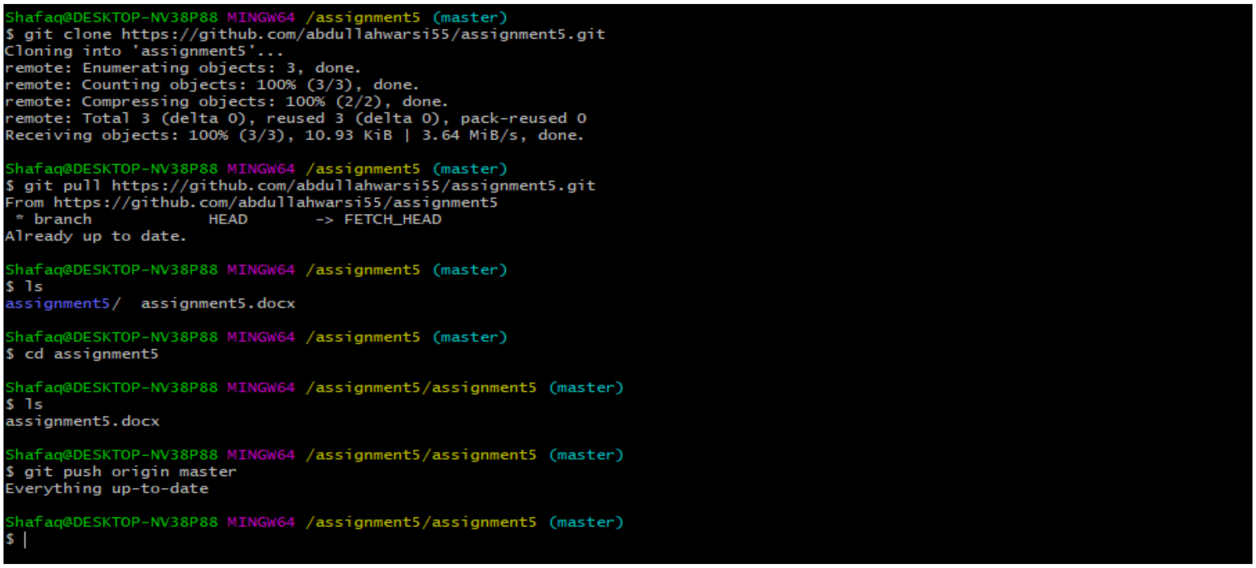
MINGW64:/assignment5/assignment5

```
Shafaq@DESKTOP-NV38P88 MINGW64 /
$ git init assignment5
hint: Using 'master' as the name for the initial branch. This default branch nam
e
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in C:/Users/Shafaq/Desktop/PortableGit/assignme
nt5/.git/

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ ls
LICENSE.txt      assignment5/  cmd/  etc/           git-cmd.exe*  proc/  usr/
README.portable  bin/          dev/  git-bash.exe*  mingw64/      tmp/

Shafaq@DESKTOP-NV38P88 MINGW64 /
$ cd assignment5

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ ls

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ touch assignment5.docx
```

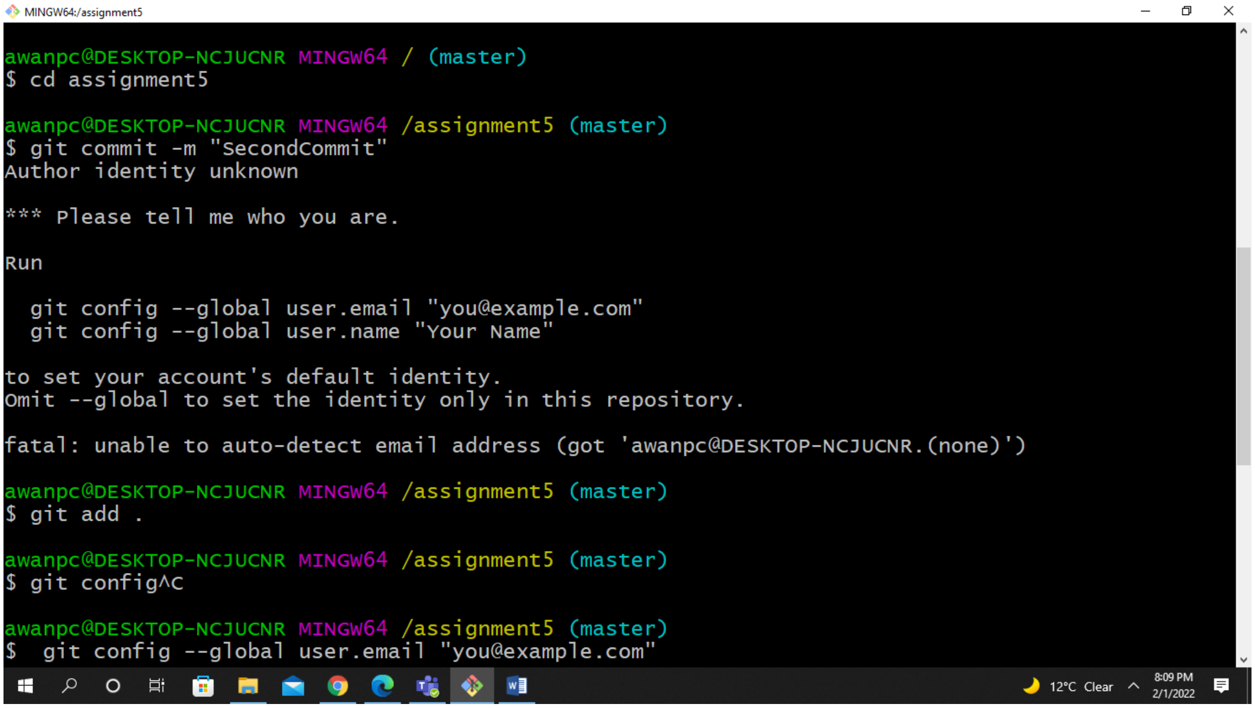


MINGW64:/assignment5/assignment5

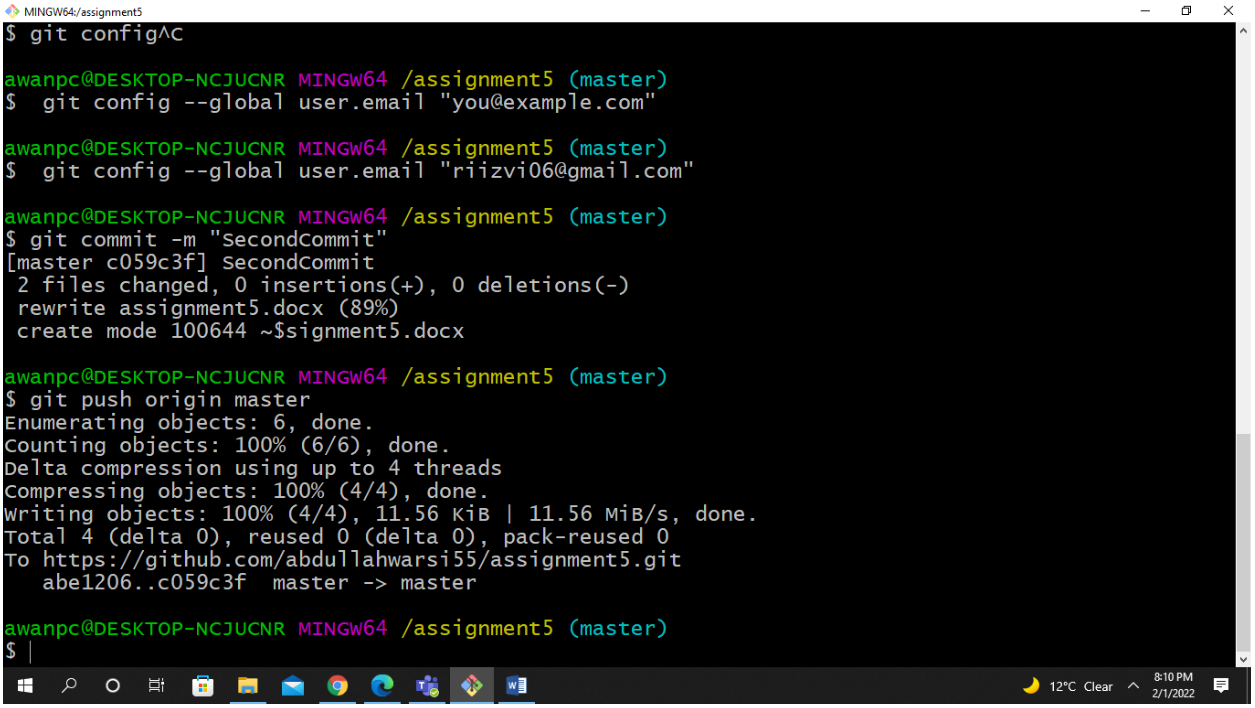
```
Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git add .

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git commit -m "firstcommit"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'Shafaq@DESKTOP-NV38P88.(none)')

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ ^C

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git config --global user.email "abdullahwarsi55@gmail.com"

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git commit -m "firstcommit"
[master (root-commit) c99468f] firstcommit
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 assignment5.docx

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git remote add origin https://github.com/abdullahwarsi55/assignment5.git

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (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), 10.93 KiB | 5.46 MiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/abdullahwarsi55/assignment5.git
 * [new branch]      master -> master
```



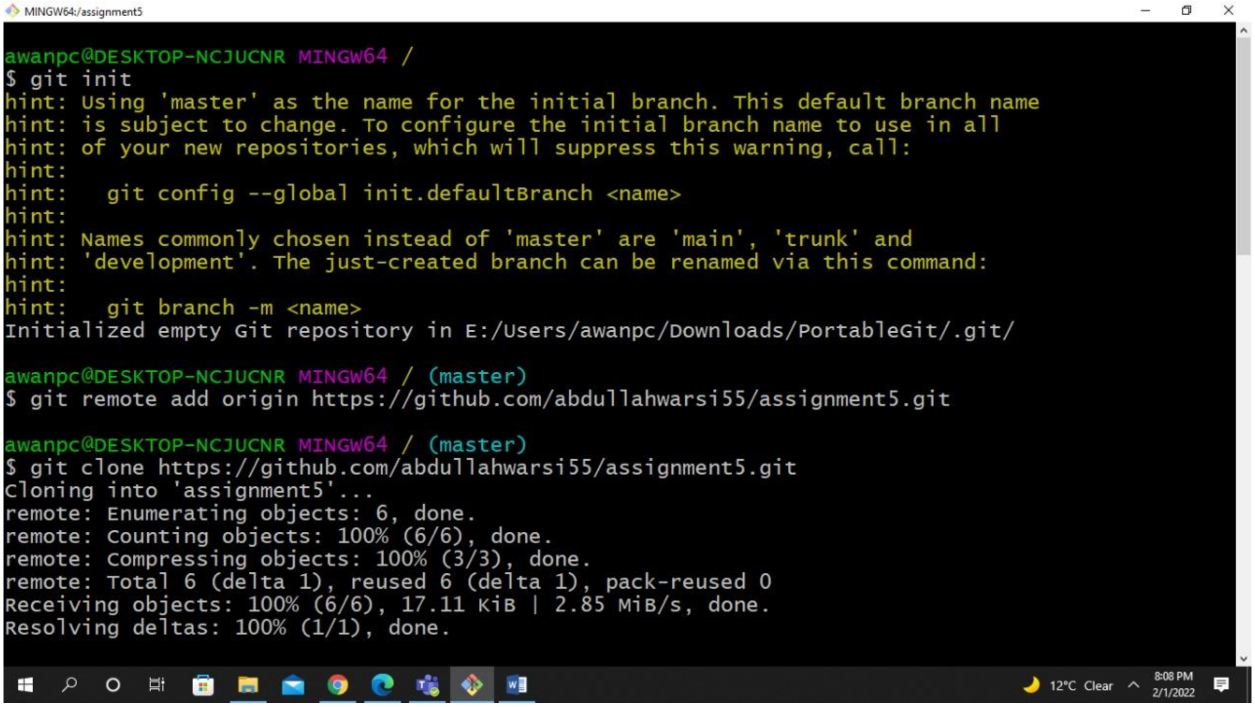
```
Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git clone https://github.com/abdullahwarsi55/assignment5.git
Cloning into 'assignment5'...
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 3 (delta 0), pack-reused 0
Receiving objects: 100% (3/3), 10.93 KiB | 3.64 MiB/s, done.

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ git pull https://github.com/abdullahwarsi55/assignment5.git
From https://github.com/abdullahwarsi55/assignment5
 * branch            HEAD       -> FETCH_HEAD
Already up to date.

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ ls
assignment5/  assignment5.docx

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5 (master)
$ cd assignment5

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5/assignment5 (master)
$ ls
assignment5.docx

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5/assignment5 (master)
$ git push origin master
Everything up-to-date

Shafaq@DESKTOP-NV38P88 MINGW64 /assignment5/assignment5 (master)
$ |
```



```
awanpc@DESKTOP-NCJUCNR MINGW64 / (master)
$ cd assignment5

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ git commit -m "SecondCommit"
Author identity unknown

*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'awanpc@DESKTOP-NCJUCNR.(none)')

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ git add .

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ git config^C

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$  git config --global user.email "you@example.com"
```



```
$ git config^C

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$  git config --global user.email "you@example.com"

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$  git config --global user.email "riizvi06@gmail.com"

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ git commit -m "SecondCommit"
[master c059c3f] SecondCommit
 2 files changed, 0 insertions(+), 0 deletions(-)
 rewrite assignment5.docx (89%)
 create mode 100644 ~$signment5.docx

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ git push origin master
Enumerating objects: 6, done.
Counting objects: 100% (6/6), done.
Delta compression using up to 4 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 11.56 KiB | 11.56 MiB/s, done.
Total 4 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/abdullahwarsi55/assignment5.git
   abe1206..c059c3f  master -> master

awanpc@DESKTOP-NCJUCNR MINGW64 /assignment5 (master)
$ |
```



```
awanpc@DESKTOP-NCJUCNR MINGW64 /
$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in E:/Users/awanpc/Downloads/PortableGit/.git/

awanpc@DESKTOP-NCJUCNR MINGW64 / (master)
$ git remote add origin https://github.com/abdullahwarsi55/assignment5.git

awanpc@DESKTOP-NCJUCNR MINGW64 / (master)
$ git clone https://github.com/abdullahwarsi55/assignment5.git
Cloning into 'assignment5'...
remote: Enumerating objects: 6, done.
remote: Counting objects: 100% (6/6), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 6 (delta 1), reused 6 (delta 1), pack-reused 0
Receiving objects: 100% (6/6), 17.11 KiB | 2.85 MiB/s, done.
Resolving deltas: 100% (1/1), done.
```