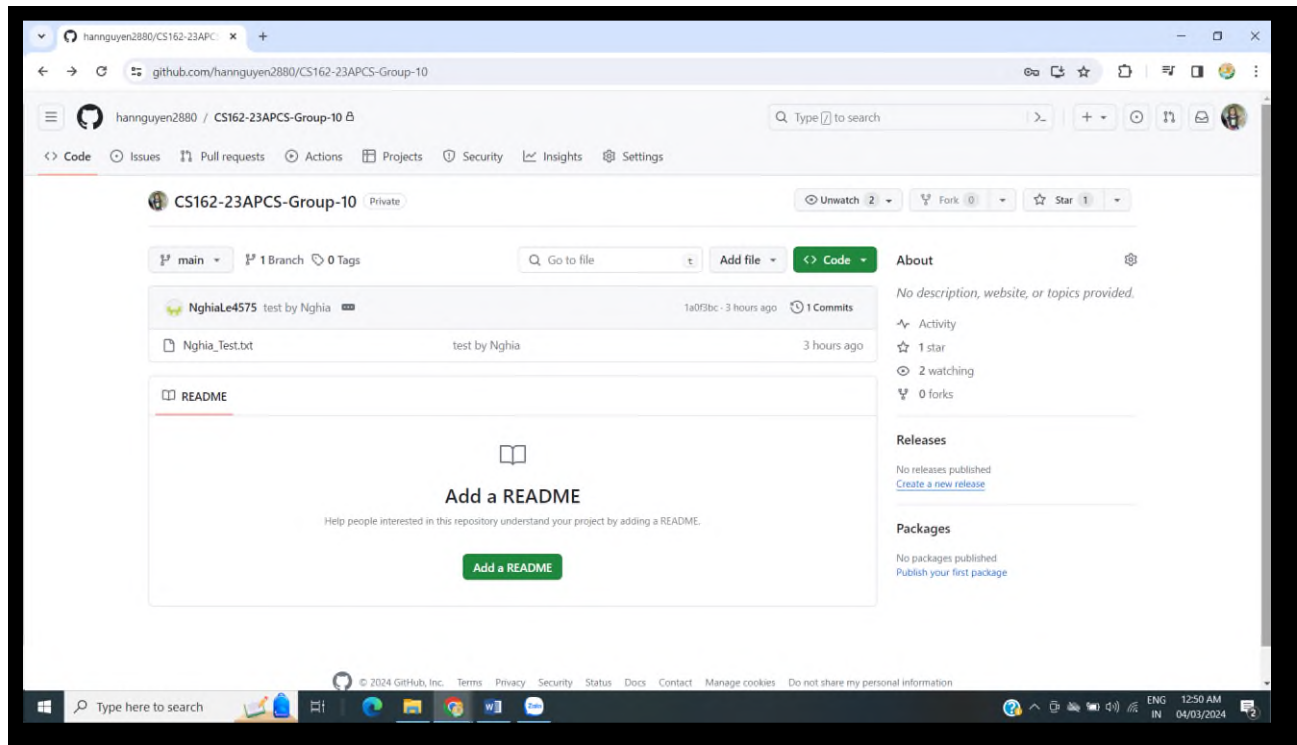
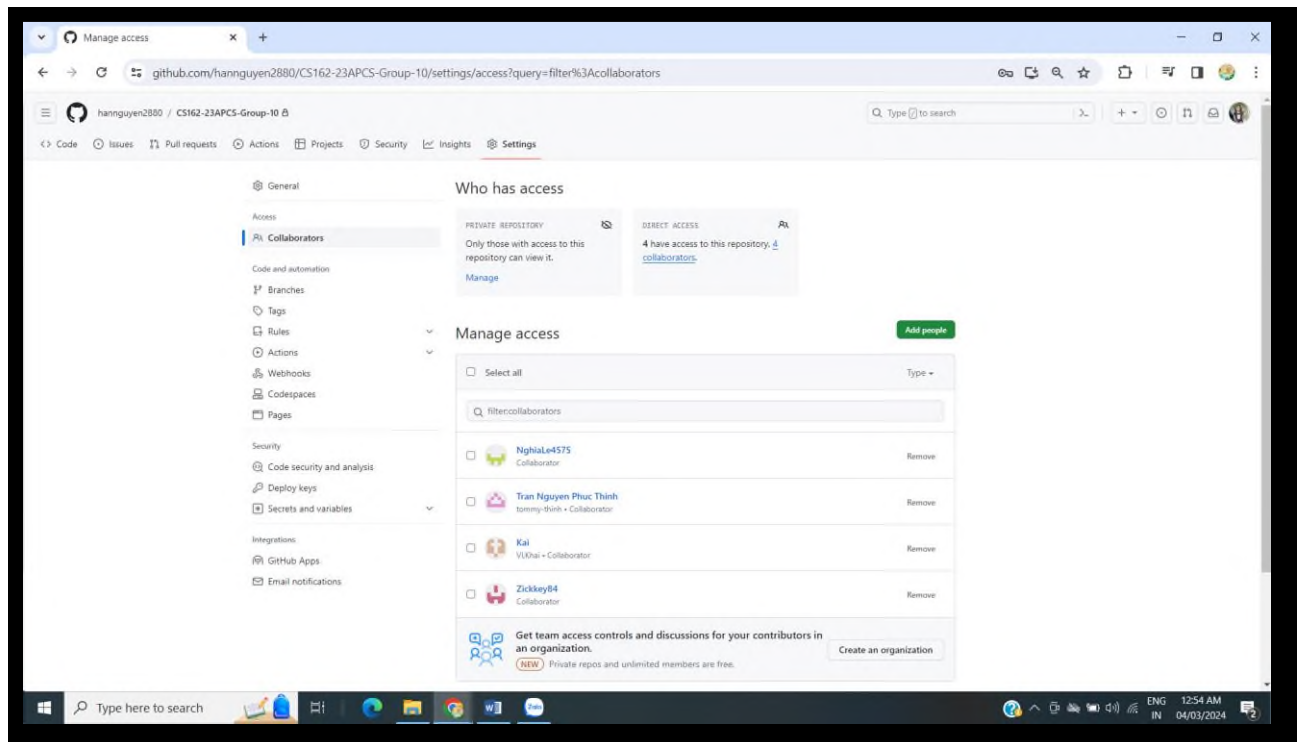


# REPORT FOR HOW TO USE GITHUB IN PROJECT ASSIGNMENT

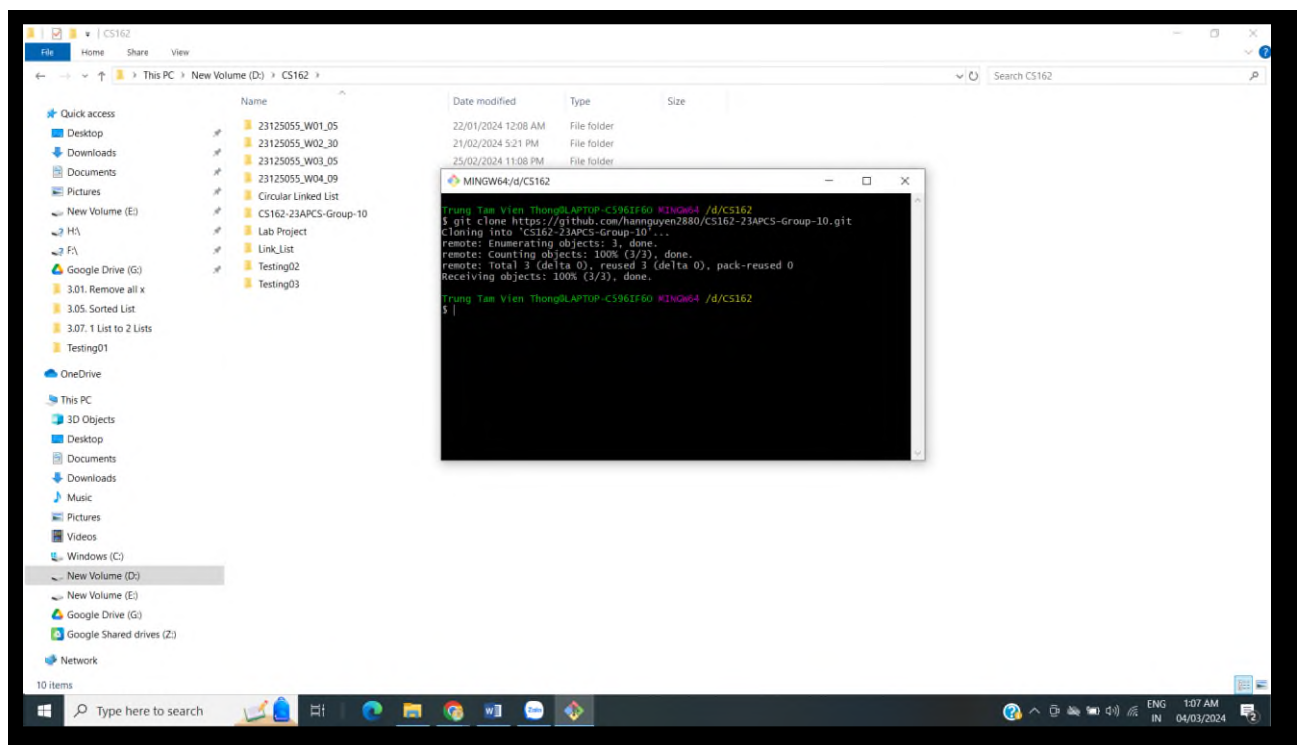
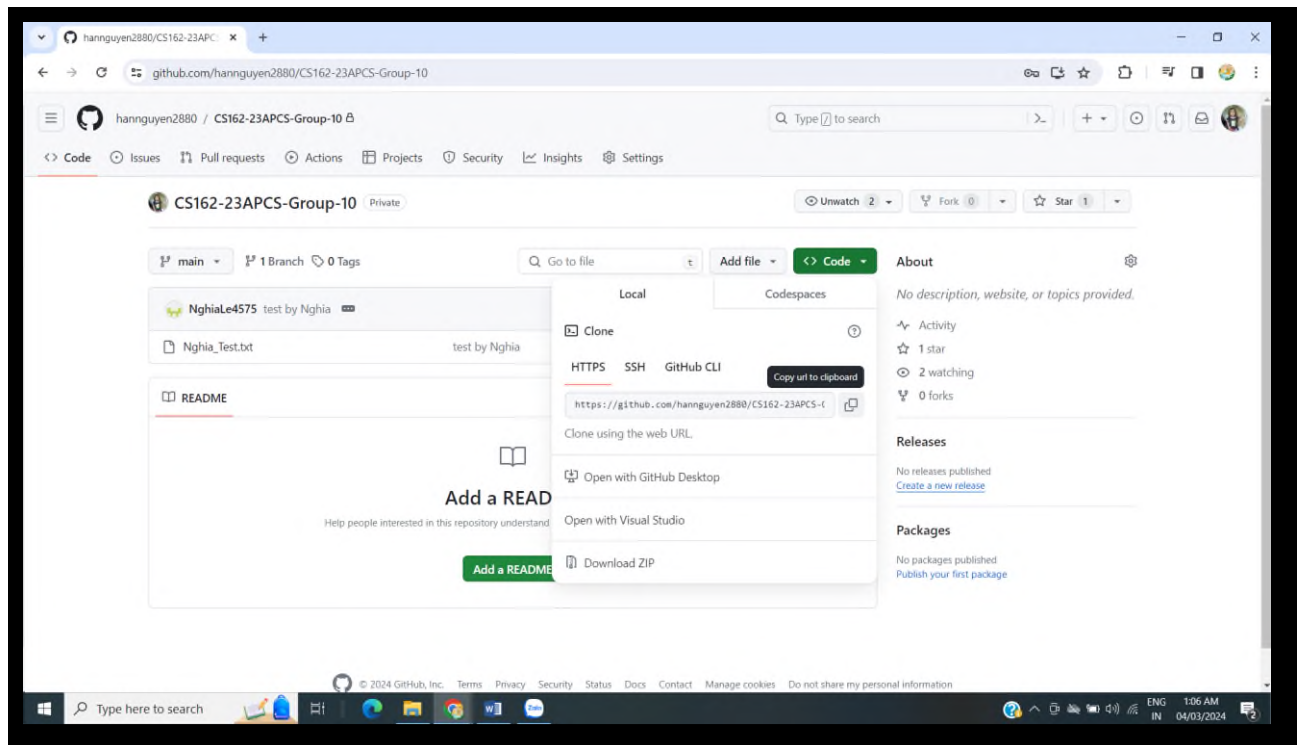
## 1. Create a private GitHub repository



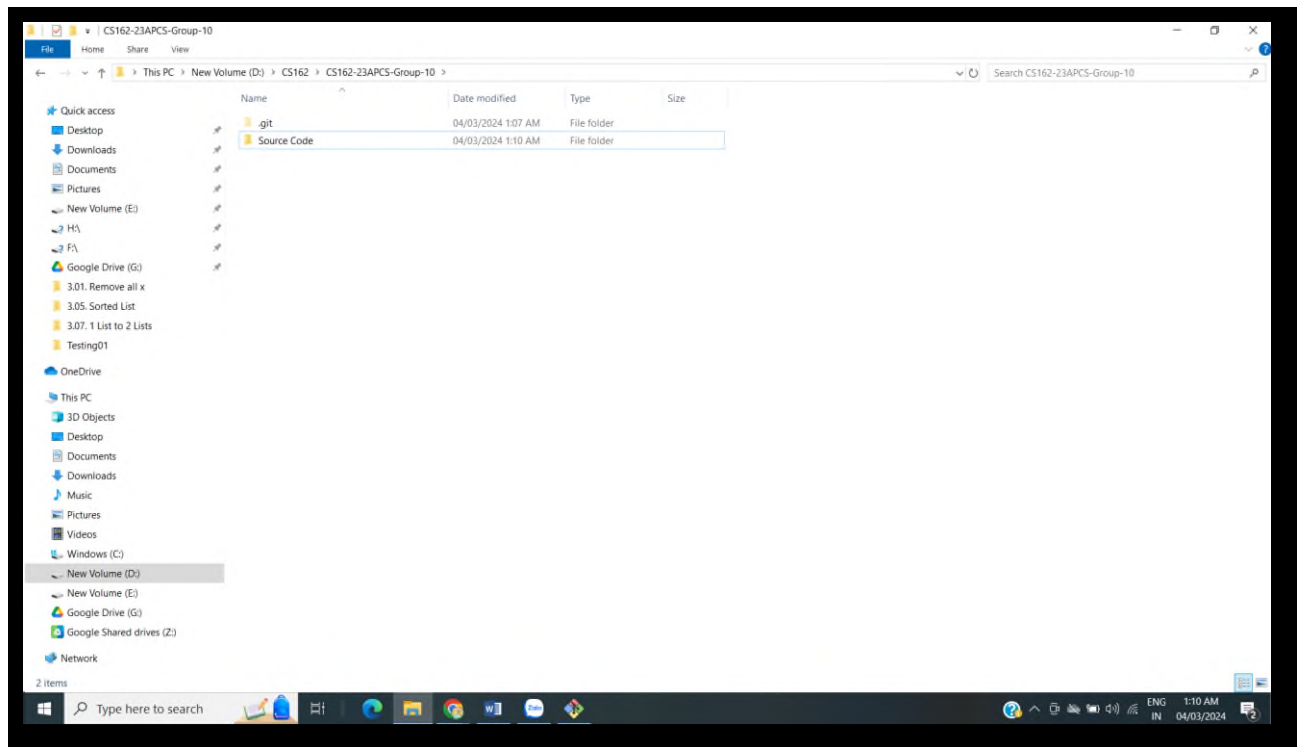
## 2. Invite all group members to the repository



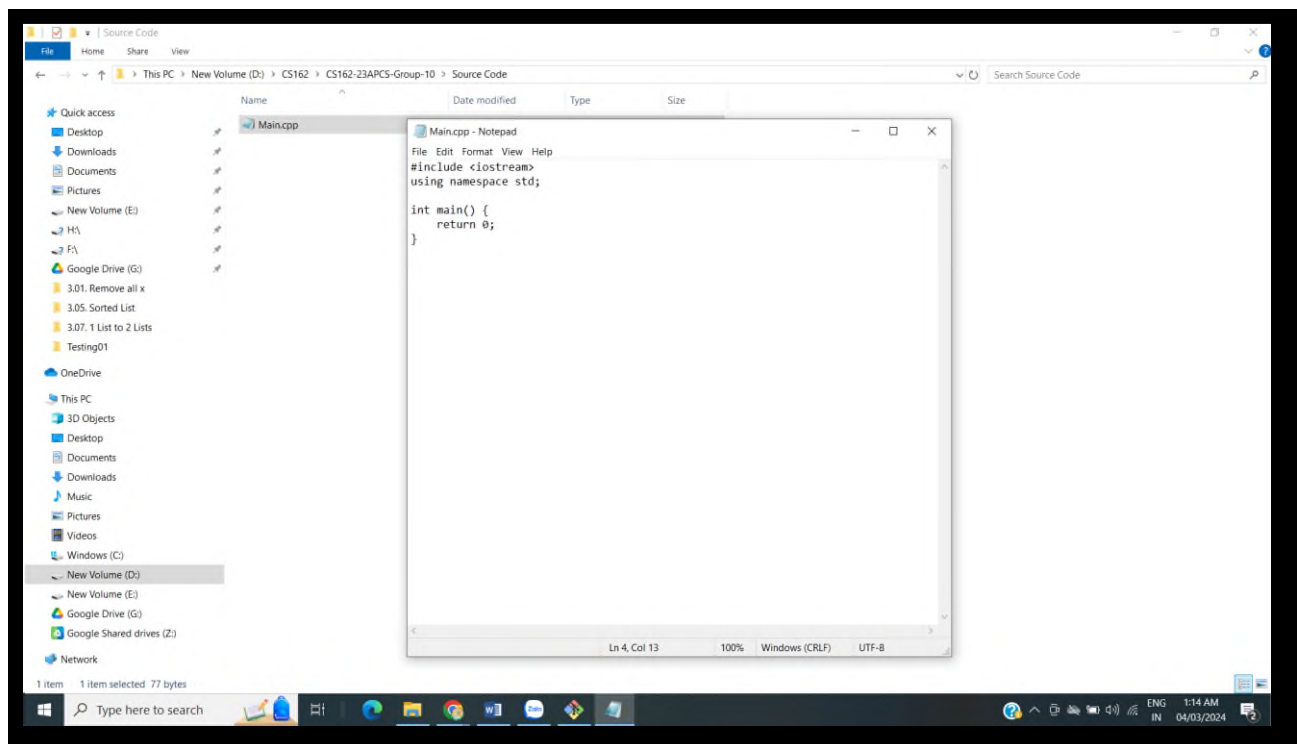
### 3. Clone the repository to your local machine



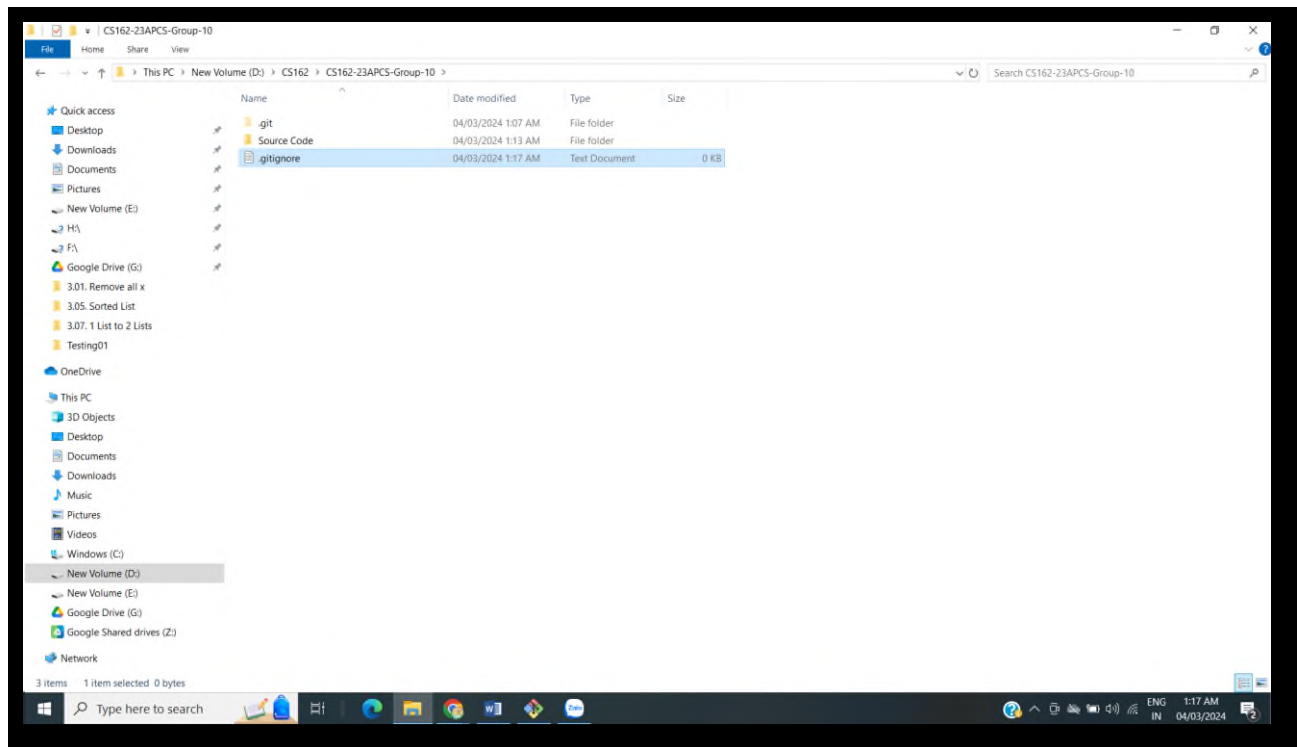
## 4. Create a folder to store the project's source code files



## 5. Implement an empty main() function

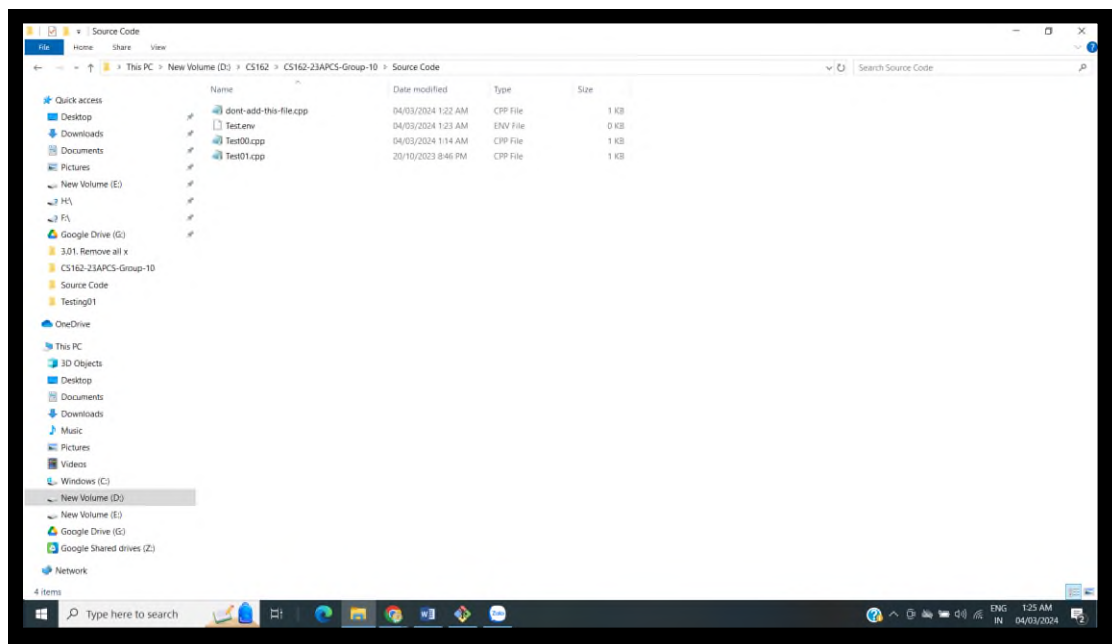


## 6. Add a .gitignore file to the project

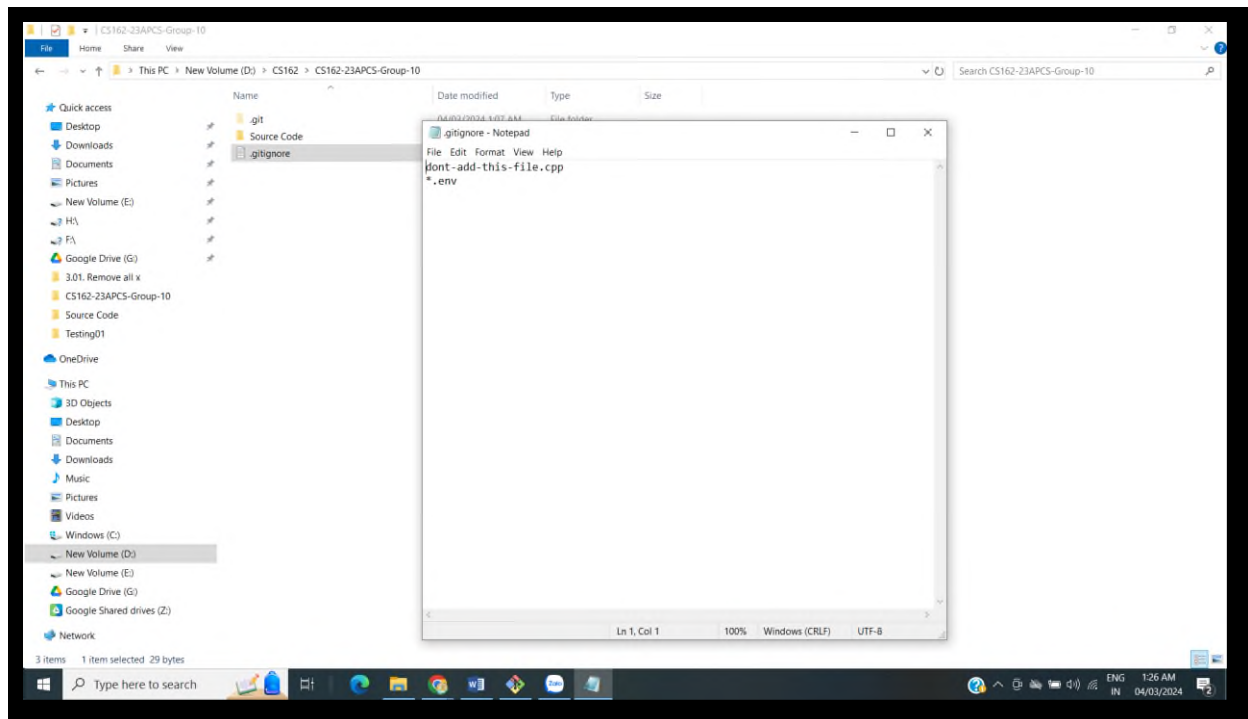


## 7. Develop additional functions and files to illustrate the use of Git commands: git add, git commit, git push, and git pull.

- I already have some of kinds of files in my folder:



- And this is my .gitignore file:



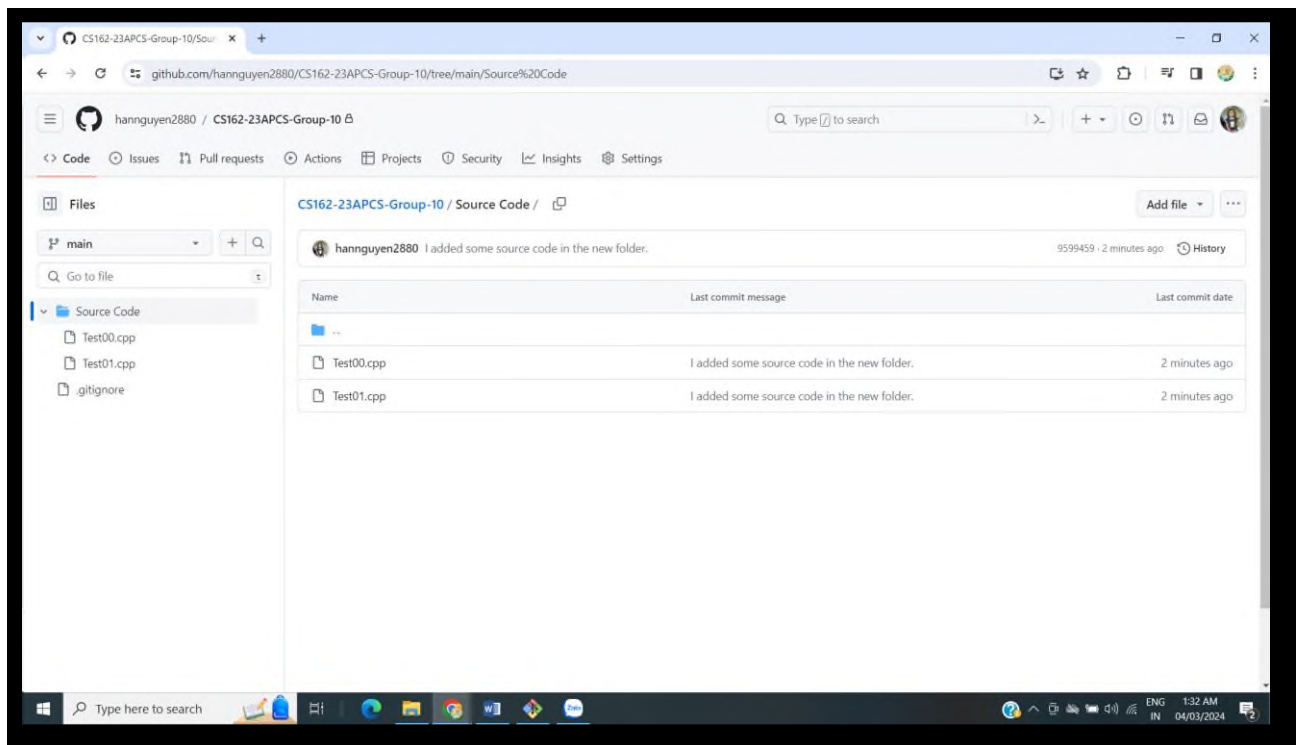
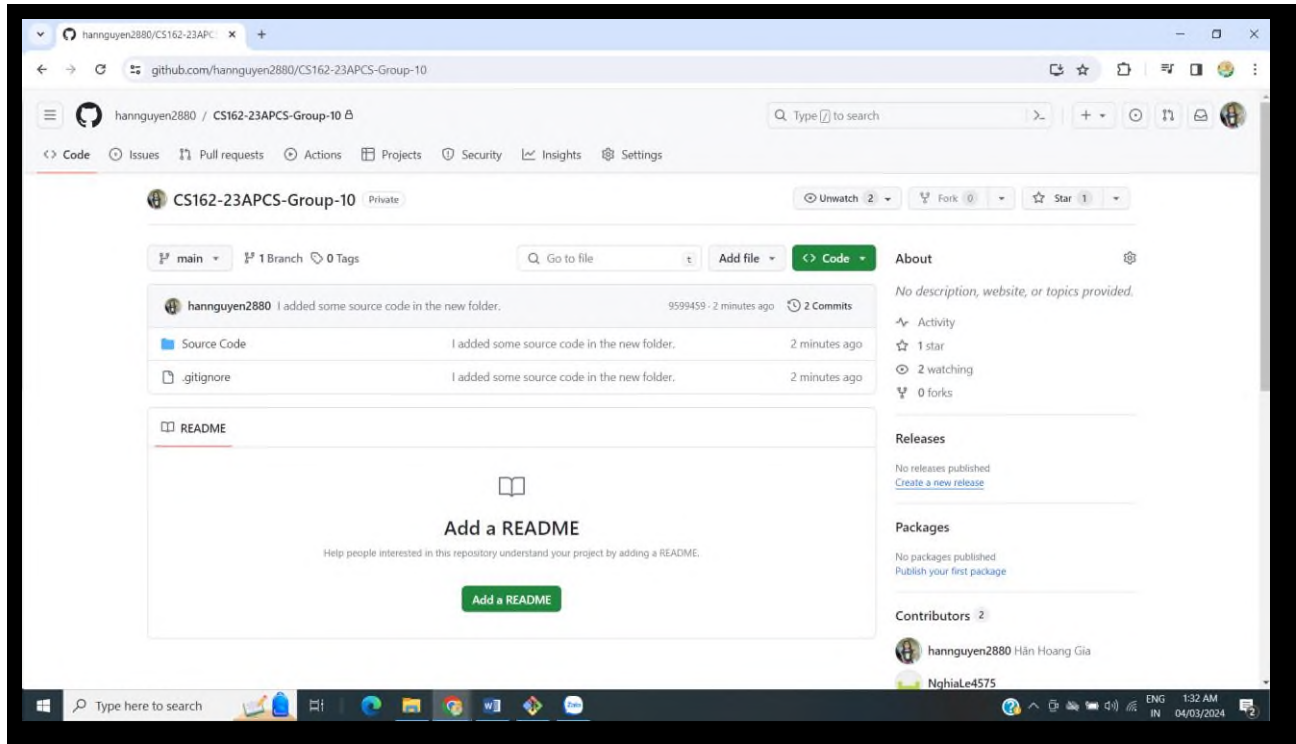
- Okay, now I'll update this folder on GitHub by git add, git commit and git push.

```

Truong Tan Vien Thong@LAPTOP-C5961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (ma1)
$ git add .
Truong Tan Vien Thong@LAPTOP-C5961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (ma1)
$ git commit -m "I added some source code in the new folder."
[main 9599499] 3 added some source code in the new folder.
4 files changed, 22 insertions(+), 1 deletion(-)
create mode 100644 .gitignore
delete mode 100644 Nghia_Test.txt
create mode 100644 Source Code/Test00.cpp
create mode 100644 Source Code/Test01.cpp
Truong Tan Vien Thong@LAPTOP-C5961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (ma1)
$ git push -u origin master
error: src refspec master does not match any
error: failed to push some refs to 'https://github.com/hannguyen2880/CS162-23APCS-Group-10.git'
Truong Tan Vien Thong@LAPTOP-C5961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (ma1)
$ git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 646 bytes | 646.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/hannguyen2880/CS162-23APCS-Group-10.git
1a0f3bc..9599499 main -> main
Truong Tan Vien Thong@LAPTOP-C5961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (main)
$

```

- Now, we check the repository on the Github to see the result:



- About git pull, we use it when we want to fetch and download content from GitHub and immediately update the local repository.



```

Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git add .
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git commit -m "I added some source code in the new folder."
[main 9599459] I added some source code in the new folder.
4 files changed, 27 insertions(+),
create mode 100644 .gitignore
delete mode 100644 Nghia_Test.txt
create mode 100644 Source Code/Test00.cpp
create mode 100644 Source Code/test01.cpp
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git push -u origin master
error: src refspec master does not match any
error: failed to push some refs to 'https://github.com/taimguyen2880/CS162-23APC
S-Group-10.git'
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 4 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (6/6), 646 bytes | 646.00 KiB/s, done.
Total 6 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/taimguyen2880/CS162-23APCS-Group-10.git
1a0f3bc..9599459 main -> main
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (main)
$ git pull
Already up to date.
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (main)
$

```

In this case, since everything is “already up to date”, it means that there’s no change in our project, so there’s nothing to pull.

## 8. Showcase an instance of a code conflict and demonstrate how to resolve it.

- “Code conflict” exists when we use “git push” to push something new on the remote repository, but it’s different from the change that your collaborator has already changed before in that file.
- For example, when I use “git push”, I meet this problem:

```

WINDOWS/CS162/CS162-23APCS-Group-10
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git add .
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git commit -m "Testing"
[main d8180d] testing
2 files changed, 3 insertions(+), 1 deletion(-)
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$ git push
To https://github.com/taimguyen2880/CS162-23APCS-Group-10.git
main -> main (fetch first)
error: failed to push some refs to 'https://github.com/taimguyen2880/CS162-23APC
S-Group-10.git'
error: local changes were rejected because the remote contains work that you do
not have locally. This is usually caused by another repository pushing
to the same ref. You may want to first integrate the remote changes
(e.g., 'git pull') before pushing again.
hint: See the 'note about fast-forwards' in 'git push --help' for details.
Trung Tam Vien Thong\LAPTOP-C5961F60 WINDOWS /d/CS162/CS162-23APCS-Group-10 (mai
n)
$

```

- To resolve it, we have to use “git pull”:

```

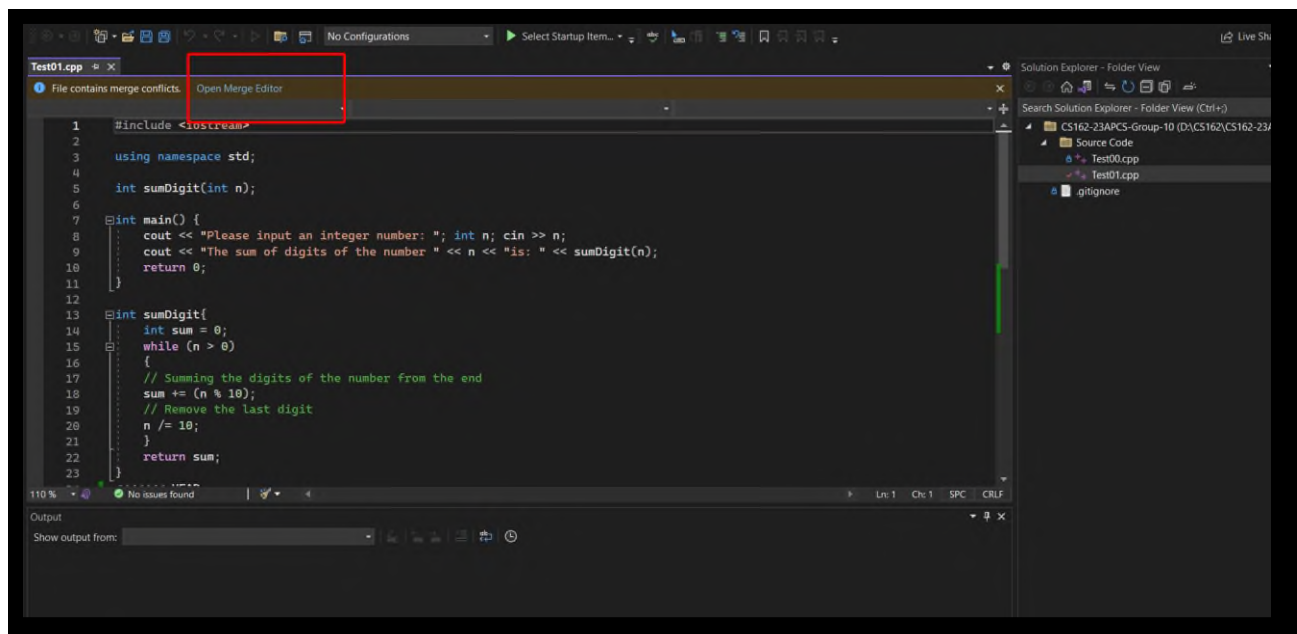
-X, --strategy-option <options> merge strategy to use
-S, --gpg-sign[=<key-id>] option for selected merge strategy
--allow-unrelated-histories GPG sign commit
allow merging unrelated histories

Options related to fetching
--all fetch from all remotes
--append append to .git/FETCH_HEAD instead of overwriting
--upload-pack <path> path to upload pack on remote end
-f, --force force overwrite of local branch
-t, --tags fetch all tags and associated objects
-p, --prune prune remote-tracking branches no longer on remote
-j, --jobs[=<n>] number of submodules pulled in parallel
--dry-run dry run
-k, --keep keep downloaded pack
--depth <depth> deepen history of shallow clone
--shallow-since <time> deepen history of shallow repository based on time
--shallow-exclude <revisions> deepen history of shallow clone, excluding rev
--deepen <n> deepen history of shallow clone
--unshallow convert to a complete repository
--update-shallow accept refs that update .git/shallow
--refmap <refmap> specify fetch refmap
-o, --server-option <server-specific> option to transmit
-4, --ipv4 use IPV4 addresses only
-6, --ipv6 use IPV6 addresses only
--negotiation-tip <revision> report that we have only objects reachable from this object
--show-forced-updates check for forced-updates on all updated branches
--set-upstream set upstream for git pull/fetch

Trung Tam Vien ThongLAPTOP-CS961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (main)
$ git pull
remote: Enumerating objects: 13, done.
remote: Counting objects: 100% (12/12), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 7 (delta 0), reused 7 (delta 0), pack-reused 0
Inpacking objects: 100% (7/7), 986 bytes | 51.00 KiB/s, done.
From https://github.com/hannguyen2880/CS162-23APCS-Group-10
  93b579e..04169cb main -> origin/main
Auto-merging Source Code/Test01.cpp
CONFLICT (content): Merge conflict in Source Code/Test01.cpp
Automatic merge failed; fix conflicts and then commit the result.
Trung Tam Vien ThongLAPTOP-CS961F60 MINGW64 /d/CS162/CS162-23APCS-Group-10 (main)MERGING

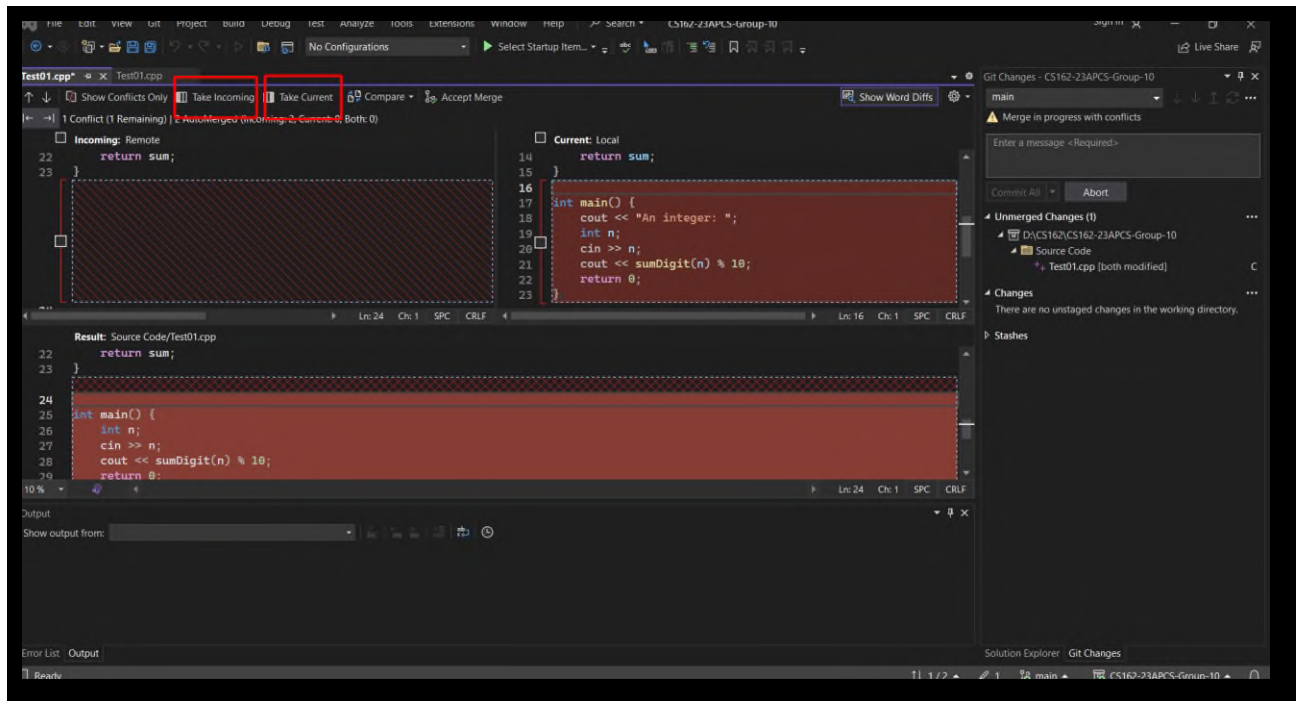
```

- After that, open your source code, choose “Open Merge Editor”:

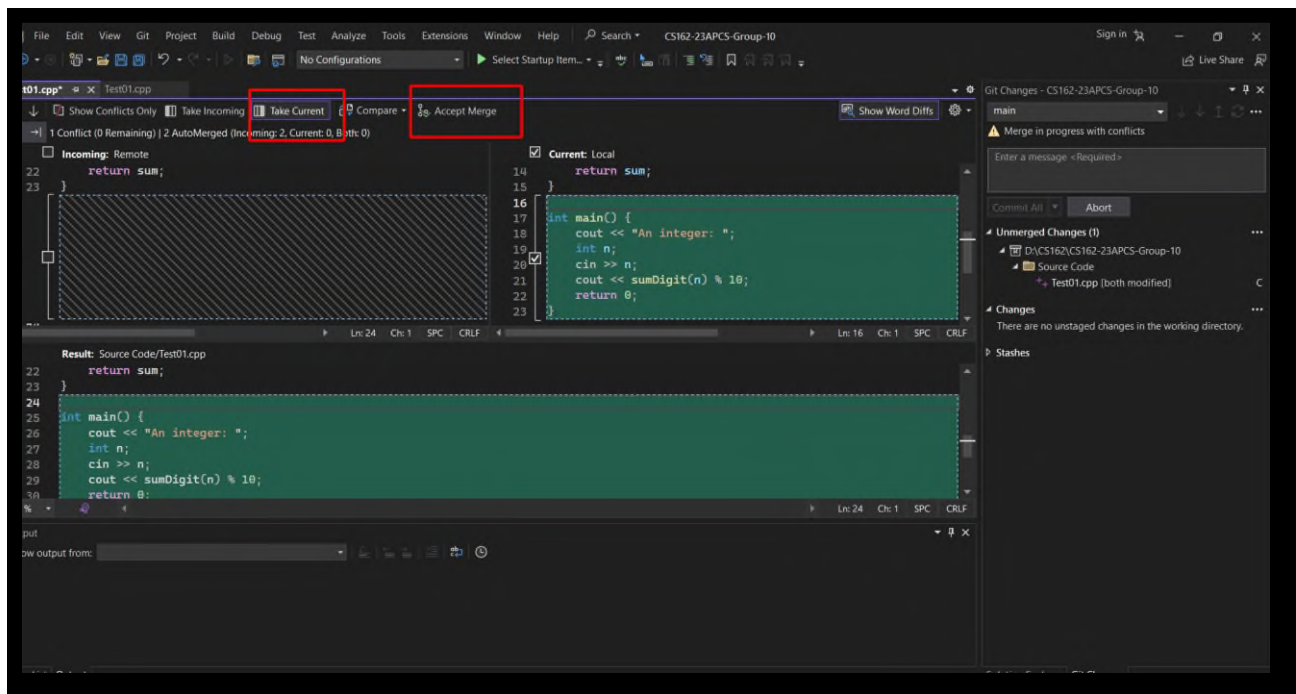


- We can choose “take incoming”, or “take Current”, or we can choose both and fix it by ourself.





- I'll choose "take current", then click "Accept Merge":



- Now, we resolved the conflict successfully. Finally, we just have to git add, git commit and git push it on the Github.

```

MINGW64/d/CS162-CS162-23APCS-Group-10/Source Code
C:\Code (main)
$ git add Test01.cpp

Trung Tam vien Thong@LAPTOP-C3961F60 MINGW64 /d/CS162-CS162-23APCS-Group-10/Source Code (main)
$ git commit -m "Fixed"
[master main]
Your branch is ahead of 'origin/main' by 3 commits.
(use "git push" to publish your local commits)

nothing to commit, working tree clean

Trung Tam vien Thong@LAPTOP-C3961F60 MINGW64 /d/CS162-CS162-23APCS-Group-10/Source Code (main)
$ git push
Enumerating objects: 25, done.
Counting objects: 100% (23/23), done.
Delta compression using up to 4 threads
Compressing objects: 100% (12/12), done.
Writing objects: 100% (13/13), 1.30 KiB | 331.00 KiB/s, done.
Total 13 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 2 local objects.
to https://github.com/hannguyen2880/CS162-23APCS-Group-10.git
a77b546..2a0f0de main -> main

Trung Tam vien Thong@LAPTOP-C3961F60 MINGW64 /d/CS162-CS162-23APCS-Group-10/Source Code (main)
$

```

- And that file on the GitHub has already changed:

github.com/hannguyen2880/CS162-23APCS-Group-10/blob/main/Source%20Code/Test01.cpp

CS162-23APCS-Group-10 / Source Code / Test01.cpp

hannguyen2880 Merge branch 'main' of https://github.com/hannguyen2880/CS162-23APCS-Group-10 2a0f0de · 2 minutes ago History

Code Blame 32 lines (27 loc) · 546 bytes Code 55% faster with GitHub Copilot Raw Download Edit History

```

1 #include <iostream>
2
3 using namespace std;
4
5 int sumDigit(int n);
6
7 int main()
8 {
9     cout << "Please input an integer number: "; int n; cin >> n;
10    cout << "The sum of digits of the number " << n << " is: " << sumDigit(n);
11    return 0;
12 }
13
14 int sumDigit(
15     int sum = 0;
16     while (n > 0)
17     {
18         // Summing the digits of the number from the end
19         sum += (n % 10);
20         // Remove the last digit
21         n /= 10;
22     }
23     return sum;
24 }
25
26 int main() {
27     cout << "An Integer: ";
28     int n;
29     cin >> n;
30     cout << sumDigit(n) << endl;
31     return 0;
32 }

```