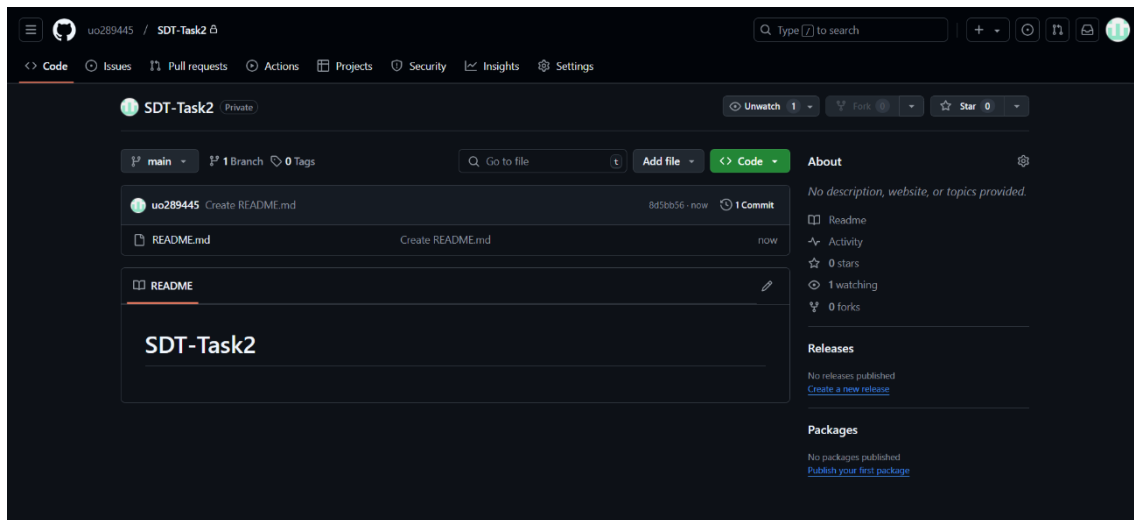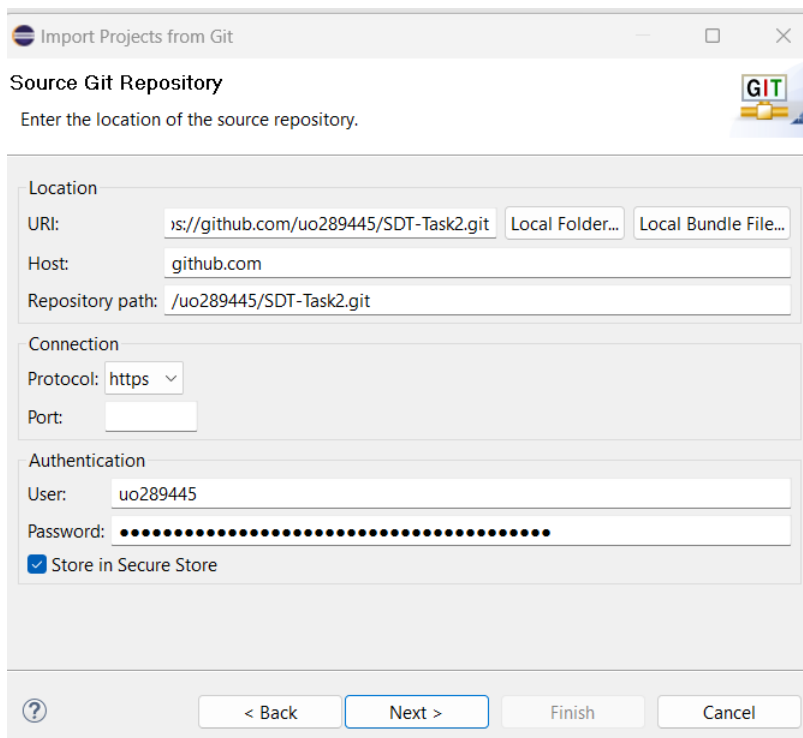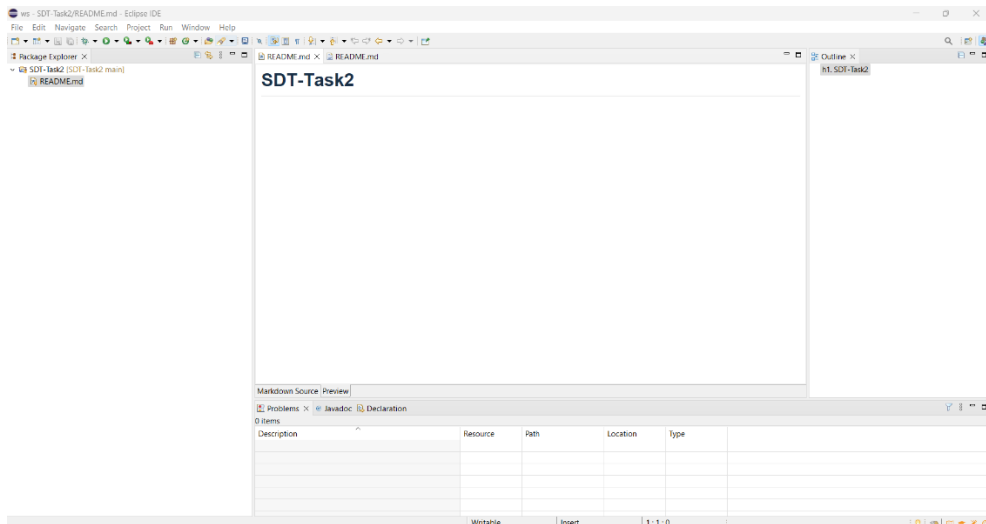# SDT-2nd Homework

Tomás Cuesta García

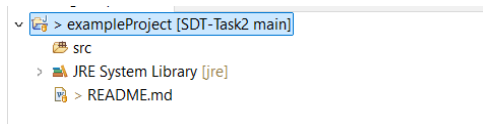a) create remote repository (at github, ...)

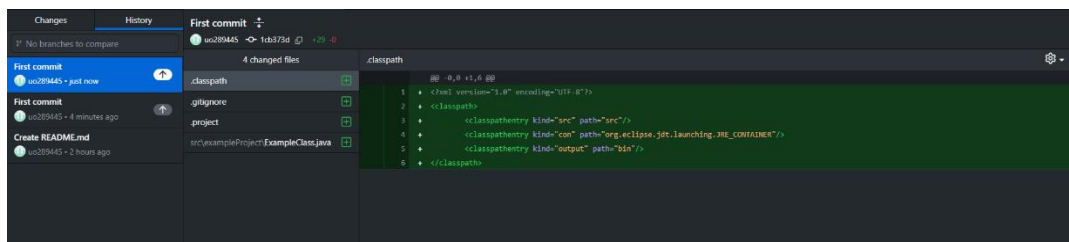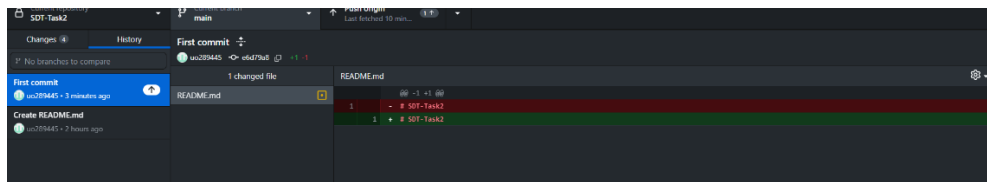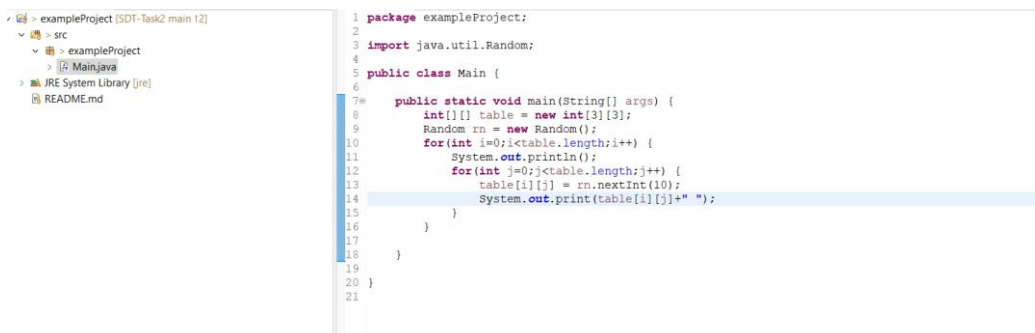

b) clone the empty repository (git clone)

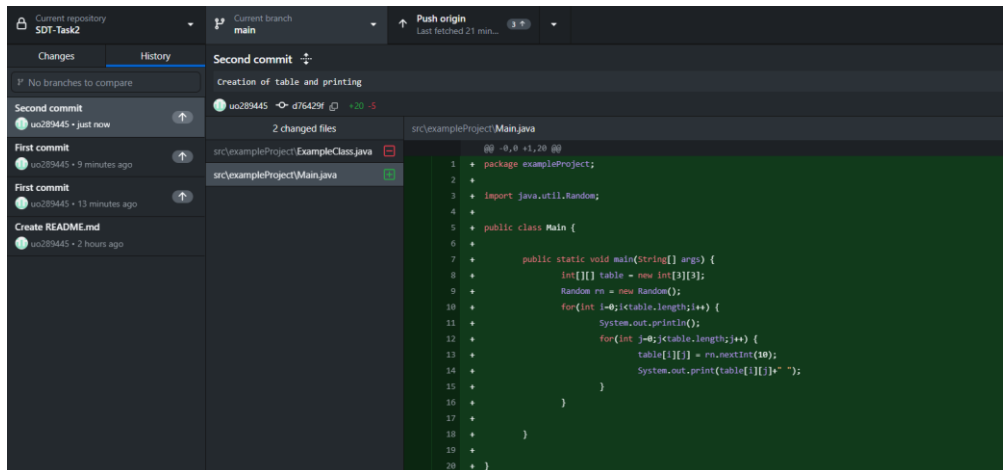c) create in the local repo folder an empty project using the chosen language

d) commit the whole project to the repo (git commit -m "message ..."

e) add simple code to the Java/C++/C# project (e.g. create table, write table elements)


```java
1  package exampleProject;
2
3  import java.util.Random;
4
5  public class Main {
6
7      public static void main(String[] args) {
8          int[][] table = new int[3][3];
9          Random rn = new Random();
10         for(int i=0;i<table.length;i++) {
11             System.out.println();
12             for(int j=0;j<table.length;j++) {
13                 table[i][j] = rn.nextInt(10);
14                 System.out.print(table[i][j]+" ");
15             }
16         }
17
18     }
19
20 }
21
```

f) commit changes

g) add more code (as I already used the random in the previous step i implemented another thing)
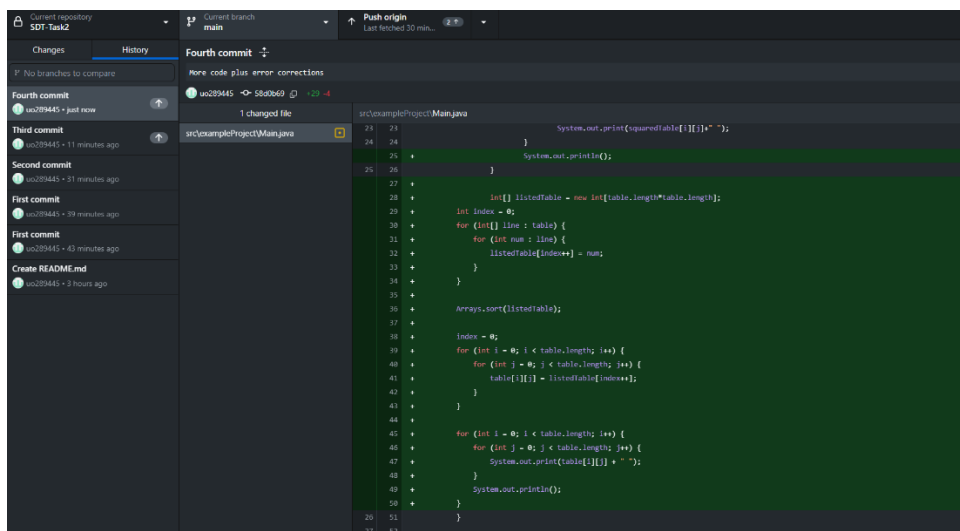
h) commit changes

i) add more code (e.g. sort table elements)
j) commit changes

k) look at code history (git log)

Id	Message	Author	Authored Date	Committer	Committed Date
58d0b69	[main] [HEAD] Fourth commit	uo289445	4 minutes ago	uo289445	4 minutes ago
8f5f2ee	Third commit	uo289445	15 minutes ago	uo289445	15 minutes ago
d76429f	[origin/HEAD] [origin/main] Second commit	uo289445	35 minutes ago	uo289445	35 minutes ago
1cb373d	First commit	uo289445	43 minutes ago	uo289445	43 minutes ago
e6d79a8	First commit	uo289445	47 minutes ago	uo289445	47 minutes ago
8d5bb56	Create README.md	uo289445	3 hours ago	GitHub	3 hours ago

```
commit 58d0b6925888aeb3ad39271c2c999884cda83f7b (HEAD -> main)
Author: uo289445 <uo289445@uniovi.es>
Date:   Thu Dec 5 17:53:21 2024 +0100

    Fourth commit

    More code plus error corrections

commit 8f5f2ee264a9bee846a0cba0d502f070183372eb
Author: uo289445 <uo289445@uniovi.es>
Date:   Thu Dec 5 17:42:33 2024 +0100

    Third commit

    Changes in the main class

commit d76429f3f62b0247b8a08ecf1a29d84062b84e98 (origin/main, origin/HEAD)
Author: uo289445 <uo289445@uniovi.es>
Date:   Thu Dec 5 17:22:23 2024 +0100

    Second commit

commit 58d0b6925888aeb3ad39271c2c999884cda83f7b (HEAD -> main)
Author: uo289445 <uo289445@uniovi.es>
Date:   Thu Dec 5 17:53:21 2024 +0100
```

l) look at code annotations (git blame)

```
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git blame exampleProject/src/Main.java
fatal: no such path 'exampleProject/src/Main.java' in HEAD
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  1) package exampleProject;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  2)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  3) import java.util.Arrays;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  4) import java.util.Random;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  5)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  6) public class Main {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  7)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  8)     public static void main(String[] args) {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  9)         int[][] table = new int[3][3];
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  1) package exampleProject;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  2)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  3) import java.util.Arrays;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  4) import java.util.Random;
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  5)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  6) public class Main {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  7)
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  8)     public static void main(String[] args) {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100  9)         int[][] table = new int[3][3];
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100 10)         Random rn = new Random();
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100 11)         for(int i=0;i<table.length;i++) {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100 12)             for(int j=0;j<table.length;j++) {
00000000 (Not Committed Yet 2024-12-05 18:33:30 +0100 13)                 table[i][j] = rn.nextInt(10);
```

m) try to checkout different revisions (git checkout)

```
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git checkout
M       .classpath
M       .project
M       src/exampleProject/Main.java
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)
```

n) add any changes to the code, do not commit (Sorting line commented)


```java
public static void main(String[] args) {
    int[][] table = new int[3][3];
    Random rn = new Random();
    for(int i=0;i<table.length;i++) {
        for(int j=0;j<table.length;j++) {
            table[i][j] = rn.nextInt(10);
            System.out.print(table[i][j]+" ");
        }
        System.out.println();
    }

    int[][] squaredTable = table.clone();
    for(int i=0;i<squaredTable.length;i++) {
        for(int j=0;j<squaredTable.length;j++) {
            squaredTable[i][j] = (int) Math.pow(table[i][j],2);
            System.out.print(squaredTable[i][j]+" ");
        }
        System.out.println();
    }

    int[] listedTable = new int[table.length*table.length];
    int index = 0;
    for (int[] line : table) {
        for (int num : line) {
            listedTable[index++] = num;
        }
    }

    //Arrays.sort(listedTable);

    index = 0;
    for (int i = 0; i < table.length; i++) {
        for (int j = 0; j < table.length; j++) {
            table[i][j] = listedTable[index++];
        }
    }
```
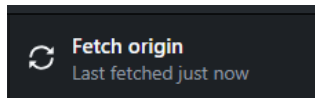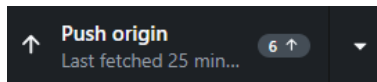

o) try to revert the last changes (git revert)

with the terminal I would be git revert and the id of the commit.

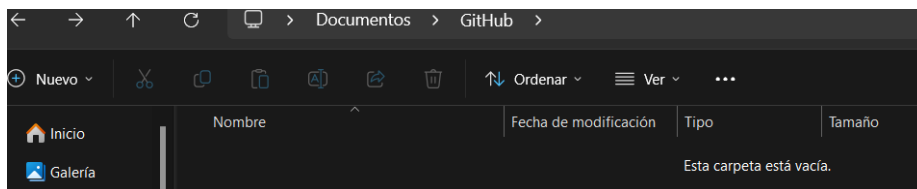## p) push the project to the remote repo (git push)
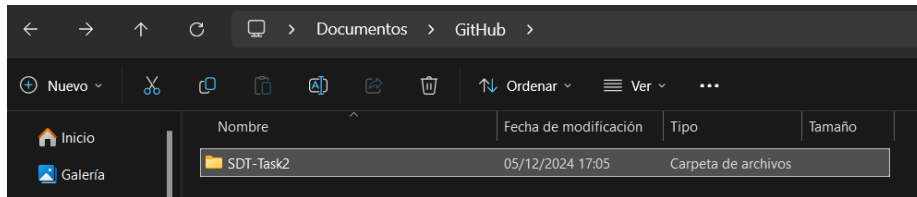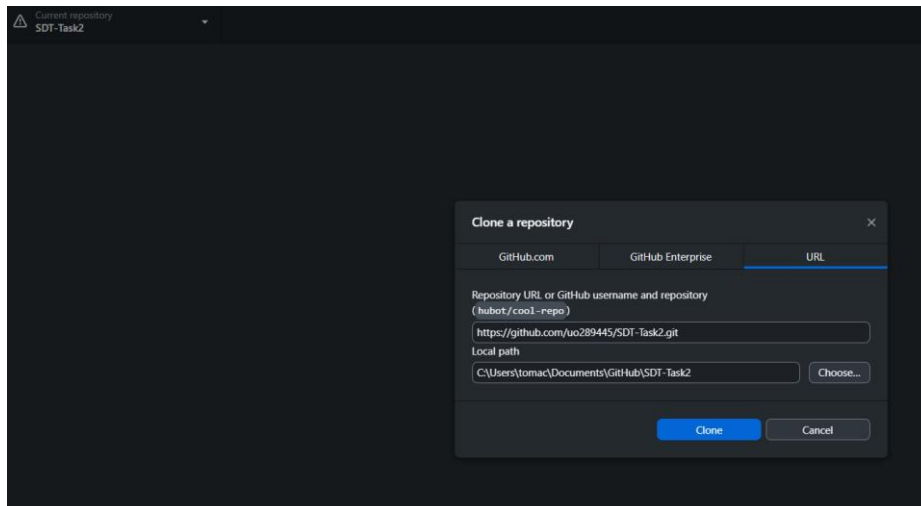

r) delete local project and local repo

s) clone project from remote repo (git clone)

t) create tag/realese, try to switch between this tag and master branch (git branch, git tag)

```
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git tag v1
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git tag
v1
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git branch v1
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git checkout v1
warning: refname 'v1' is ambiguous.
M       .classpath
M       .gitignore
M       .project
M       src/exampleProject/Main.java
Switched to branch 'v1'
```

u) create new branch from the master one

```
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git branch
* main
  v1
```

w) switch to branch (git merge)

```
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git checkout v1
warning: refname 'v1' is ambiguous.
M       .classpath
M       .gitignore
M       .project
M       src/exampleProject/Main.java
Switched to branch 'v1'
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git merge
fatal: No remote for the current branch.
uo289445@TOMS:/mnt/c/Users/tomac/Documents/GitHub/SDT-Task2$ git merge v1
warning: refname 'v1' is ambiguous.
Already up to date.
```

x) improve your code in a branch (e.g. change the sorting algorithm)

y) merge new branch into the master branch

z) give a url to repo to one of your friends (before you have to allow him/her access to this repo)

z1) try to produce conflict

```
<<<<<<< HEAD
=======
        }
        System.out.println();
    }

    int[][] squaredTable = table.clone();
    for(int i=0;i<squaredTable.length;i++) {
        for(int j=0;j<squaredTable.length;j++) {
            squaredTable[i][j] = (int) Math.pow(table[i][j],2);
            System.out.print(squaredTable[i][j]+" ");
>>>>>>> heads/v1
        }
```
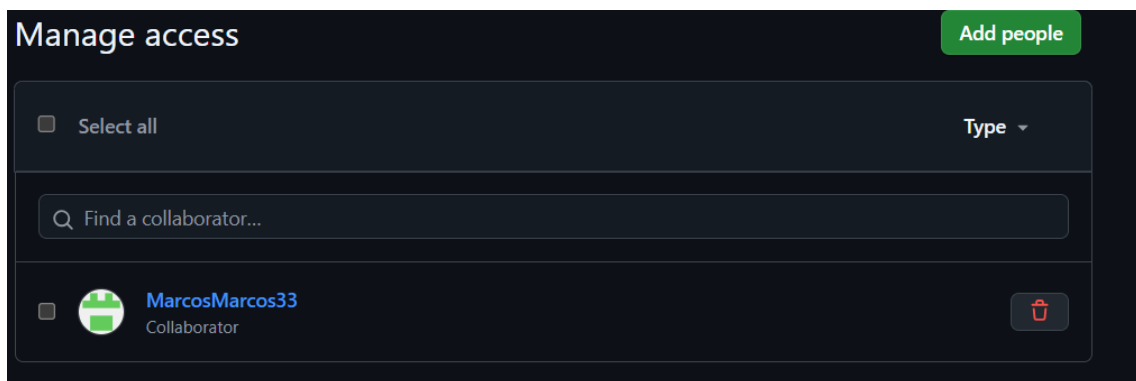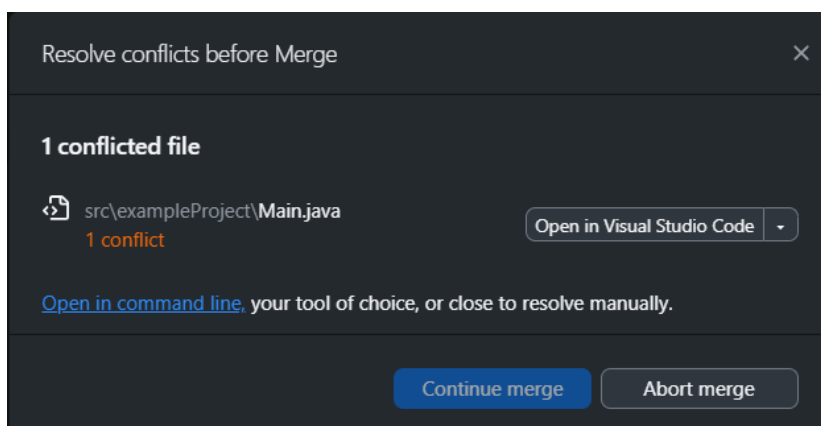
z2) solve it and push the solution to remote repo

Merge into **main**   ✕

Q Filter

Default branch

✓ main   just now

Recent branches

⅄ heads/v1   11 minutes ago

✓

This branch is up to date with **heads/v1**

Create a merge commit   ▾

⟳ **Fetch origin**
   Last fetched just now