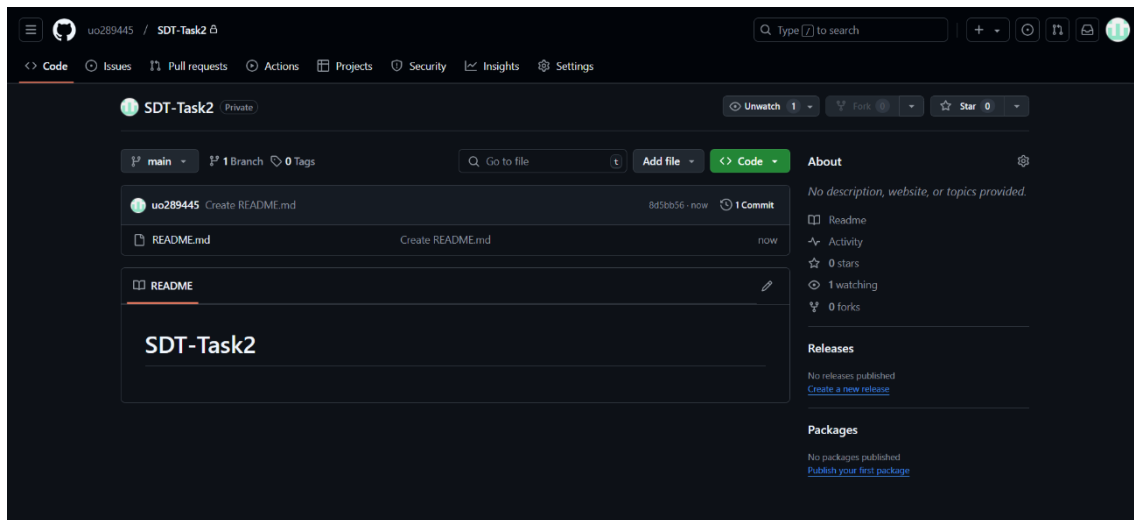


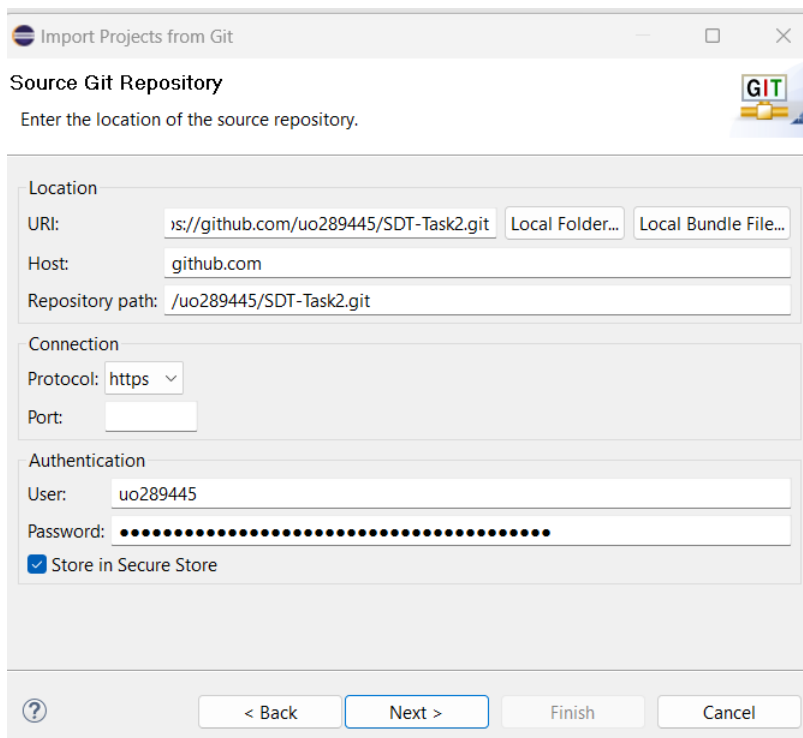
# SDT-2nd Homework

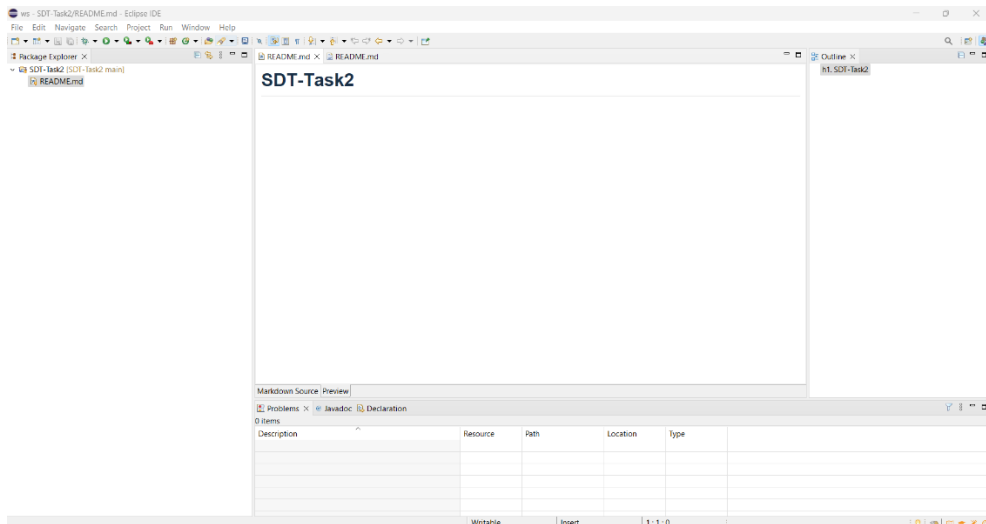
Tomás Cuesta García

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

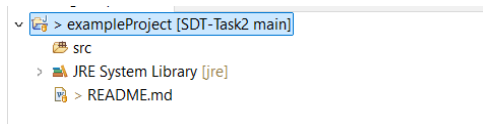


b) clone the empty repository (git clone)

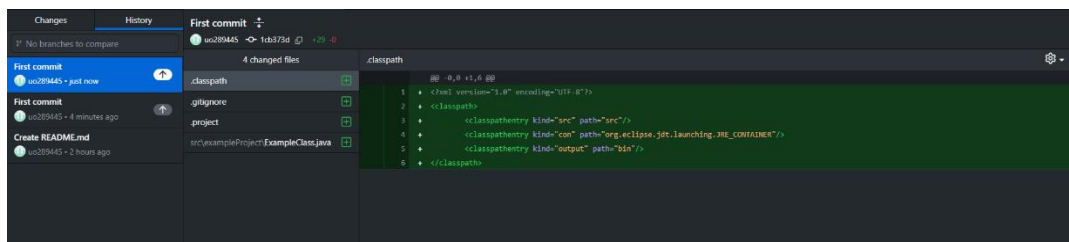
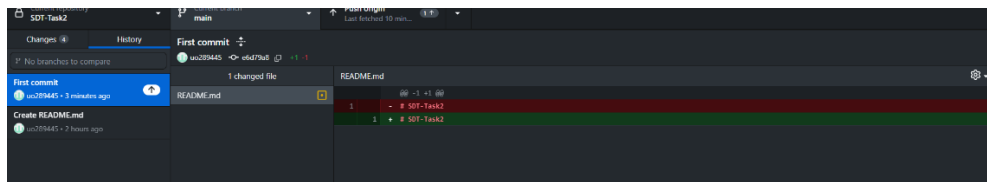




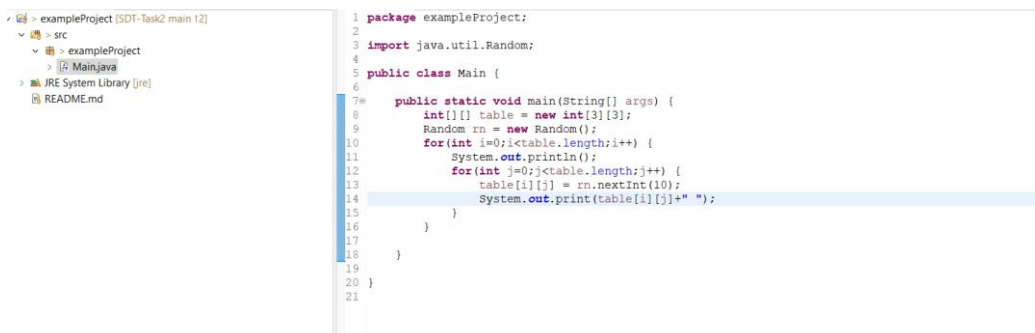
c) create in the local repo folder an empty project using the chosen language



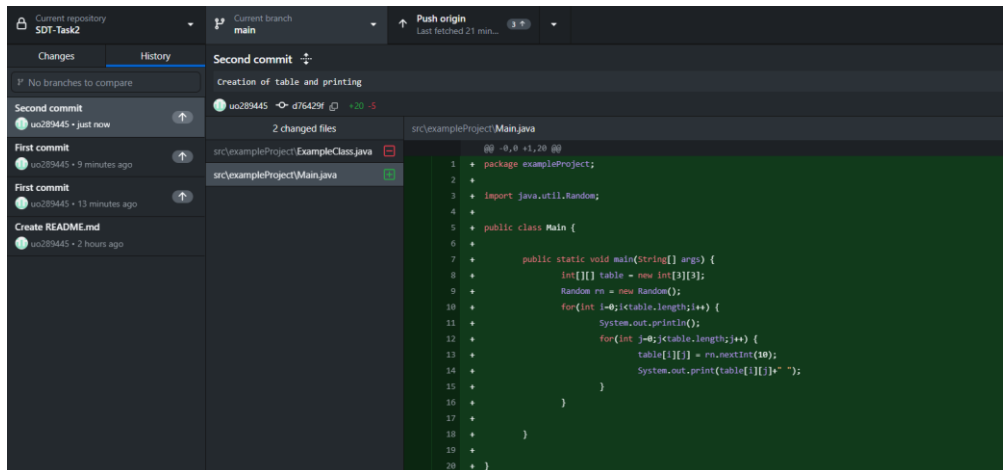
d) commit the whole project to the repo (git commit -m "message ...")



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



## f) commit changes



```
Current repository: SDT-Task2
Current branch: main
Push origin: Last fetched 21 min...

Changes | History
No branches to compare

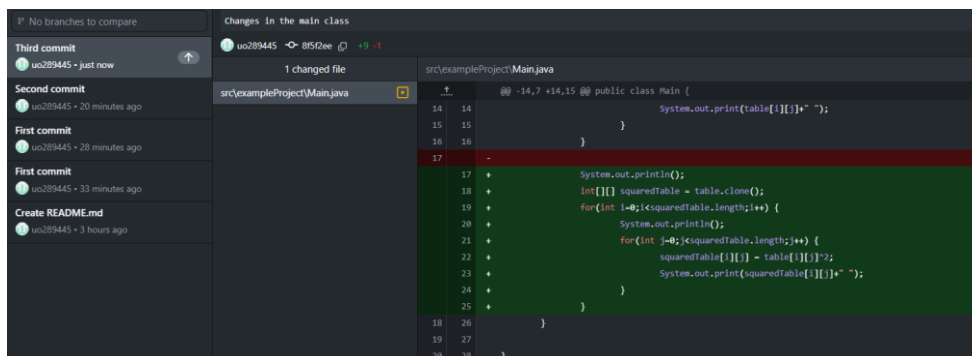
Second commit
uo289445 • just now
First commit
uo289445 • 9 minutes ago
First commit
uo289445 • 13 minutes ago
Create README.md
uo289445 • 2 hours ago

Creation of table and printing
2 changed files
src\exampleProject\Main.java
src\exampleProject\ExampleClass.java

@@ -0,0 +1,20 @@
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(100);
14 +                 System.out.print(table[i][j]+" ");
15 +             }
16 +         }
17 +     }
18 + }
19 +
20 + }
```

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

## h) commit changes

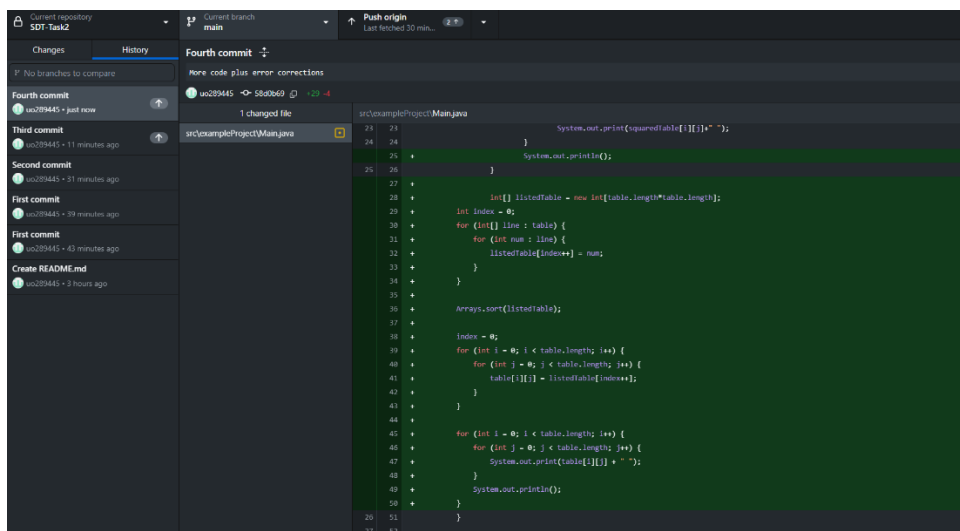


```
Changes in the main class
uo289445 • 852ee • +9 -1
1 changed file
src\exampleProject\Main.java

@@ -14,7 +14,15 @@ public class Main {
14 +         System.out.print(table[i][j]+" ");
15 +     }
16 + }
17 +
18 +     System.out.println();
19 +     int[][] squaredTable = table.clone();
20 +     for(int i=0; i<squaredTable.length; i++) {
21 +         System.out.println();
22 +         for(int j=0; j<squaredTable.length; j++) {
23 +             squaredTable[i][j] = table[i][j]*2;
24 +             System.out.print(squaredTable[i][j]+" ");
25 +         }
26 +     }
27 + }
28 + }
```

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

## j) commit changes



```
More code plus error corrections
uo289445 • 5d0b69 • -29 -4
1 changed file
src\exampleProject\Main.java

21 +         System.out.print(squaredTable[i][j]+" ");
22 +     }
23 + }
24 +
25 +     System.out.println();
26 + }
27 +
28 +     int[][] listedTable = new int[table.length*table.length];
29 +     int index = 0;
30 +     for (int[] line : table) {
31 +         for (int num : line) {
32 +             listedTable[index++] = num;
33 +         }
34 +     }
35 +
36 +     Arrays.sort(listedTable);
37 +
38 +     index = 0;
39 +     for (int i = 0; i < table.length; i++) {
40 +         for (int j = 0; j < table.length; j++) {
41 +             table[i][j] = listedTable[index++];
42 +         }
43 +     }
44 +
45 +     for (int i = 0; i < table.length; i++) {
46 +         for (int j = 0; j < table.length; j++) {
47 +             System.out.print(table[i][j]+" ");
48 +         }
49 +         System.out.println();
50 +     }
51 + }
52 + }
```

## k) look at code history (git log)

Id	Message	Author	Authored Date	Committer	Committed Date
58d0b69	<b>main</b> Fourth commit	uo289445	4 minutes ago	uo289445	4 minutes ago
8f5f2ee	Third commit	uo289445	15 minutes ago	uo289445	15 minutes ago
d76429f	<b>origin/main</b> 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)

The screenshot shows an IDE with a project named 'exampleProject [SDT-Task2 main 12]'. The file explorer on the left shows the project structure: 'src' > 'exampleProject' > 'Main.java'. The main editor displays the code of 'Main.java'. The code includes a 'main' method that generates a 3x3 table of random numbers, clones it into 'squaredTable' (calculating squares), and lists the elements into 'listedTable'. Line 36, which contains the commented-out line '//Arrays.sort(listedTable);', is highlighted in blue. Below the code editor, the 'Changes' panel shows a list of changes for 'src\exampleProject\Main.java'. It indicates that line 36 has been changed from a comment to a call to 'Arrays.sort(listedTable);'.

```
8=
9
10
11 public static void main(String[] args) {
12     int[][] table = new int[3][3];
13     Random rn = new Random();
14     for(int i=0;i<table.length;i++) {
15         for(int j=0;j<table.length;j++) {
16             table[i][j] = rn.nextInt(10);
17             System.out.print(table[i][j]+" ");
18         }
19         System.out.println();
20     }
21
22     int[][] squaredTable = table.clone();
23     for(int i=0;i<squaredTable.length;i++) {
24         for(int j=0;j<squaredTable.length;j++) {
25             squaredTable[i][j] = (int) Math.pow(table[i][j],2);
26             System.out.print(squaredTable[i][j]+" ");
27         }
28         System.out.println();
29     }
30
31     int[] listedTable = new int[table.length*table.length];
32     int index = 0;
33     for (int[] line : table) {
34         for (int num : line) {
35             listedTable[index++] = num;
36         }
37     }
38
39     //Arrays.sort(listedTable);
40
41     index = 0;
42     for (int i = 0; i < table.length; i++) {
43         for (int j = 0; j < table.length; j++) {
44             table[i][j] = listedTable[index++];
45         }
46     }
47 }
```

Changes	History	src\exampleProject\Main.java
1 changed file		@@ -33,7 +33,7 @@ public class Main {
src\exampleProject\Main.java		33 } 34 } 35 } 36 - Arrays.sort(listedTable); 36 + //Arrays.sort(listedTable); 37 38 index = 0; 39 for (int i = 0; i < table.length; i++) {

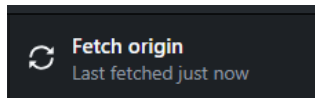
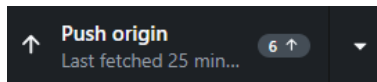
o) try to revert the last changes (git revert)

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

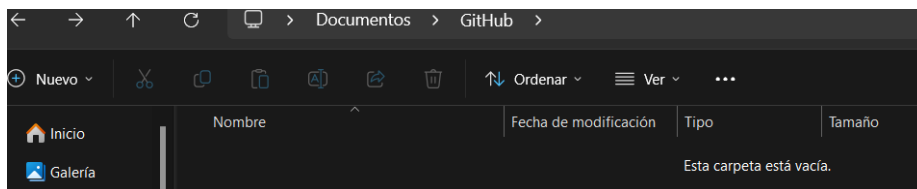
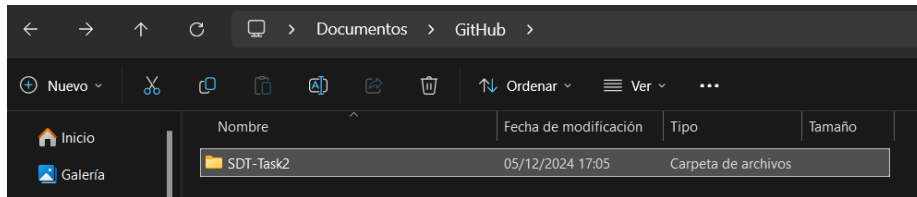
The screenshot shows a Git GUI interface. At the top, it displays 'Current repository: SDT-Task2' and 'Current branch: main'. The 'Changes' tab is active, showing a list of commits. The 'Fifth commit' is selected, with a message 'Revert "Fifth commit"'. Below this, the commit history is listed: 'Fifth commit' (uo289445, just now), 'Fourth commit' (uo289445, 19 minutes ago), 'Third commit' (uo289445, 30 minutes ago), 'Second commit' (uo289445, 1 hour ago), and 'First commit'. The 'Changes' panel on the right shows the diff for the selected commit, highlighting the changes to 'src\exampleProject\Main.java'. The diff shows that line 36 was changed from a comment to a call to 'Arrays.sort(listedTable);'.

Changes	History	Revert "Fifth commit"
No branches to compare		This reverts commit 42dbaad3879ae22987c031134a14afe5882a0442.
Revert "Fifth commit"		uo289445 9bb3eb0 +1 -1
1 changed file		src\exampleProject\Main.java
src\exampleProject\Main.java		33 } 34 } 35 } 36 - //Arrays.sort(listedTable); 36 + Arrays.sort(listedTable); 37 38 index = 0; 39 for (int i = 0; i < table.length; i++) {

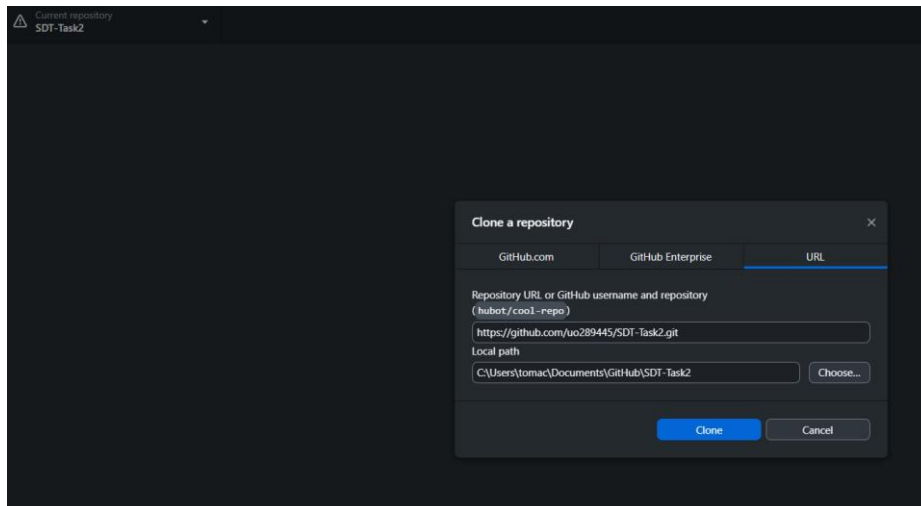
p) push the project to the remote repo (git push)



r) delete local project and local repo



s) clone project from remote repo (git clone)



t) create tag/release, 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)

```
> exampleProject [SDT-Task2 v1]
├── src
│   └── exampleProject
│       └── Main.java
├── JRE System Library [jre]
└── README.md
```

```
31         for (int num : line) {
32             listedTable[index++] = num;
33         }
34     }
35
36     Arrays.sort(listedTable,0,5); //sorts the first 5 numbers
37 }
```

Changes History

src\exampleProject\Main.java

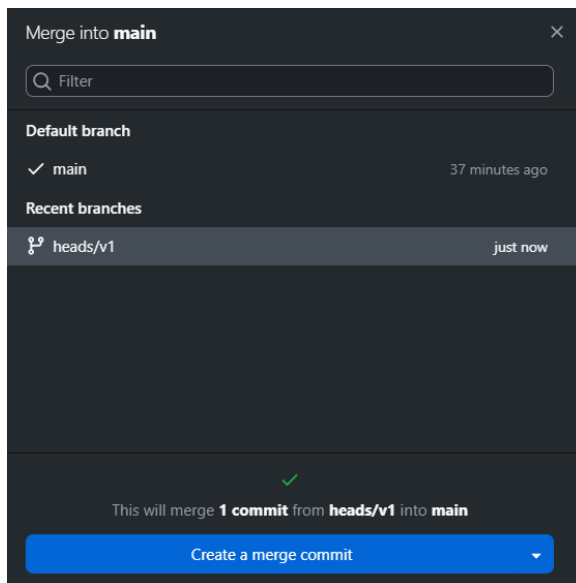
Line	Old	New
33	33	33
34	34	34
35	35	35
36	<del>Arrays.sort(listedTable);</del>	<del>Arrays.sort(listedTable);</del>
36		<del>Arrays.sort(listedTable,0,5); //sorts the first 5 numbers</del>
37	37	37
38	38	38
39	39	39

Sixth commit

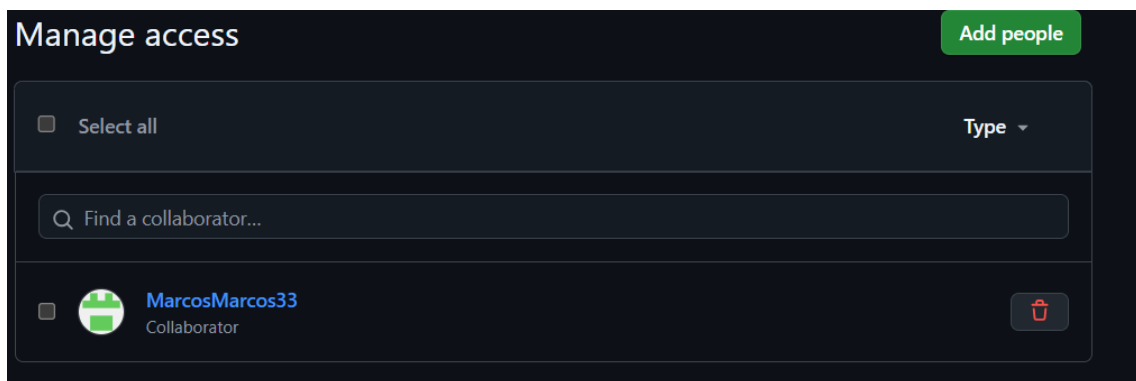
Change in the sorting

Commit to v1

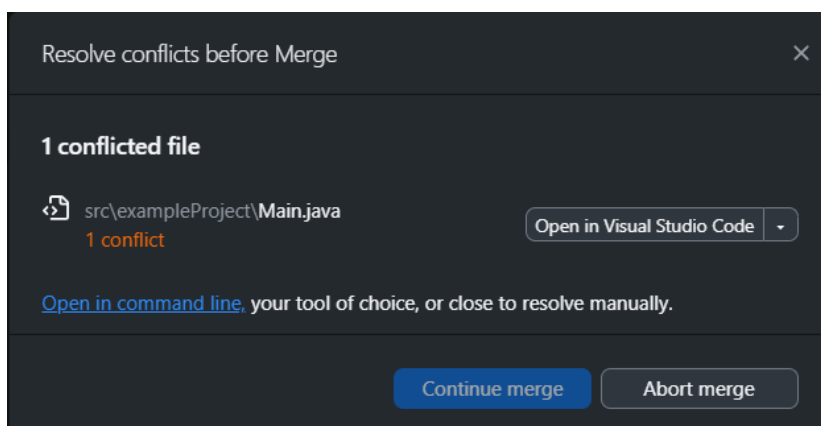
y) merge new branch into the master branch



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

