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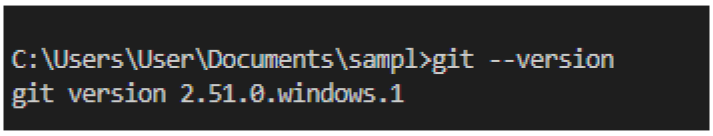
Lesson 4: Introduction to Git

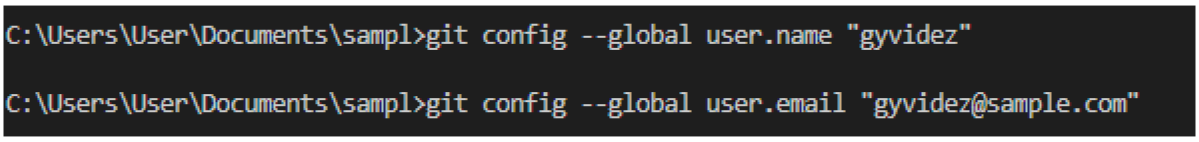
In this lesson, we will be learning git basics: how to create a repository, make commits, create branches, and merge changes, all within Visual Studio Code.

1. Create a new folder on your desktop named **lastname-sample.** In Visual Studio Code, open this folder.
2. Open your terminal **in VS Code** by clicking **Terminal > New Terminal** or pressing **Ctrl +** ` on your keyboard.
3. In the terminal, type: **git --version.** Press Enter.



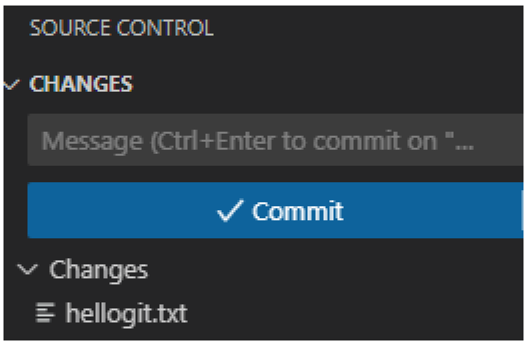
```
C:\Users\User\Documents\sampl>git --version
git version 2.51.0.windows.1
```

4. Set up your git profile name by typing the following command: **git config --global user.name "Your Name Here".** Press enter to run the command.
5. Next, set up your email by typing the following command: **git config --global user.email "yourexample@email.com".** Press enter to run the command. *(Note: Since we are practicing, you may use a fake email.)*

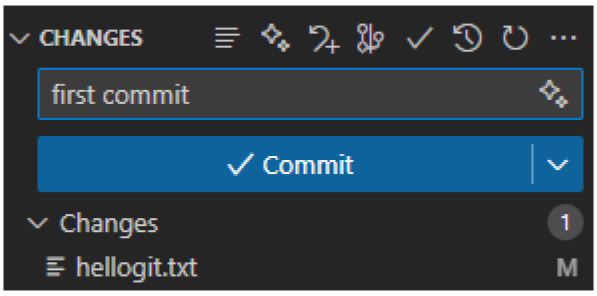


```
C:\Users\User\Documents\sampl>git config --global user.name "gyvidez"

C:\Users\User\Documents\sampl>git config --global user.email "gyvidez@sample.com"
```

6. In the left sidebar of VSC, click the source control icon (⎇).
7. Then, click **Initialize Repository.**
8. After Initialization, go back to the Explorer (⧉) tab of VSC.
9. In your folder, create a new file called: **hellogit.txt**
10. Inside the file, type the following: *Hello, Git! Our names are [names]!* **Save the file.**
11. Return to **Source Control.** Your new file, *hellogit.txt,* should be present there, under **Changes.**



12. Hover over the file, then click the **+ (stage changes)** button.
13. At the top, on the Message area, type a commit message: *"First Commit."*



first commit

Activity 1: Git Practice

Instructions: Follow the steps given below. For every instruction, attach a screenshot of the relevant windows and areas on your screen. Refer to the lesson above for reference. *(2 pts. each)*

A. Changes and Commits.

1. Open *hellogit.txt.* Type the following changes, filling them up with your own writing and info. **One for each group member.**

My name is: x

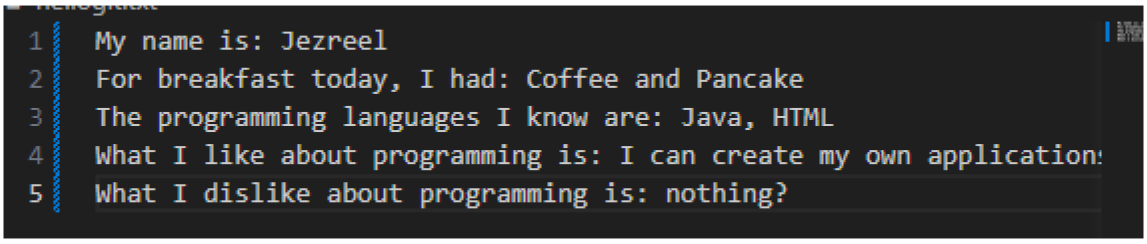
For breakfast today, I had:

The programming languages I know are: x, x, x…

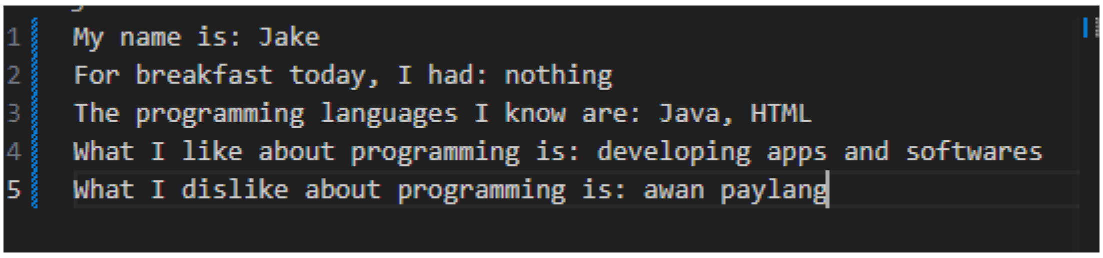
What I like about programming is: x

What I dislike about programming is: x

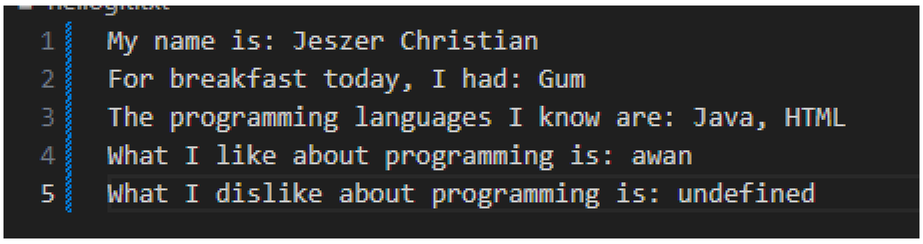
Screenshot:



```
My name is: Jezreel
For breakfast today, I had: Coffee and Pancake
The programming languages I know are: Java, HTML
What I like about programming is: I can create my own application
What I dislike about programming is: nothing?
```



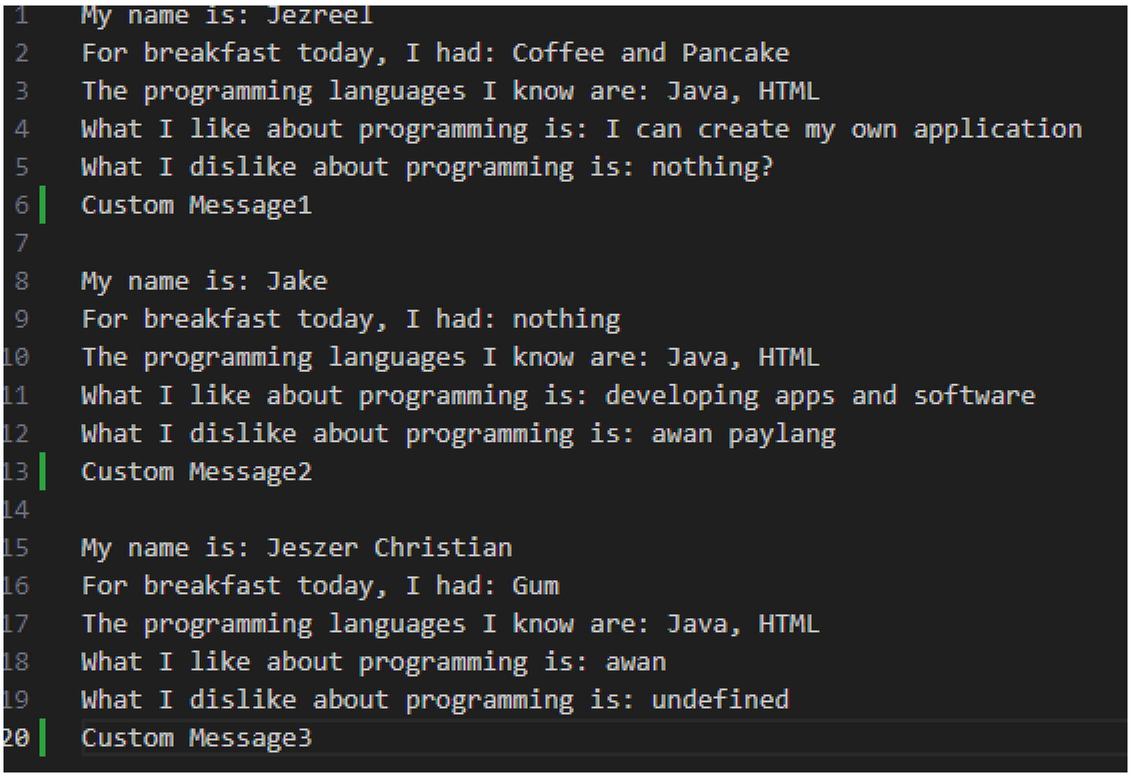
```
My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are: Java, HTML
What I like about programming is: developing apps and softwares
What I dislike about programming is: awan paylang
```



```
My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are: Java, HTML
What I like about programming is: awan
What I dislike about programming is: undefined
```

2. Commit your changes. Write your custom message.

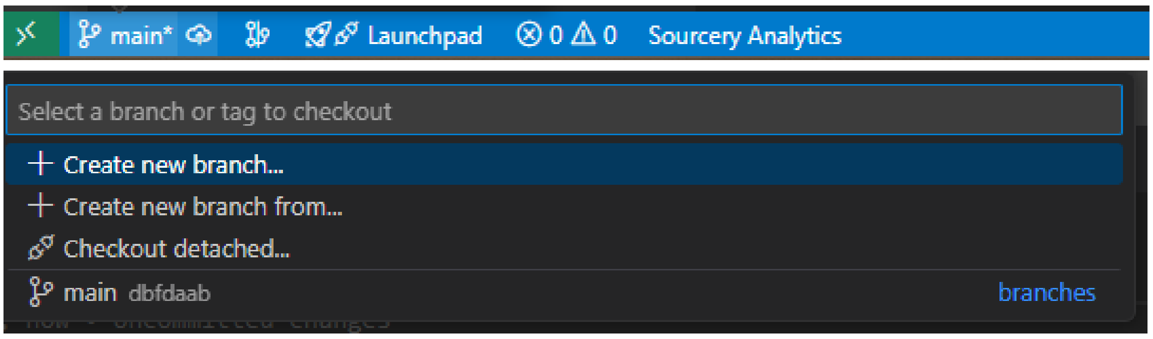
Screenshot:



```
My name is: Jezreel
For breakfast today, I had: Coffee and Pancake
The programming languages I know are: Java, HTML
What I like about programming is: I can create my own application
What I dislike about programming is: nothing?
Custom Message1

My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are: Java, HTML
What I like about programming is: developing apps and software
What I dislike about programming is: awan paylang
Custom Message2

My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are: Java, HTML
What I like about programming is: awan
What I dislike about programming is: undefined
Custom Message3
```

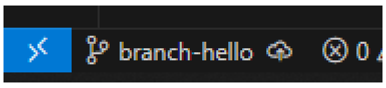
B. Branch Practice

1. Look at the bottom-left corner in VS Code. You'll see the current branch you're working on, usually highlighted in blue. By default, this is set to **main.**
2. Click on the main branch.



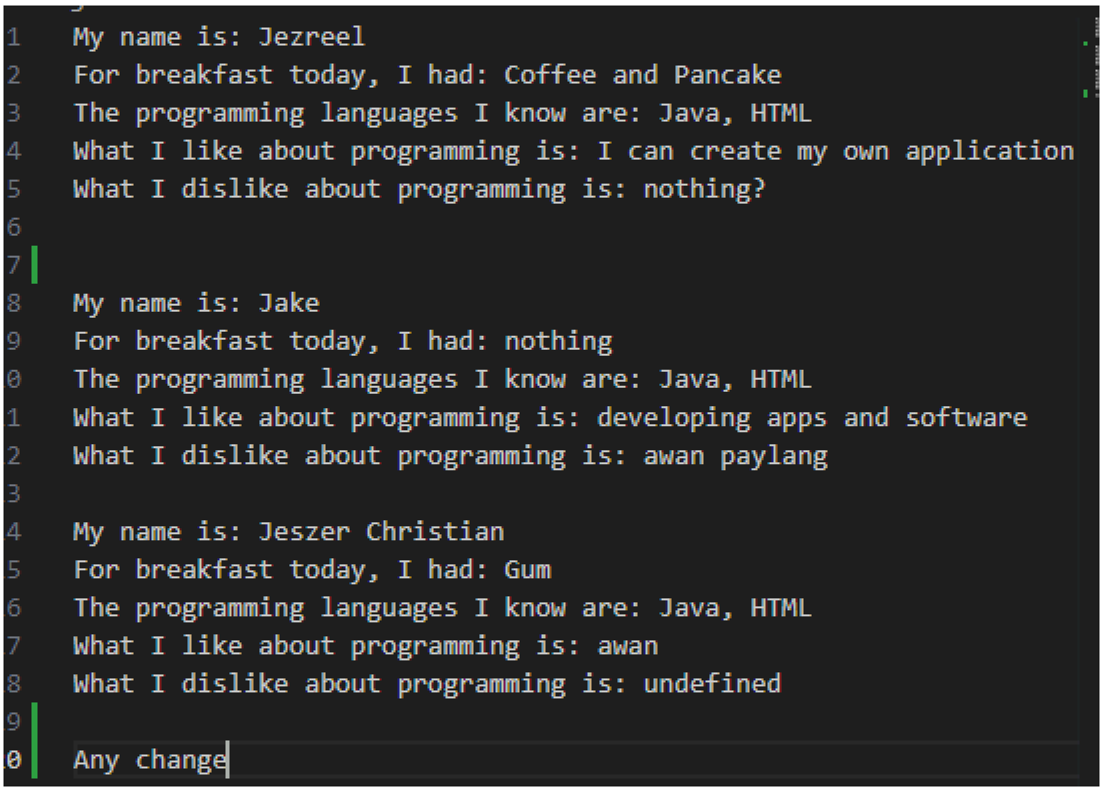
3. A popup will appear on the top of your window. There, **create a new branch. Name it branch-hello.**

Screenshot:



4. Make sure you are working on the **branch-hello** branch. To double-check, you can look at the bottom left corner of VSC again.
5. Make any change to *hellogit.txt.*

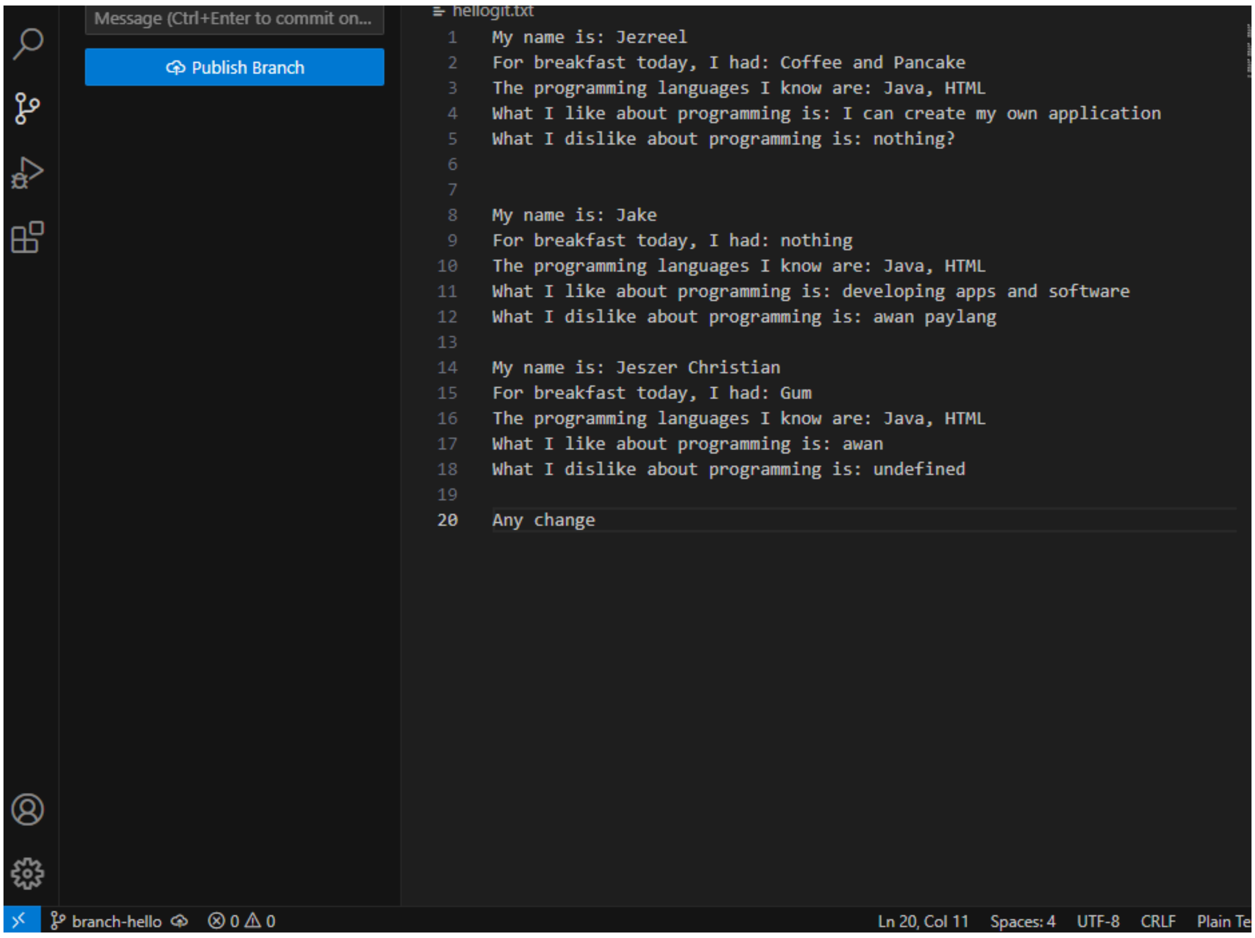
Screenshot:



```
My name is: Jezreel
For breakfast today, I had: Coffee and Pancake
The programming languages I know are: Java, HTML
What I like about programming is: I can create my own application
What I dislike about programming is: nothing?


My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are: Java, HTML
What I like about programming is: developing apps and software
What I dislike about programming is: awan paylang

My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are: Java, HTML
What I like about programming is: awan
What I dislike about programming is: undefined

Any change
```

6. Save and commit with a new message indicating that you are committing from a new branch.

Screenshot:



```
My name is: Jezreel
For breakfast today, I had: Coffee and Pancake
The programming languages I know are: Java, HTML
What I like about programming is: I can create my own application
What I dislike about programming is: nothing?


My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are: Java, HTML
What I like about programming is: developing apps and software
What I dislike about programming is: awan paylang

My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are: Java, HTML
What I like about programming is: awan
What I dislike about programming is: undefined

Any change
```

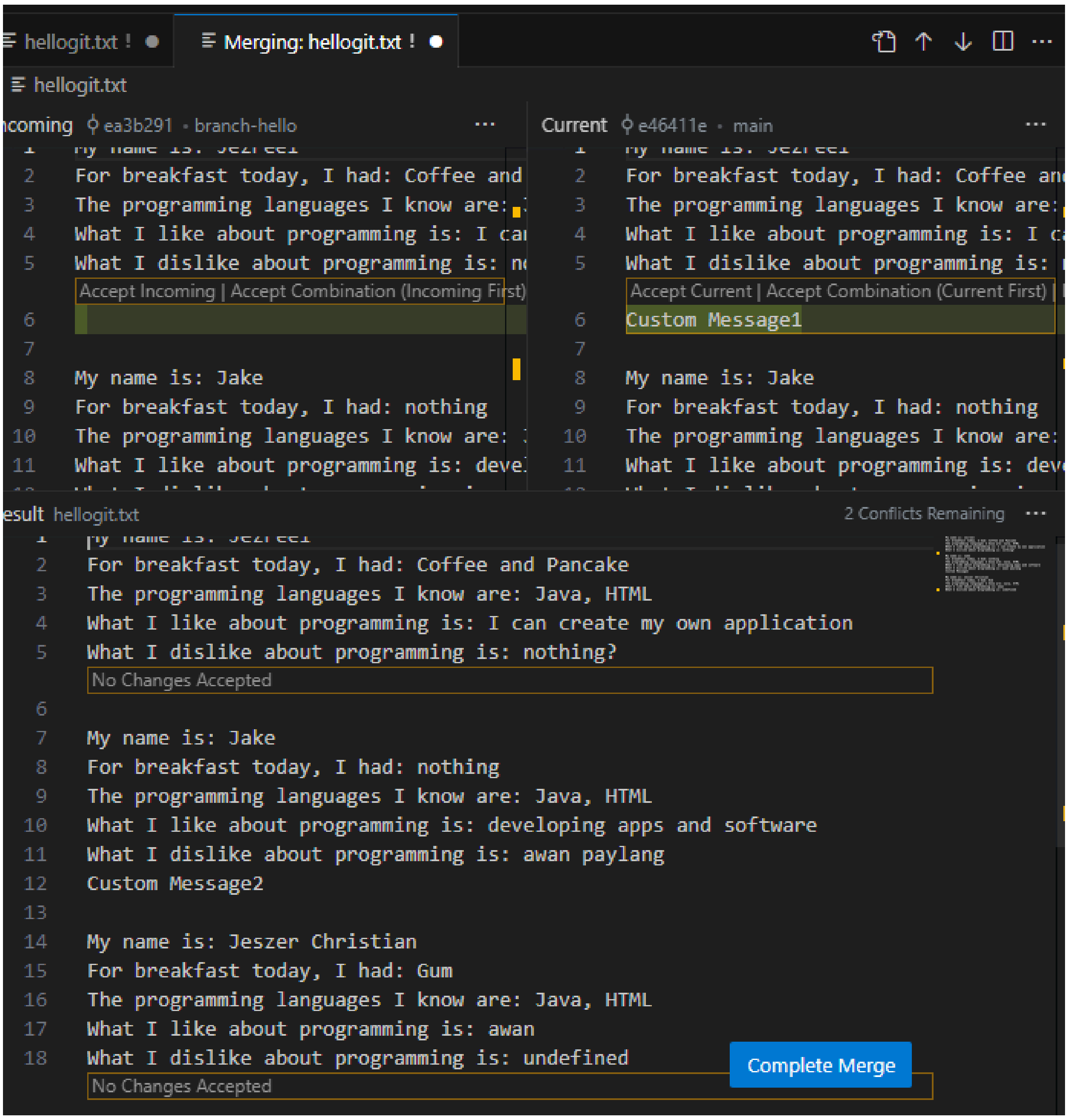
7. Switch back to **main. What changes did you observe in *hellogit?***

   Answer: Nothing changed

8. While currently on main, open the Command Palette by pressing **Ctrl + Shift + P.**

9. Type **Git: Merge Branch.** Click **branch-hello.**

Screenshot:



hellogit.txt ! ●
Merging: hellogit.txt ! ●
hellogit.txt
ncoming ea3b291 • branch-hello
Current e46411e • main
Accept Incoming | Accept Combination (Incoming First)
Accept Current | Accept Combination (Current First)
esult hellogit.txt
2 Conflicts Remaining
No Changes Accepted
Complete Merge

Incoming:

```
My name is: Jezreel
For breakfast today, I had: Coffee and
The programming languages I know are:
What I like about programming is: I ca
What I dislike about programming is: no


My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are:
What I like about programming is: devel
```

Current:

```
My name is: Jezreel
For breakfast today, I had: Coffee an
The programming languages I know are:
What I like about programming is: I c
What I dislike about programming is:
Custom Message1

My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are:
What I like about programming is: deve
```

Result:

```
My name is: Jezreel
For breakfast today, I had: Coffee and Pancake
The programming languages I know are: Java, HTML
What I like about programming is: I can create my own application
What I dislike about programming is: nothing?


My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are: Java, HTML
What I like about programming is: developing apps and software
What I dislike about programming is: awan paylang
Custom Message2

My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are: Java, HTML
What I like about programming is: awan
What I dislike about programming is: undefined
```

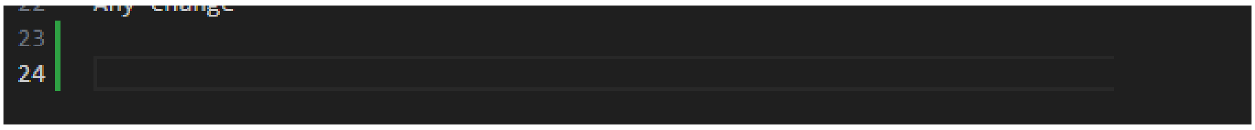
10. What changes did you observe in hellogit?

Answer: changes made with the branch-hello merge with the main branch

C. Merge Conflicts

1. Switch to **main.** Create any new line on *hellogit.*

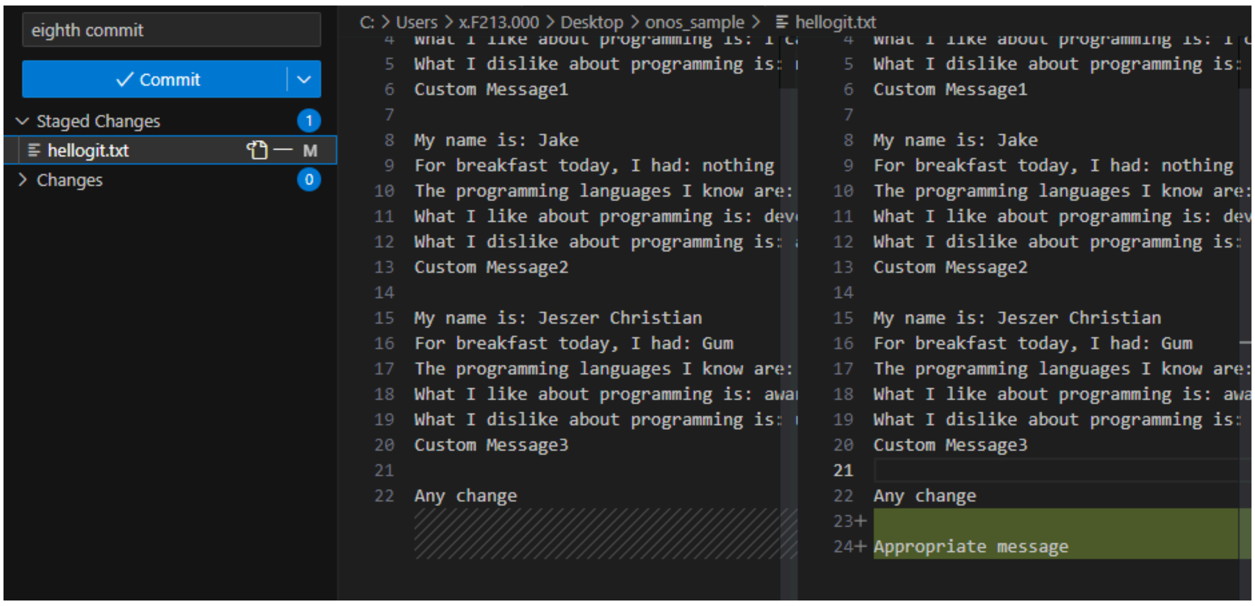
Screenshot:



```
Any change


```

2. Commit this change with the appropriate message.

Screenshot:



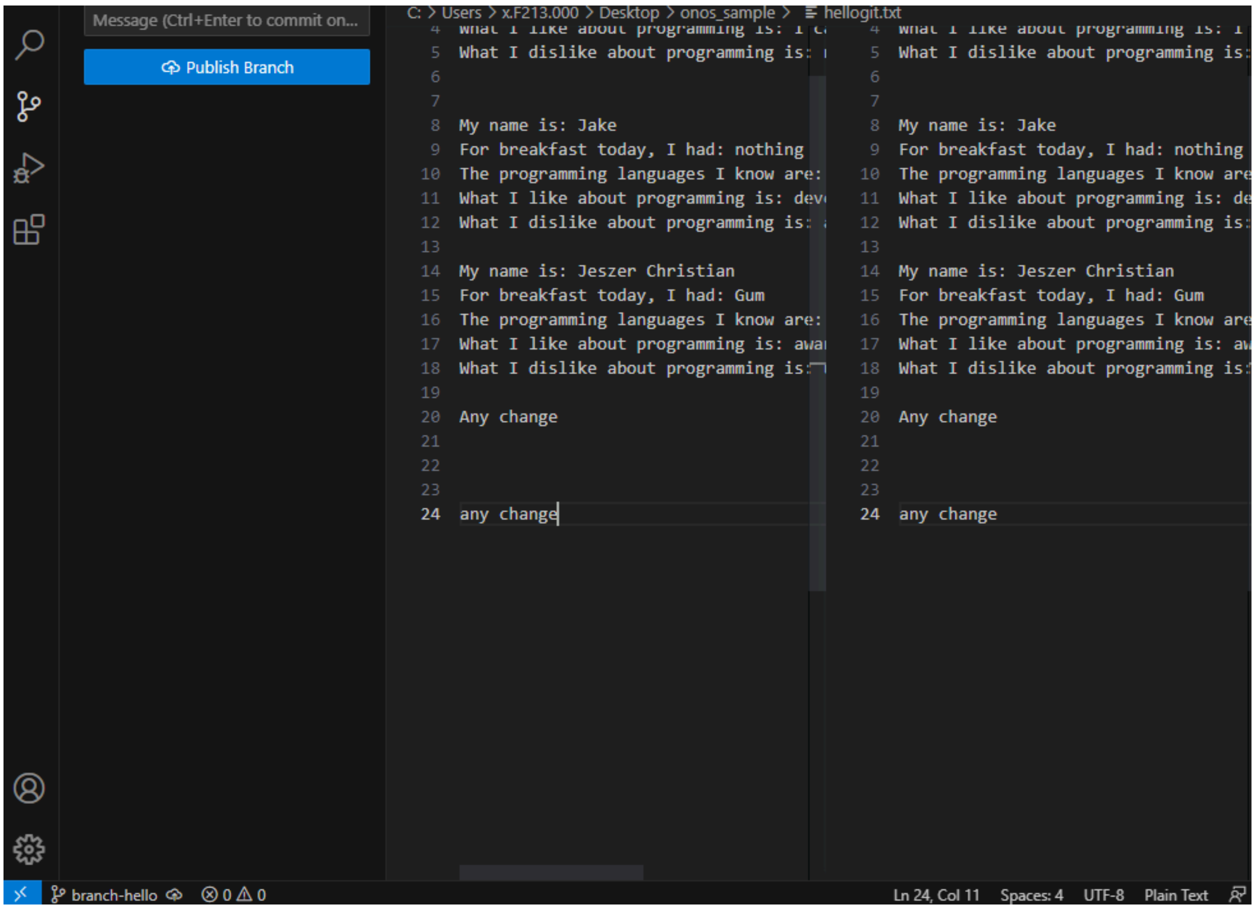
eighth commit
✓ Commit
Staged Changes 1
hellogit.txt M
Changes 0
C: > Users > x.F213.000 > Desktop > onos_sample > hellogit.txt

```
 4  What I like about programming is: I c
 5  What I dislike about programming is: 
 6  Custom Message1
 7
 8  My name is: Jake
 9  For breakfast today, I had: nothing
10  The programming languages I know are:
11  What I like about programming is: dev
12  What I dislike about programming is: 
13  Custom Message2
14
15  My name is: Jeszer Christian
16  For breakfast today, I had: Gum
17  The programming languages I know are:
18  What I like about programming is: awa
19  What I dislike about programming is: 
20  Custom Message3
21
22  Any change
```

```
 4  What I like about programming is: I c
 5  What I dislike about programming is:
 6  Custom Message1
 7
 8  My name is: Jake
 9  For breakfast today, I had: nothing
10  The programming languages I know are:
11  What I like about programming is: dev
12  What I dislike about programming is:
13  Custom Message2
14
15  My name is: Jeszer Christian
16  For breakfast today, I had: Gum
17  The programming languages I know are:
18  What I like about programming is: awa
19  What I dislike about programming is:
20  Custom Message3
21
22  Any change
23+
24+ Appropriate message
```

3. Switch back to **branch-hello.** On this branch, edit the new line you created on *hellogit.* For example, if you edited line 11, edit the same line here. Make any change, then **commit.**

Screenshot:



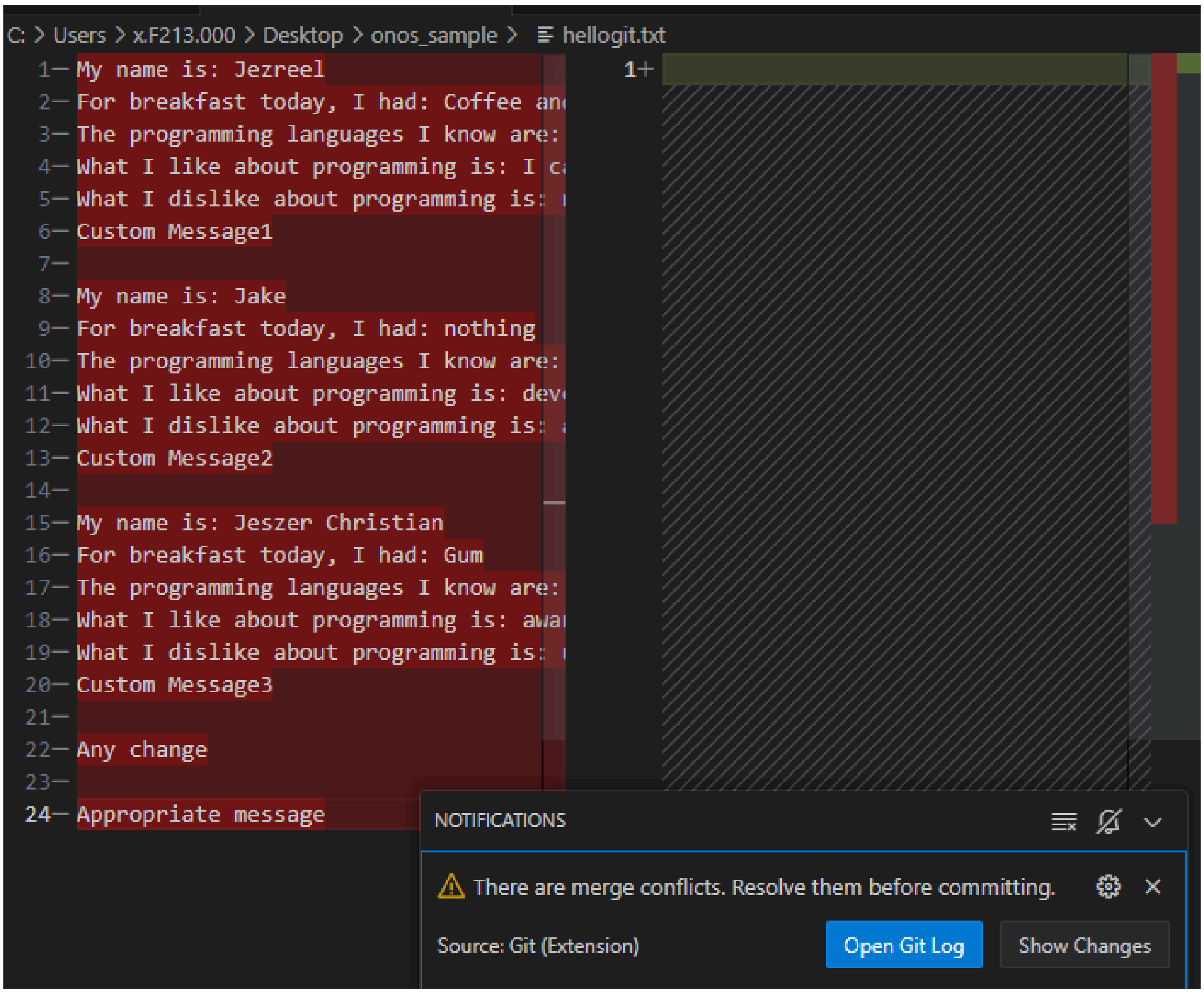
Message (Ctrl+Enter to commit on...
Publish Branch
C: > Users > x.F213.000 > Desktop > onos_sample > hellogit.txt
branch-hello
⊗ 0 ⚠ 0
Ln 24, Col 11
Spaces: 4
UTF-8
Plain Text

```
 4  What I like about programming is: I c
 5  What I dislike about programming is: 
 6
 7
 8  My name is: Jake
 9  For breakfast today, I had: nothing
10  The programming languages I know are:
11  What I like about programming is: dev
12  What I dislike about programming is: 
13
14  My name is: Jeszer Christian
15  For breakfast today, I had: Gum
16  The programming languages I know are:
17  What I like about programming is: awa
18  What I dislike about programming is:
19
20  Any change
21
22
23
24  any change
```

```
 4  What I like about programming is: I
 5  What I dislike about programming is:
 6
 7
 8  My name is: Jake
 9  For breakfast today, I had: nothing
10  The programming languages I know are
11  What I like about programming is: de
12  What I dislike about programming is:
13
14  My name is: Jeszer Christian
15  For breakfast today, I had: Gum
16  The programming languages I know are
17  What I like about programming is: aw
18  What I dislike about programming is:
19
20  Any change
21
22
23
24  any change
```

4. Switch back to **main,** then perform a merge.
5. Go back to *hellogit.txt.* What appears?

Screenshot:


C: > Users > x.F213.000 > Desktop > onos_sample > hellogit.txt
NOTIFICATIONS
Open Git Log
Show Changes

```
My name is: Jezreel
For breakfast today, I had: Coffee an
The programming languages I know are:
What I like about programming is: I ca
What I dislike about programming is: 
Custom Message1

My name is: Jake
For breakfast today, I had: nothing
The programming languages I know are:
What I like about programming is: dev
What I dislike about programming is: a
Custom Message2

My name is: Jeszer Christian
For breakfast today, I had: Gum
The programming languages I know are:
What I like about programming is: awa
What I dislike about programming is: 
Custom Message3

Any change

Appropriate message
```

⚠ There are merge conflicts. Resolve them before committing.

Source: Git (Extension)

C. Short Essay: In your own words, answer the following questions. _Work will be checked for AI usage. Any answers detected to have used AI assistance in writing will be considered invalid and given a mark of 0_ *(5 pts each)*

1.) Research and read up on Git. What is its history, its purpose, and its usage?
2.) Explain and define each of the git commands you performed and their overall purpose.
3.) Why do you, as a future UI/UX developer, need to know and understand git?
4.) Why do you think Git has become essential in software development and web design? What problems does it solve?

The story of Git's creation is closely tied to the development of the Linux kernel. In the early 2000s, the Linux kernel project relied on a proprietary VCS called BitKeeper. However, in 2005, a licensing dispute between the Linux kernel community and BitKeeper's owner led to the withdrawal of the tool's free version. This left the Linux kernel project in urgent need of a new version control system. The development began in April 2005. Within weeks, Git was functional and began to be used for the Linux kernel's development. Git is a DevOps tool used for source code management. It is a free and open-source version control system used to handle small to very large projects efficiently. Git is used to tracking changes in the source code, enabling multiple developers to work together on non-linear development.

The git commands that we used are commit, branch, and merge. The commit command records the changes made to the files to a local repository. And the branch command lets you create isolated development environments with a single repository. Lastly, the merge command lets you take an independent lines of development created by git branch and integrate them into a single branch.

As a future UI/UX developer, we need to know and understand git because it allows you to experiment freely with your code, safe in the knowledge that you can revert to a previous version if things go awry. Git also provides an excellent mechanism for tracking your development as a coder, allowing you to review your progression over time. It also allows multiple developers to work on the same project simultaneously, ensuring that their changes don't conflict with each other.

Git has become essential because it helps track code and fix mistakes easily. It also allows developers to collaborate smoothly.Git solves problems like losing progress, file conflicts, and messy teamwork.