

Tutorial : VSCode – GitHub Automatic Files Transfer

Relevance: Copying your lab task solutions, at every step of their development, to github has to be done according to the procedure below in order for the lab instructor to monitor easily your progress, as code amendments get highlighted and timestamped automatically in Github, so you get marked fairly.

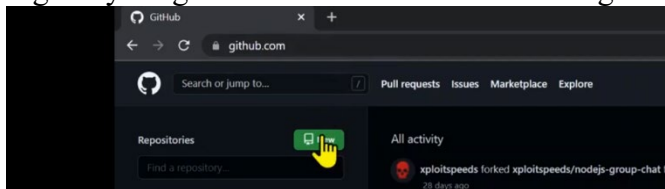
Requirements:

- a. Visual Studio Code IDE
- b. Create an account on github.com (log in details to be shared with Ms. Ayesha and Mr. Kiyan)
- c. Install git on your computer , see (<https://git-scm.com/book/en/v2/Getting-Started-Installing-Git>)

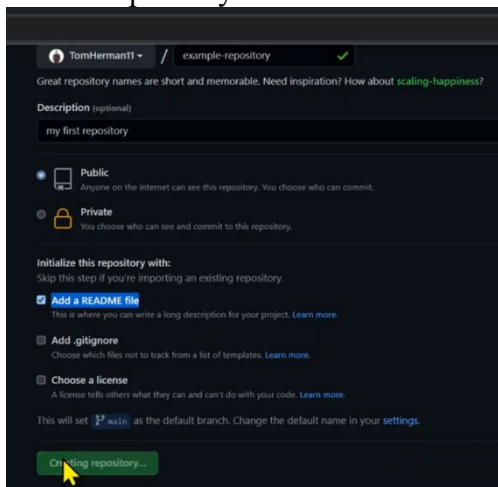
1. Create a github repository and copy it to VSCode

1.a. Create a github repository

Sign in your github account then click on the green “New” button next to *Repositories*:

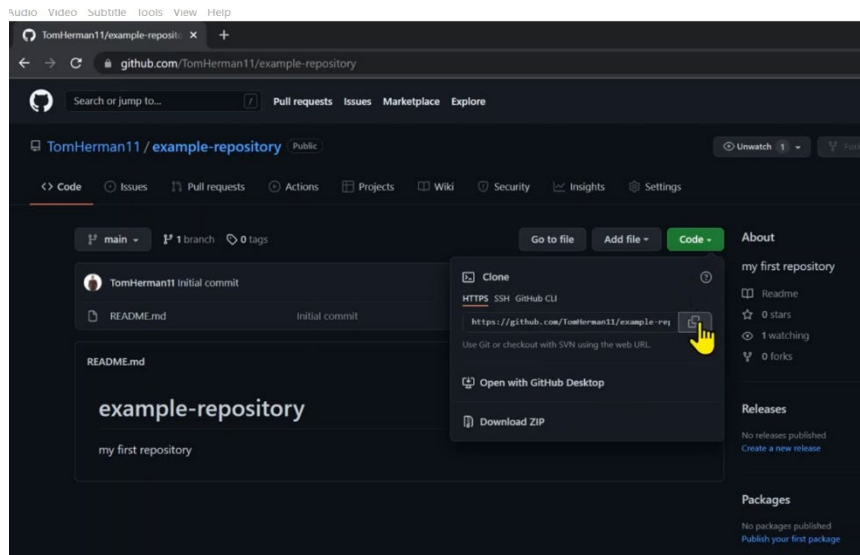


Name your repository and add an optional description (“my first repository” in the following), set the repository as either “public” or “private” and check in “Readme” file , then click on “create repository”:

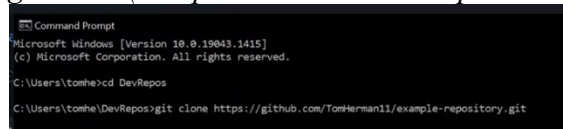


1.b. Copy a repository to VSCode

Choose your github repository, e.g., the one you have just created in the previous section; click the green “<>Code button” in the repository and copy its URL (click on the copy button next to the repository github address):

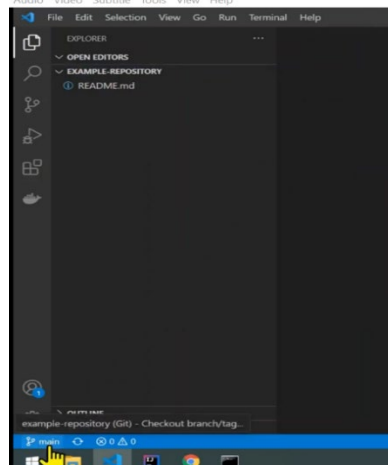


On your desktop computer, open the terminal application (in windows, search for the “command prompt” application or type in *cmd*). Type in the command *cd path2folder*, where *path2folder* gives the path to the folder under which the git repository will be copied, then type in: *git clone* (and paste the URL we copied earlier by pressing *CTRL V* keys on your keyboard)



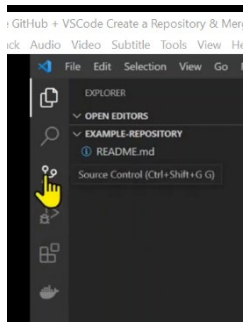
From VSCode -> File Menu, click on “Open Folder” and then choose the folder matching your repository's name.

As we have just created a repository the current branch is *main* (see the current branch name at the bottom left corner):

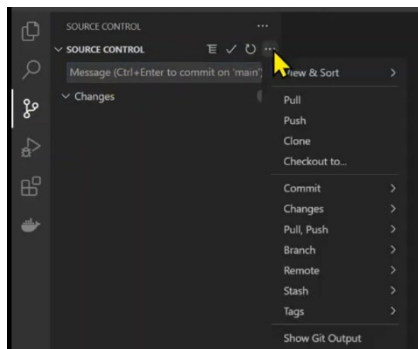


It's a bad practice to push changes directly into the main branch of your repository. Rather, when you would like to edit or delete code, you should create a **branch**¹ and a matching **Pull request** in github; finally merge the new branch into the *main* branch as it'll be explained next.

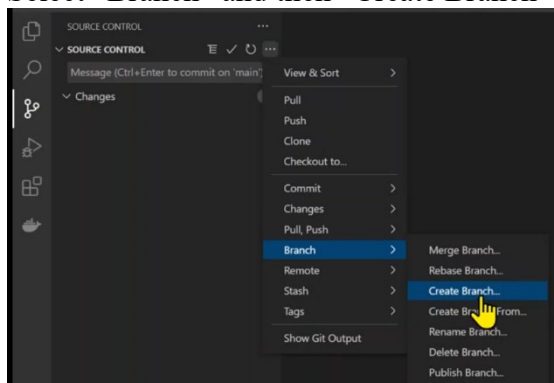
To create a new branch, go to “Source Control” view in VSCode:



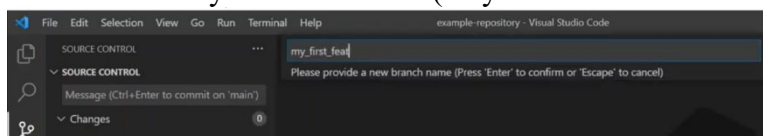
Click then on the three dots ... for more actions:



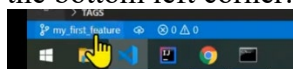
Select “Branch” and then “Create Branch” :



Give a name to your new branch (“my first feature” in the following), and press Enter:



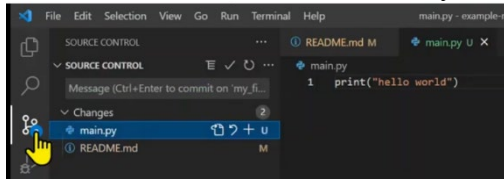
The current branch in VSCode becomes the newly created branch “my first feature” as seen at the bottom left corner:



¹ For simplicity, you can make all your project files amendment under the same new branch in VSCode.

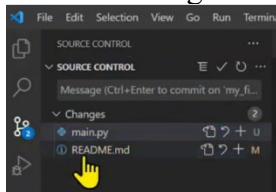
Note that this branch is local, meaning it does not exist yet in your github repository.

Make an edit change to the content of the project file “Readme”; edit and add a C program to your project (in the following screenshots, the file is the python program *main.py*). Go back to the “Source Control” view where you can see all of the changes made:

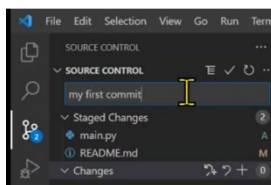


To create a new matching branch in your repository in github, follow these steps:

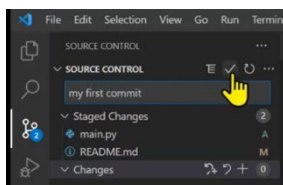
1. One stage changes: click on the plus button next to each made change you want to include:



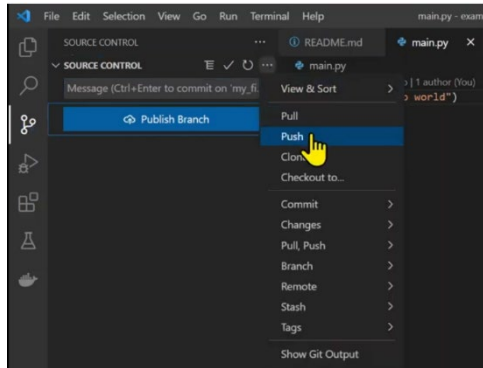
2. Commit the stage changes: add a message to describe the changes you're making (my “first commit” in the below):



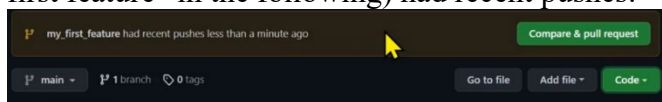
and then click on the “check” mark button:



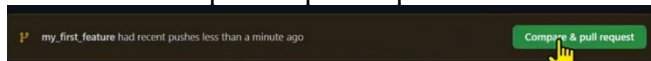
To push this commit, click on the three dots button, select “push” and then choose OK:



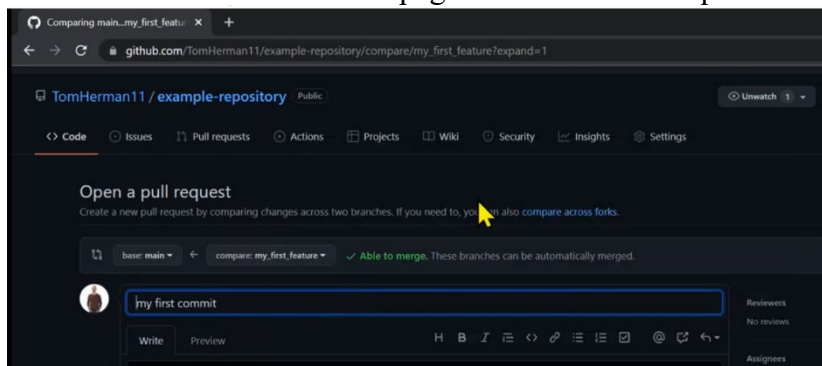
Go back to your github account, where you should see a message saying that your commit (“my first feature” in the following) had recent pushes:



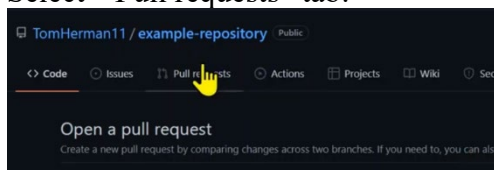
Click on “Compare & pull request” button



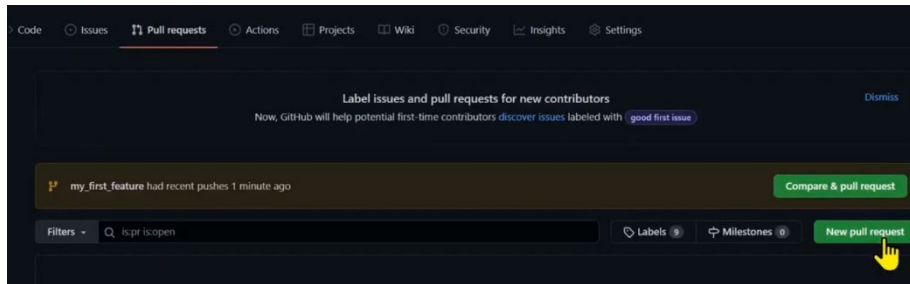
You'll be transferred to a new page to create a Pull request:



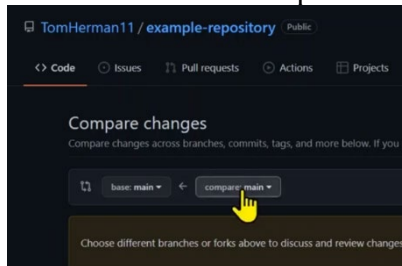
Select “Pull requests” tab:



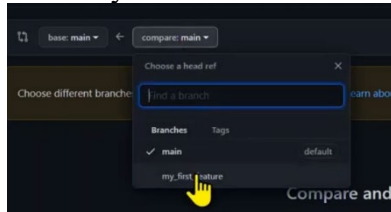
And click on “New pull request”



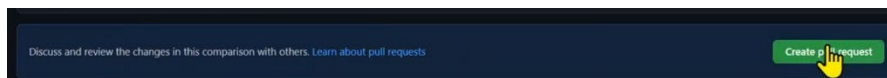
Click then on the Compare button.



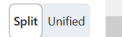
Choose your branch from the drop down menu



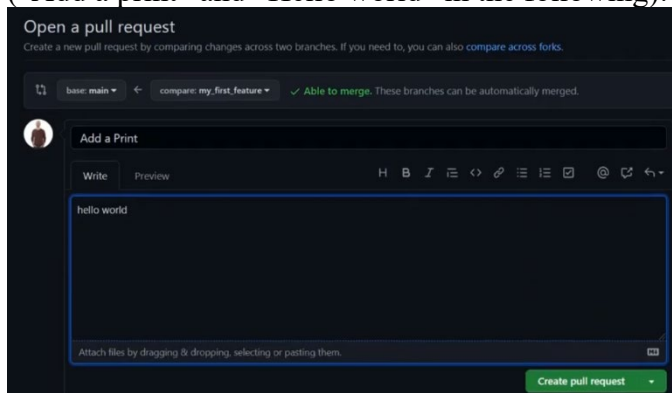
and then click on “Create pull request”



Scroll down and toggle the slider between **Split** and **Unified** to see underneath the changes made to your files.

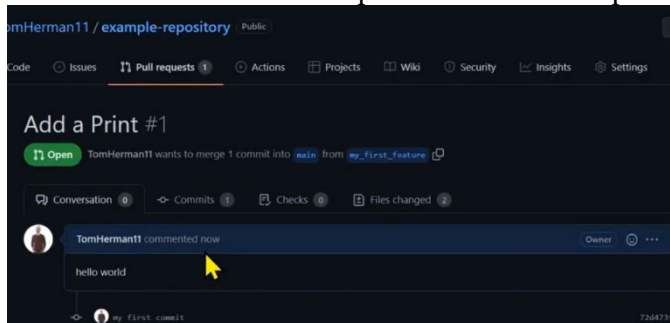


A pull request needs a title and a description to describe the goals of the changes made (“Add a print” and “Hello world” in the following):

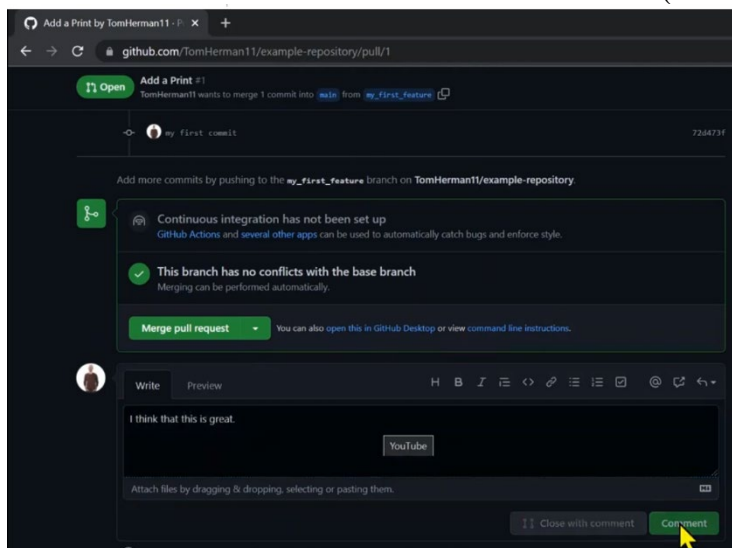


Then click on “Create pull request”

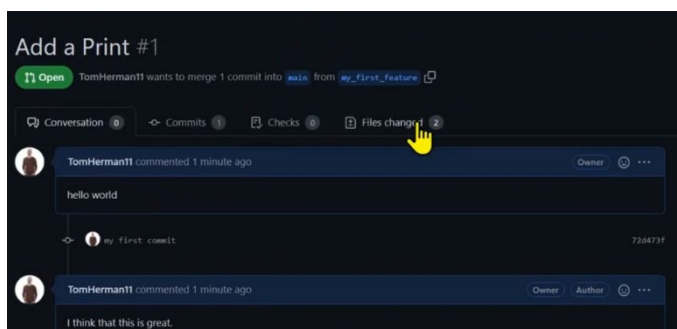
You can then see the description on the Pull request you have just created:



You can then add a comment under the Write tab (“ I think that this is great” in the following):



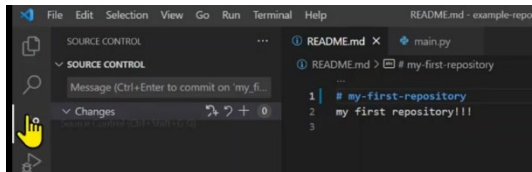
You can also see the files which were changed, by clicking on “Files change” tab



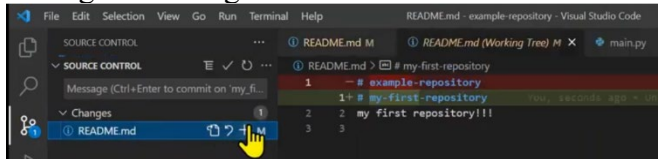
2. Pushing multiple commits

Go back to VSCode and make changes to your files (readme file in the following) under the same branch created in section (1).

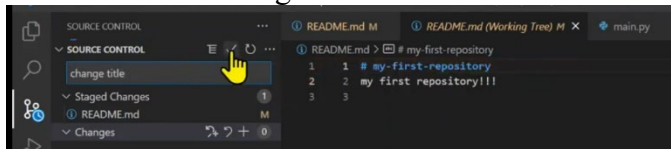
Go back to “Source Control” View and follow the same steps as in section 1, see below



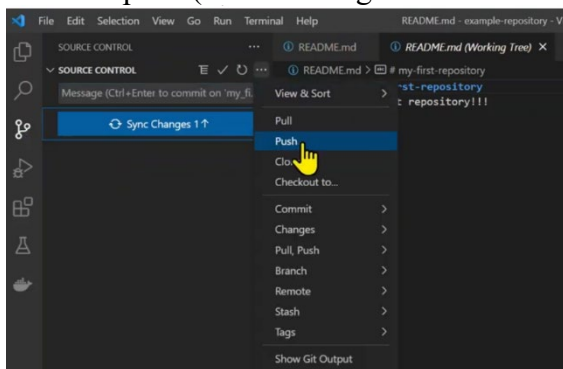
...Stage the changes



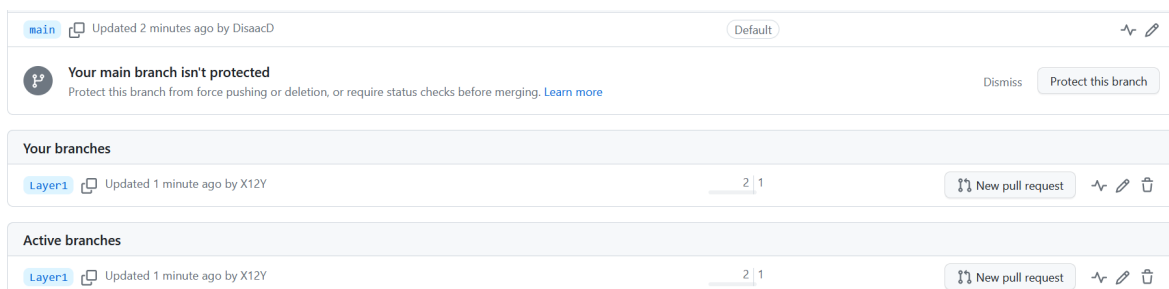
Add a commit message



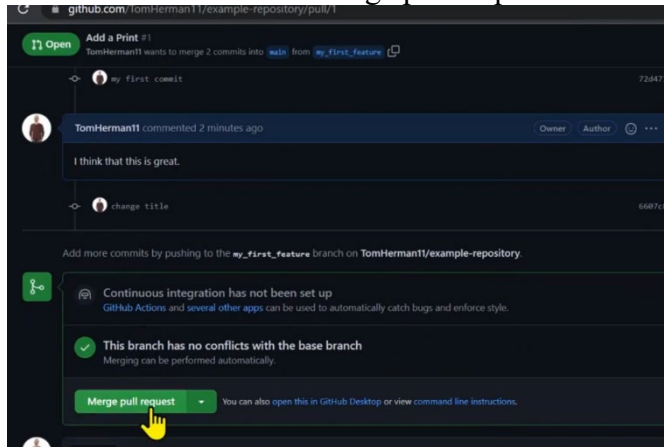
and then push (after clicking on the three dots)



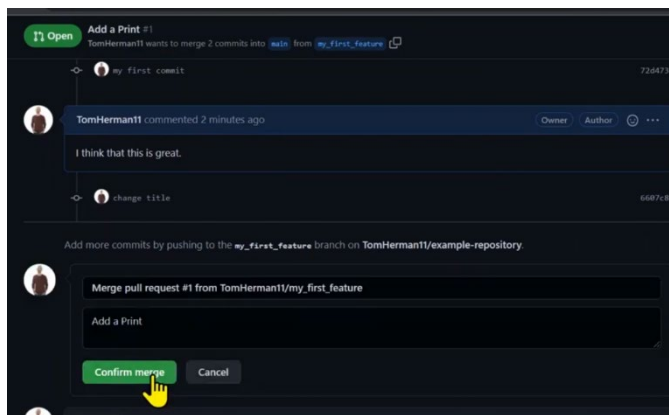
If you go back to github→”2 Branches”→ Scroll down, you can see the new commit under the main branch. Click on “ New pull request” and follow the same steps as in section 1.



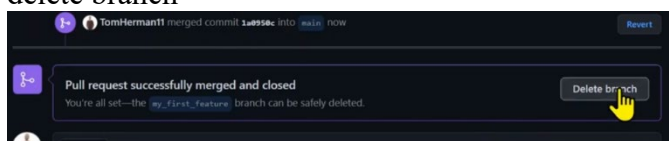
To merge the above Pull request to the main branch, go back to the “Conversation” tab, scroll down and click on the “Merge pull request”



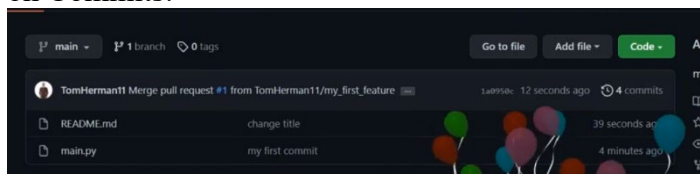
and then click on “Confirm merge”



It's a good practice to delete merged branches, to delete the branch we have just merged click on delete branch



let's scroll up and click on the “Code” tab, where you can see all the changes made by clicking on Commits:



Source:

<https://www.youtube.com/watch?v=eLmpKKaQL54>