

Lab 0: Setup for Jetson Nano

NOTE: Please treat your jetson as a baby.

Objective: This lab will cover the setup procedure and use of basic commands for the Jetson Nano Developer Kit.

Preface:

The Jetson Nano Developer Kit serves as a compact AI computing platform designed for makers, learners, and developers. By adhering to this guide, you'll learn the creation of practical AI applications, innovative AI projects, and various other projects.

Materials Required:

- Jetson Nano Development Kit
- Minimum 32GB MicroSD card
- ethernet cable/ WiFi module
- USB to micro USB cable
- keyboard and mouse
- display with cables / additional monitor
- Your own laptop / PC

Assignment Submission Instructions (1 submission per team)

You will need to turn in the following for full credit (10 points) on today's lab:

- One image of your Jetson appearance, include all cables (2 pts)
- One screenshot while using Jetson (2 pts)
- All questions answered (5 pts)
- All the items above turned in as a .zip file or uploaded to the Github (1 pt)

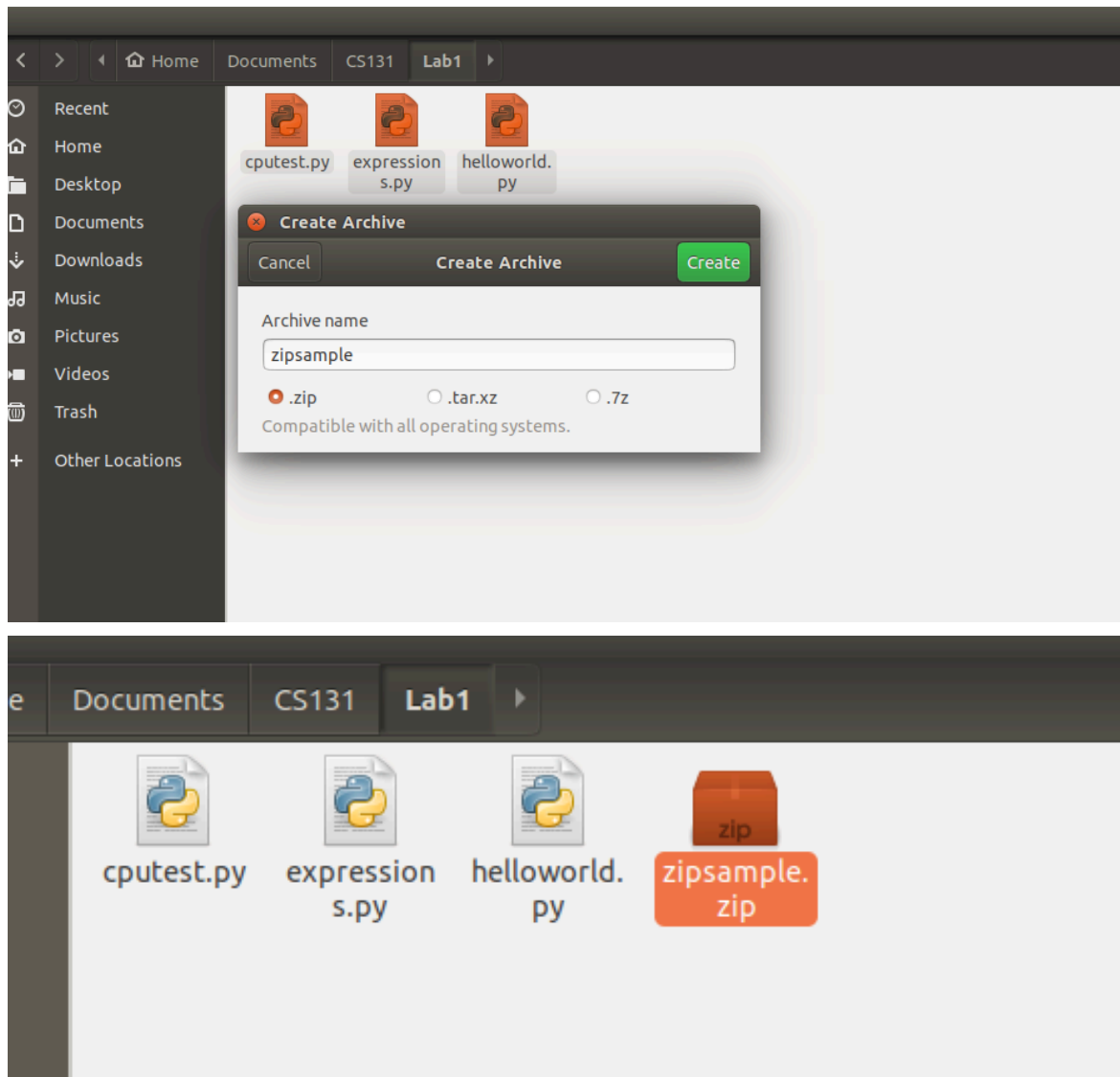
You can login to canvas on your jetson nano and turn in the assignment. Please follow the guide below for help on formatting your files for submission.

You can simply take the screenshots using the *print screen* key on your keyboard or change it to any key you want in the System setting.

You can either, make the .zip file once you have all the items above using these steps

- select the items by holding *ctrl* and left clicking
- right click on selected file and hit compress
- select .zip format when prompted
- please make sure to use the format "Lab_0_Group number" for file name

Or upload the screenshots (compressed into .zip file) and this document completed with the answers to a new branch (Lab0) on your repository. Finally, upload the link to your repo on canvas.



Please let me know if you have any difficulty in following these steps or formatting your files.

Part I - Setup(Skip this step, your card is already flashed with the image)

Step 1: verify microSD card

- Insert microSD card to your computer
- Check the storage and format it

Step 2: Prepare the System

- Follow the [official website](#) to install the system
- [Get Started With Jetson Nano Developer Kit | NVIDIA Developer](#)
- Write the [Jetson Nano Development Kit Image](#) in the SD card using tools like [Etcher](#)

Please read the above reference carefully before starting.

For the next part, you can choose either to install a WiFi module or use Ethernet.

Part II - Install WiFi module and boot up

Step 1: verify WiFi module

- Two antennas with their cables
- One WiFi module card
- One screwdriver

Step 2: Install the WiFi module

- Follow [the instruction](#) to install
- Attach the antennas to the WiFi card (Be careful, the ports are tiny and fragile)
- [Jetson Nano + Intel Wifi and Bluetooth - JetsonHacks](#)
- Insert the WiFi card under radiator
- Tips: use some tape to fix the antennas cable

Step 3: Boot up

- Check the WiFi is worked
- Verify the system information
- run commands (lines with # are comments):

```
## Under stable internet connection
## Update & upgrade packages in Linux
## Ctrl^C to exit
sudo apt update
sudo apt upgrade
```

Part II - Setup Ethernet

Step 1: Disconnect power to your nano device

Step 2: Connect Ethernet and USB cable

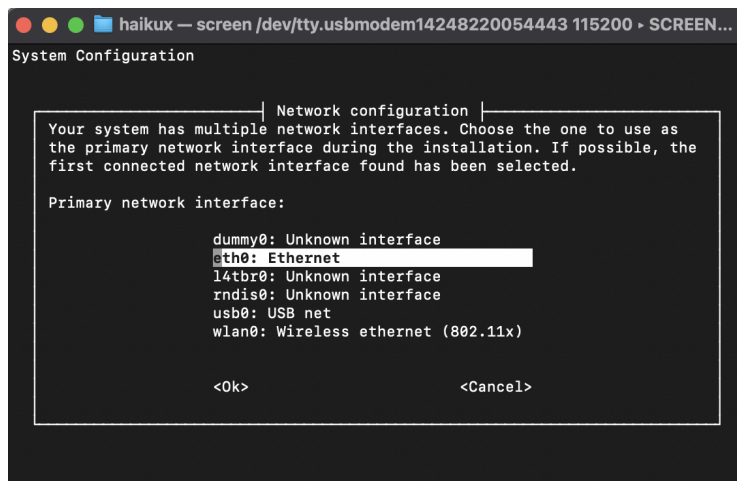
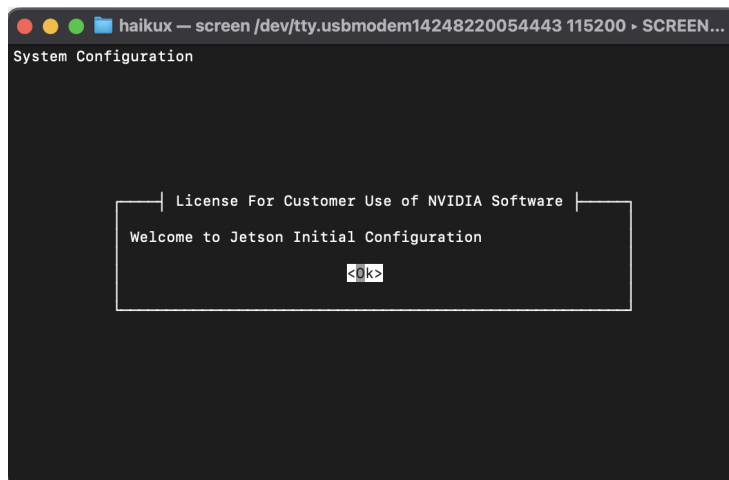
- One end of your ethernet cable to Nano and the other end to your laptop
- Connect the micro USB cable to the nano board and the USB cable to your laptop

Step 3: Insert newly flashed micro SD card into your Nano

Step 4: Let's setup the nano device

- Follow the instructions [here](#) to use our USB connection to communicate with nano.

Step 5: Follow the on screen instruction to complete the Nano setup



Q1: What version of your Jetson nano's system?

Q2: What is the effect of different power modes(MAXN, 5W)?

Q3: What challenges did you face during the setup and how did you overcome them?

Q4: Can you think of a real-world problem that could be solved using the Jetson Nano? Describe how you would design and implement a solution.

Part III - Setup Github

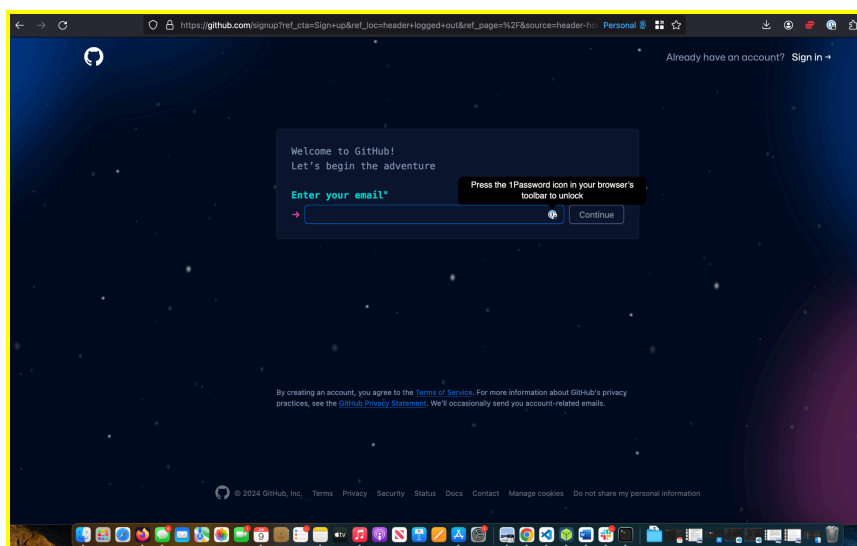
We'll set up Github from Jetson, you can use this to submit all your lab artifacts (Screenshots, Documents and Code). For all the lab submissions, you can either upload the zip file on canvas or submit a link to your Github repository

NOTE: All Github repos used for assignments must be private and only shared with the TAs. Repos that are public or shared intentionally or unintentionally with other students will not be evaluated.

Let's start with creating a new Github account. If you already have an account skip to Step 2.

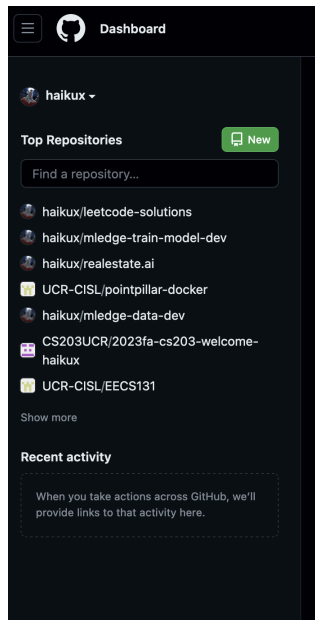
Step 1: Create a new Github account

1.1: Visit [Github.com](https://github.com), and sign up for a new account.



Step 2: Create a new **private** repo for this course.

2.1: Once logged in, click on **new** to create a new repository



2.2: Name the repository as CS131/EE131, switch from Public to Private and add a README.md file. Click on create repository.

The screenshot shows the 'Create a new repository' form on GitHub. The title is 'Create a new repository'. Below it, a note says 'A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)'. A note states 'Required fields are marked with an asterisk (*)'. The 'Owner' field is set to 'haikux' and the 'Repository name' field is 'cs131'. A green checkmark indicates 'cs131 is available.'. Below this, a tip says 'Great repository names are short and memorable. Need inspiration? How about [solid-system](#) ?'. The 'Description (optional)' field contains 'Lab and assignment artifacts for CS131'. There are two radio buttons for visibility: 'Public' (selected) and 'Private'. The 'Initialize this repository with:' section has 'Add a README file' checked. Below that, there's a section for 'Add .gitignore' with a dropdown set to 'None'. A note says 'Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)'. The 'Choose a license' section has a dropdown set to 'None'. A note says 'A license tells others what they can and can't do with your code. [Learn more about licenses.](#)'. At the bottom, it says 'This will set `main` as the default branch. Change the default name in your [settings](#).' and a small note at the very bottom says 'You are creating a private repository in your personal account.'

This will set `main` as the default branch. Change the default name in your [settings](#).

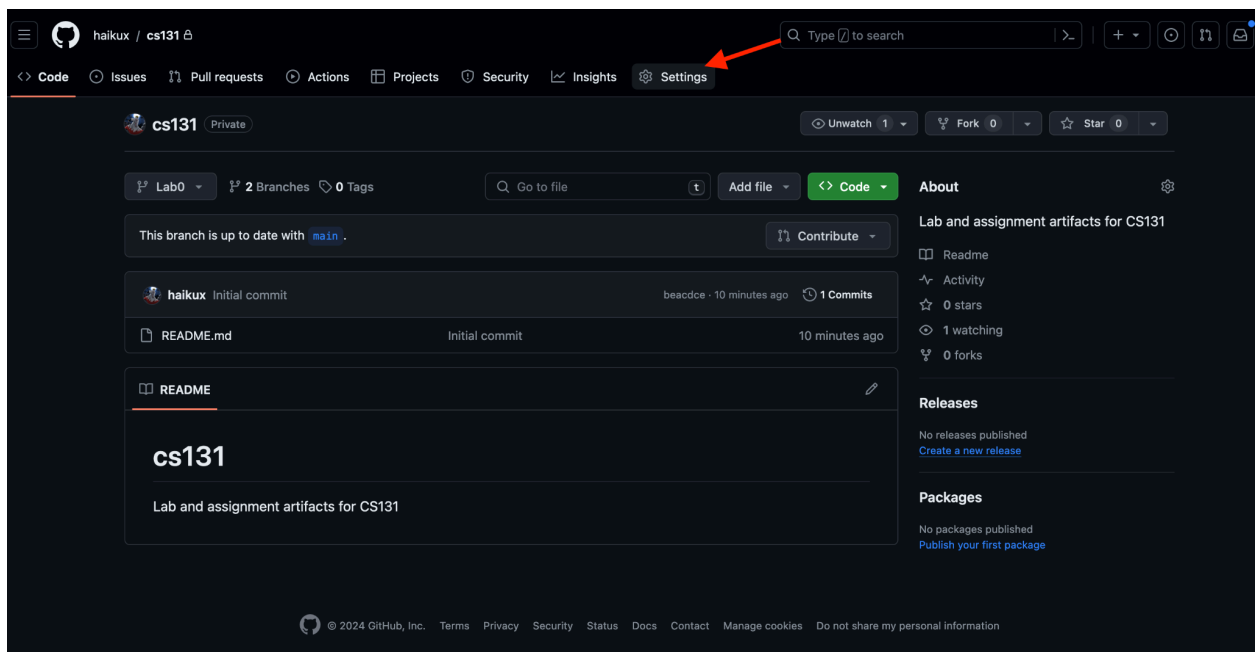
① You are creating a private repository in your personal account.

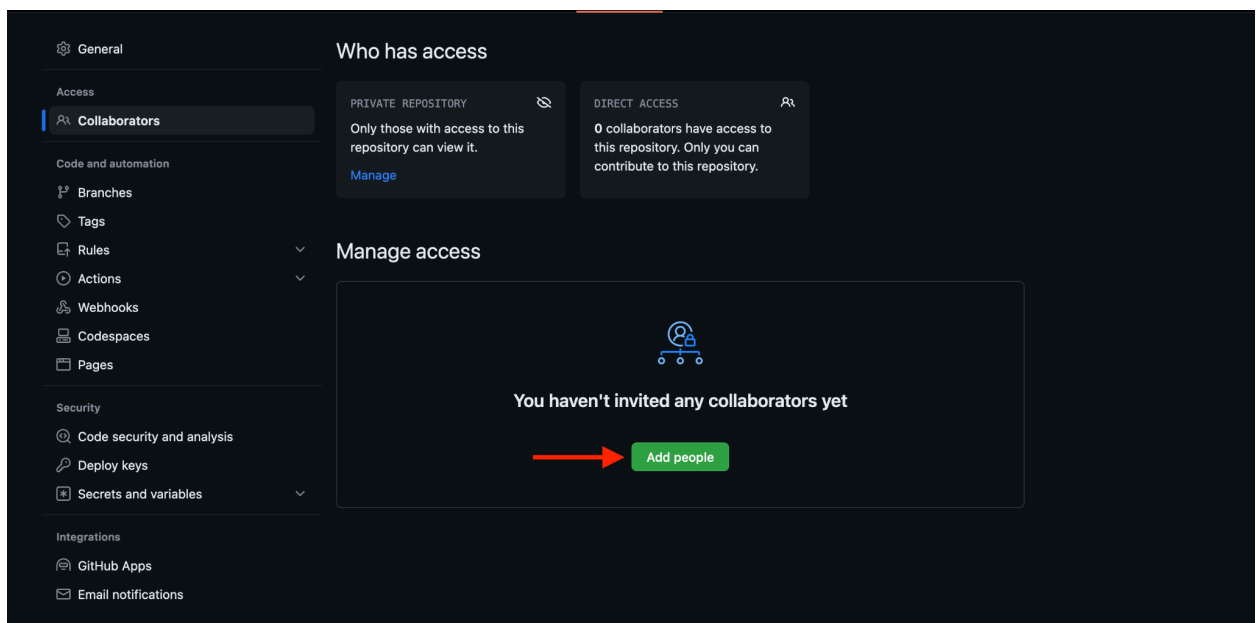
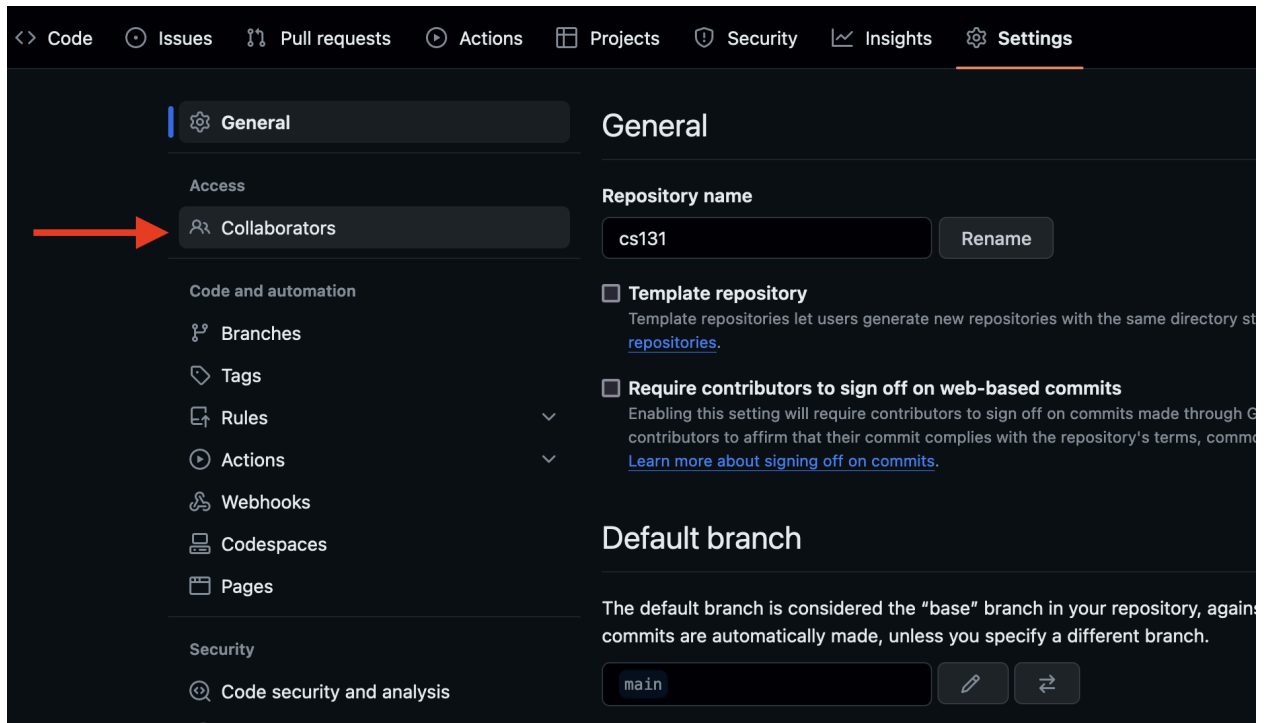
Create repository

2.3: Give TAs access to your repo

Settings > Collaborators > Add people

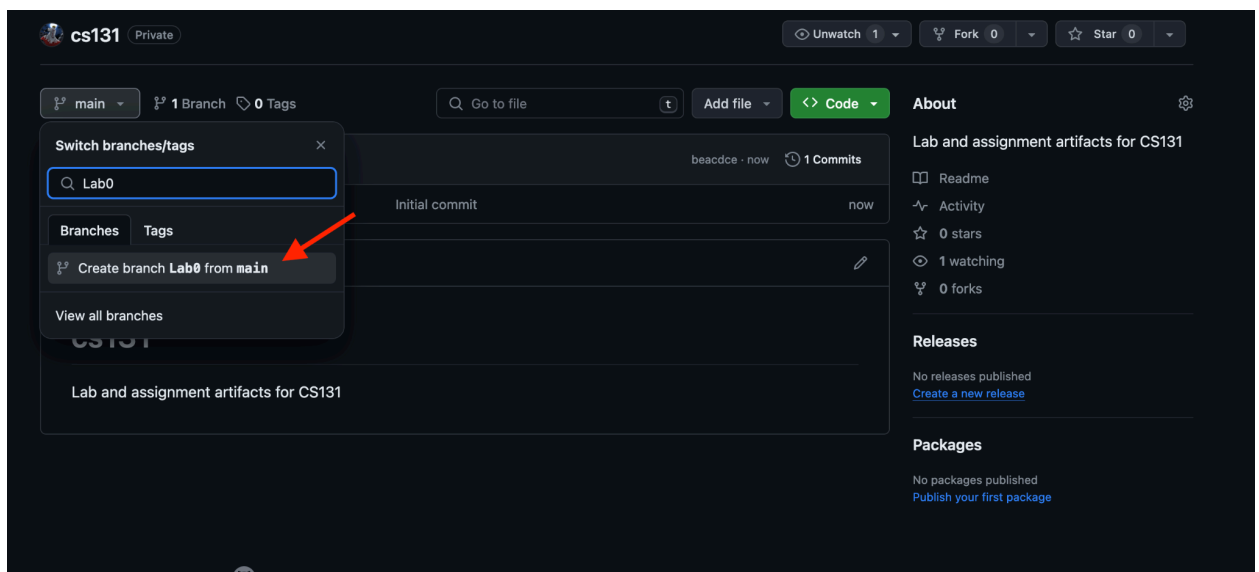
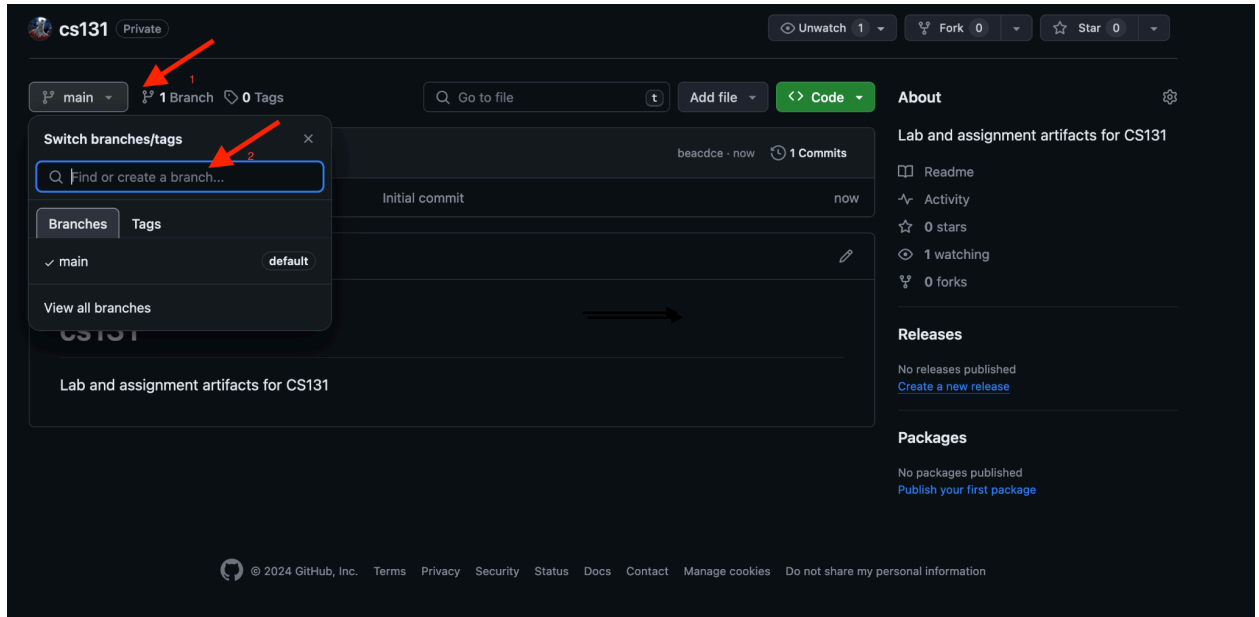
TAs Github ID: **dlbbgo**



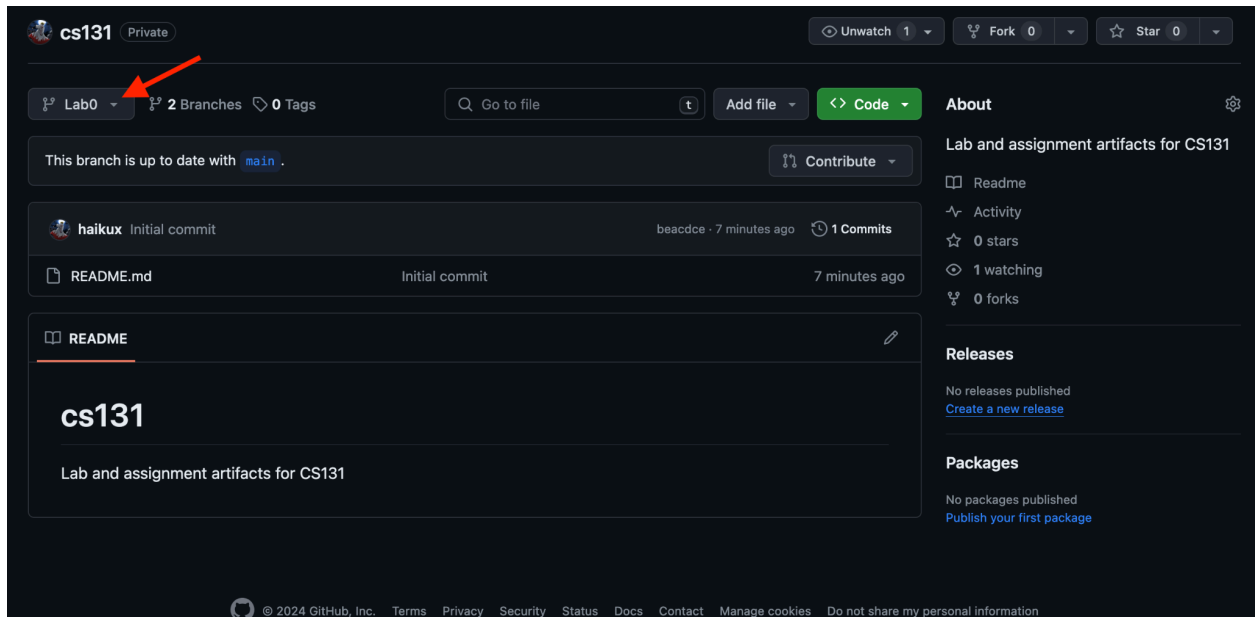


Step 3: For every lab, create a new branch and name it respective to the lab numbers. Lab<num> e.g. Lab0, Lab1, Lab2, Lab3, Lab4.

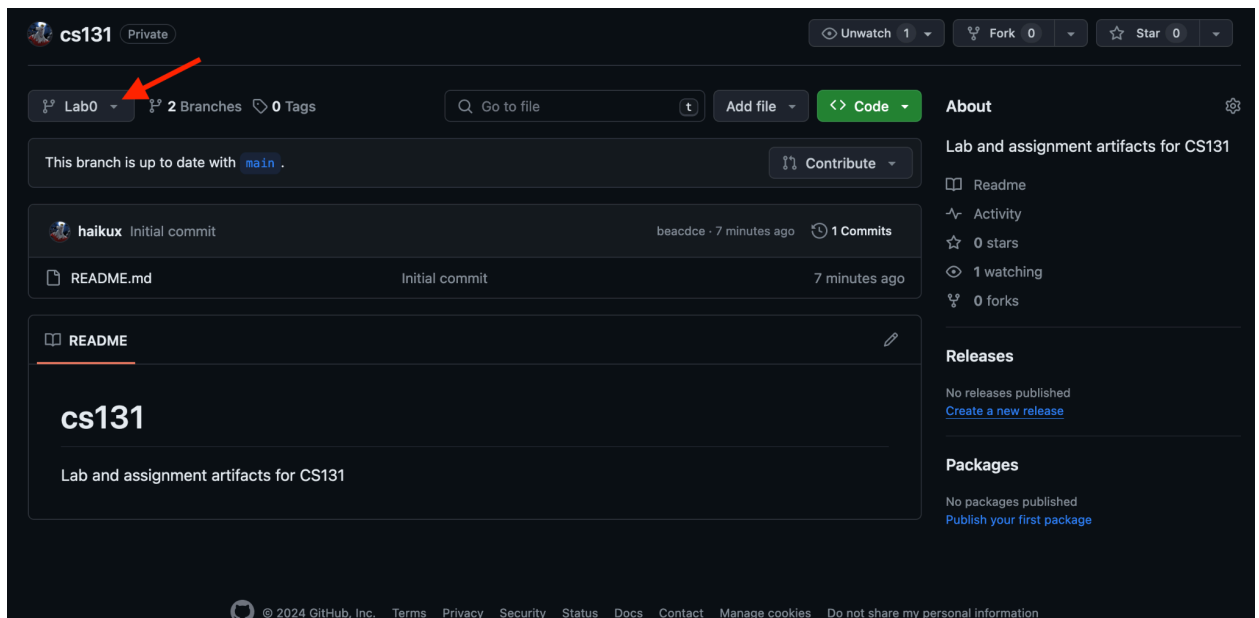
3.1: Click on the dropdown and type the name of your new branch



You can switch between the branches from the dropdown



3.2: Upload the required artifacts. You can drag and drop all the files from your Jetson to the Github repo. Make sure you are at the correct branch.



cs131 /

Drag files here to add them to your repository

Or [choose your files](#)

Something went really wrong, and we can't process that file.

Lab_0_Setup.docx

Commit changes

Add files via upload

Add an optional extended description...

☒ Commit directly to the `Lab0` branch.

☐ Create a new branch for this commit and start a pull request. [Learn more about pull requests.](#)

Commit changes

Cancel

cs131

Private

Unwatch 1

Fork 0

Star 0

Lab0 had recent pushes 3 seconds ago

Compare & pull request

Lab0

2 Branches

0 Tags

Go to file

Add file

Code

This branch is 2 commits ahead of `main`.

Contribute

haikux

Add files via upload

2d2edb1 · 2 minutes ago

3 Commits

Lab_0_Setup.docx

Add files via upload

4 minutes ago

README.md

Initial commit

27 minutes ago

screenshots.zip

Add files via upload

2 minutes ago

README

cs131

Lab and assignment artifacts for CS131

About

Lab and assignment artifacts for CS131

Readme

Activity

0 stars

1 watching

0 forks

Releases

No releases published

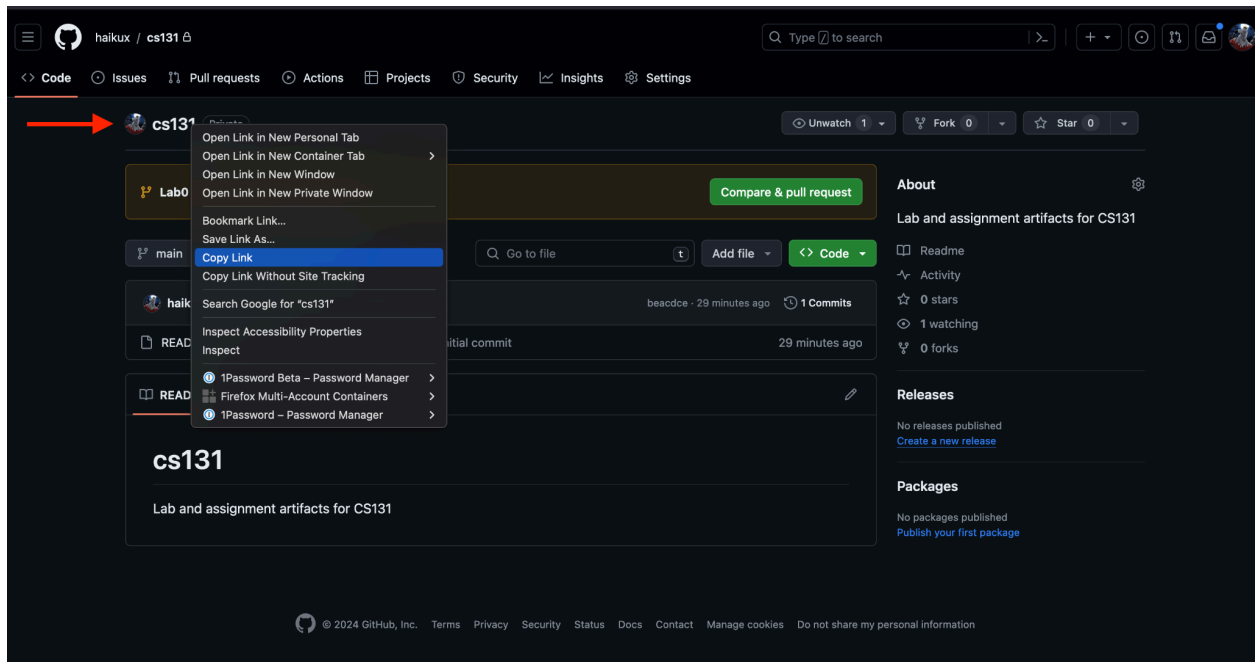
[Create a new release](#)

Packages

No packages published

[Publish your first package](#)

3.3: Share the link to your repo for successful submission on canvas



For all other labs, repeat step 3 to create a new branch and upload the required artifacts.