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# Introduction to High-Performance Computing

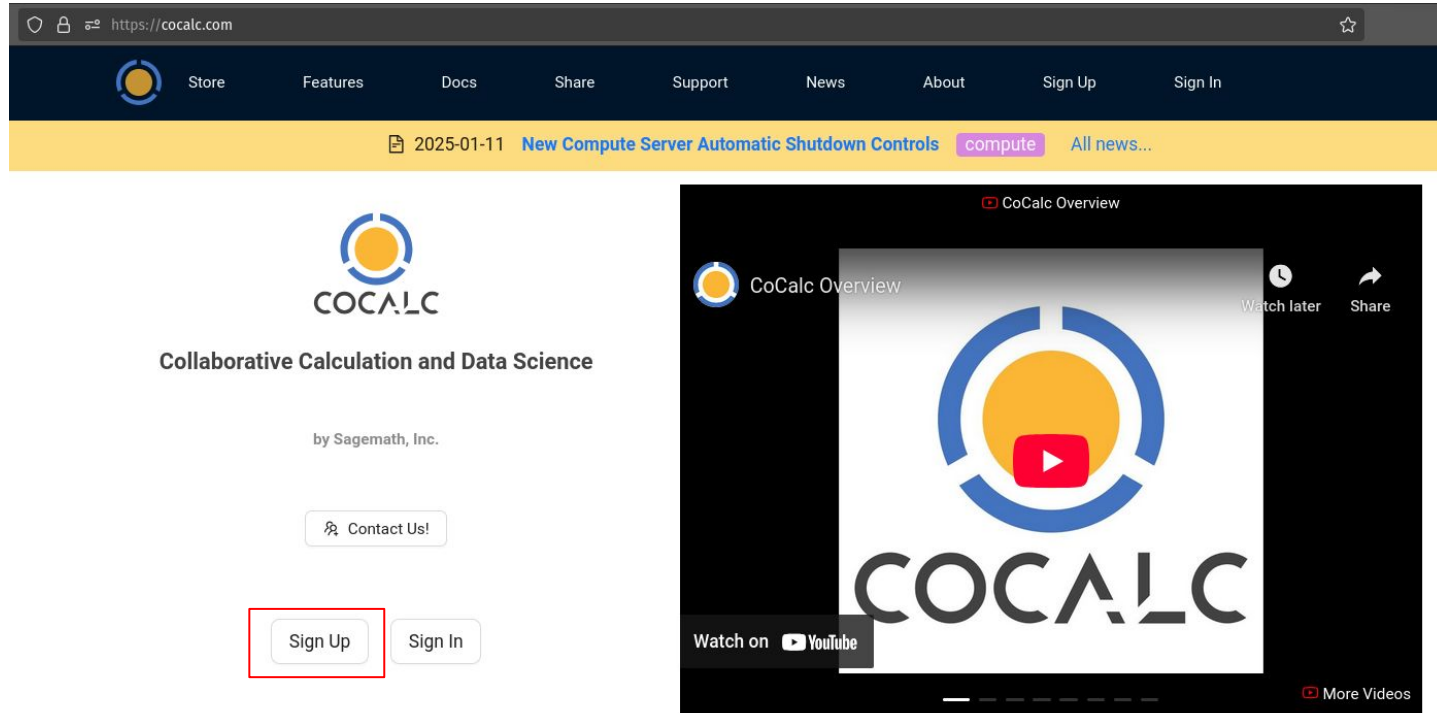
## CoCalc Introduction

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# Registration



Go on <https://cocalc.com> and follow the registration procedure (as **student**) by clicking “Sign Up”

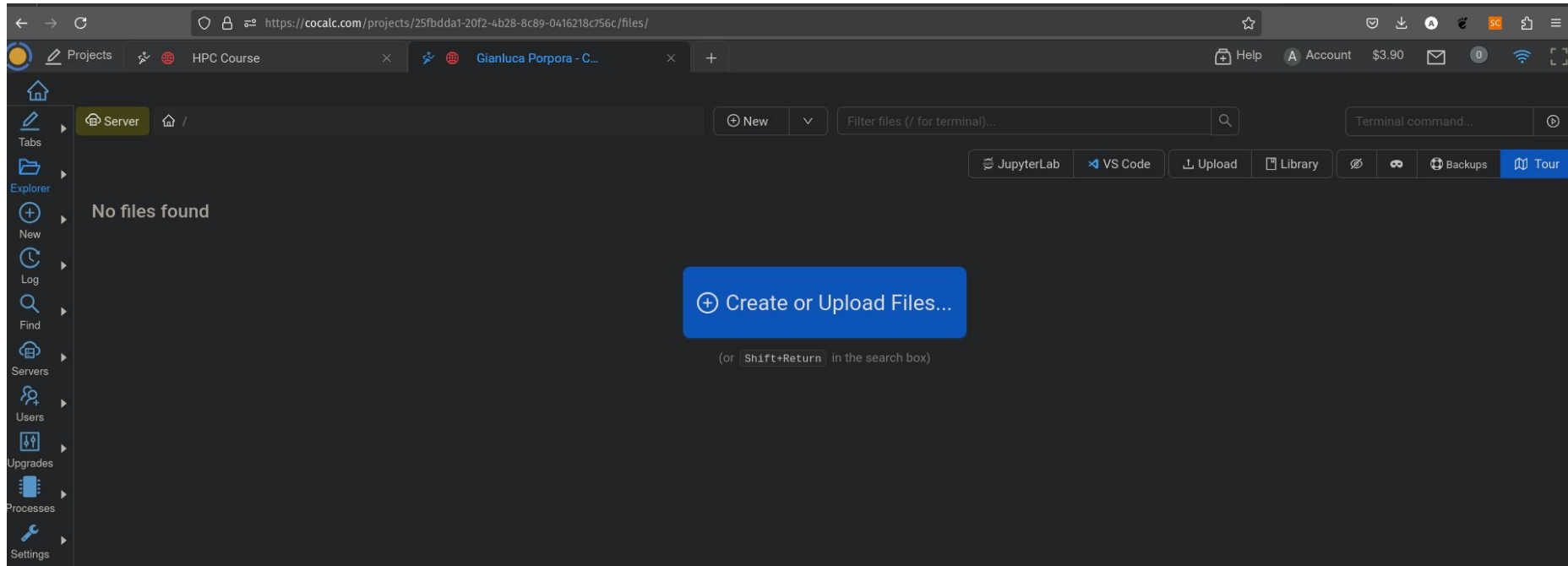
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# Registration

- ✓ Once registered, please share your “sign up” email with us
  - ✓ You will be added to the project course ...
  - ✓ ... and a personal project related to the course will be added to your account
  - ✓ We have a limited number of licenses (currently 10)
  - ✓ So we encourage “the brave ones” to actually use linux on their local machine
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# Registration

- ✓ If you have successfully registered and been added to the course, your project should look like this



# Shared Project

- ✓ We also have a shared project where all participants (students + instructors) can work together, **at the same time (!!!)**, interactively

The screenshot displays the Cocalc web interface in a browser. The address bar shows the URL: <https://cocalc.com/projects/72703117-822d-4da9-853d-ba75bf020167/files/>. The interface is divided into several sections:

- Left Sidebar:** Contains navigation icons for Home, Tabs, Explorer, New, Log, Find, Servers, Users, Upgrades, Processes, and Settings.
- Top Bar:** Includes tabs for 'Projects', 'HPC Course', and 'Shared Project - Course...'. It also features links for Help, Account, and a balance of \$3.90.
- Processes Panel:** Located on the left, it shows system metrics: CPU (0%), Memory (1%), and Disk (2%). Below this is a table of running processes.
- File Explorer:** Displays the current directory structure. It includes a 'Check All' button and a message: '3 items — Click the checkbox to the left of a file to copy, download, etc.'
- File List:** A table showing files and folders in the current directory.
- Terminal:** Located at the bottom right, it includes a 'Terminal command...' input field and buttons for JupyterLab, VS Code, Upload, Library, Backups, and Tour.

Process	CPU%	MEM
node --trace-warning...	1%	91M
sshd /usr/sbin/sshd...	0%	8M

Type	Name	Date Modified	Size/Download/View
<input type="checkbox"/>	Fortran90-terminal.term	5 days ago	0 bytes
<input type="checkbox"/>	HELLO_WORLD	2 weeks ago	3 items
<input type="checkbox"/>	X11-desktop.x11	5 days ago	0 bytes

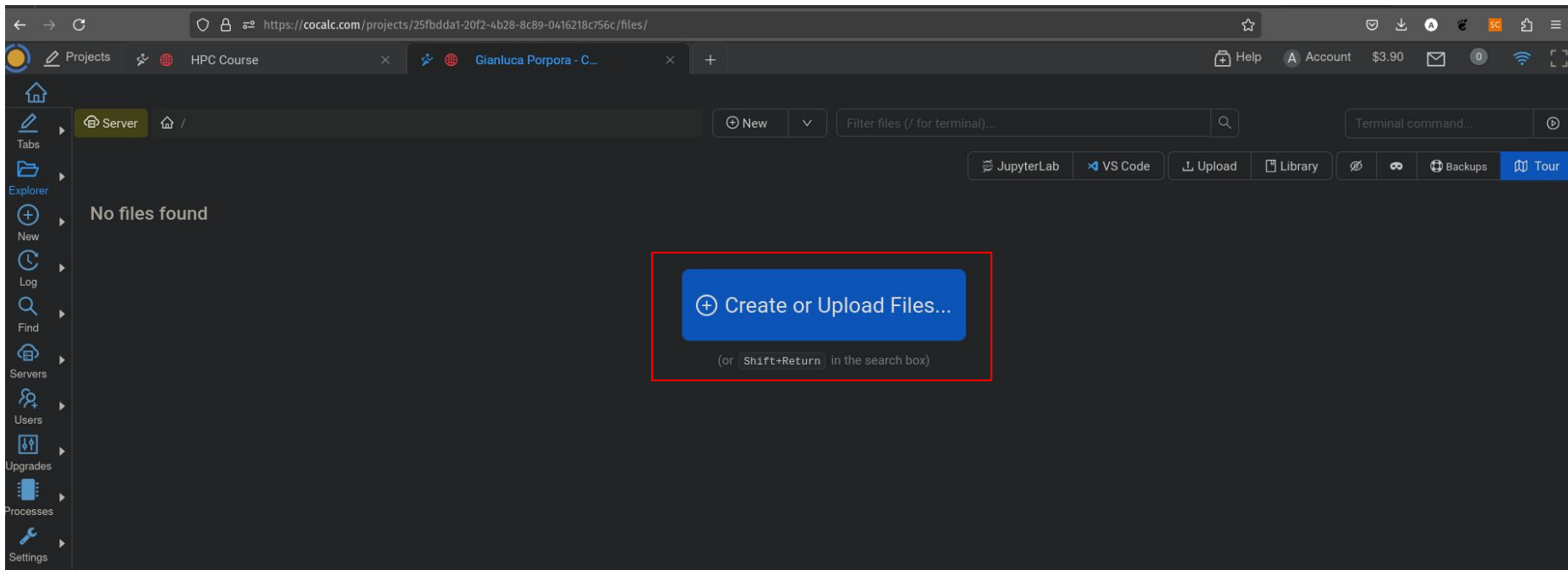
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# Shared Project

- ✓ The shared project will serve the purpose of showing you “hands on” experiences of the course material during each class
  - ✓ The shared project contains a copy of the github repository used in the course
  - ✓ It also has a linux terminal, a graphical X11 desktop interface for visualization and some miscellaneous examples
  - ✓ Each participant can open the linux terminal and work, **at the same time (!!!)**
  - ✓ So, you are encouraged to only follow the tutorials on it, and work in your own dedicated project
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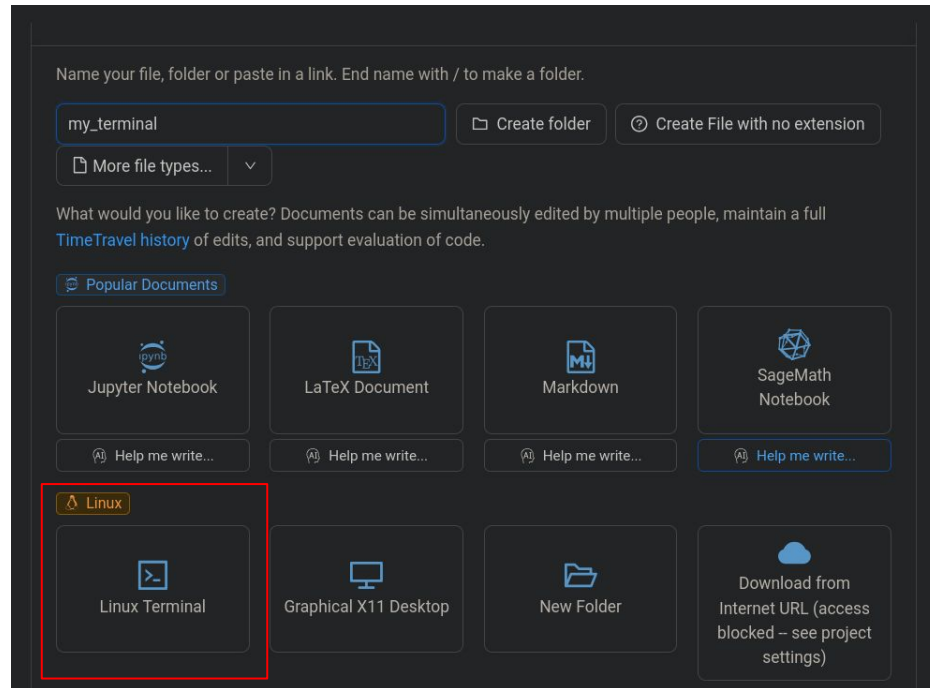
# Personal Project

- ✓ Your personal project will be completely empty at the beginning
- ✓ Click on the “Create or Upload Files ...” button to add a linux terminal



# Linux Terminal

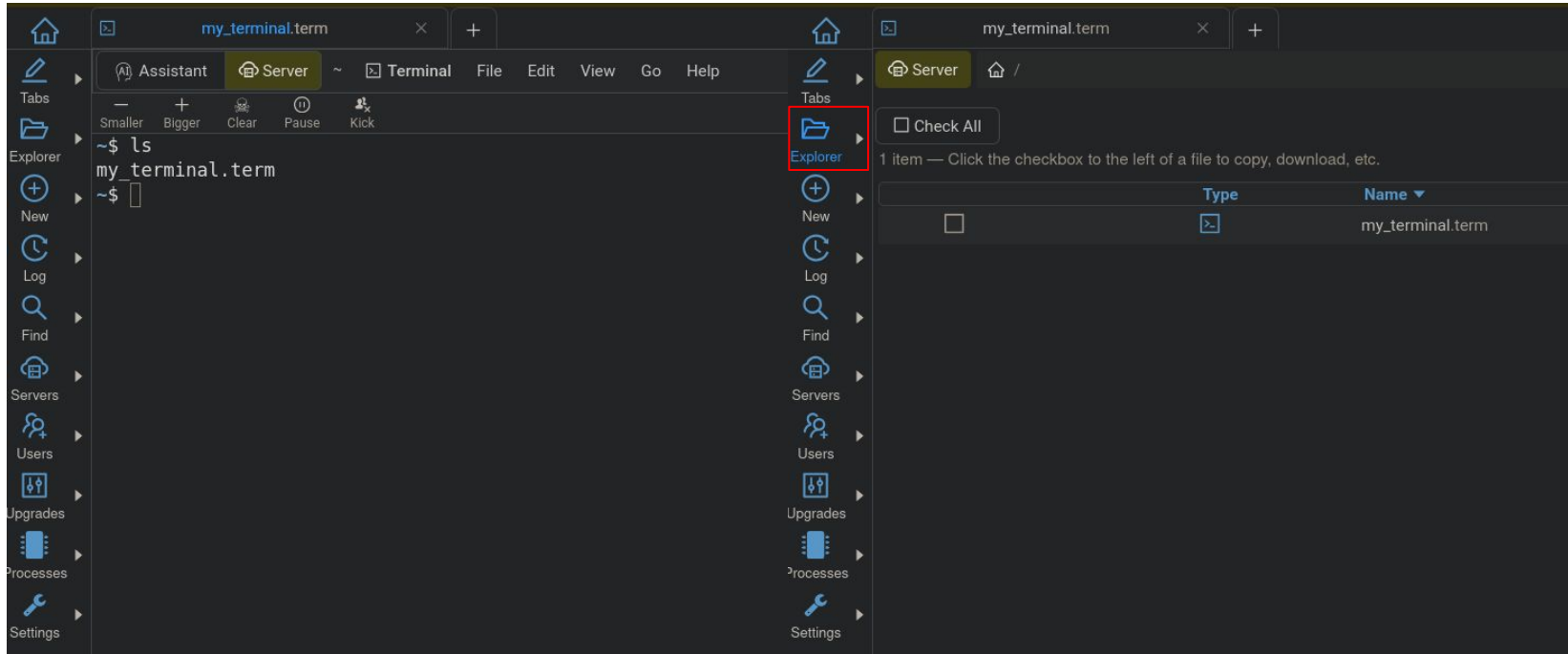
- ✓ Rename your terminal as you prefer and clic on “Linux Terminal”





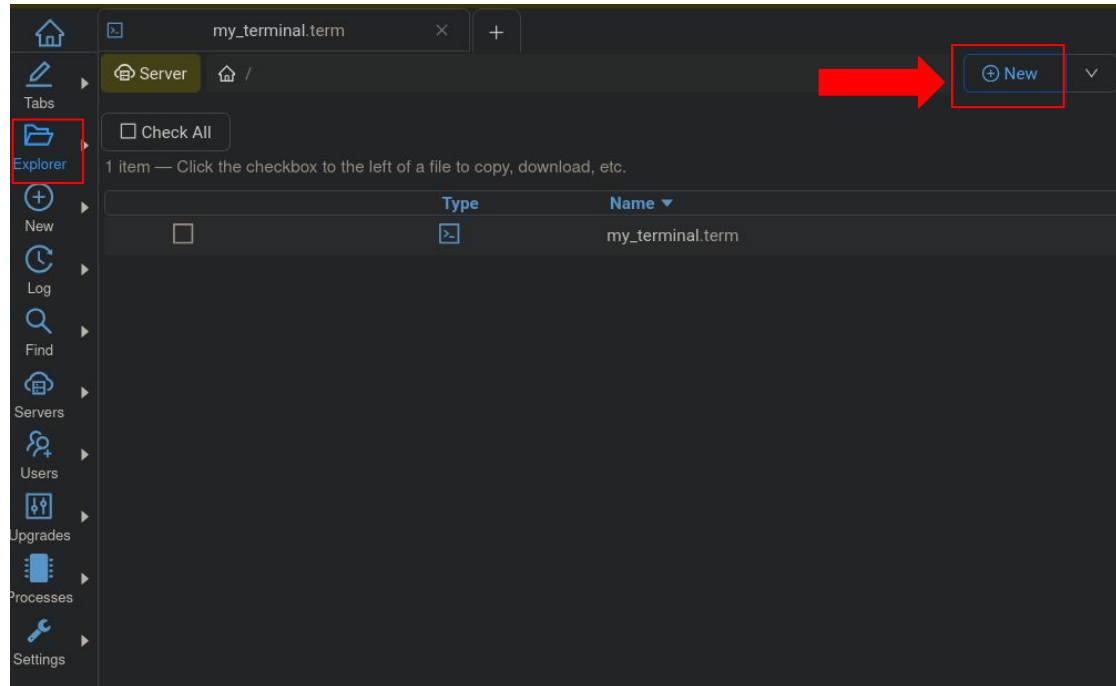
# Linux Terminal

- ✓ You will be prompted immediately to your terminal ...
- ✓ ... that will also appear in your explorer



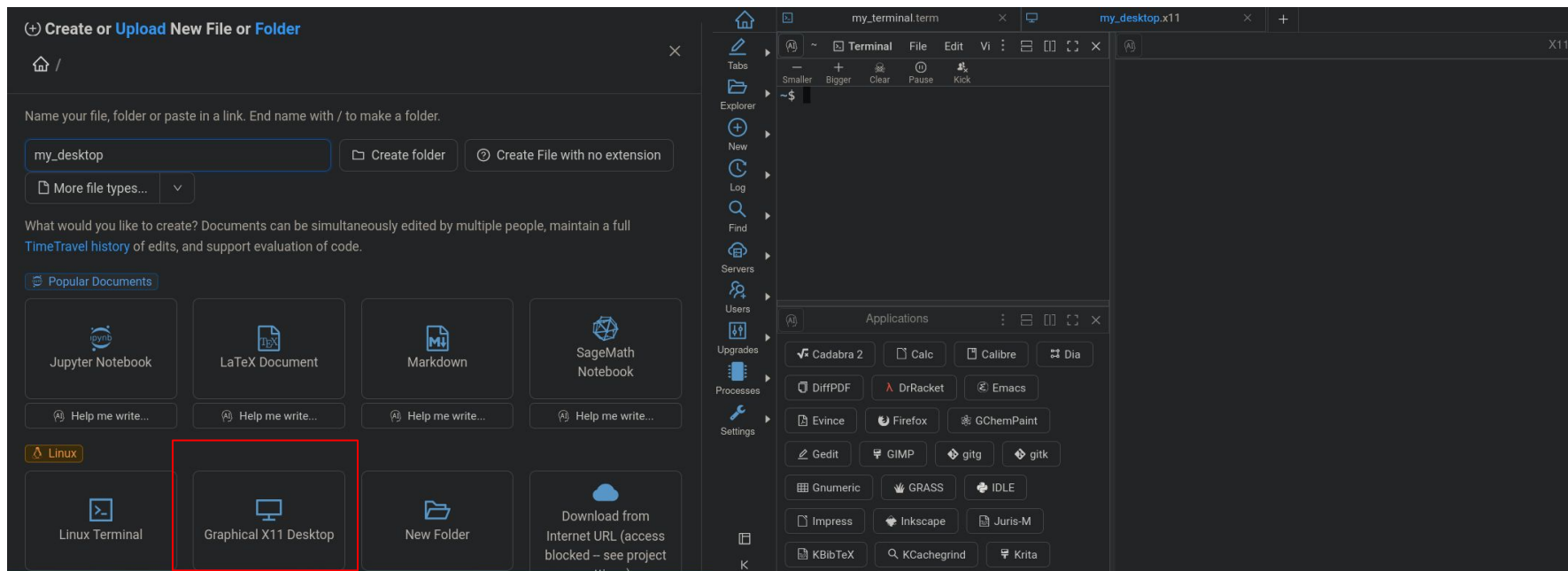
# X11 Destop

- ✓ The last step of the project preparation is the addition of a desktop environment, open the Explorer and click on the “New” button to add it



# X11 Desktop

- ✓ Rename your desktop as you prefer ...
- ✓ ... and you will be prompted to the newly created desktop environment



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# Congratulations!

- ✓ If all the steps were successfully completed ...
- ✓ ... congratulations! You now have a fully functional linux computer