



LLM Bootcamp Projects Handbook

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1.Set-up Virtual Machine using RDP files

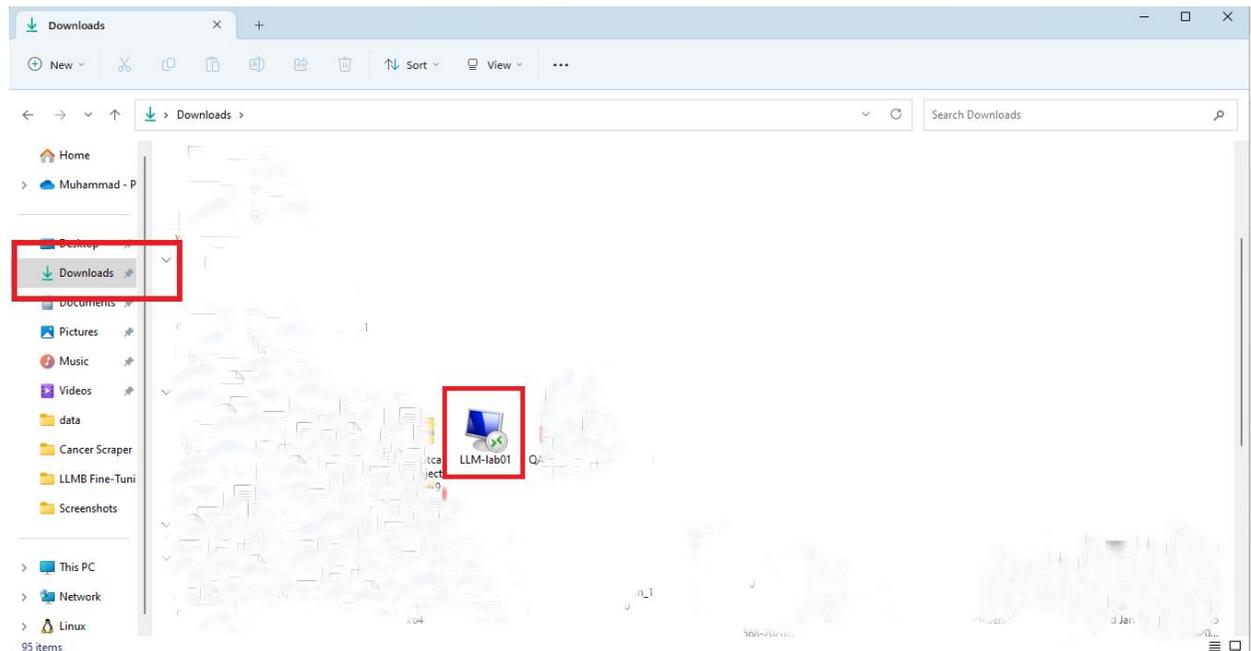
You are given a link. Click on that link.

For Example:

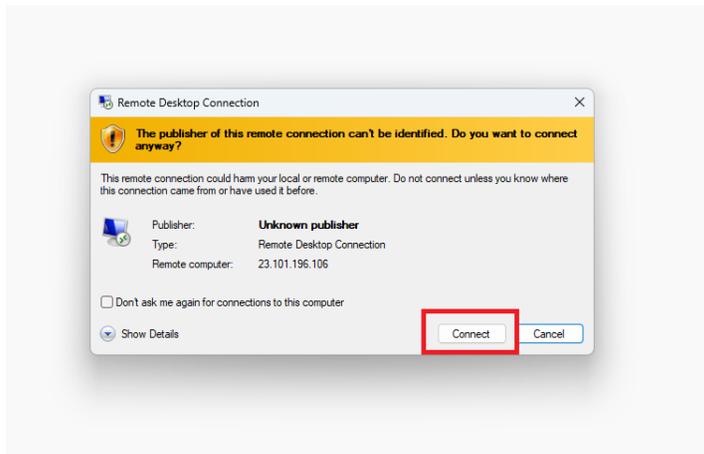
<https://stpydspipeline.blob.core.windows.net/llmlabscontainer/llmlab03.rdp>

It will download a virtual machine.

1. Go to the **Downloads** directory and double-click on the virtual machine icon. You will see the Icon as in the image below:



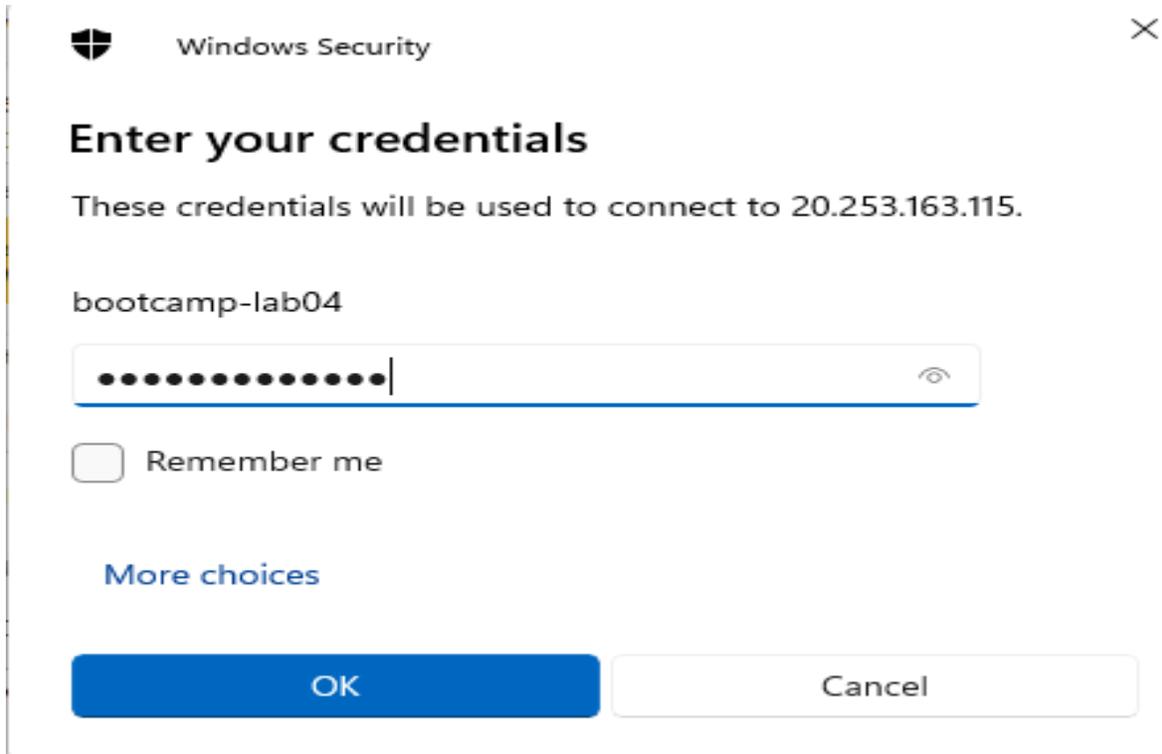
2. Now click on “Connect”.



3. Enter the **username and password** and click on **Ok**.

Username: bootcamp-lab01

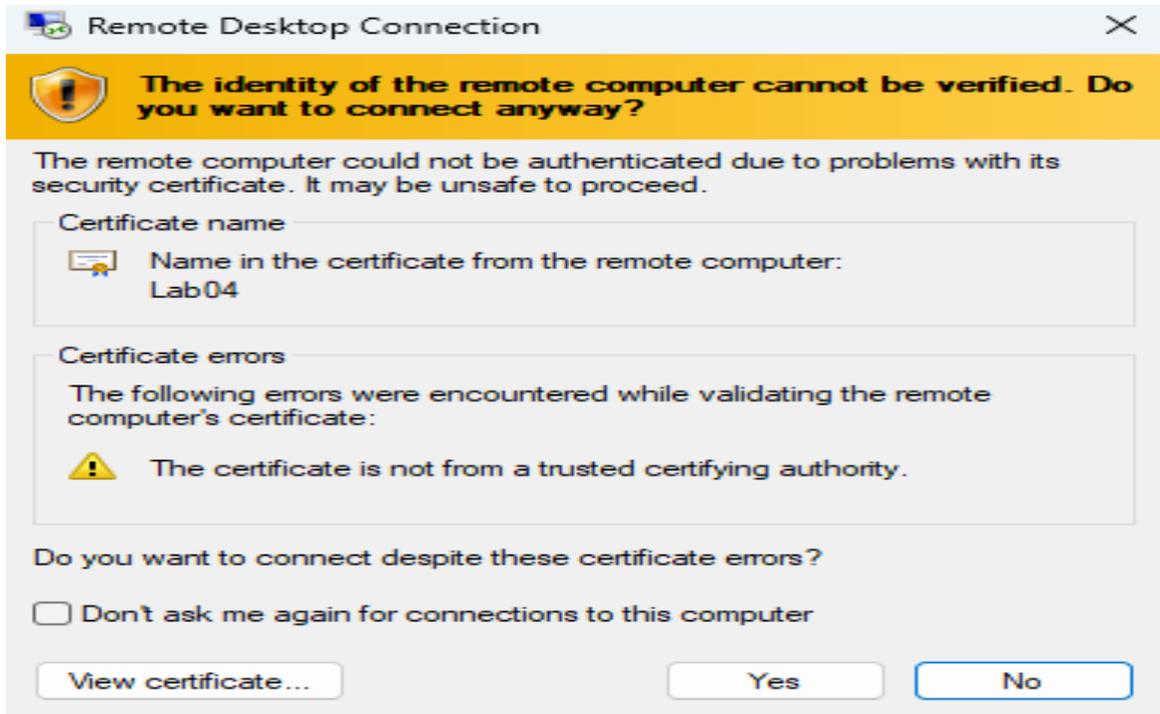
Password: DSD@LLMBLAB01



The image shows a Windows Security dialog box titled "Enter your credentials". It contains the following elements:

- Windows Security logo and title bar with a close button (X).
- Section header: "Enter your credentials".
- Text: "These credentials will be used to connect to 20.253.163.115."
- Username field: "bootcamp-lab04".
- Password field: A text box containing 12 dots, with a visibility icon (eye) on the right.
- Remember me checkbox: An unchecked checkbox labeled "Remember me".
- More choices link: A blue link labeled "More choices".
- Buttons: A blue "OK" button and a white "Cancel" button.

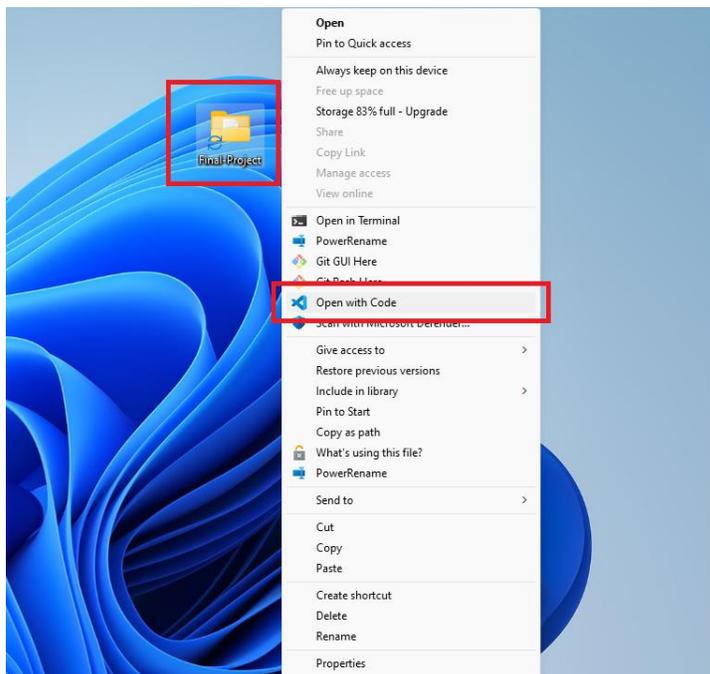
4. You will see the following. Now click on **Yes**. Your VM is set-up now.



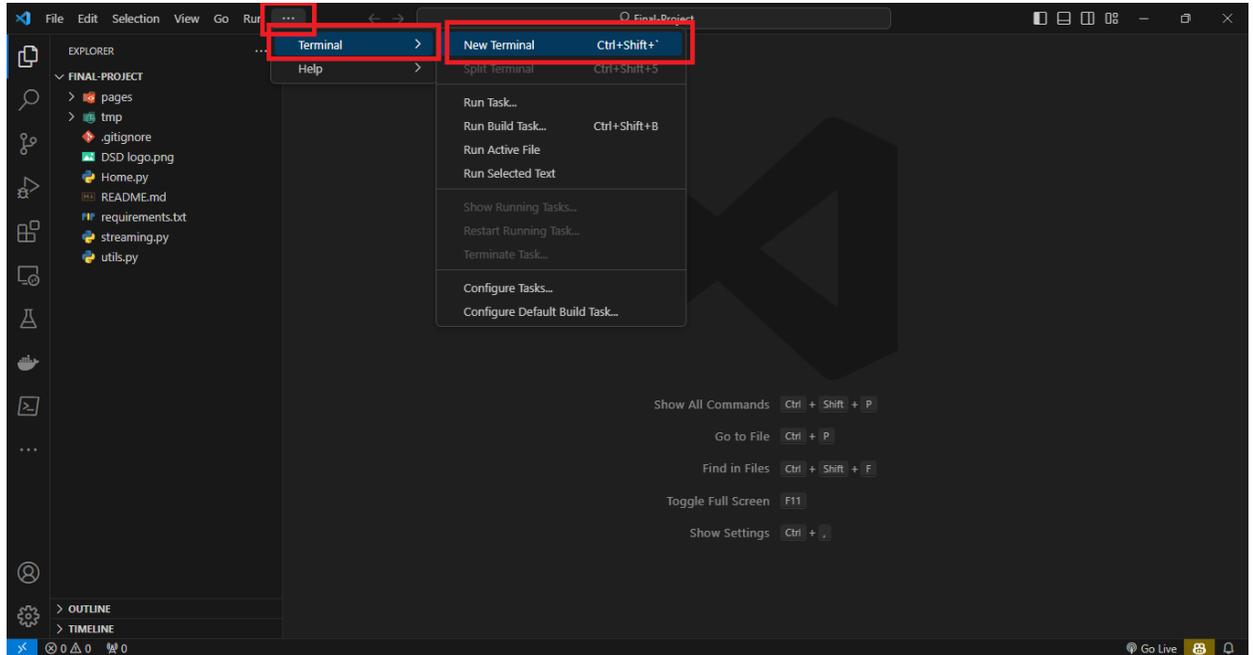
2. Project setup and execution

2.1 Setting-up project code in VS code

1. You can **open** project in Visual Studio Code simply by **right clicking** on the **Final-Project** folder icon on the **Desktop** then click on **Open with Code**.

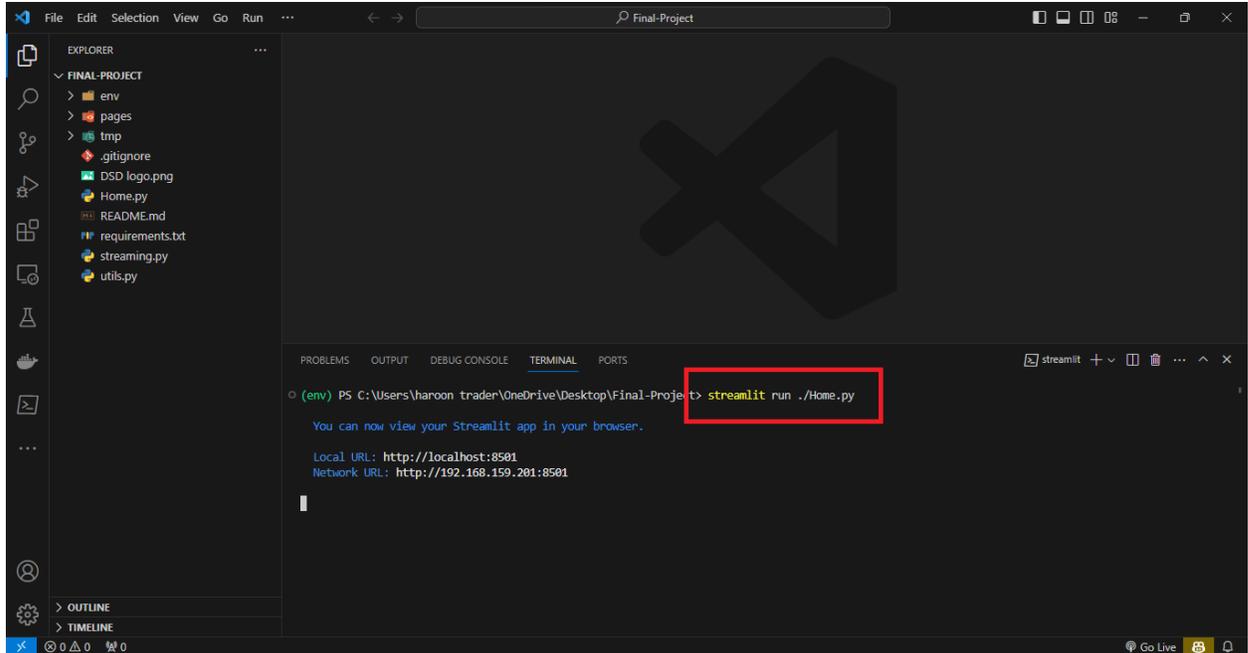


2. On the top there is the menu bar of Visual Studio Code. Select ... (3-dots) > **Terminal** > **New Terminal** or use the shortcut **Ctrl + Shift + `**

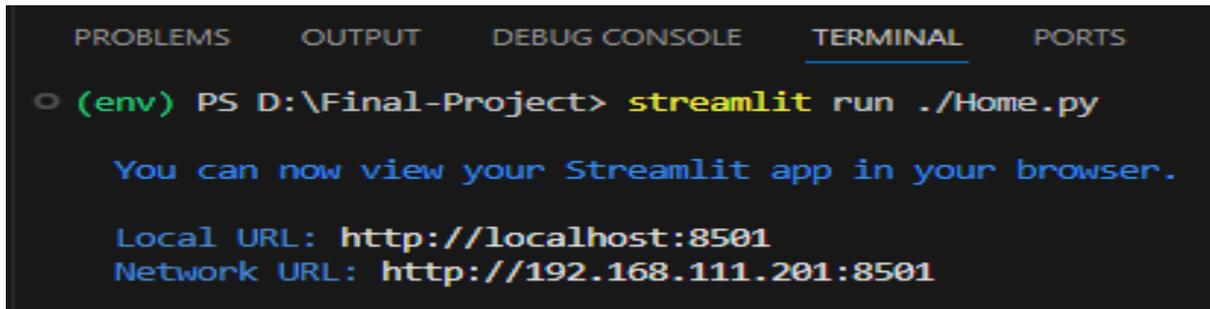


2.2 Project Execution

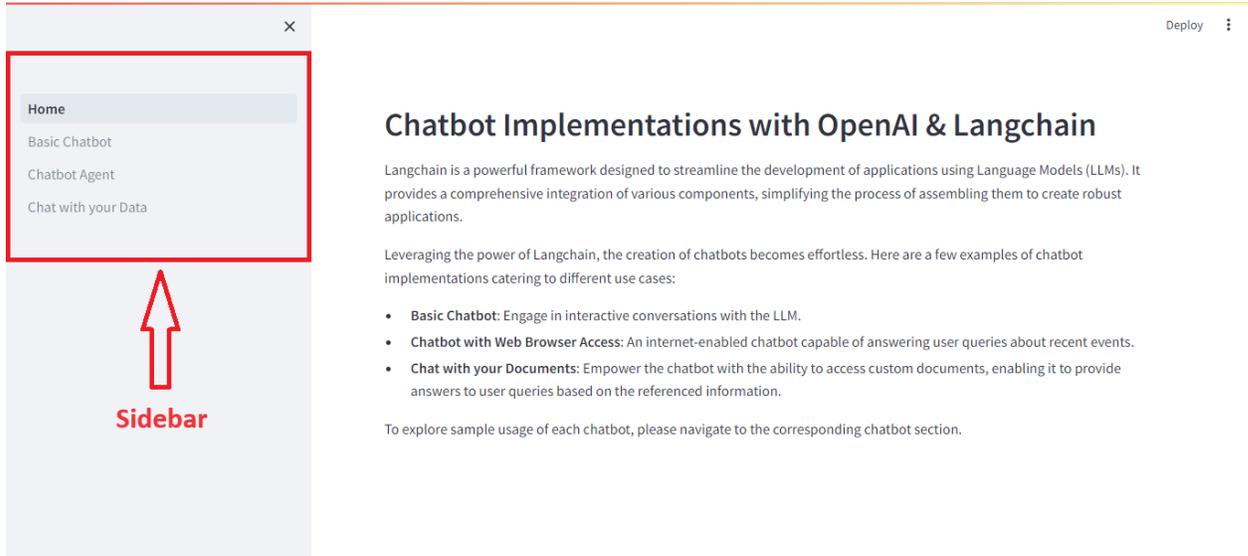
1. In the terminal of VS code write **streamlit run Home.py** and press **Enter**



A closer picture



2. You will be redirected to the **Home Page**. It contains the meta related info about the projects. You can see on the **left pane (sidebar)** we have three projects
- Basic Chatbot
 - Chatbot Agent
 - Chat with your data



The screenshot shows a web application interface. On the left, there is a sidebar with a red border and a red arrow pointing to it, labeled "Sidebar". The sidebar contains a "Home" section with three items: "Basic Chatbot", "Chatbot Agent", and "Chat with your Data". The main content area on the right has a title "Chatbot Implementations with OpenAI & Langchain" and a "Deploy" button in the top right corner. The main content area contains a paragraph about Langchain, a list of chatbot implementations, and a note about navigating to the corresponding chatbot section.

Deploy

Chatbot Implementations with OpenAI & Langchain

Langchain is a powerful framework designed to streamline the development of applications using Language Models (LLMs). It provides a comprehensive integration of various components, simplifying the process of assembling them to create robust applications.

Leveraging the power of Langchain, the creation of chatbots becomes effortless. Here are a few examples of chatbot implementations catering to different use cases:

- **Basic Chatbot:** Engage in interactive conversations with the LLM.
- **Chatbot with Web Browser Access:** An internet-enabled chatbot capable of answering user queries about recent events.
- **Chat with your Documents:** Empower the chatbot with the ability to access custom documents, enabling it to provide answers to user queries based on the referenced information.

To explore sample usage of each chatbot, please navigate to the corresponding chatbot section.

3. You will be able to navigate through the projects using the left sidebar. Select any of the project from the left sidebar, scroll down the sidebar a bit and enter the **secret API key** given to you and press **Enter**.

Home

Basic Chatbot

Chatbot Agent

Deploy

Select any project from here

Basic Chatbot

Allow users to interact with the OpenAI LLMs

Please add your OpenAI API key to continue.

Powered by [Data Science Dojo](#)

OpenAI API Key

sk-...

Enter you API key here

Made with Streamlit

4. To use the **Basic Chatbot**, select it from the sidebar and enter your query in the textbox provided and press **Enter**.

Home

Basic Chatbot

Chatbot Agent

Powered by [Data Science Dojo](#)

OpenAI API Key

.....

Basic Chatbot

Allow users to interact with the OpenAI LLMs

How can I help you?

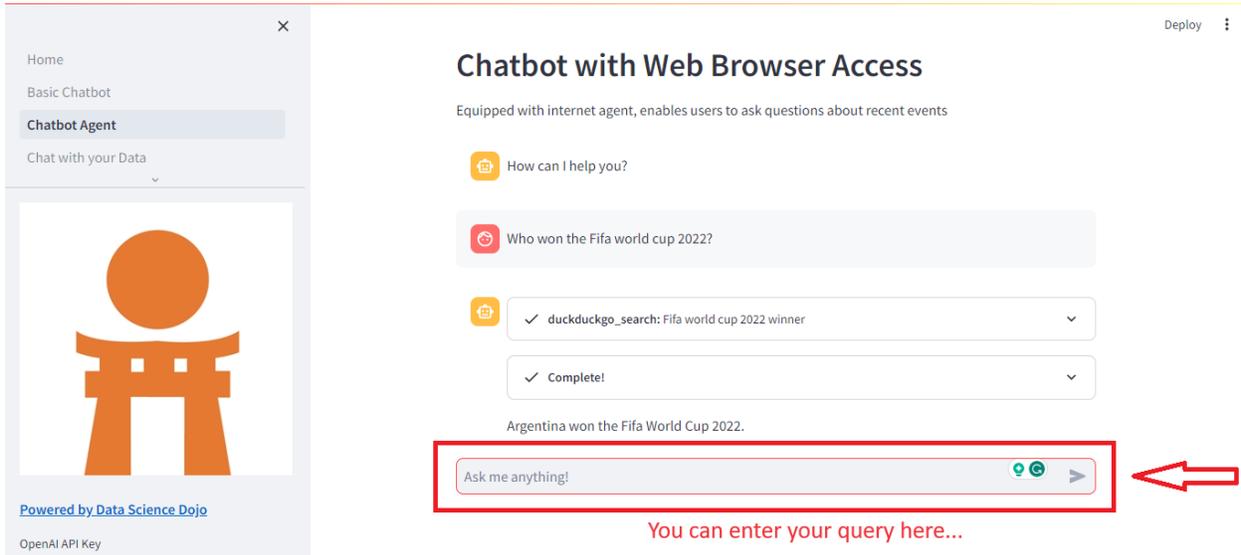
What is OpenAI?

OpenAI is an artificial intelligence research laboratory and company. It was founded in December 2015 by Elon Musk, Sam Altman, Greg Brockman, Ilya Sutskever, John Schulman, and Wojciech Zaremba. OpenAI's mission is to ensure that artificial general intelligence (AGI) benefits all of humanity. AGI refers to highly autonomous systems that outperform humans at most economically valuable work. OpenAI conducts research in various areas of AI, including reinforcement learning, natural language processing, computer vision, and robotics. They also

Ask me anything!

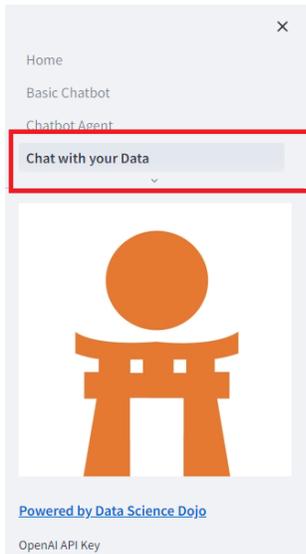
You can enter you query here

5. To use the **Chatbot Agent**, select it from the sidebar and enter your query in the textbox provided and press **Enter**.



The screenshot displays a web interface for a chatbot. On the left is a sidebar with a close button (X) at the top. It contains the following items: 'Home', 'Basic Chatbot', 'Chatbot Agent' (highlighted with a grey background), and 'Chat with your Data'. Below the sidebar is a large orange icon of a person. At the bottom of the sidebar, it says 'Powered by Data Science Dojo' and 'OpenAI API Key'. The main area is titled 'Chatbot with Web Browser Access' and has a 'Deploy' button with a dropdown arrow. Below the title is the text 'Equipped with internet agent, enables users to ask questions about recent events'. The chat history shows: a yellow speech bubble with 'How can I help you?', a red speech bubble with 'Who won the Fifa world cup 2022?', a yellow speech bubble with '✓ duckduckgo_search: Fifa world cup 2022 winner', and a yellow speech bubble with '✓ Complete!'. Below the history is the text 'Argentina won the Fifa World Cup 2022.'. At the bottom is a text input field with the placeholder 'Ask me anything!'. The input field has a red border and a red arrow pointing to it from the right. Below the input field is the text 'You can enter your query here...'. There are also two small circular icons (a green one with a white dot and a blue one with a white dot) and a right-pointing arrow icon inside the input field.

6. To use the **Chat with your Data**, select it from the sidebar.



Deploy ⋮

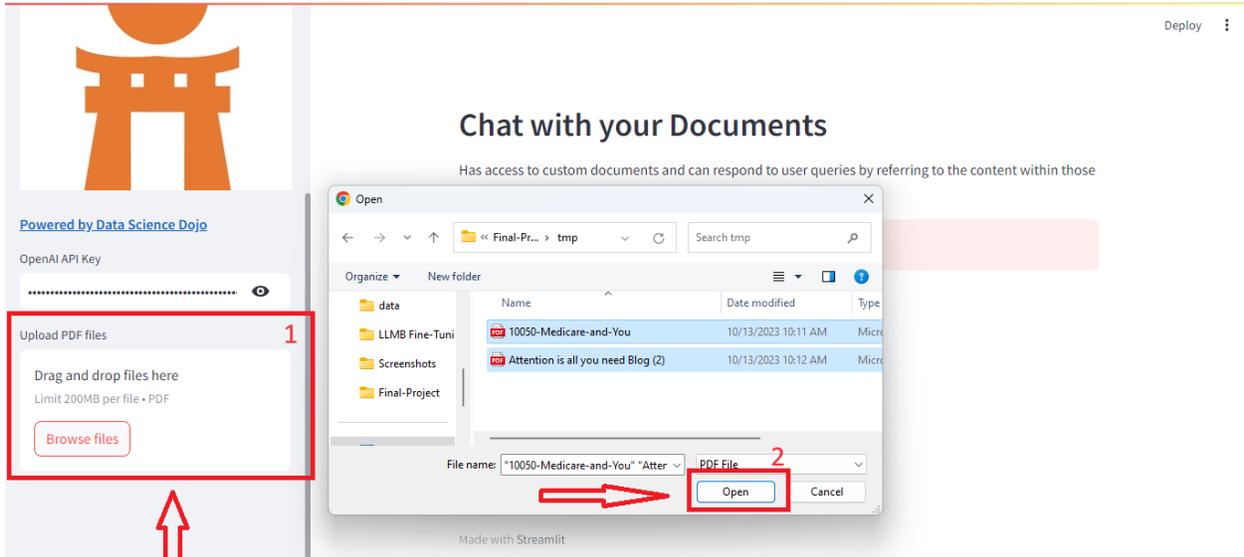
Chat with your Documents

Has access to custom documents and can respond to user queries by referring to the content within those documents

 How can I help you?

Ask me anything! 

- a. Scroll the sidebar down, click on **Browse files**, select the pdfs from the **data** folder on desktop and press **open**.



b. Now, enter your query about the pdfs in the textbox provided and press **Enter**.

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OpenAI API Key
.....

Upload PDF files

Drag and drop files here
Limit 200MB per file • PDF

Browse files

Attention is all you need Bl...
0.7MB

10050-Medicare-and-You.pdf
3.6MB

Deploy

Chat with your Documents

Has access to custom documents and can respond to user queries by referring to the content within those documents

How can I help you?

ALS stands for?

ALS stands for Amyotrophic lateral sclerosis.

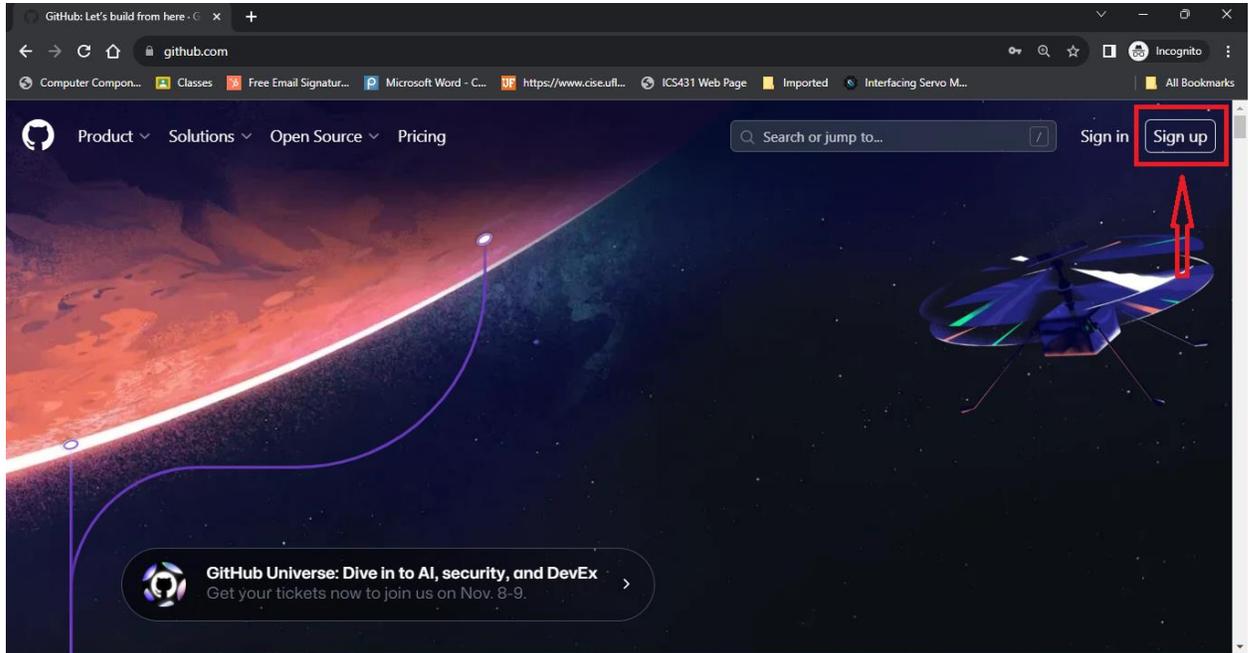
Ask me anything!

Enter your query here

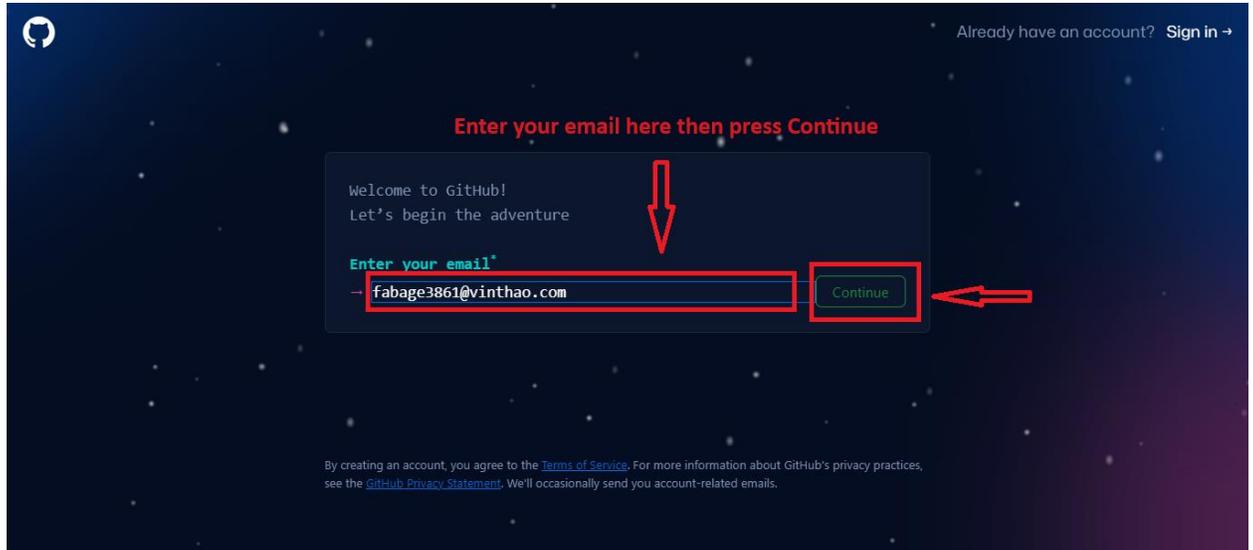
3. Set-up Github Account

3.1 Sign-up for Github account

1. In order to create a github account goto <https://github.com/> and select sign up from top right of the page.



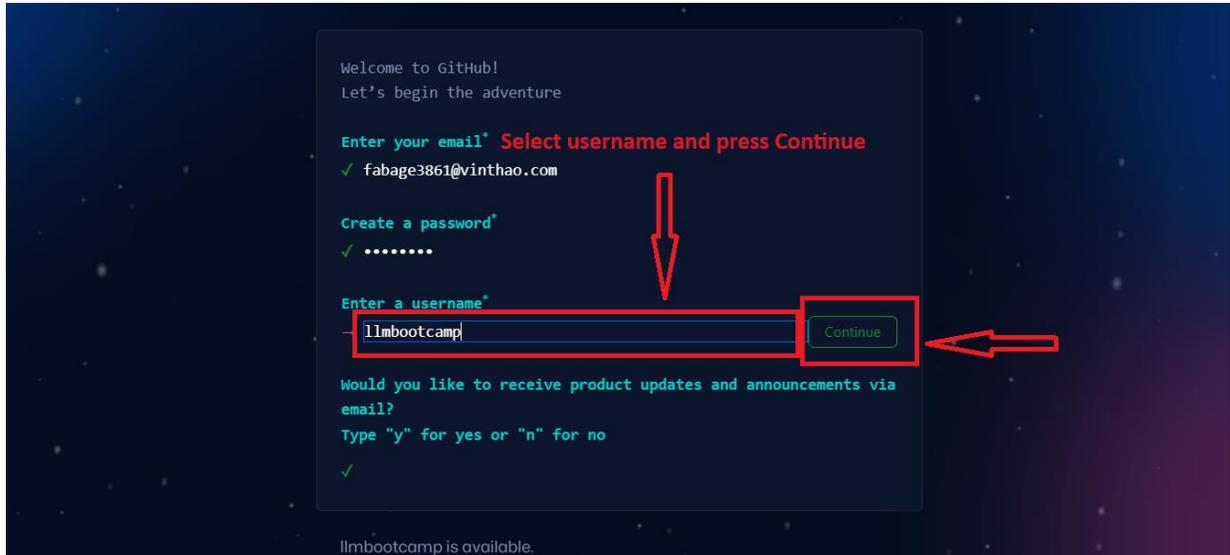
2. You'll be redirected to an other page where you'll be asked to enter your email address. Enter your email address there.



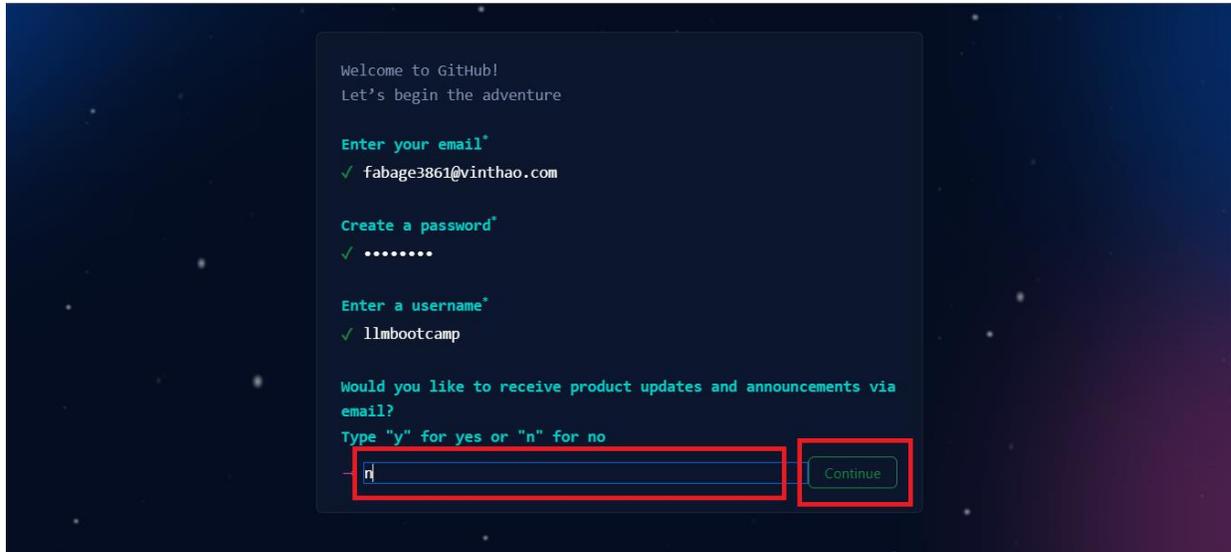
3. After you add your email and press continue you'll be asked to enter a password. Make sure you add a strong password by making different combination of upper and lower alphabets, numeric numbers and special characters.



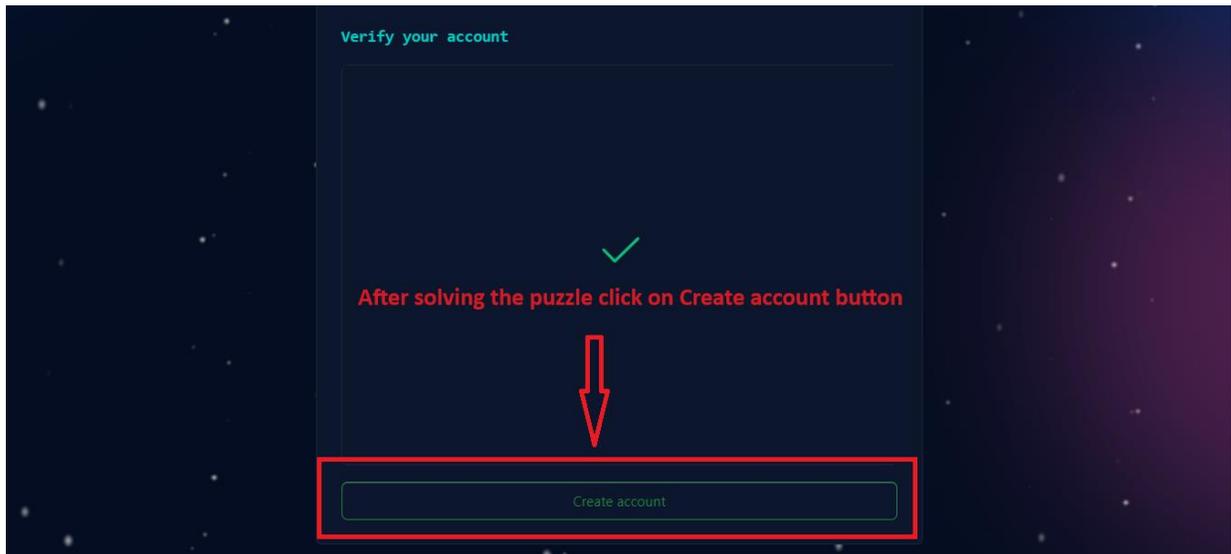
4. After adding a password you'll be asked to create a username that will be public.



5. After create a username you'll be asked whether you want to receive product updates via email. If you want to receive press "y" otherwise "n".



6. After this you'll be asked to verify as a human by playing a puzzle or solving a **CAPTCHA**. After solving it click on **Create account** button.



7. After creating your account you will receive an email with an OTP to verify your email address. Add the OTP and if you do not find any OTP in your mail please check your junk or spam folders.



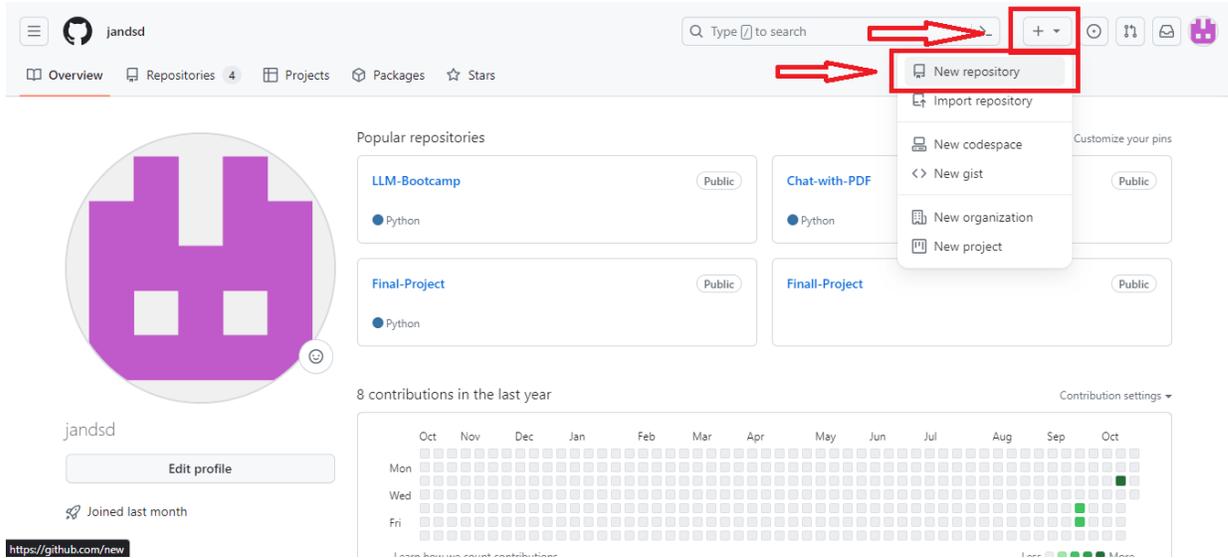
Now your account is ready.

3.3 Creating a Github repository

1. To create a Github repository goto your profile (make sure you have account logged in) and from the top right of the page click on the **plus (+) button**.

The screenshot shows the GitHub profile page for user 'jandsd'. The top navigation bar includes a search bar and a red box highlighting the plus (+) button. Below the navigation bar, the profile section shows the user's name 'jandsd', an 'Edit profile' button, and a note 'Joined last month'. The 'Popular repositories' section lists four repositories: 'LLM-Bootcamp', 'Chat-with-PDF', 'Final-Project', and 'Finall-Project', all marked as 'Public' and using Python. The '8 contributions in the last year' section shows a calendar grid with contributions indicated by colored squares.

2. Now select “New Repository”



The screenshot shows the GitHub profile page for user 'jandsd'. The navigation bar at the top includes 'Overview', 'Repositories 4', 'Projects', 'Packages', and 'Stars'. A search bar is present with the text 'Type to search'. A dropdown menu is open from the '+' icon in the top right, with the 'New repository' option highlighted. Other options in the menu include 'Import repository', 'New codespace', 'New gist', 'New organization', and 'New project'. The main content area shows 'Popular repositories' with items like 'LLM-Bootcamp', 'Chat-with-PDF', and 'Final-Project'. Below that is a contribution calendar for the last year, showing 8 contributions.

GitHub profile page for user 'jandsd'. The navigation bar shows 'Overview', 'Repositories 4', 'Projects', 'Packages', and 'Stars'. A search bar is present with the text 'Type to search'. A dropdown menu is open from the '+' icon in the top right, with the 'New repository' option highlighted. Other options in the menu include 'Import repository', 'New codespace', 'New gist', 'New organization', and 'New project'. The main content area shows 'Popular repositories' with items like 'LLM-Bootcamp', 'Chat-with-PDF', and 'Final-Project'. Below that is a contribution calendar for the last year, showing 8 contributions.

- Now, add the repository name and press the **Create repository** button from the bottom in green color and the repository will be created.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere?
[Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner * Repository name * 

Final-Projectt is available.

Great repository names are short and memorable. Need inspiration? How about ubiquitous-doodle ?

Description (optional)

- Public**
Anyone on the internet can see this repository. You choose who can commit.
- Private**
You choose who can see and commit to this repository.

Initialize this repository with:

- Add a README file**
This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

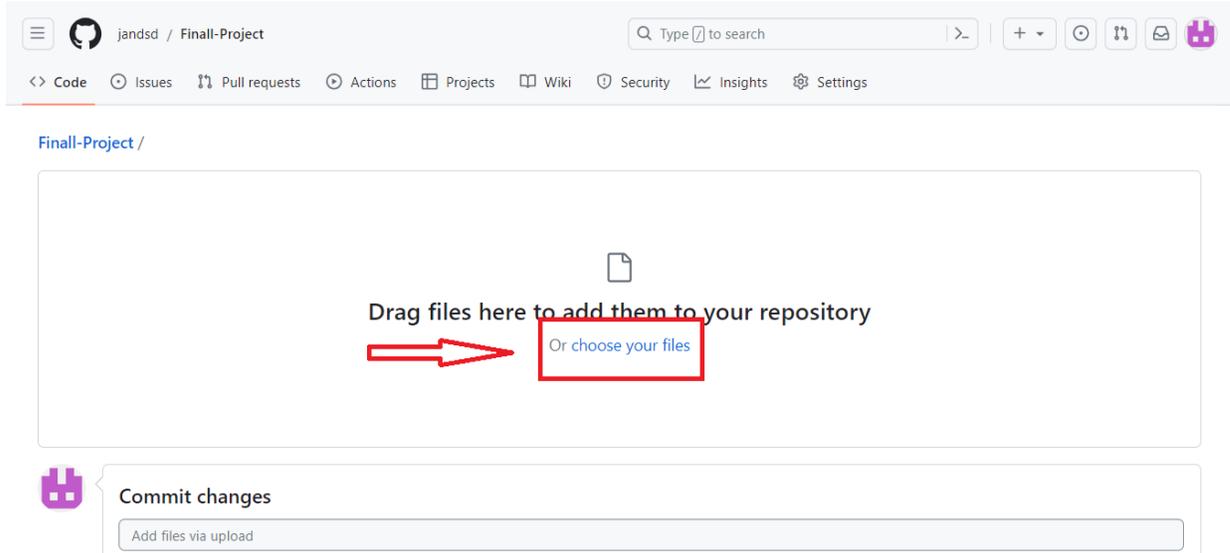
You are creating a public repository in your personal account.



4. To push the code to you Github repository click on **uploading an existing file**

The screenshot shows the GitHub interface for a repository named 'Finall-Project'. At the top, there is a navigation bar with a search box and various icons. Below this, a secondary navigation bar includes links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The repository name 'Finall-Project' is displayed with a 'Public' badge, along with statistics for 'Pin', 'Unwatch' (1), 'Fork' (0), and 'Star' (0). Two main action cards are visible: 'Set up GitHub Copilot' and 'Add collaborators to this repository'. A light blue 'Quick setup' section is highlighted, containing a dropdown menu with 'Set up in Desktop', 'HTTPS', and 'SSH' options. Below the dropdown, the text reads: 'Get started by [creating a new file](#) or [uploading an existing file](#). We recommend every repository include a [README](#), [LICENSE](#), and [.gitignore](#).' The link 'uploading an existing file' is highlighted with a red box, and a red arrow points to it from the right.

5. Now click on **choose you files.**



The screenshot shows the GitHub interface for a repository named 'Finall-Project'. At the top, there is a navigation bar with the repository name, a search bar, and various icons. Below this, a secondary navigation bar contains links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The main content area is titled 'Finall-Project /' and features a large white box with a document icon and the text 'Drag files here to add them to your repository'. A red arrow points to a button labeled 'Or choose your files'. Below this box is a 'Commit changes' section with a sub-section 'Add files via upload'.

GitHub navigation: jandsd / Finall-Project

Search: Type to search

Navigation: <> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

Finall-Project /

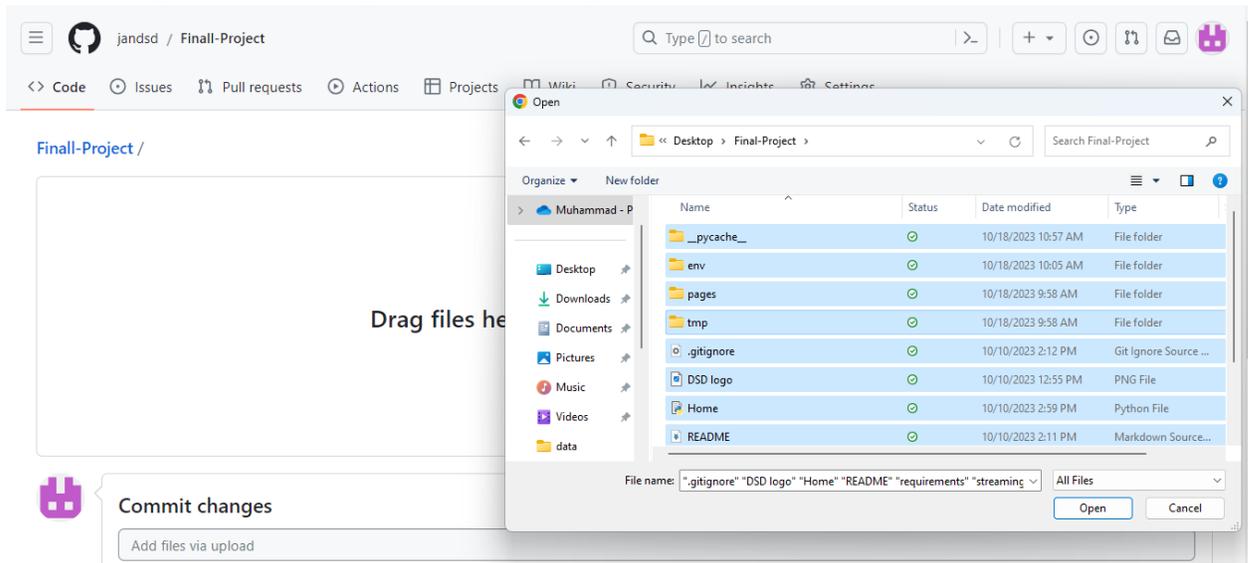
Drag files here to add them to your repository

Or choose your files

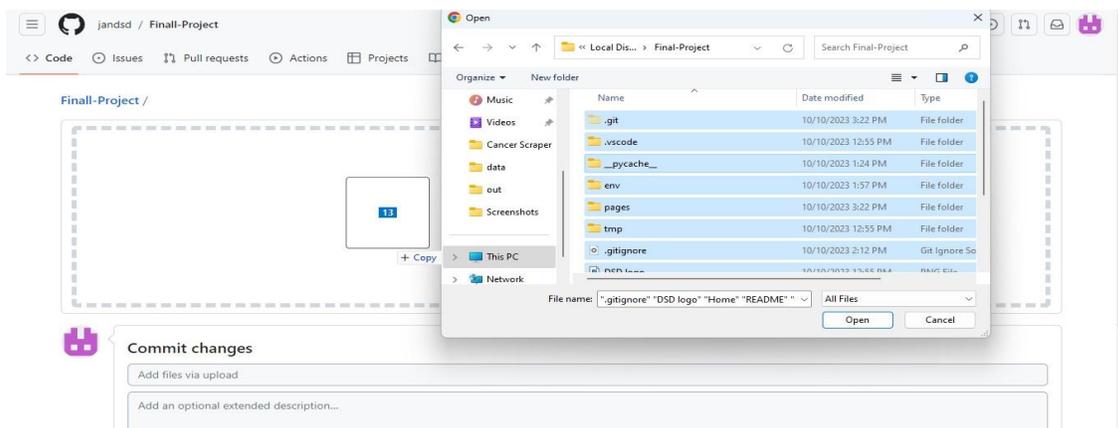
Commit changes

Add files via upload

6. Now, go to **Desktop > Final-Project** and select all files and folders.



7. Use the **drag and drop** option to **upload** the files. (Must do drag and drop otherwise all files will not be uploaded) and will cause problems later.



8. Now, click on **Commit changes**.

Or choose your files



Commit changes

Add files via upload

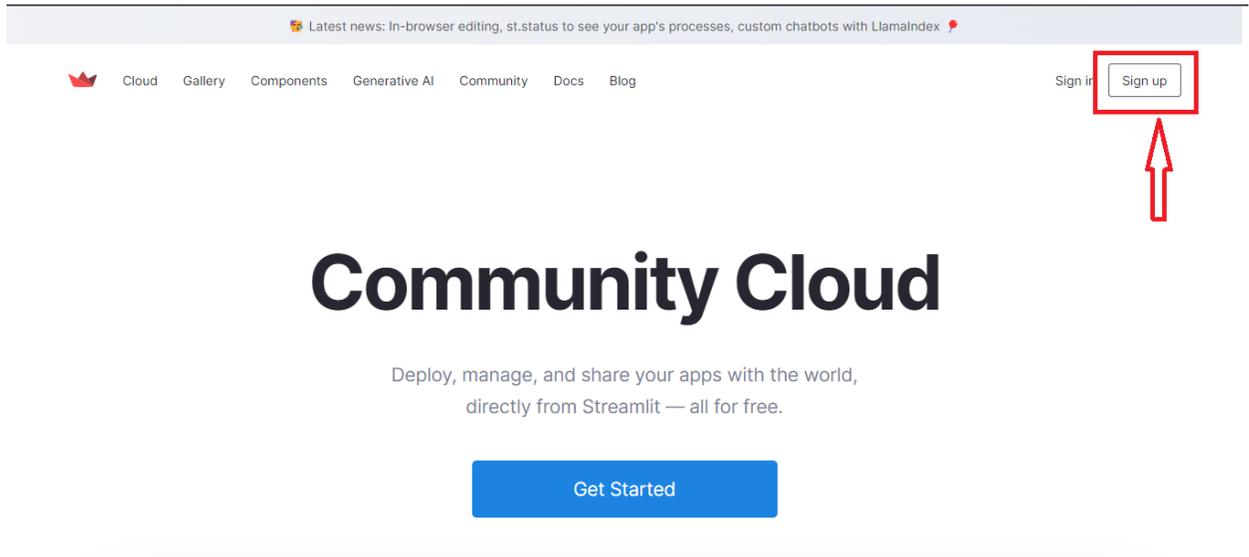
Add an optional extended description...

Commit changes Cancel

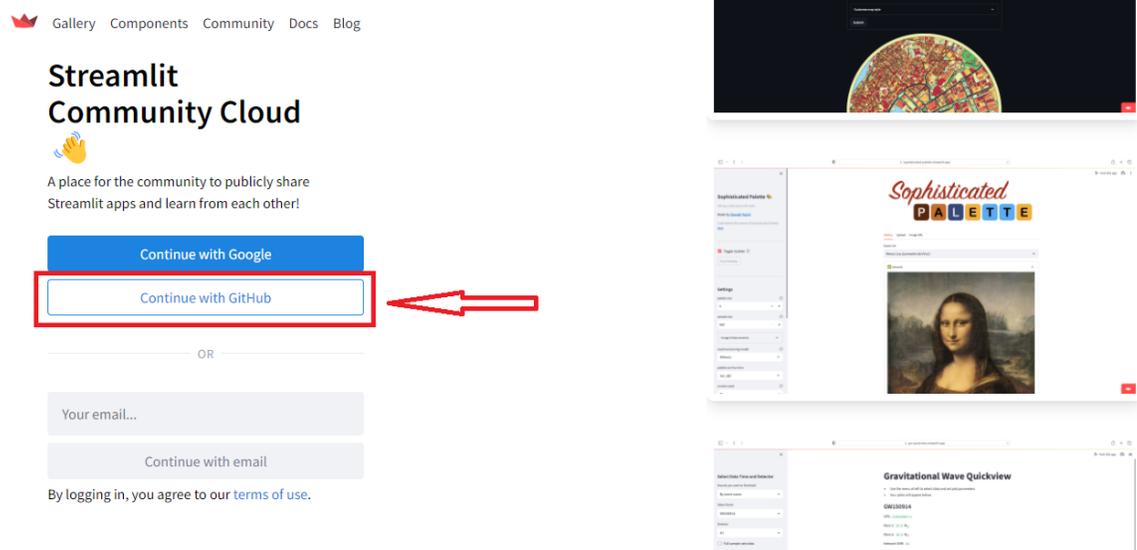
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3.5 Setting Streamlit cloud account

1. Go to the link: <https://streamlit.io/cloud> and from the top right corner click on **sign up** if you don't already have an account

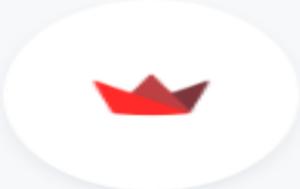


2. You'll see multiple routes to sign up. Since we have learnt how to create a GitHub account we will be following that route and click on **Continue with GitHub**.



The image shows the Streamlit Community Cloud sign-up page on the left and a gallery of Streamlit apps on the right. The sign-up page features a navigation bar with links for Gallery, Components, Community, Docs, and Blog. The main heading is "Streamlit Community Cloud" with a hand icon. Below the heading is the text "A place for the community to publicly share Streamlit apps and learn from each other!". There are two primary sign-up buttons: "Continue with Google" (blue) and "Continue with GitHub" (white with a red border). A red arrow points to the "Continue with GitHub" button. Below these buttons is an "OR" separator, followed by an email input field and a "Continue with email" button. At the bottom, it says "By logging in, you agree to our terms of use." The gallery on the right shows three app thumbnails: a colorful network graph, a "Sophisticated PALETTE" app featuring the Mona Lisa, and a "Gravitational Wave Quickview" app.

3. Click on Continue with GitHub and it will ask you to log in to your GitHub account. Enter your username and password and click on sign in.



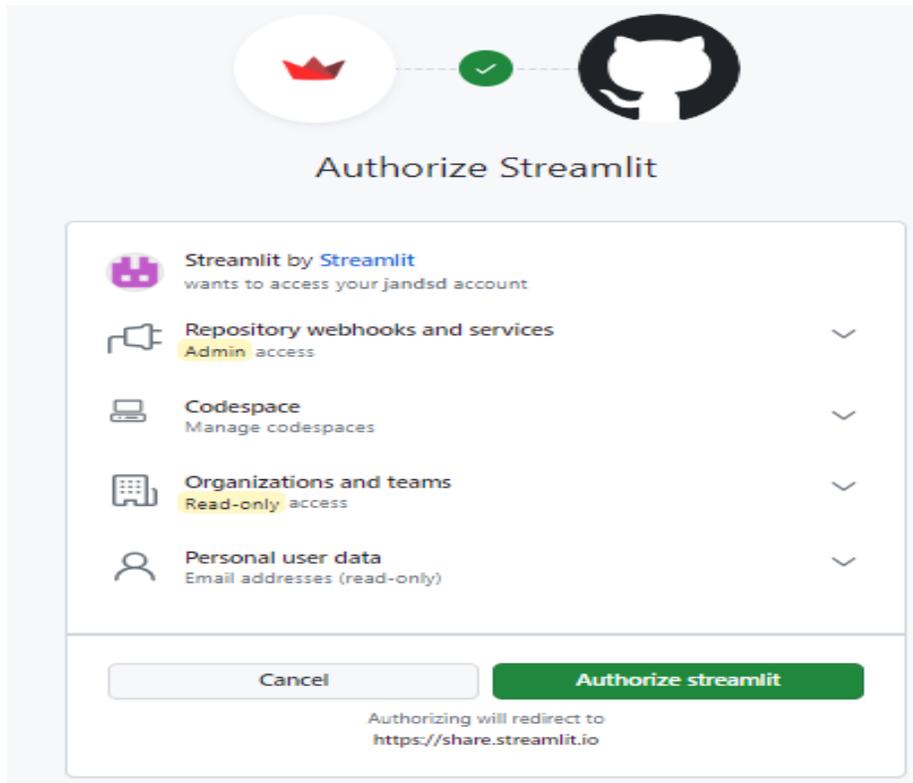
Sign in to **GitHub**
to continue to **Streamlit**

Username or email address

Password [Forgot password?](#)

Sign in

4. Now, it will ask to authorize the Streamlit with Github. Click on **“Authorize Streamlit”**



5. Now, it will ask you to fill out a form to set up your account.

STEP 3 / 3

Set up your account

First Name

required

First

Last Name

Last

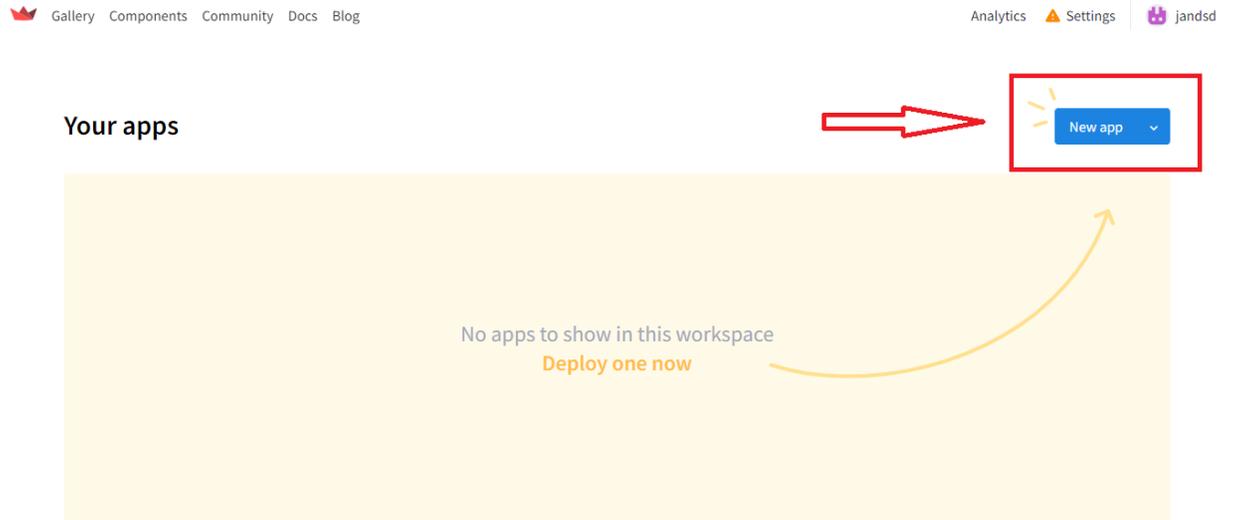
Primary Email

required

Email

3.6 Deploy on Streamlit cloud

1. After setting up your Streamlit account login it and click on **“New app”** on top right.



2. It will ask to **Authorize streamlit**. Press the green button.

Streamlit is requesting additional permissions

 **Streamlit** by Streamlit
would like additional permissions to

 **Repositories**
Public and private

Existing access

- ✓ Full control of repository hooks
- ✓ Full control of codespaces
- ✓ Read org and team membership, read org projects
- ✓ Access user email addresses (read-only)

Authorizing will redirect to
<https://share.streamlit.io>

3. Since you have signed up using GitHub after the authorization it will ask you to select which repository you want to deploy, on which branch, and other related info.
 4. Select the repository on which you have **uploaded** the code. There is a textbox type dropdown with the title repository.
 5. Select the branch if have pushed on another branch. By default the branch is **main**.
 6. Write main file name in our case main file is **Home.py**
 7. After filling out details click on “**Deploy!**”. It will take some time to deploy your app.
-

The screenshot shows a web interface for deploying an application. At the top left, there is a blue arrow and the text 'Back'. The main heading is 'Deploy an app'. Below this, there are several input fields: 'Repository' with the value 'jandsd/Final-Project' and a 'Paste GitHub URL' link; 'Branch' with the value 'main'; 'Main file path' with the value 'Home.py'; and 'App URL (Optional)' with the value 'final-project-w68zrszgfzntymyp5djghfy' and a '.streamlitApp' suffix. Below the App URL field, there is a green message 'Domain is available'. At the bottom left, there is a link 'Advanced settings...'. A red rectangular box highlights the 'Deploy!' button, and a red arrow points to it from the right.

8. Your app will be accessible from the App URL