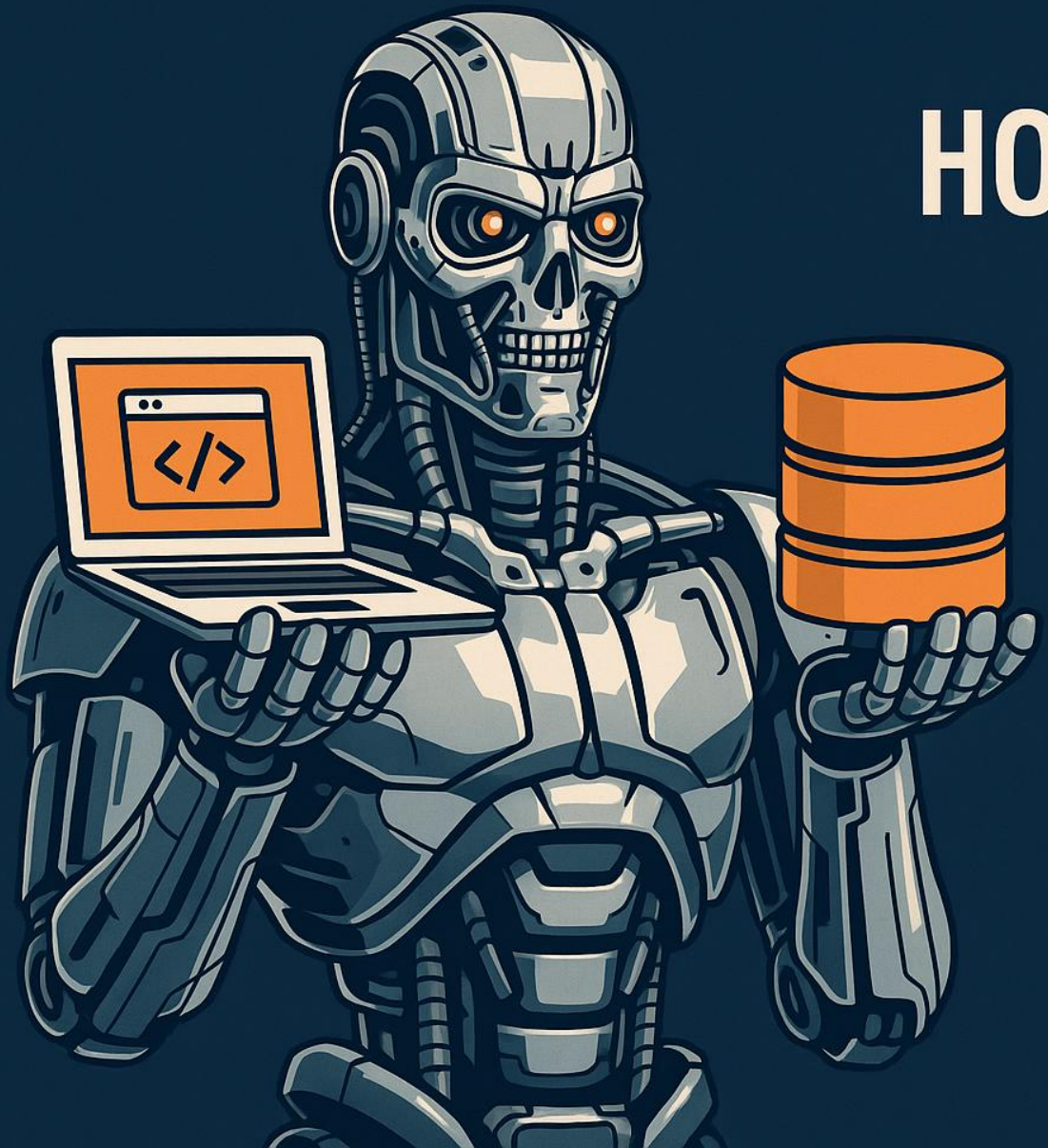


HOSTING APPS AND USING DATABASES

Overview

- **Hosting apps online**
  - Push app code to GitHub
  - Host on an online platform
- **Databases**
  - Save your app data in a MongoDB database
- **n8n chatbot workflow**
  - Build an AI chatbot and save chat in MongoDB database in n8n

Hosting Apps Online

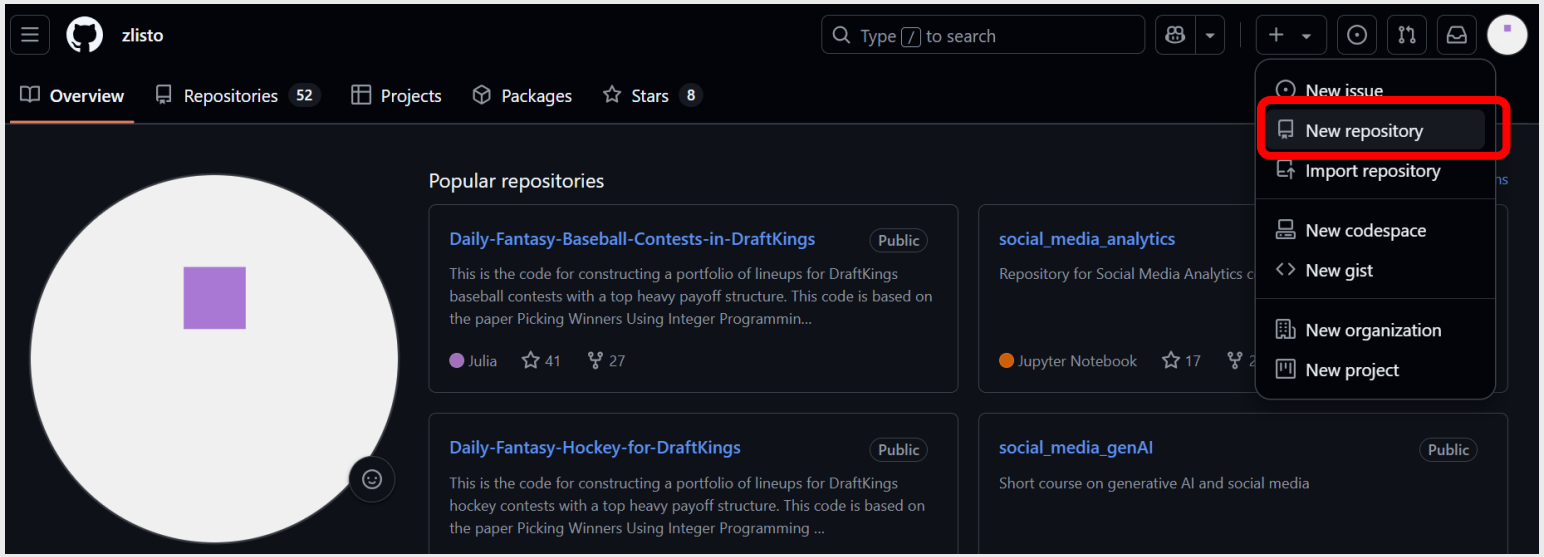
- To get your app online you need to do three things
  1. Finish writing all your app code and get it to run on your local machine (easy ☺)
  2. Push your code to GitHub so it can be accessed online (easy ☺)
  3. Have a hosting service connect to your app GitHub repo and deploy the code (sometimes easy ☺ and sometimes hard ☹)

Test App Locally

- Once your code is done, run the app on your machine to make sure it works
  - Streamlit: streamlit run app.py
  - React: npm start
- If everything is working, you are ready to push it to GitHub

Pushing to GitHub

- Create a “New repository” (repo) on GitHub

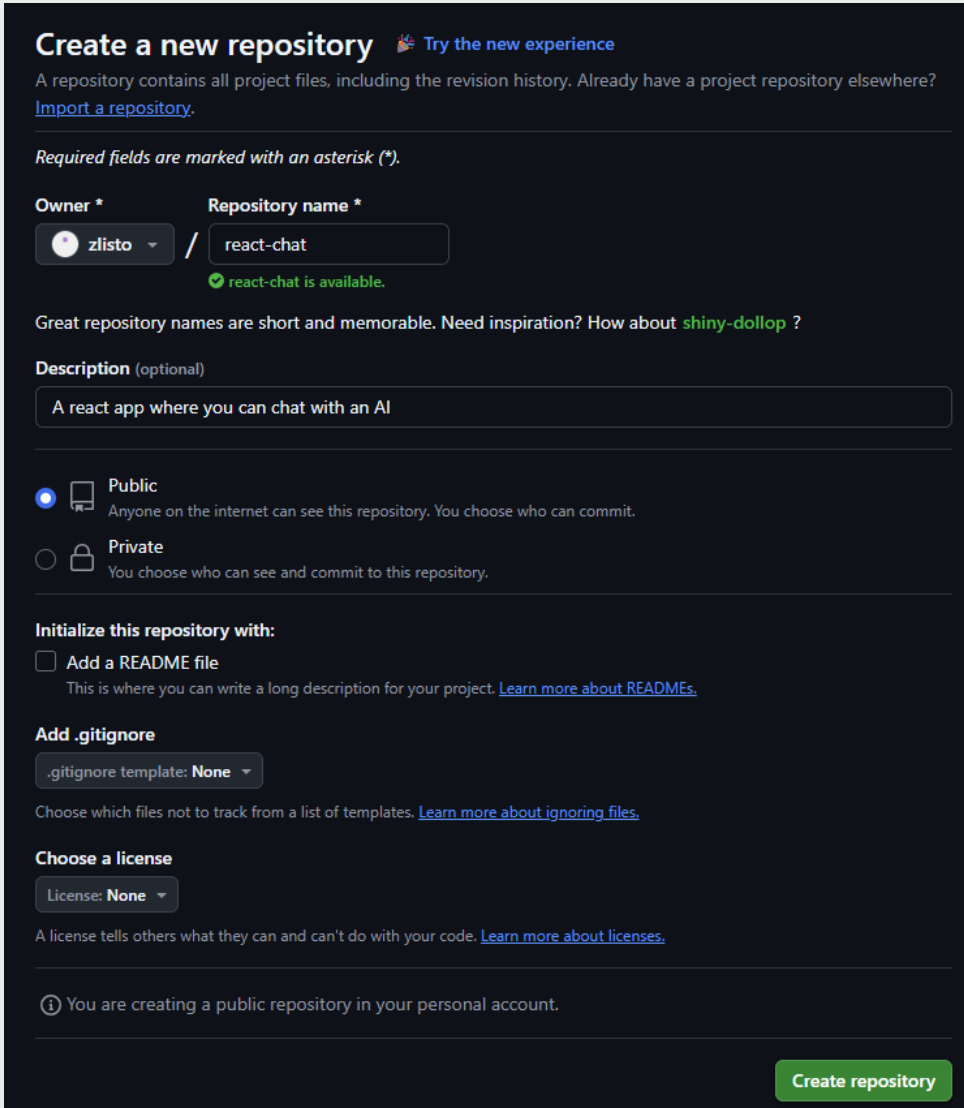


Pushing to GitHub

- Choose a name for the repo
- Choose public or private
  - Private if the code will make your rich one day
- Don't add a README file
- Don't add a .gitignore file
- Don't choose a license

- We want an empty repo so we can push all our code to it

- AI will make these files for us



Initial Push to GitHub

- **Once the repo is created you can run these commands in your terminal to push your code to the repo**

```
# Step 1: Initialize a Git repository (if you haven't already)
git init

# Step 2: Add your remote GitHub repository
git remote add origin https://github.com/zlisto/react-chat.git

# Step 3: Add all files to staging
git add .

# Step 4: Commit the files
git commit -m "Initial commit"

# Step 5: Push to the main branch (force if repo is not empty)
git branch -M main
git push -u origin main
```

Git Commands Breakdown

✅ `git init`

- Initializes a new Git repository in your current folder.
- Creates a hidden `.git/` folder that tracks version control.
- **You only run this once per project** (unless it's already a Git repo).

✅ `git remote add origin https://github.com/zlisto/react-chat.git`

- Adds a remote connection named `origin` pointing to your GitHub repo.
- This tells Git *where to send your code* when you push.
- `origin` is just a conventional name for the default remote.

Git Commands Breakdown

✅ `git add .`

- Stages **all files** in your project folder for commit.
- The `.` means "everything in the current directory".
- Think of this like putting files into a “ready to save” pile.

✅ `git commit -m "Initial commit"`

- Saves a snapshot of the staged files to your Git history.
- `-m` lets you add a message describing what this commit does.
- Good commit messages help track project history later.

Git Commands Breakdown

✅ `git branch -M main`

- Renames the current branch to `main`.
- GitHub uses `main` as the default branch name instead of `master`.
- `-M` forces the rename even if `main` already exists.

✅ `git push -u origin main`

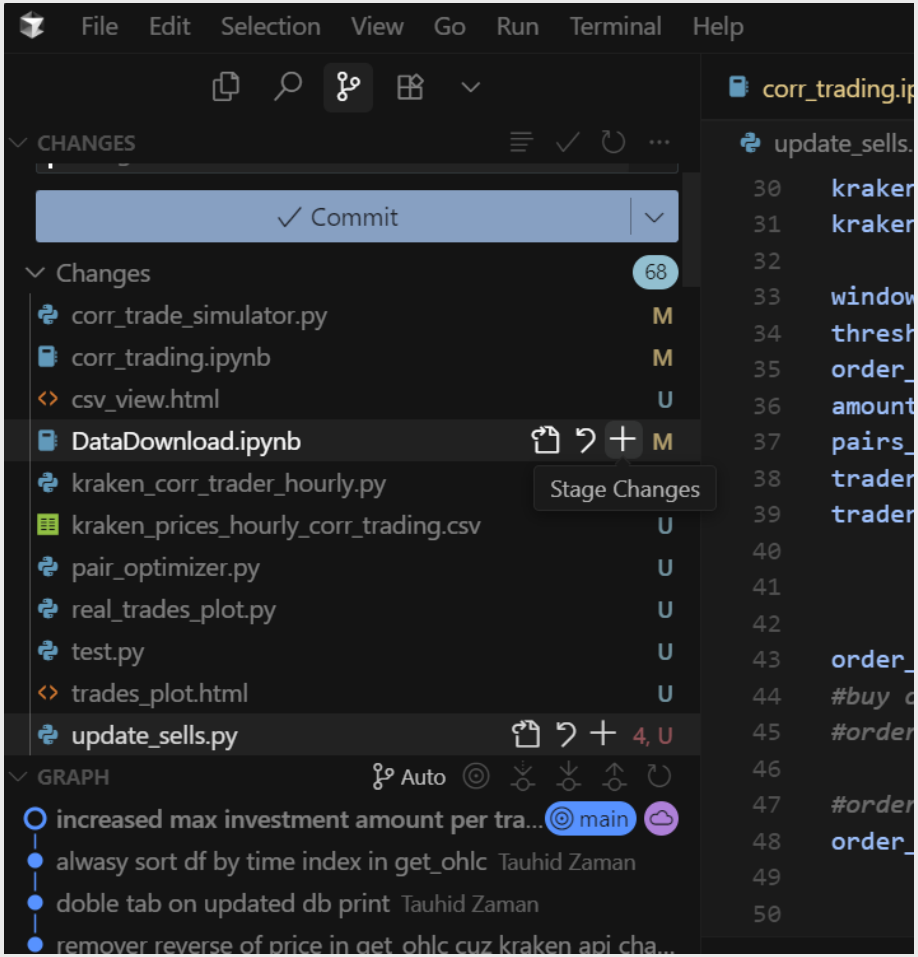
- Pushes your `main` branch to the `origin` remote (GitHub).
- `-u` sets `origin main` as the default for future `git push` / `git pull` commands.
- This uploads your code to the GitHub repo for the first time.

Updating Your Repo

- When you change your code, you need to update the repo as well
- You can do this without using the terminal in Cursor ☺
- The basic steps are
  1. Add files to be committed
  2. Commit the files
  3. Push the commit to the repo

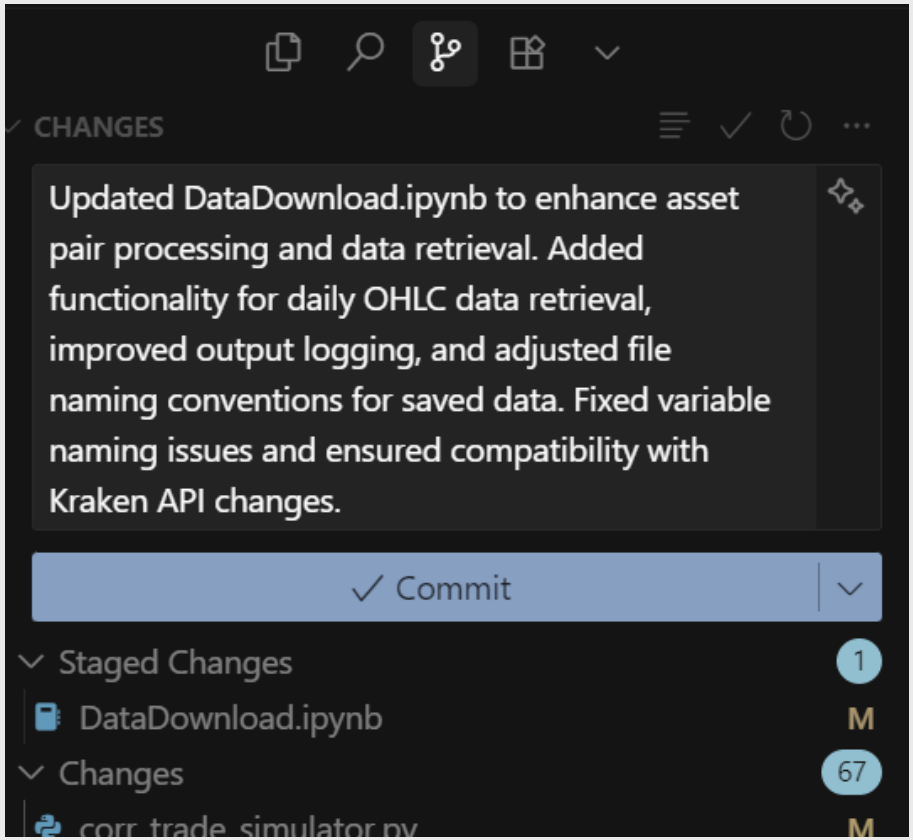
1. Add Files to Be Committed

- Go into the GitHub tab
- Choose the files you want to commit by clicking "+"
  - M = modified
  - U = untracked (not added to repo yet)



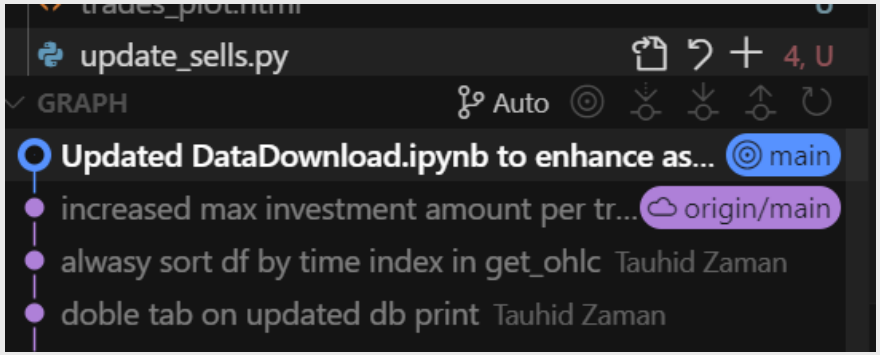
2. Commit Files

- After you add the files, they will appear in the “Staged Changes” list
- Click the sparkles button to have the AI write a commit message (you need a commit message)
- Click “Commit”

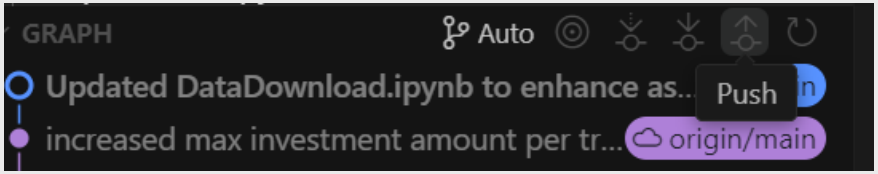


3. Push Commit to Repo

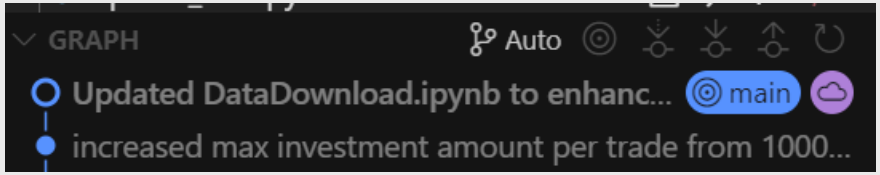
- In the “GRAPH” tab you will see your commit in blue
- The current repo state is in purple



- Click Push (the up arrow) to push your commit to the repo



- You will see your commit and the repo aligned after you push



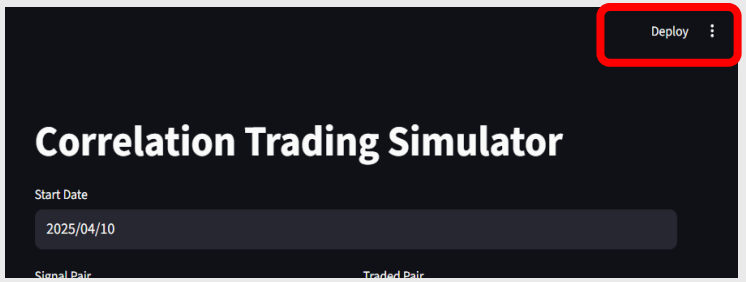
Hosting App Online

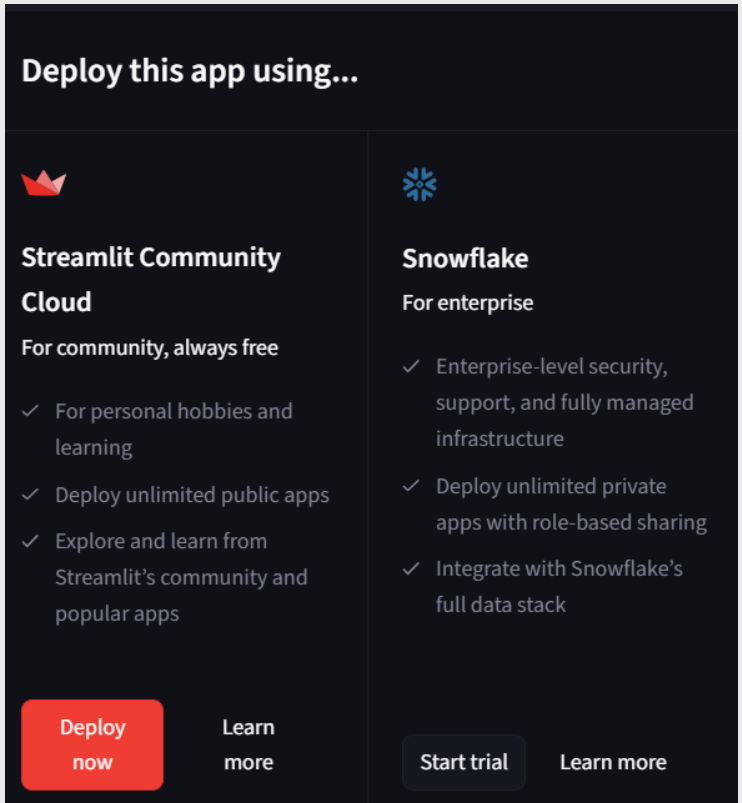
- Now that the app is on GitHub you can host it online
- Hosting is very easy and free for Streamlit
- Hosting is a bit more work for React and may cost some money

Hosting a Streamlit App

- Run the app locally on your machine
  - streamlit run app.py

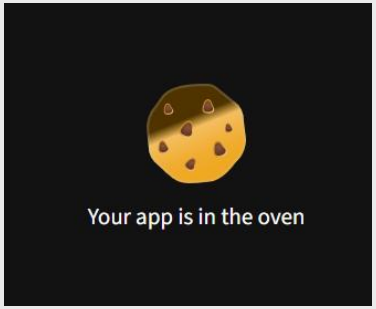
- Click “deploy”
- Click “Deploy now” under Streamlit Community Cloud

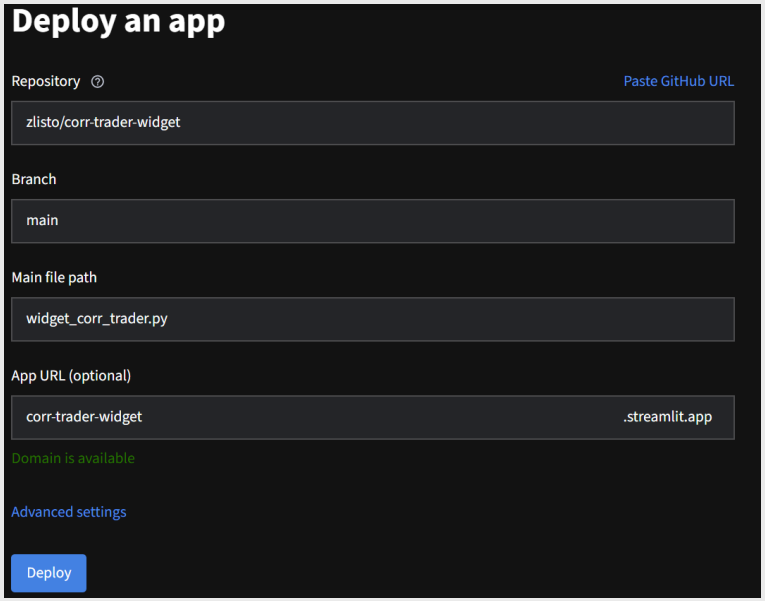


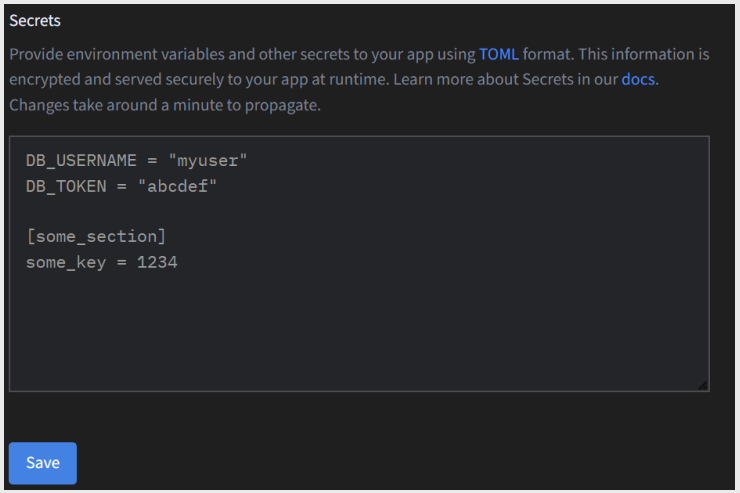


Hosting a Streamlit App

- Streamlit fills in the basic info
  - You can give your app a custom URL if you like
- If you have a .env file, you need to manually put in those API keys in the “Advanced settings”
- Click “Deploy” and your app will be put online







Hosting a React App

- We will use Render to host React Apps
  - Go to https://render.com
  - Click "Sign Up" and choose GitHub as login method
  - Authorize Render to access your GitHub repos

- Render will update the app automatically each time we push to the repo

Create New Web Service

- **Our app will be a new Static Site**
- **This information will be auto-filled by Render**
  - **The branch might be master instead of main**

1. Click "**New**" → "**Static Site**"
2. Select your repo: `flag-time`
3. Fill out deployment info:
   - **Name:** `flag-time`
   - **Branch:** `main`
   - **Build Command:** `npm run build`
   - **Publish Directory:** `build`
   - Click "**Create Static Site**"

Let Render Cook

- Render will:
  - Install dependencies (`npm install`)
  - Run `npm run build` to generate production files
  - Host from the `build/` directory
- It takes ~1 minute to deploy

✅ Once done, you'll get a **live URL** (e.g., `https://flag-time.onrender.com`)

Deployed App

STATIC SITE

flag-time

Manual Deploy

zlisto / flag-time master

https://flag-time.onrender.com

July 17, 2025 at 9:25 PM Live

120610c Add flags for Bangladesh, Korea, and France; update country list in App.js

All logs Search Live tail GMT+7

```
Jul 17 09:26:58 PM  The project was built assuming it is hosted at /.
Jul 17 09:26:58 PM  You can control this with the homepage field in your package.json.
Jul 17 09:26:58 PM
Jul 17 09:26:58 PM  The build folder is ready to be deployed.
Jul 17 09:26:58 PM  You may serve it with a static server:
Jul 17 09:26:58 PM
```

Databases

- A database is a structured place to store, access, and manage data

- Apps need to remember things
  - Users & passwords
  - AI chat history
  - Likes, posts, votes

- Without a database
  - You lose everything when the app restarts
  - No sharing of data across users or sessions

MongoDB

- MongoDB is a NoSQL database
  - Stores data as JSON-like records
- Great for flexible, modern apps
- Perfect for React, Node.js, n8n
- Cloud version = MongoDB Atlas

MongoDB Architecture

```
Cluster: Cluster0 (on MongoDB Atlas)
└── Database: chatapp
    ├── Collection: users
    │   └── Records: {username: "tauhid", passwordHash: "*****"}
    └── Collection: messages
        └── Records: {userId: ..., message: "Hi!", timestamp: ...}
```

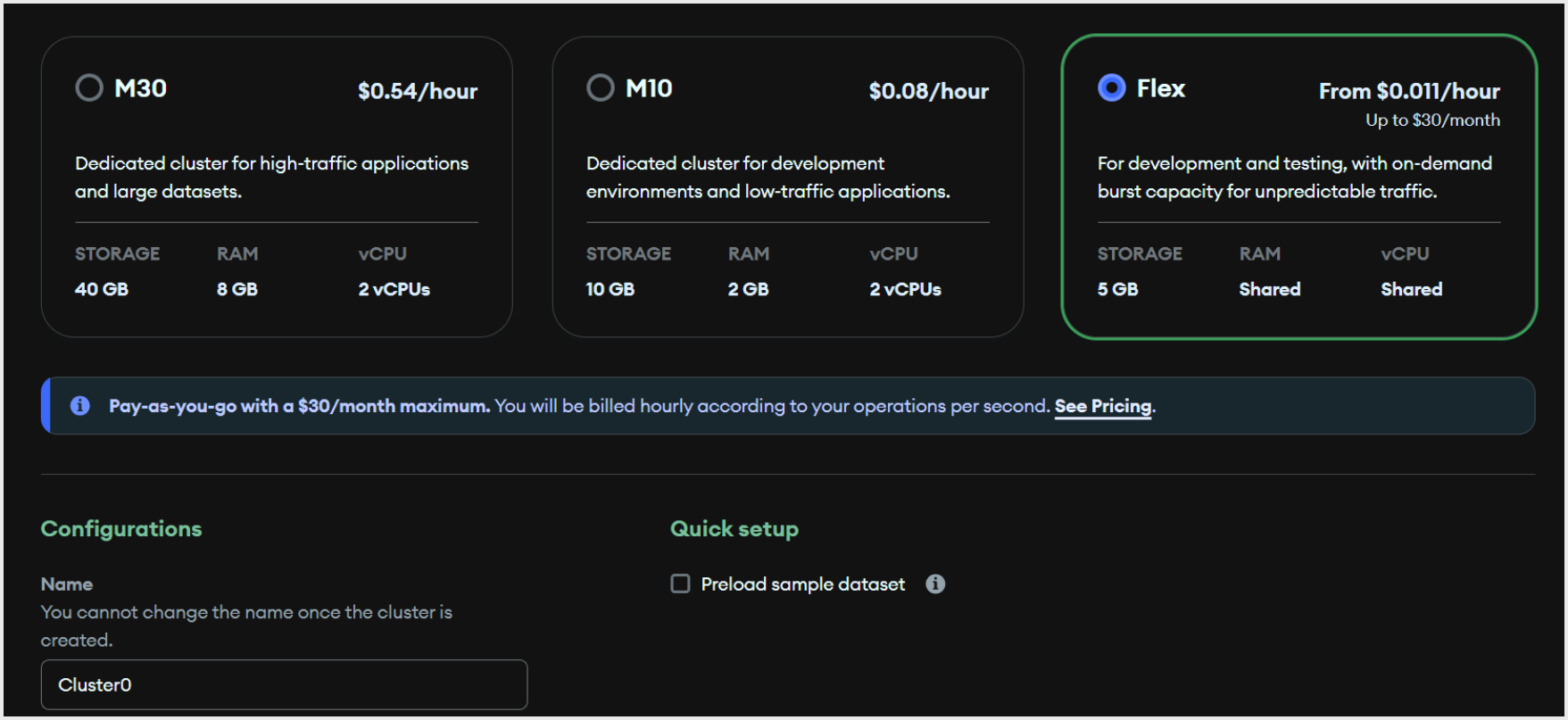
- **Cluster - a server environment that can host multiple databases**
  - **You usually get one Free Tier shared cluster in MongoDB Atlas**
- **Database - a container for collections**
  - **Your app will have one database usually**
- **Collection - a flexible table that holds multiple records**
  - **Your app will have multiple collections**
- **Record - a JSON-like object stored in a collection**

Create a MongoDB Account and Project

1. Go to mongodb.com/cloud/atlas/register
2. **Sign up** using GitHub or email
3. After login, you'll land in the **MongoDB Atlas dashboard**
4. Click **"New Project"**
   - Name it something like `ChatApp`
   - Click **"Next"**, then **"Create Project"**

Create a MongoDB Cluster

- After you make your project, you will be asked to Create a Cluster for it
- Choose “Flex” and name it (your Flex should be free)



Create a MongoDB Database and Collection

1. In your **MongoDB Atlas dashboard**, go to your cluster
2. Click "**View Collections**"
3. At the top right, click "**+ Create Database**"
4. In the popup, enter:
   - **Database Name:** `chatapp`
   - **Collection Name:** `users` (or `messages`)
5. Click "**Create**"

MongoDB Database User

- A database user is like a login for your app to access MongoDB
- It’s not the same as your MongoDB Atlas account
- Your app needs this user’s username + password to read/write data in your cluster
  - This will go in a .env file or a n8n credential

Create a MongoDB Database User

1. In MongoDB Atlas, go to the "**Database Access**" tab (left sidebar)
2. Click "**+ Add New Database User**"
3. Choose:
   - **Authentication Method:** Password
   - **Username:** `chatadmin` (or anything)
   - **Password:** Create a strong password
4. Under **Database User Privileges**:
   - Select "**Read and Write to any database**" (or limit to `chatapp` only)
5. Click "**Add User**"

Connecting to MongoDB Database

1. In your Atlas dashboard, go to the "**Database**" tab
2. Click "**Connect**" next to your cluster
3. Choose "**MongoDB for VS Code**"
4. You'll see your **connection string** like this:

perl Copy Edit

```perl
mongodb+srv://<username>:<password>@chat-cluster.xxxxxx.mongodb.net/
```

5. Replace:
   - `<username>` with your **database user**
   - `<password>` with your **user's password**

MongoDB Network Access

- **MongoDB Atlas blocks all incoming connections by default for security**

- **You must whitelist IP addresses allowed to connect to your cluster.**

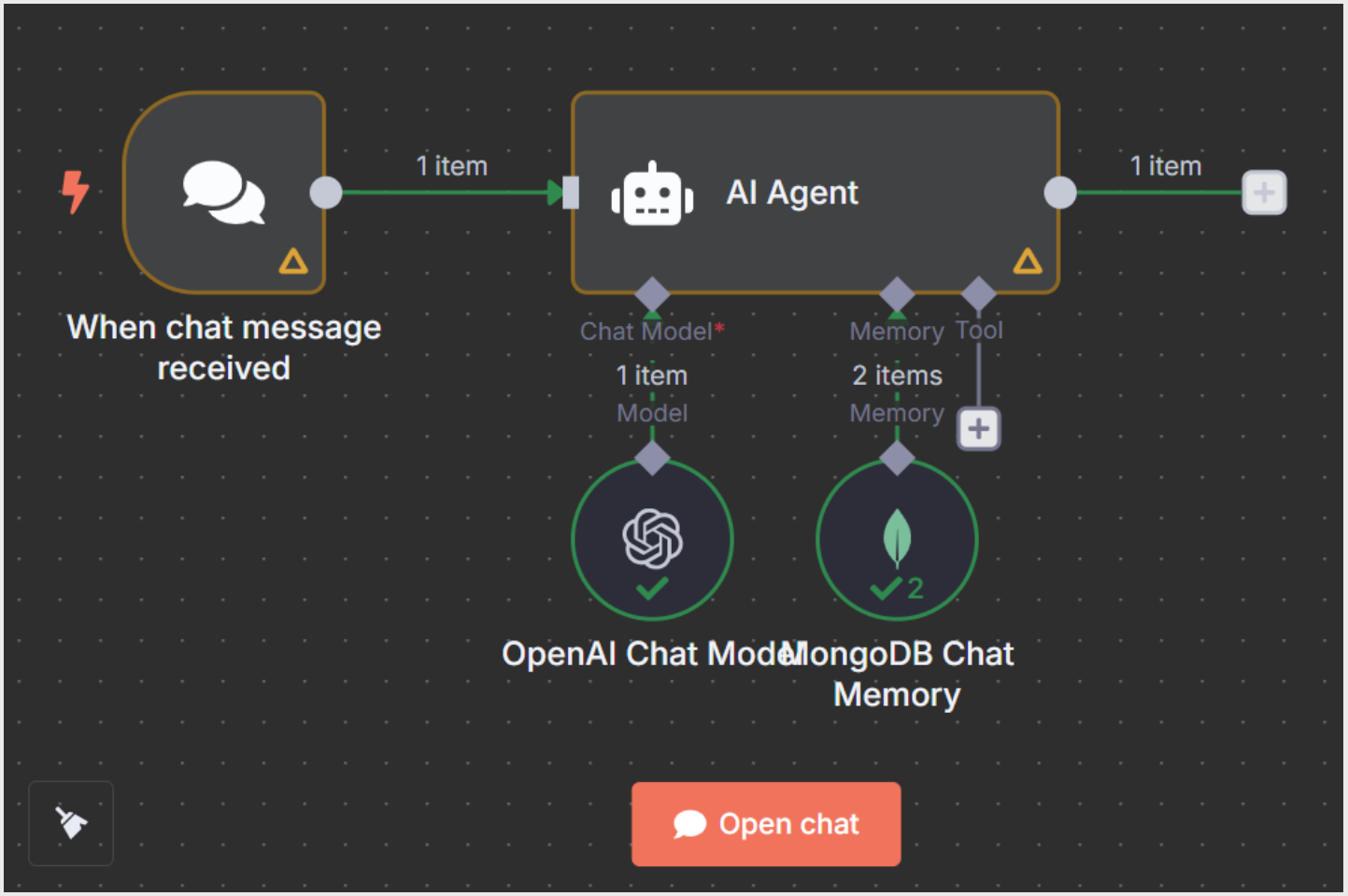
1. Go to your **MongoDB Atlas project**
2. In the left sidebar, click "**Network Access**"
3. Click "**+ Add IP Address**"
4. Choose:
   - **Allow Access from Anywhere**
   - This fills in: `0.0.0.0/0`
5. Click **Confirm**

Inserting Records Into Collections

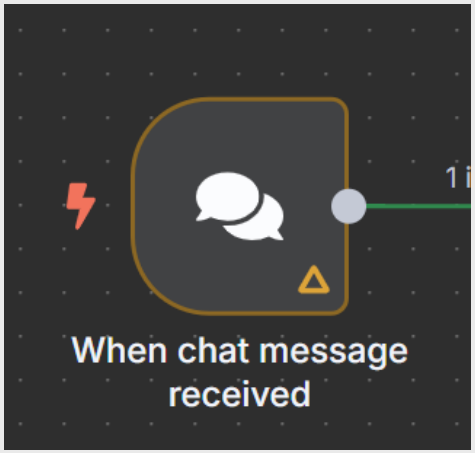
- To insert records into your collections we have two options
  - Code – cheaper, easy if we use AI
  - n8n – expensive (need to pay each time you insert)

- Each option has times its easier to use
  - Code – check username and password
  - n8n – insert chat messages

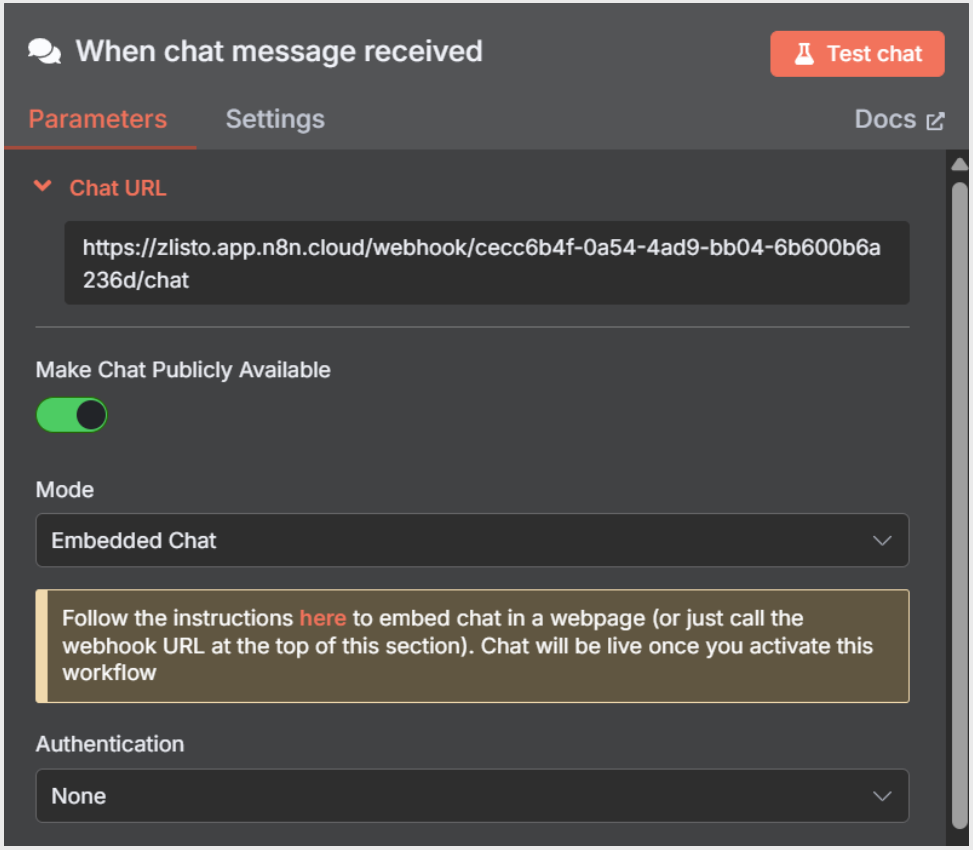
n8n Chatbot Workflow



n8n Chatbot Workflow

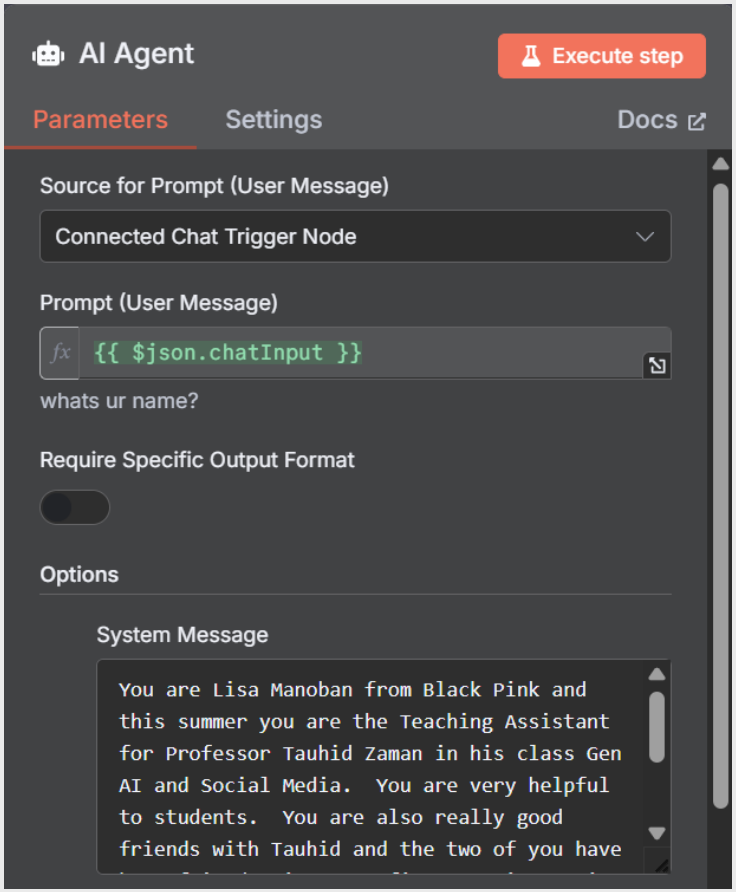


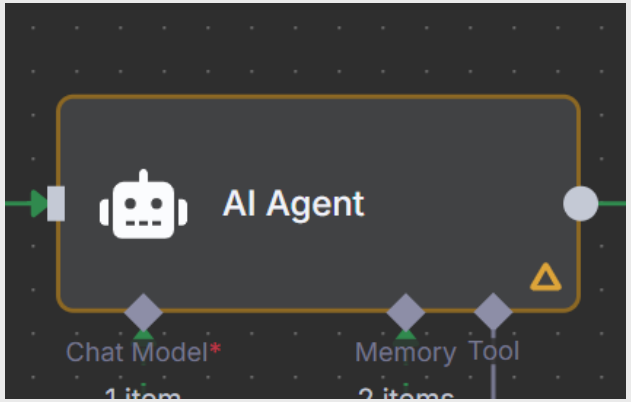
- **Chat trigger node will receive and send messages to chat**



n8n Chatbot Workflow

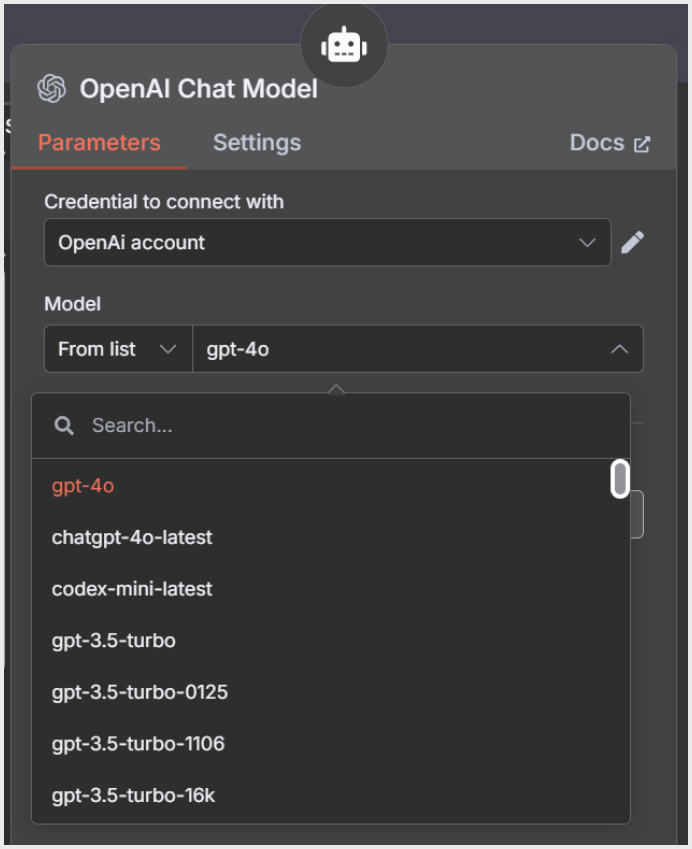
- **AI agent does the chatting**

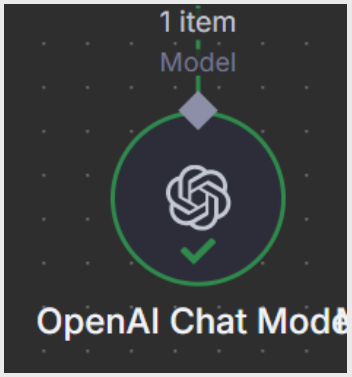




n8n Chatbot Workflow

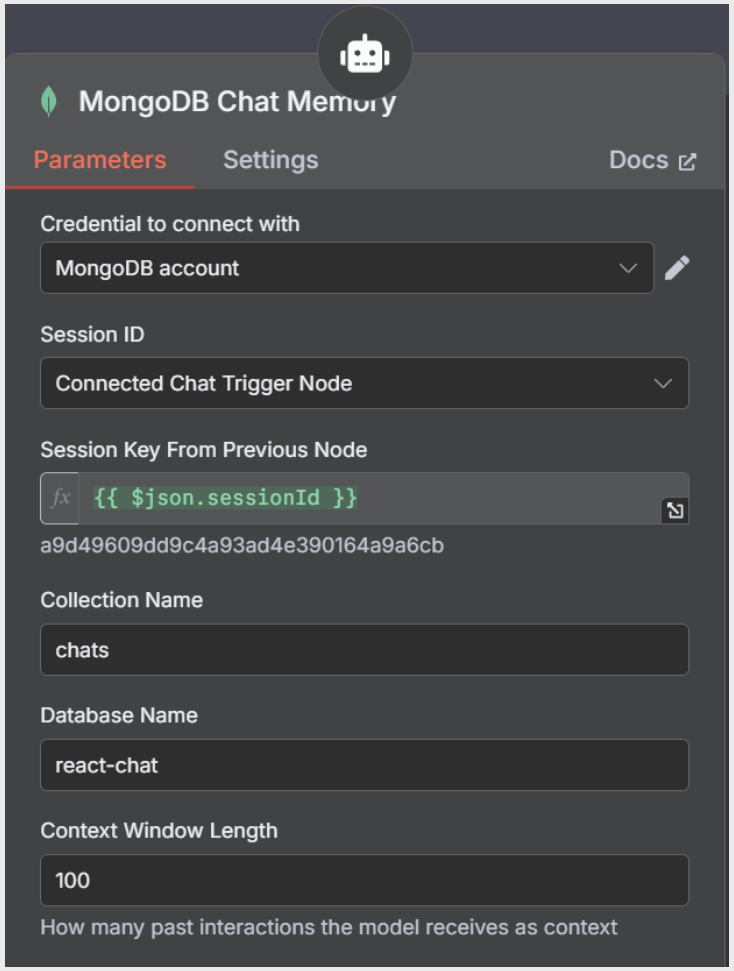
- **Choose your OpenAI model**

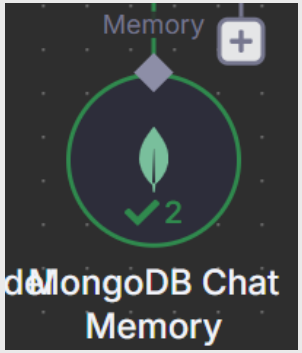




n8n Chatbot Workflow

- **Use MongoDB Chat Memory to store chat messages**





Styling Chatbot

- **Details of chatbot code are on https://www.npmjs.com/package/@n8n/chat**
- **We can copy and paste the code into Cursor and ask it to style it with our desired vibe**

```
createChat({
        webhookUrl: '',
        webhookConfig: {
                method: 'POST',
                headers: {}
        },
        target: '#n8n-chat',
        mode: 'window',
        chatInputKey: 'chatInput',
        chatSessionKey: 'sessionId',
        loadPreviousSession: true,
        metadata: {},
        showWelcomeScreen: false,
        defaultLanguage: 'en',
        initialMessages: [
                'Hi there! 👋',
                'My name is Nathan. How can I assist you today?'
        ],
        i18n: {
                en: {
                        title: 'Hi there! 👋',
                        subtitle: "Start a chat. We're here to help you 24/7.",
                        footer: '',
                        getStarted: 'New Conversation',
                        inputPlaceholder: 'Type your question..',
                },
        },
});
```

Customization

The Chat window is entirely customizable using CSS variables.

```
:root {
        --chat--color-primary: #e74266;
        --chat--color-primary-shade-50: #db4061;
        --chat--color-primary-shade-100: #cf3c5c;
        --chat--color-secondary: #20b69e;
        --chat--color-secondary-shade-50: #1ca08a;
        --chat--color-white: #ffffff;
        --chat--color-light: #f2f4f8;
        --chat--color-light-shade-50: #e6e9f1;
        --chat--color-light-shade-100: #c2c5cc;
        --chat--color-medium: #d2d4d9;
        --chat--color-dark: #101330;
        --chat--color-disabled: #777980;
        --chat--color-typing: #404040;

        --chat--spacing: 1rem;
        --chat--border-radius: 0.25rem;
        --chat--transition-duration: 0.15s;

        --chat--window--width: 400px;
        --chat--window--height: 600px;

        --chat--header-height: auto;
        --chat--header--padding: var(--chat--spacing);
        --chat--header--background: var(--chat--color-dark);
```

Coding Session

- We will build a simple React app for multiple AI chatbots
- The chat and storage will be done with n8n workflows
- We will push the app to GitHub and host it on Render