

# 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

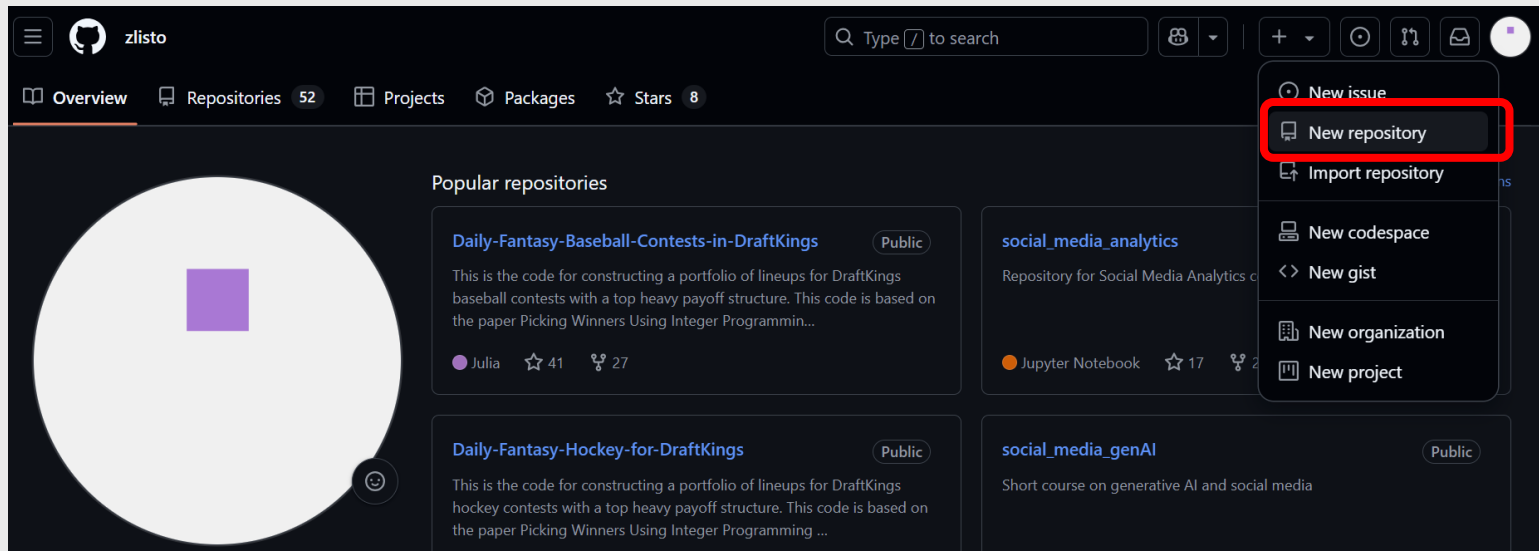
- **To get your app online you need to do three things**
  - 1. Finish writing all your app code and get it to run on your local machine (easy 😊)**
  - 2. Push your code to GitHub so it can be accessed online (easy 😊)**
  - 3. Have a hosting service connect to your app GitHub repo and deploy the code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

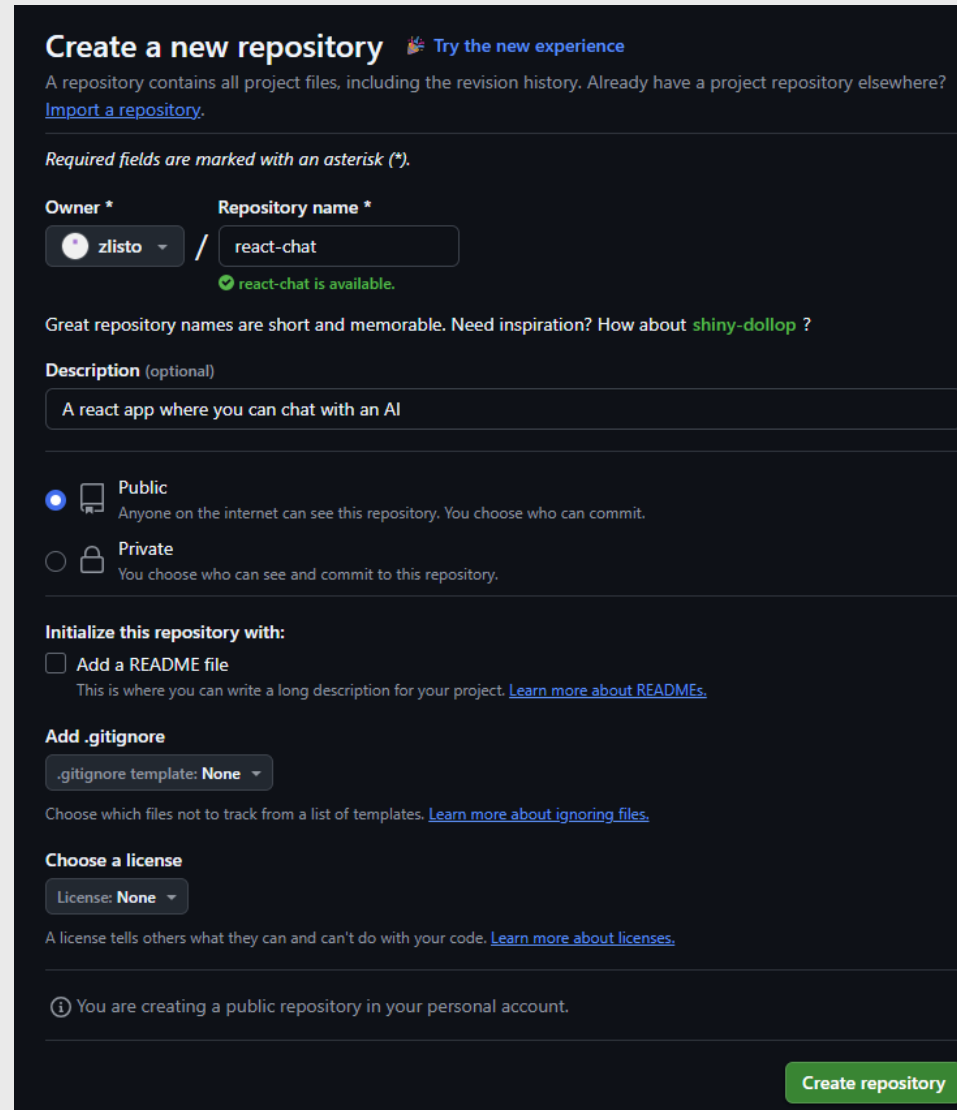
# Pushing to GitHub

- 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



**Create a new repository** 🚀 [Try the new experience](#)

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 \***

🟢 react-chat is available.

Great repository names are short and memorable. Need inspiration? How about [shiny-dollop](#) ?

**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.

[Create repository](#)

# 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
```



# Initial Commit to GitHub

## Initial Commit

## Pushing Changes

### 1. Initialize Git

`git init` in your project folder terminal.

### 2. Add Remote

- In Git sidebar → ... → Remote → Add Remote
- Name: `origin`
- URL: `https://github.com/<username>/<github-repo-name>.git`

### 3. Publish Branch

Click the **Publish Branch** button in the Git panel.

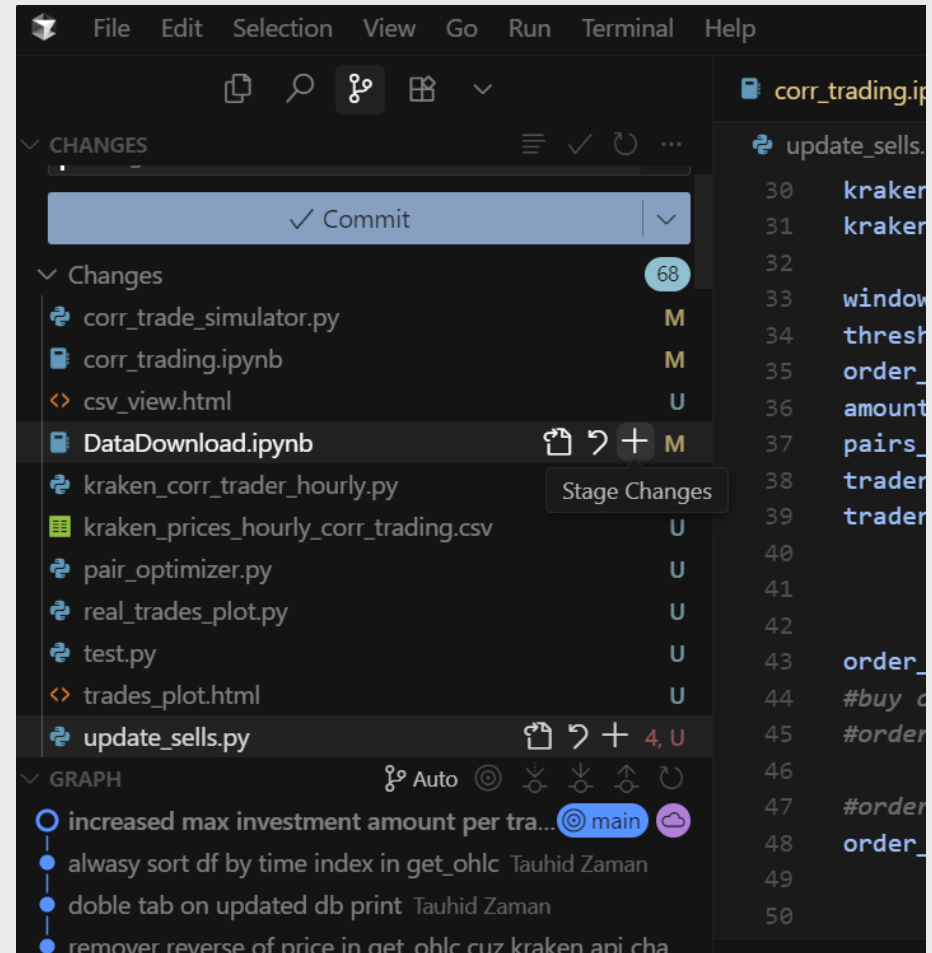


# Updating Your Repo

- 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

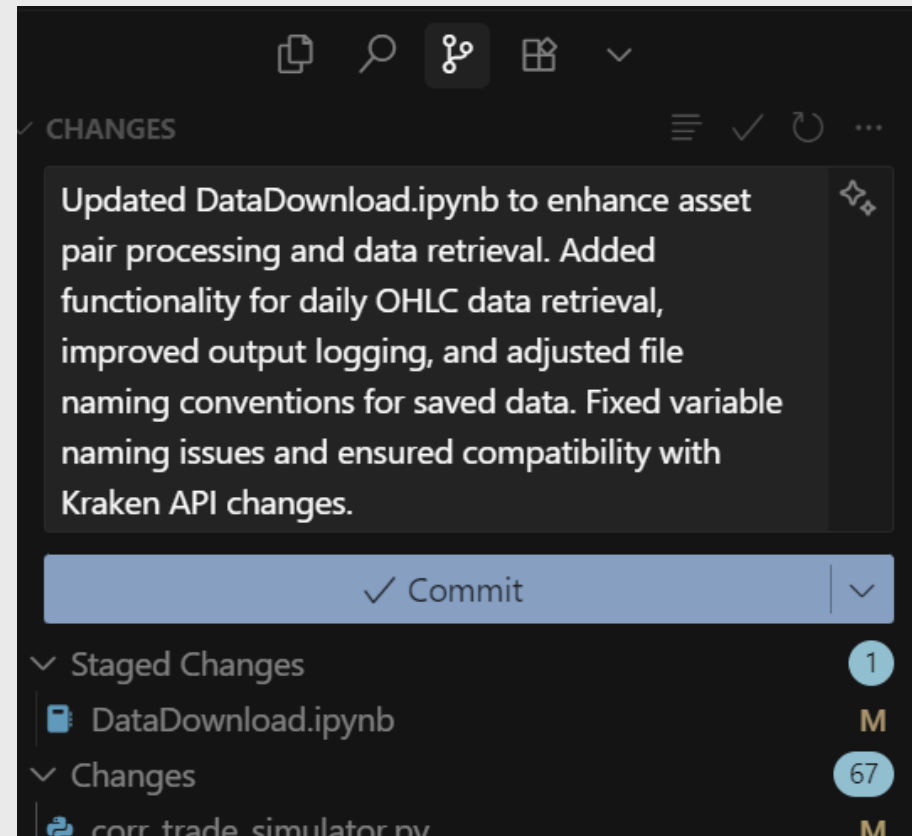
# 1. Add Files to Be Committed

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



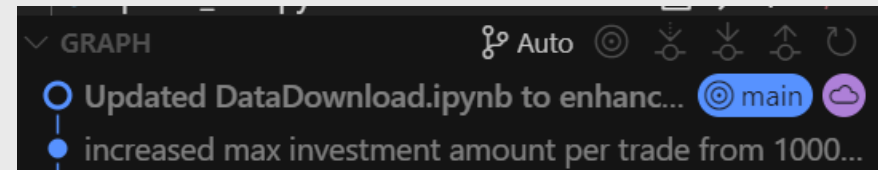
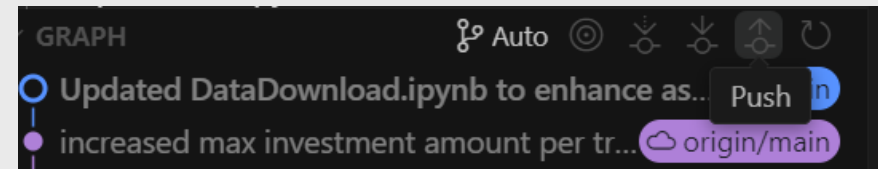
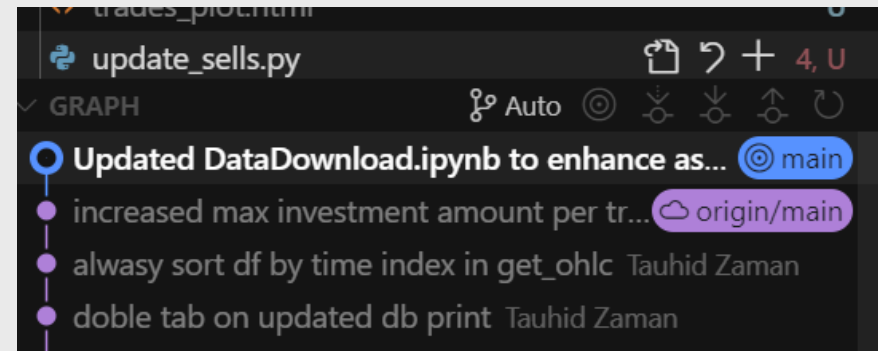
## 2. Commit Files

- 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

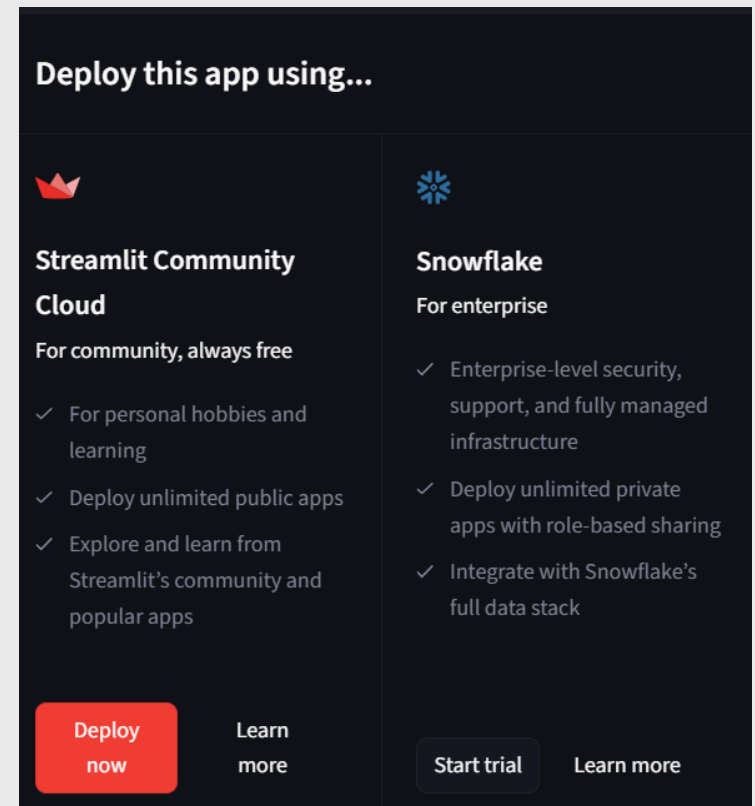
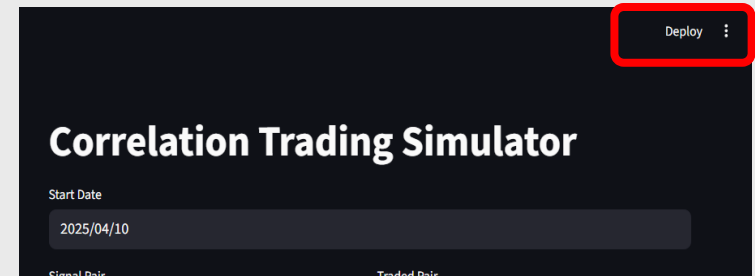


# Hosting App Online

- 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

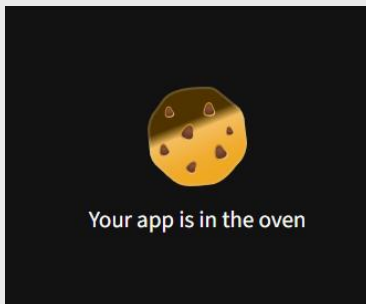
# Hosting a Streamlit App

- 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



### Deploy an app

Repository ⓘ [Paste GitHub URL](#)

zlisto/corr-trader-widget

Branch

main

Main file path

widget\_corr\_trader.py

App URL (optional)

corr-trader-widget .streamlit.app

Domain is available

[Advanced settings](#)

Deploy

### Secrets

Provide environment variables and other secrets to your app using [TOML](#) format. This information is encrypted and served securely to your app at runtime. Learn more about Secrets in our [docs](#). Changes take around a minute to propagate.

```
DB_USERNAME = "myuser"
DB_TOKEN = "abcdef"

[some_section]
some_key = 1234
```

Save

# 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 


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](https://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)

☐ **M30** **\$0.54/hour**

Dedicated cluster for high-traffic applications and large datasets.

STORAGE	RAM	vCPU
40 GB	8 GB	2 vCPUs

☐ **M10** **\$0.08/hour**

Dedicated cluster for development environments and low-traffic applications.

STORAGE	RAM	vCPU
10 GB	2 GB	2 vCPUs

☒ **Flex** **From \$0.011/hour**  
Up to \$30/month

For development and testing, with on-demand burst capacity for unpredictable traffic.

STORAGE	RAM	vCPU
5 GB	Shared	Shared

**i** Pay-as-you-go with a \$30/month maximum. You will be billed hourly according to your operations per second. [See Pricing.](#)

### Configurations

**Name**  
You cannot change the name once the cluster is created.

### Quick setup

☐ Preload sample dataset **i**



# 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

```
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

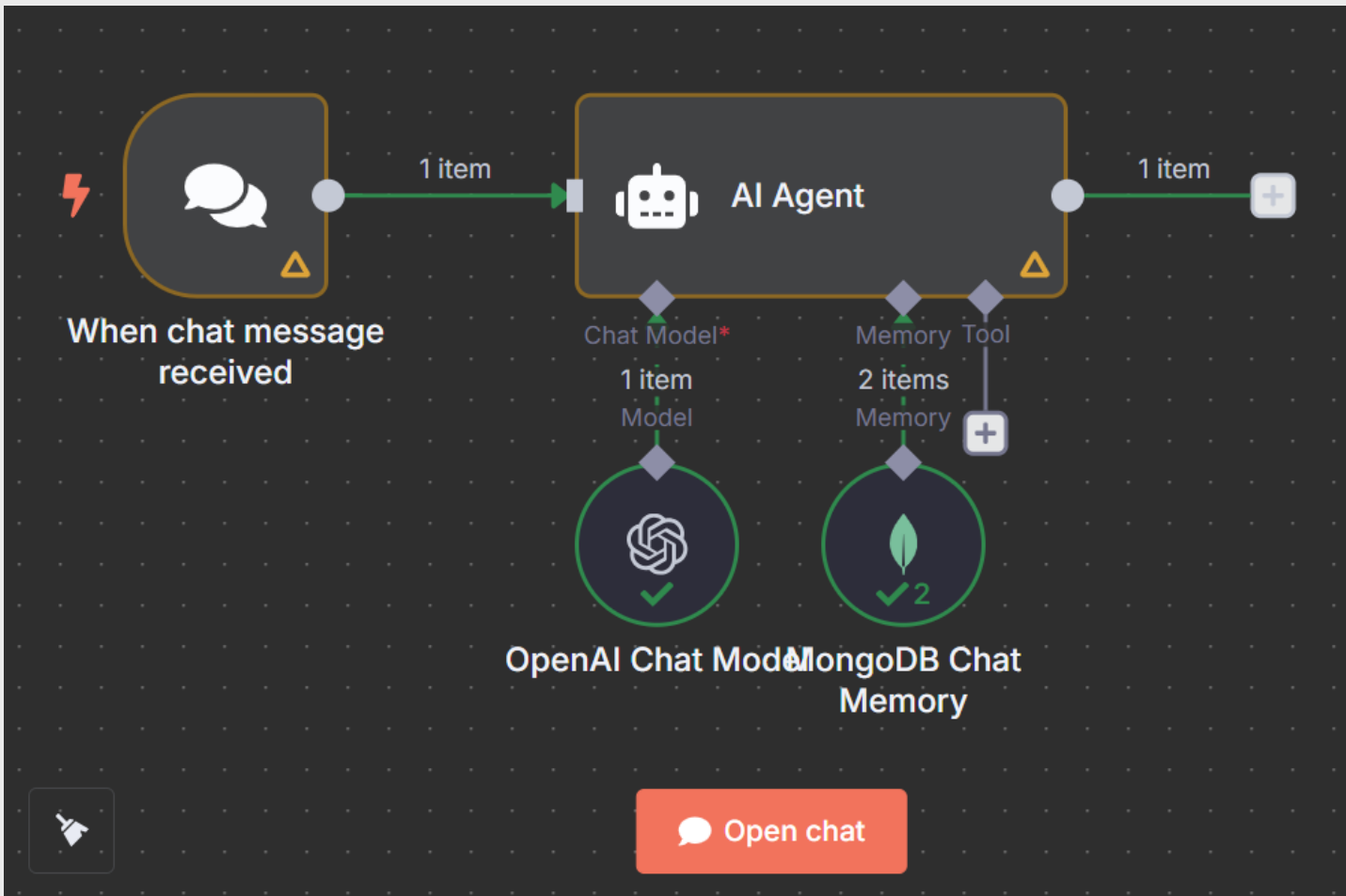
- MongoDB Atlas blocks all incoming connections by default for security
- You must whitelist IP addresses allowed to connect to your cluster.

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

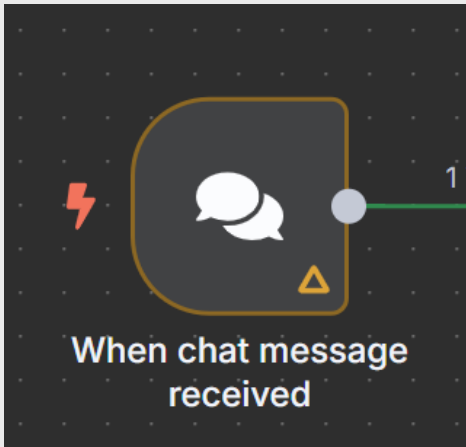
# **Inserting Records Into Collections**

- **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

When chat message received

Test chat

ParametersSettingsDocs

Chat URL

https://zlisto.app.n8n.cloud/webhook/cecc6b4f-0a54-4ad9-bb04-6b600b6a236d/chat

Make Chat Publicly Available

Mode

Embedded Chat

Follow the instructions [here](#) to embed chat in a webpage (or just call the webhook URL at the top of this section). Chat will be live once you activate this workflow


Authentication

None



# n8n Chatbot Workflow

- AI agent does the chatting

 AI Agent

Execute step

Parameters

Settings

Docs

Source for Prompt (User Message)

Connected Chat Trigger Node

Prompt (User Message)

fx

{{ \$json.chatInput }}

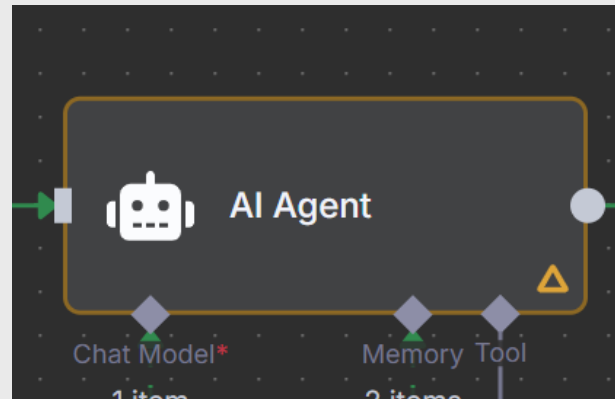
whats ur name?

Require Specific Output Format

Options

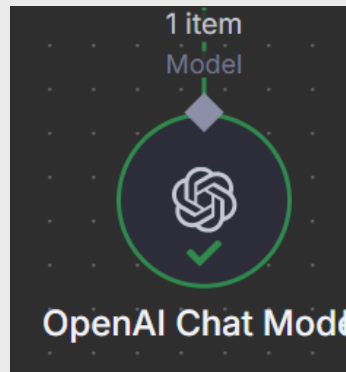
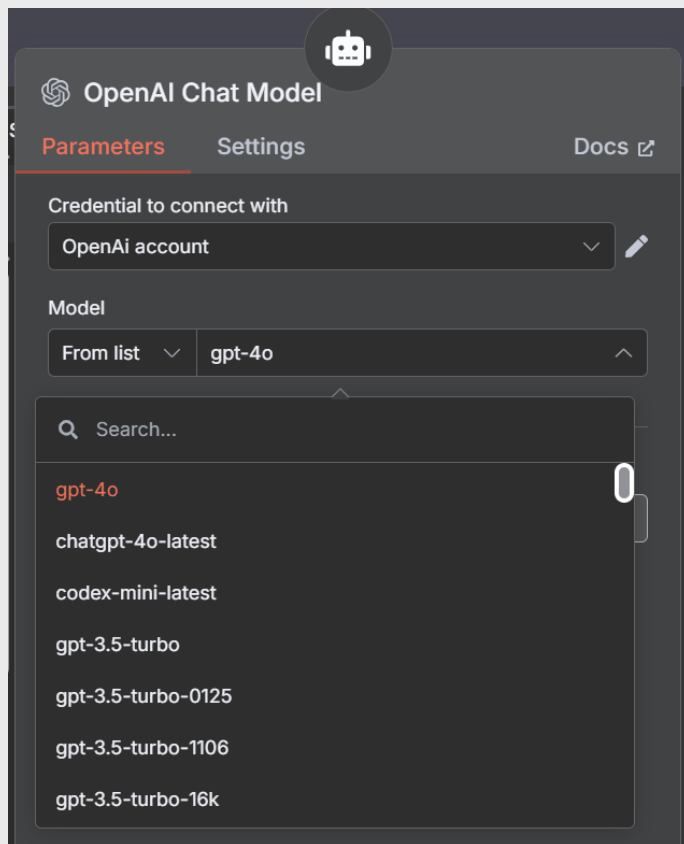
System Message

You are Lisa Manoban from Black Pink and this summer you are the Teaching Assistant for Professor Tauhid Zaman in his class Gen AI and Social Media. You are very helpful to students. You are also really good friends with Tauhid and the two of you have



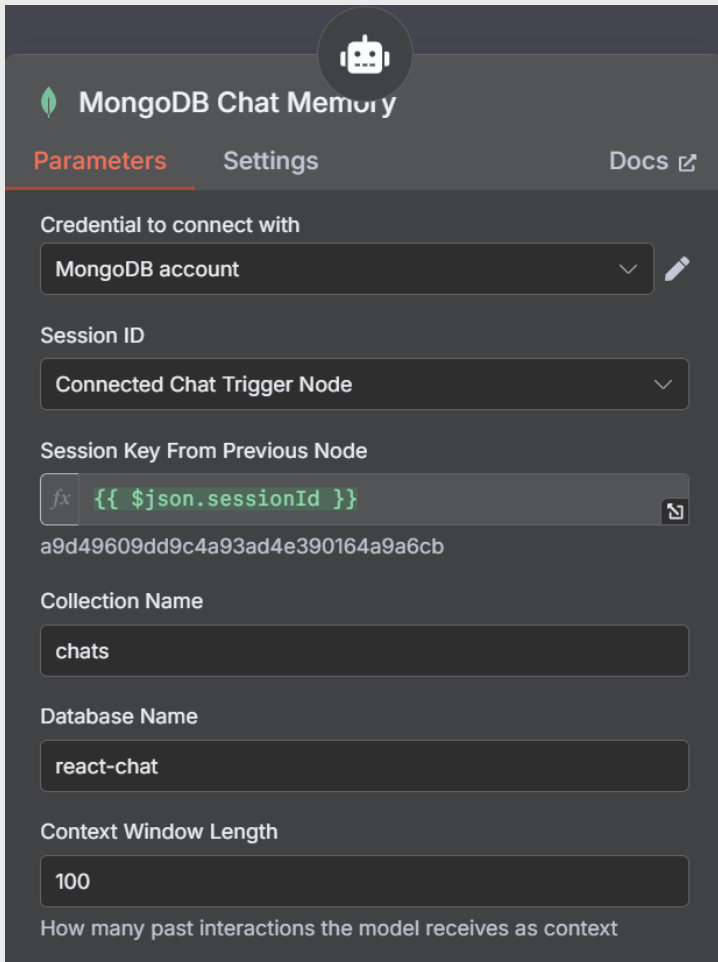
# n8n Chatbot Workflow

- Choose your OpenAI model



# n8n Chatbot Workflow

- Use MongoDB Chat Memory to store chat messages



The image shows the configuration interface for the 'MongoDB Chat Memory' node in n8n. The interface is dark-themed with a green leaf icon. It has tabs for 'Parameters' (selected), 'Settings', and 'Docs'. The 'Parameters' tab contains several fields: 'Credential to connect with' (set to 'MongoDB account'), 'Session ID' (set to 'Connected Chat Trigger Node'), 'Session Key From Previous Node' (set to a JavaScript expression `function($json) { return $json.sessionId; }`), 'Collection Name' (set to 'chats'), 'Database Name' (set to 'react-chat'), and 'Context Window Length' (set to '100'). A note at the bottom states: 'How many past interactions the model receives as context'.

**MongoDB Chat Memory**

Parameters Settings Docs

Credential to connect with  
MongoDB account

Session ID  
Connected Chat Trigger Node

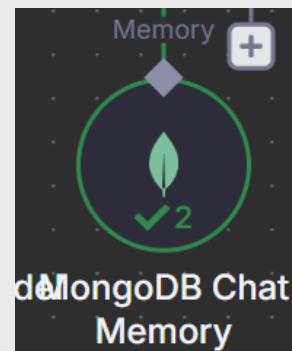
Session Key From Previous Node  
`function($json) { return $json.sessionId; }`

Collection Name  
chats

Database Name  
react-chat

Context Window Length  
100

How many past interactions the model receives as context



# 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

