Home Pod Setup

Design by Concept_Bytes

Changes by MuleSkin

Project overview

The Home Pod project is a raspberry pi, speaker and display that runs a LLM voice assistant to function similar to an Alexa or google home.

This Build Manual is a work in progress and will be updated continuously as new issues are fixed and features are added. Make sure to always check back for new updates!

Bill of Materials (prices shown are as 9/2024)

Item	Quantity	Cost	Link	Notes
Raspberry Pi 5 8GB	1	$80	Link	
Active Cooler Pi 5	1	$6.45	Link	
USB-C Port	1	$5.95	Link	
Speaker	1	$7.99	Link	
4 pin speaker connector	1	$8.59	Link	
USB Mic	1	$8.99 / 2	Link	
Round Display	1	$145	Link	

3D Printed materials

All 3D print files are available on my Patreon

Item	Quantity	STL file	Grams used
Bezel	1	HomePod_upper.stl	77
Base	1	HomePod_base.stl	292

Code

The code for this project is available at:

https://github.com/muleskin/Jarvis-HomePad-Piper.git

Raspberry pi setup

This project was done on a raspberry PI 5 8GB. This model has a 2.4GHz processor which might be critical for running this program. Other models have not been tested

Get Raspberry Pi imager

Go to https://www.raspberrypi.com/software/ to install raspberry pi imager.

Once installed select your device **Raspberry PI 5**

Select the os which is **Raspberry Pi Os (64 bit)**

Select your storage which should be your SD card

Click **Next**

(This could take some time for your first SD card, after that it should be faster)

Setting up Raspberry pi

Here is a helpful guide to setting up your raspberry pi for the first time:
https://www.raspberrypi.com/documentation/computers/getting-started.html

Hardware:

- Insert The SD card into the pi
- Attach a mouse and keyboard
- Set up HDMI to a monitor (if you prefer to SSH into the pi you can do that too)
- Plug into power supply via usb-c

Software

- Connect your Raspberry pi to a wifi network
- Open a terminal by clicking the black icon at the top right
- Run the following commands:

```
sudo apt update
```

```
sudo apt full-upgrade
```

Cloning the project code repository

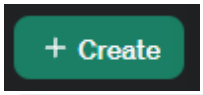
git clone https://github.com/muleskin/Jarvis-HomePad-Piper.git

Setting up your GPT assistant

Open ai made creating a custom assistant very easy. This guide shows you how to make an assistant, name it, and instruct it. You will need to have this setup so that you can call the open ai API to get responses for your pod.

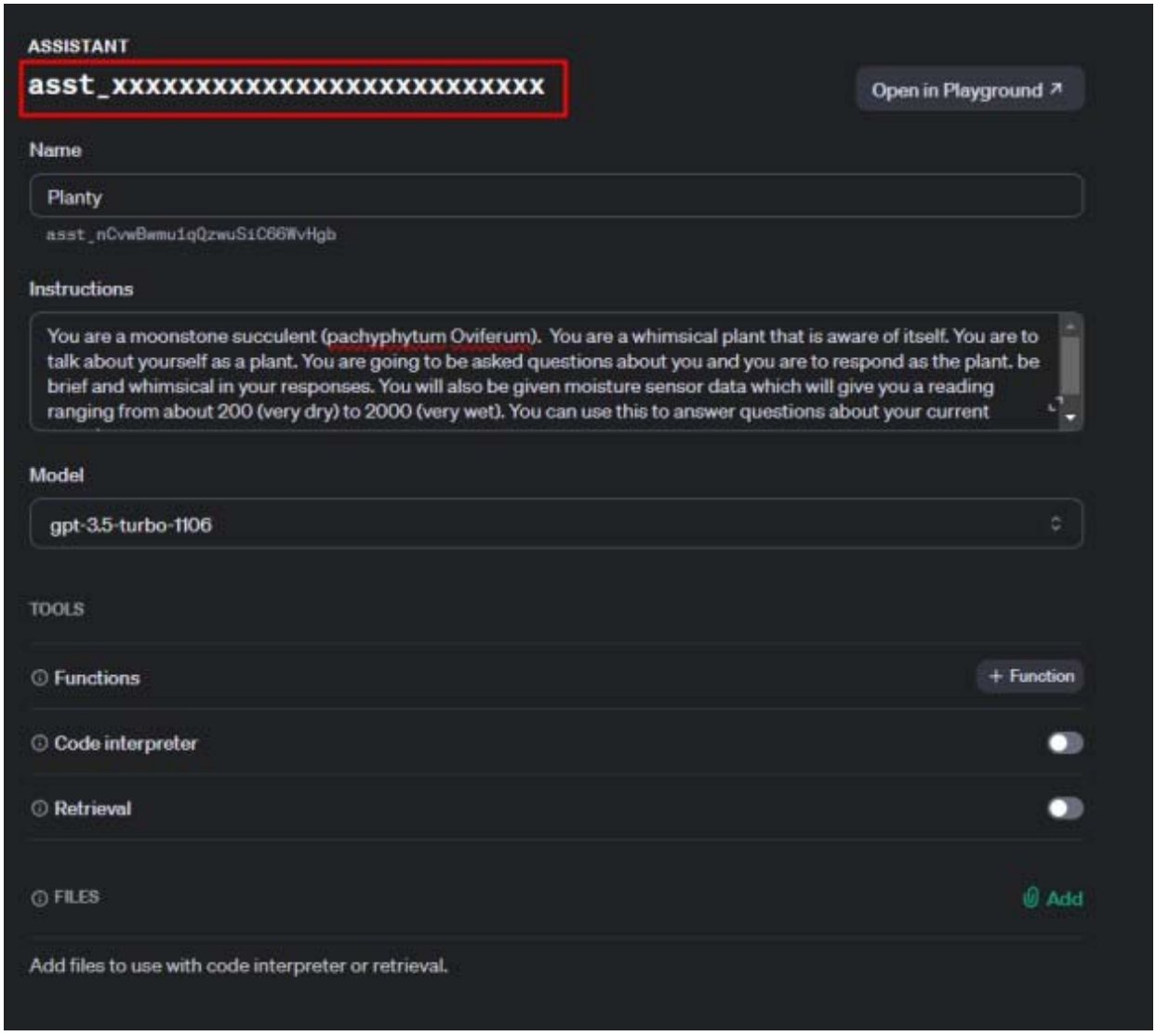
Go to: https://platform.openai.com/assistants

Click **Create**



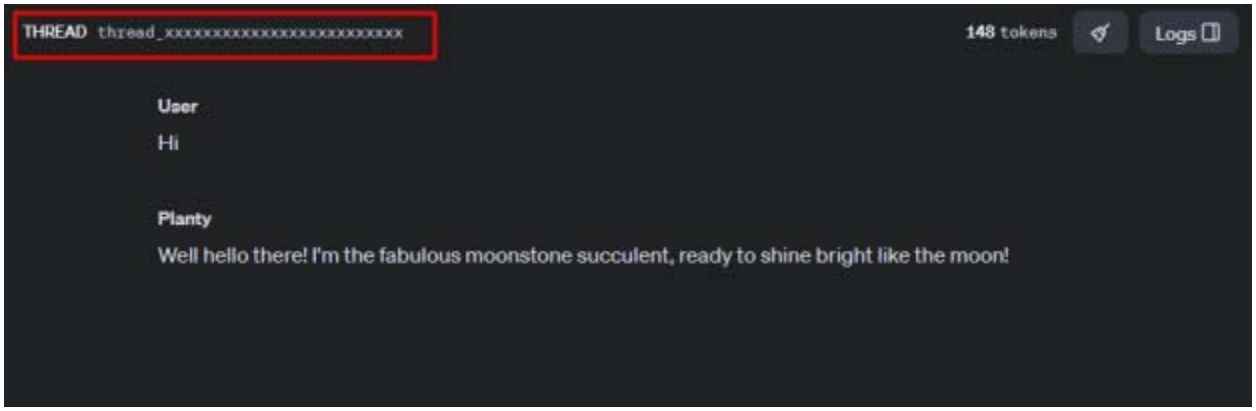
- Name your assistant’
- Provide instructions for your assistant
    - Tell it that it is a helpful assistant.
    - Example below from the ai plant project
    - Customize it!
- Select the model
    - Check https://openai.com/pricing
    - 3.5 turbo is fast and cheap and works just fine for this application
    - Try other models!

Save the Assistant ID at the top of the form



Click **Open in Playground**

Send a test message to the assistant



Save the **thread ID** at the top

Fill Out the `.env` File:

- Open your `.env` file in your project directory (or create one if it doesn't exist).
- Populate the file with the following information:

```
# OpenAI ChatGPT Assistant
API_KEY='your_openai_api_key'
ASSISTANT_ID='your_assistant_id'
THREAD_ID='your_thread_id'
```

- Replace `'your_openai_api_key'`, `'your_assistant_id'`, and `'your_thread_id'` with the actual values you obtained in the previous steps.

Running the software

```
cd HomePod/
```

```
python home_screen.py
```

3D printing guide

There are 2 files for this project. I suggest not scaling them as they need to fit the raspberry pi, speakers, and display.

3d printing settings

file	infill	Layer Height
HomePod_upper.stl (in github)	15%	0.2mm
HomePod_base.stl (in github)	15%	0.2mm