LangSmith Setup Guide: Tracing Your LangGraph Applications

LangSmith is LangChain's developer platform that lets you trace, debug, evaluate, and monitor your LLM applications—including LangGraph workflows—automatically.

This guide walks you through:

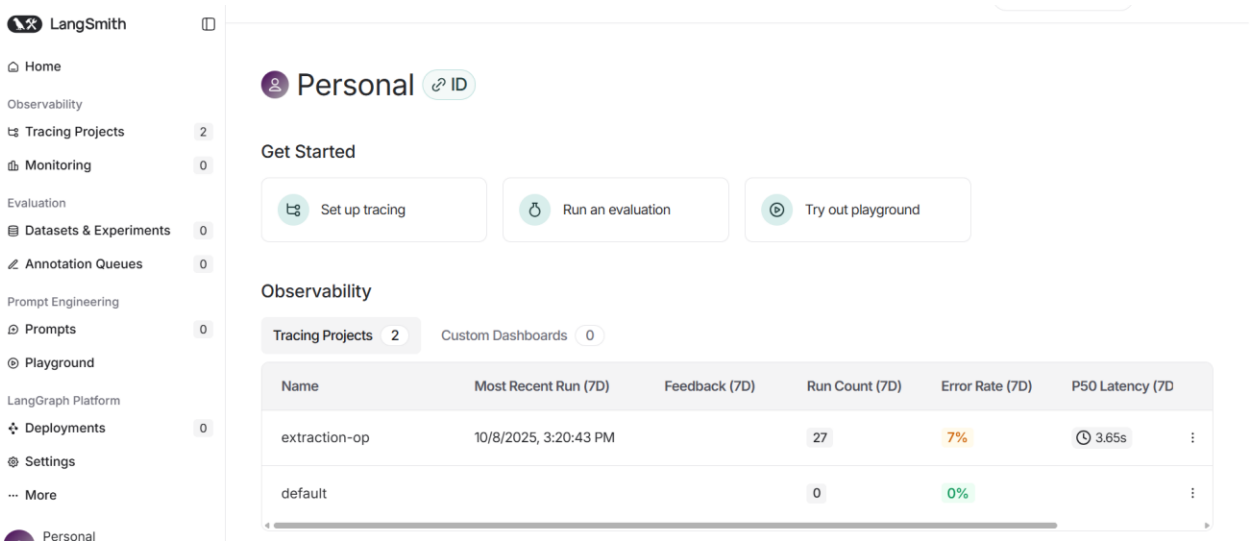
You can go to this link for more details on how to generate API key:

https://docs.langchain.com/langsmith/create-account-api-key

1. Creating a LangSmith account.
2. Getting your ****API key****.
3. Configuring your .env file.
4. Enabling automatic tracing for your LangGraph app.

Step 1: Create a LangSmith Account

1. Go to https://smith.langchain.com
2. Click "Sign Up" (you can use Google, GitHub, or email)
3. Complete registration and verify your email
4. You'll be redirected to the LangSmith dashboard



Step 2: Get Your API Key

In the LangSmith dashboard, click your profile icon (top-right) → "Settings"

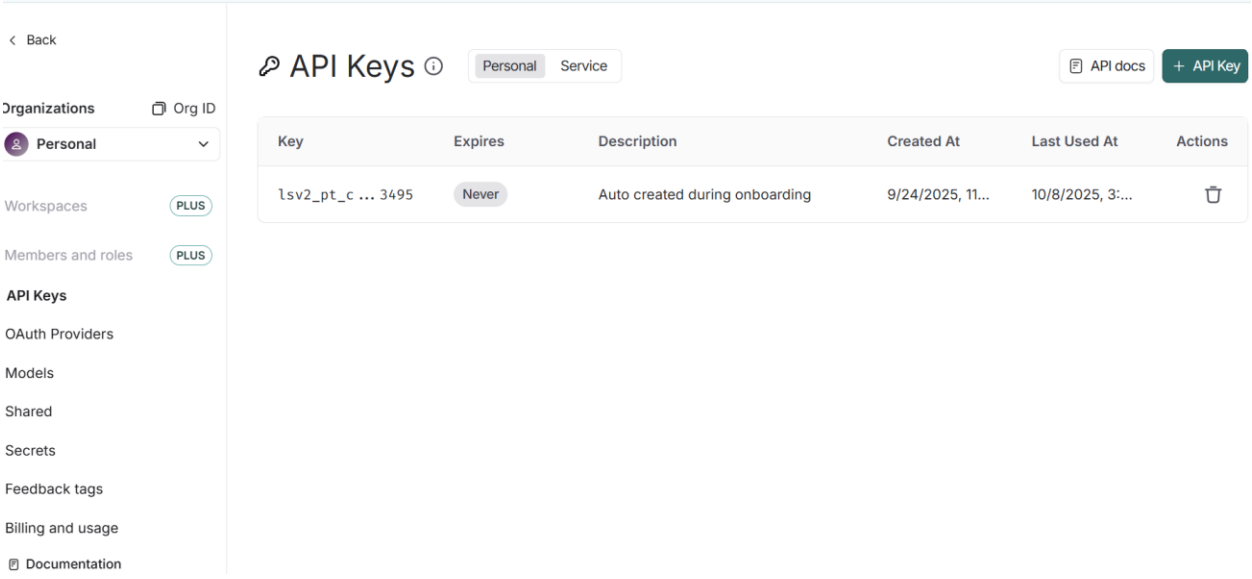
1. Go to the "API Keys" tab in settings

2. Click "Create API Key"

3. Give it a name (e.g., my-langgraph-dev)

4. Click "Create"

5. Copy your API Key ****(you won’t see it again!)****



Step 3: Set Up Your .env File

In your project root create a ****.env**** file and paste your credentials

 # LangSmith Configuration

LANGCHAIN_API_KEY=your_actual_api_key_here

LANGCHAIN_PROJECT=your_project_name_here

LANGCHAIN_TRACING_V2=true

LANGCHAIN_ENDPOINT=https://api.smith.langchain.com

Step 4: Automatic Tracing in LangGraph (Zero Code Changes!)

Once you set the environment variables above, LangChain (and LangGraph) will automatically trace every run—no code changes needed!

How It Works:

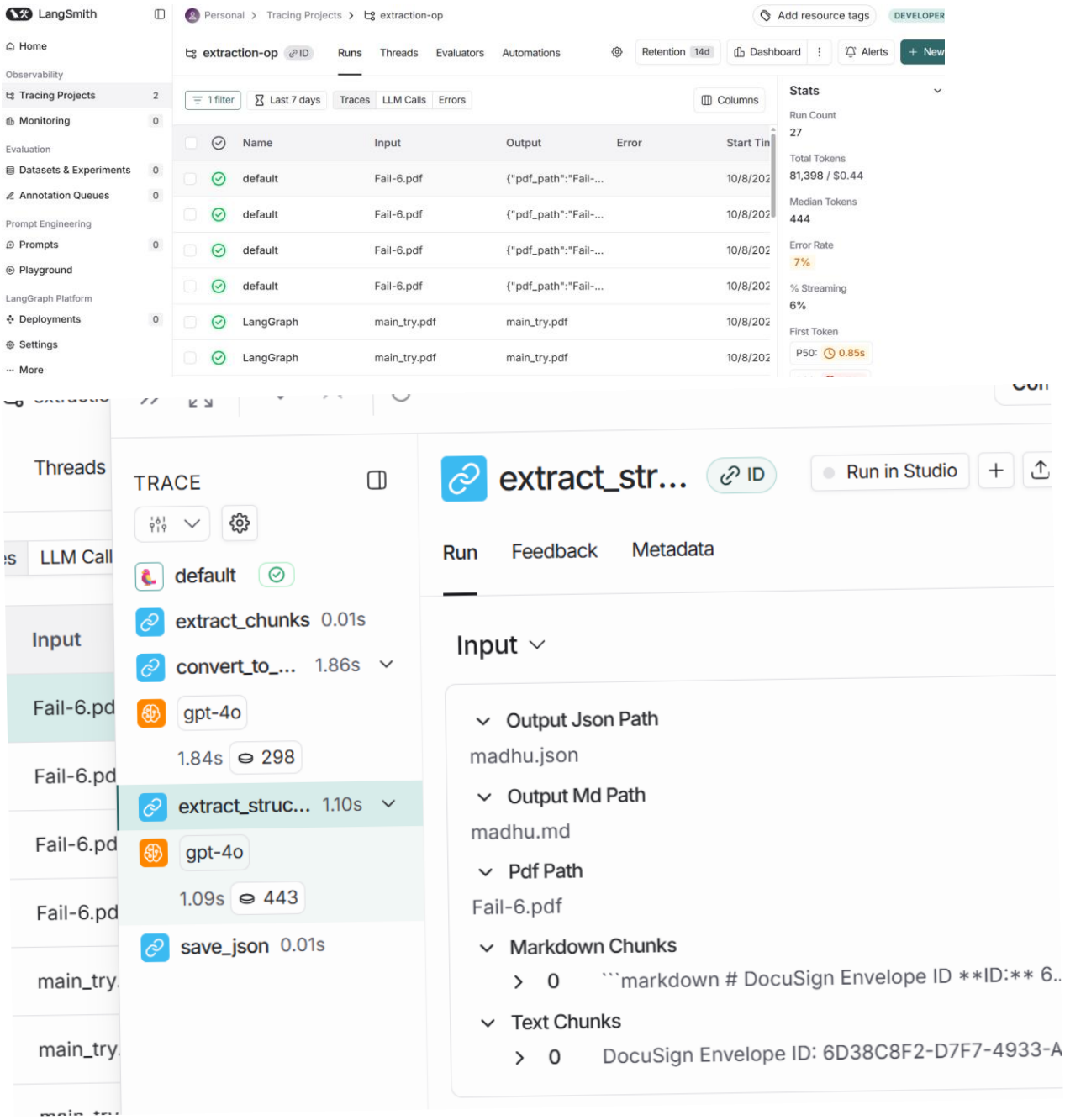
LangChain detects LANGCHAIN_TRACING_V2=true

Every LLM call, tool use, and graph node execution is sent to LangSmith

Your LangGraph state transitions, messages, and outputs appear in the dashboard

Now

Go to LangSmith Dashboard → "Traces"



You'll see your full LangGraph execution with:

Each node (extract_chunks, convert_to_markdown, etc.)

Input/output state

LLM calls with prompts & responses

Timing and tokens used

For this you can run main.py or directly run the run_pipeline function in the main.graph.py with parameters and you can check the tracing for test purpose.

Now we would want to deploy the graph in LangGraph Studio in order to visualize it and make it accessible through an endpoint.

Deploying Your LangGraph App Locally with LangGraph Studio

****Organize your folder structure like this****

Deployed/

├─── .env

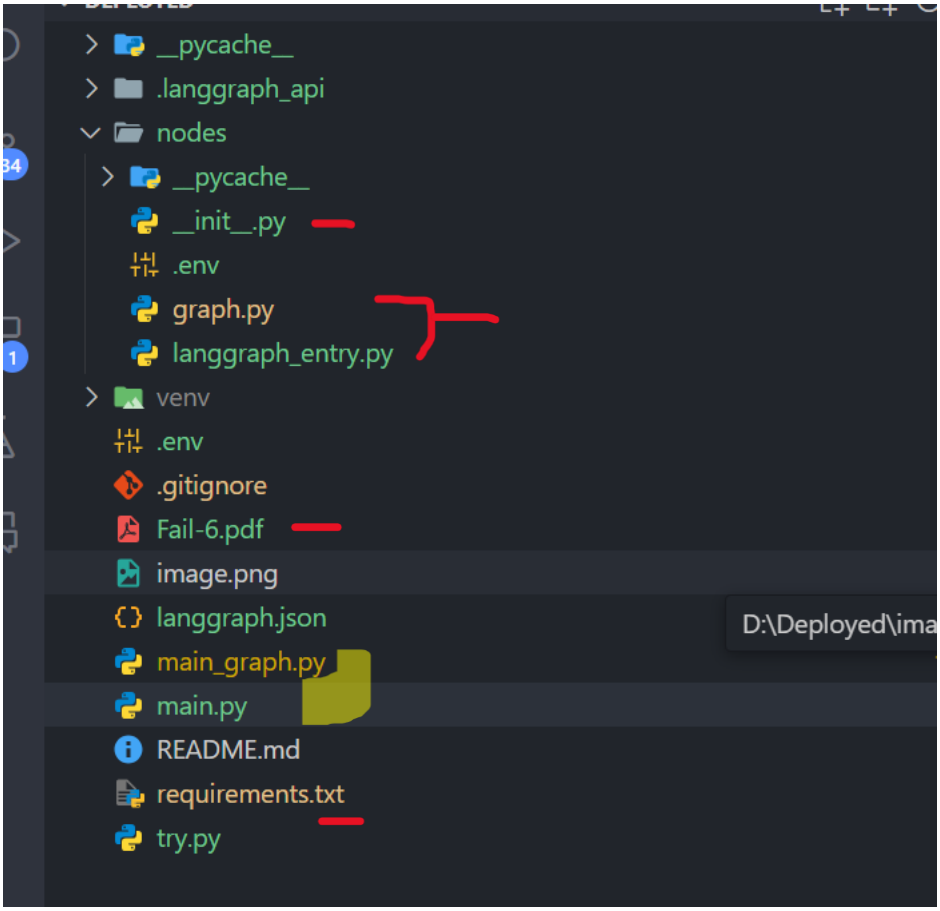
├─── langgraph.json ← LangGraph deployment config

├─── nodes/

│ └─── langgraph_entry.py ← Entry point for the server

| └───graph.py ← Contains your graph

└─── run_server.py ← manual server script



 # langgraph.json -> tells the LangGraph server where to find the Graph.

{

"graphs": {

"default": {

"path": "nodes.langgraph_entry:graph"

}

},

"dependencies": [

"langgraph>=0.1.0",

"langchain-openai",

"python-dotenv",

"pdfplumber",

"pymupdf",

"pillow"

]

}

It is also having the dependencies that are required to run the graph.

Now we need to have ****langgraph-cli**** installed in the environment.

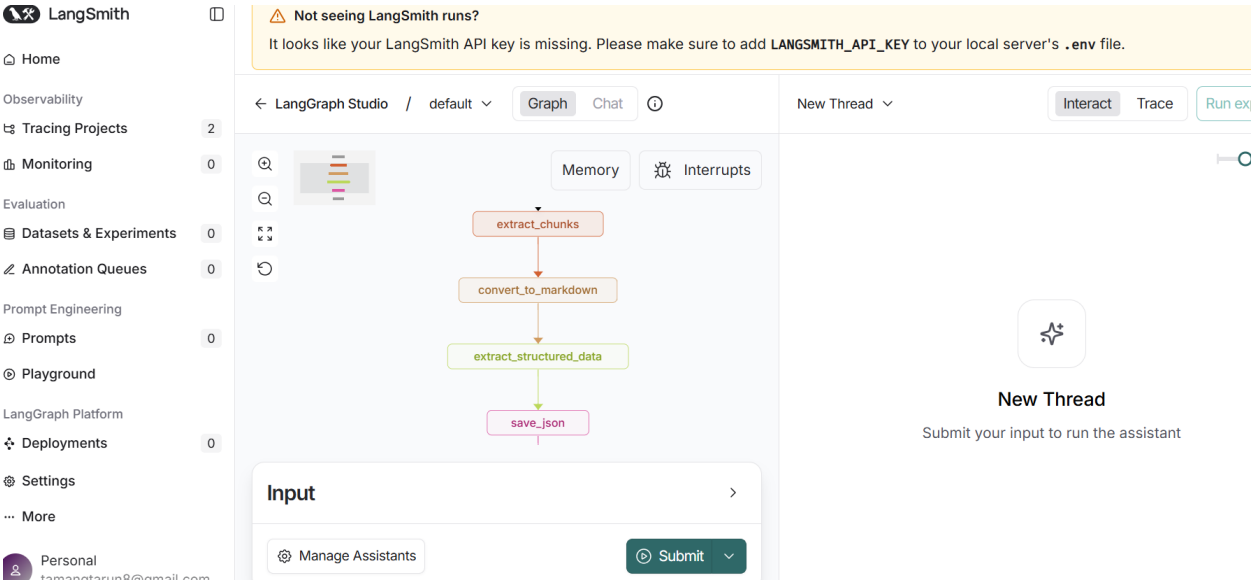
use langgraph dev to run from the root folder

langgraph dev

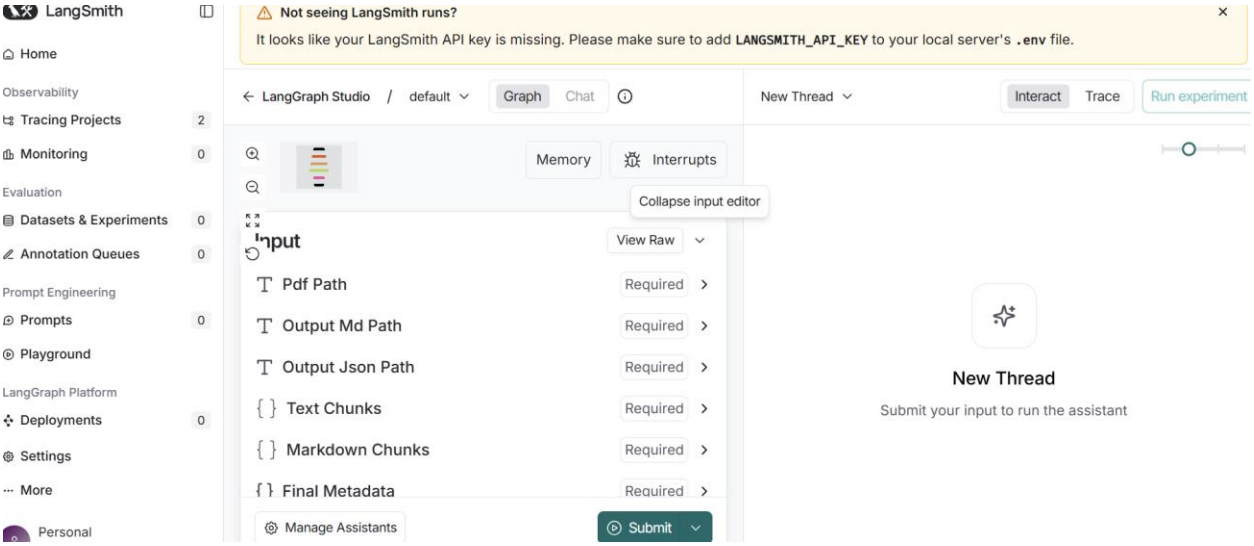
It will start the development server and take you to Langgraph studio hosted on ****http://127.0.0.1:2024****

```
Welcome to

LANGGRAPH

- 🚀 API: http://127.0.0.1:2024
- 🎨 Studio UI: https://smith.langchain.com/studio/?baseUrl=http://127.0.0.1:2024
- 📚 API Docs: http://127.0.0.1:2024/docs

This in-memory server is designed for development and testing.
For production use, please use LangGraph Platform.
```

**We can check on the Langgraph Studio to run it and it's like a playground where we can see our graphs and agents working **



As you can see below we have the parameter or the data of state of graph



****Now using try.py we will acces the above endpoint and send our files and run trace it in langsmith server****

When running locally give asssistant_id as default

LangSmith