Observability Quick Start

This tutorial will get you up and running with our observability SDK by showing you how to trace your application to LangSmith.

If you're already familiar with the observability SDK, or are interested in tracing more than just LLM calls you can skip to the next steps section, or check out the how-to guides.

> **TRACE LANGCHAIN OR LANGGRAPH APPLICATIONS**
>
> If you are using LangChain or LangGraph, which both integrate seamlessly with LangSmith, you can get started by reading the guides for tracing with LangChain or tracing with LangGraph.

1. Install Dependencies

Python | TypeScript

```
yarn add langsmith openai
```

2. Create an API key

To create an API key head to the LangSmith settings page. Then click **Create API Key.**

3. Set up your environment

Shell

```
export LANGSMITH_TRACING=true
export LANGSMITH_API_KEY="<your-langsmith-api-key>"
# The example uses OpenAI, but it's not necessary if your code uses another
```

```
LLM provider
export OPENAI_API_KEY="<your-openai-api-key>"
```

4. Define your application

We will instrument a simple RAG application for this tutorial, but feel free to use your own code if you'd like - just make sure it has an LLM call!

▸ Application Code

5. Trace OpenAI calls

The first thing you might want to trace is all your OpenAI calls. LangSmith makes this easy with the `wrap_openai` (Python) or `wrapOpenAI` (TypeScript) wrappers. All you have to do is modify your code to use the wrapped client instead of using the `OpenAI` client directly.

Python **TypeScript**

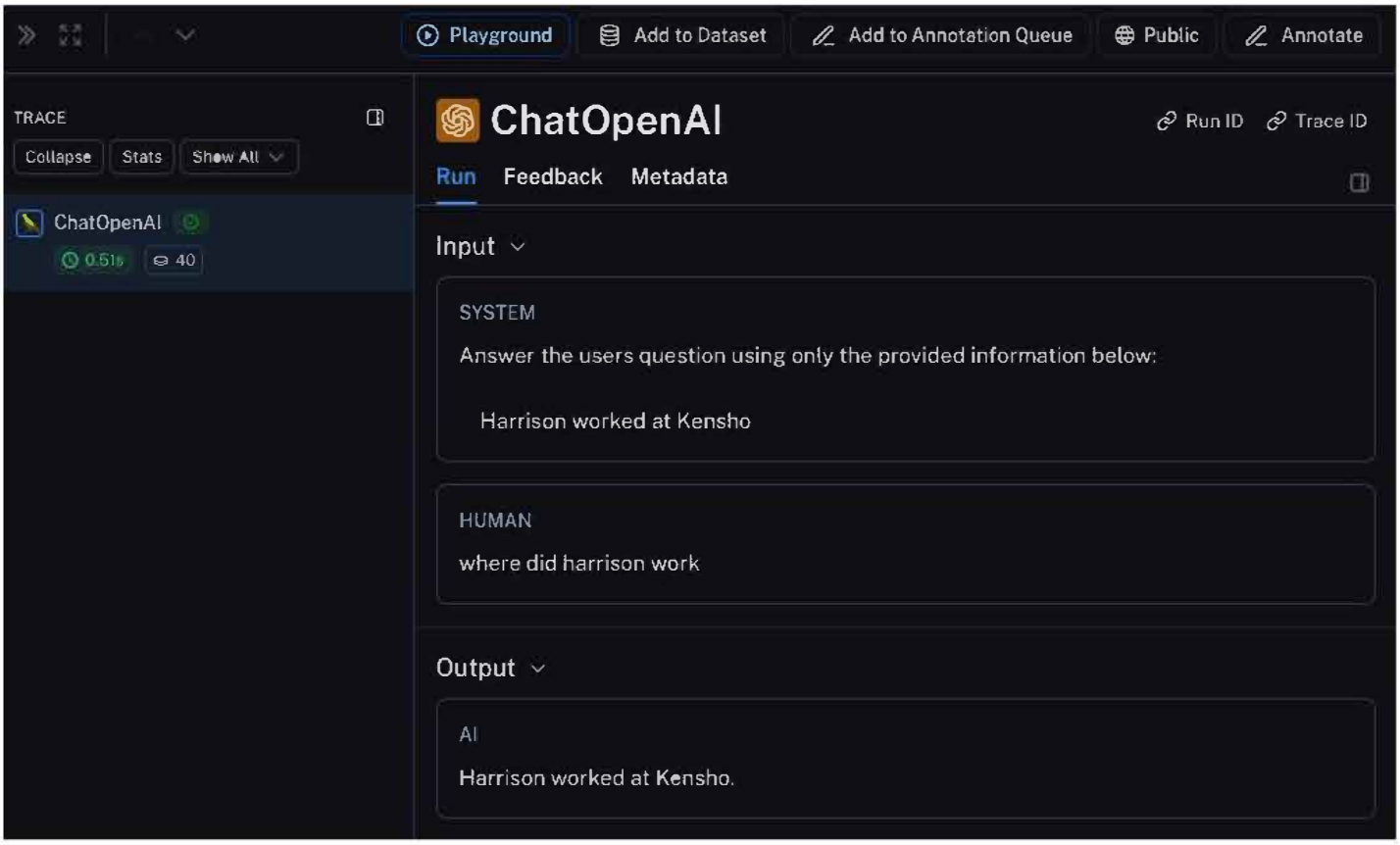
```
import { OpenAI } from "openai";
import { wrapOpenAI } from "langsmith/wrappers";

const openAIClient = wrapOpenAI(new OpenAI());

// This is the retriever we will use in RAG
// This is mocked out, but it could be anything we want
async function retriever(query: string) {
  return ["This is a document"];
}

// This is the end-to-end RAG chain.
// It does a retrieval step then calls OpenAI
async function rag(question: string) {
  const docs = await retriever(question);

  const systemMessage =
    "Answer the users question using only the provided information below:\r
+
    docs.join("\n");
```

```
  return await openAIClient.chat.completions.create({
    messages: [
      { role: "system", content: systemMessage },
      { role: "user", content: question },
    ],
    model: "gpt-4o-mini",
  });
}
```

Now when you call your application as follows:

```
rag("where did harrison work")
```

This will produce a trace of just the OpenAI call in LangSmith's default tracing project. It should look something like this.



6. Trace entire application

You can also use the `traceable` decorator (Python or TypeScript) to trace your entire application instead of just the LLM calls.

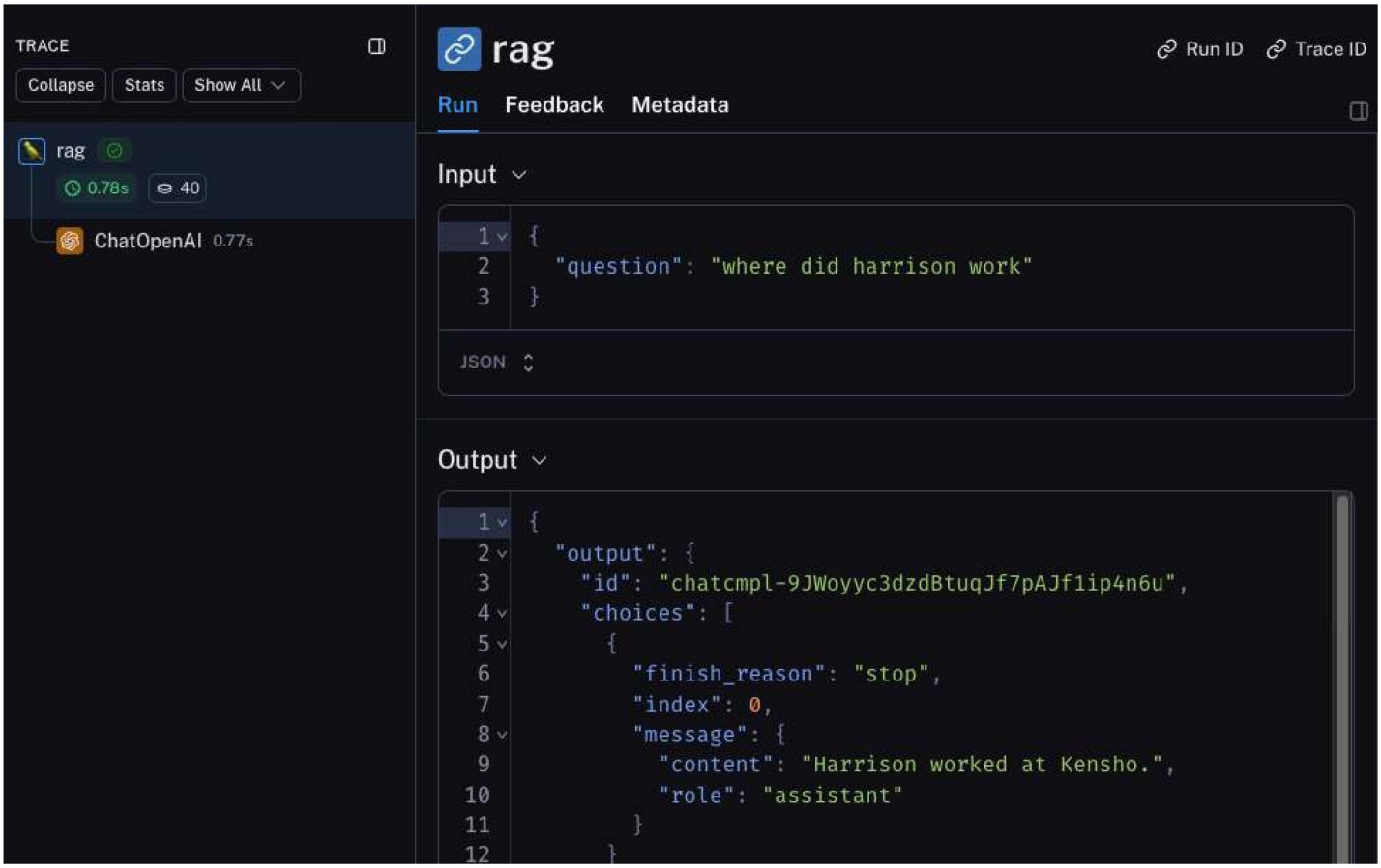
Python **TypeScript**

```
import { OpenAI } from "openai";
import { traceable } from "langsmith/traceable";
import { wrapOpenAI } from "langsmith/wrappers";

const openAIClient = wrapOpenAI(new OpenAI());

async function retriever(query: string) {
  return ["This is a document"];
}

const rag = traceable(async function rag(question: string) {
  const docs = await retriever(question);

  const systemMessage =
    "Answer the users question using only the provided information below:\n\n"
+
    docs.join("\n");

  return await openAIClient.chat.completions.create({
    messages: [
      { role: "system", content: systemMessage },
      { role: "user", content: question },
    ],
    model: "gpt-4o-mini",
  });
});
```

Now if you call your application as follows:

```
rag("where did harrison work")
```

This will produce a trace of just the entire pipeline (with the OpenAI call as a child run) - it should look something like this



Next steps

Congratulations! If you've made it this far, you're well on your way to being an expert in observability with LangSmith. Here are some topics you might want to explore next:

- Trace multiturn conversations
- Send traces to a specific project
- Filter traces in a project

Or you can visit the how-to guides page to find out about all the things you can do with LangSmith observability.

If you prefer a video tutorial, check out the Tracing Basics video from the Introduction to LangSmith Course.

Was this page helpful?

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