

## SpringAI Tool Calling

This year is named as the Age of Agents. In Agents era, we try to automate stuff – if you want to book a ticket, you ask your AI agent to book for you. Say we want a plan to visit a place for 5 days, it should give me the entire plan.

<https://docs.spring.io/spring-ai/reference/api/tools.html>

Tool calling is not only SpringAI

Say we want to find out the current date, AI replies like “Sorry I cant provide real-time information. However, you can check your current date on your device or calendar”. It happens because the model is trained only until a certain date and it doesn’t know current data. Very similar to RAG, we could pass in the current date and time to LLM and get the correct response.

To make it as a Tool, use Annotation @Tool

@DateTimeTool

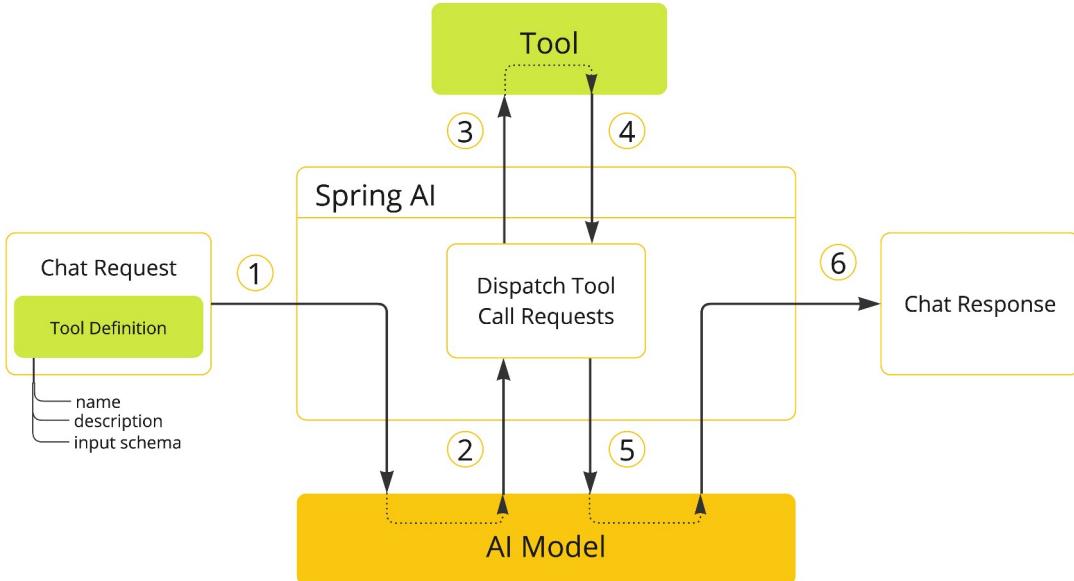
The screenshot shows the Postman interface with the following details:

- Request URL:** http://localhost:8080/api/current date
- Method:** GET
- Query Params:** Key
- Response Status:** 200 OK
- Response Body:** The current date is December 18, 2025.

Say we have multiple tools here

```
ChatResponse response = chatClient
    .prompt(message)
    .tools(dateTimeTool, tool1, tool2, tool3)
    .call()
    .chatResponse(); //content();
```

The user query might not require all 3 or 5 tools. It depends on what actions LLM has to perform or return what kind of information it has to return. It is in the hands of LLM



So when you send a request, you also send some Tool Definition (you send name, description, input schema). We got to add a description. Description is highly recommended, better description will lead to better results. If Description is not available, it will highly rely on the method name (`getCurrentDateAndTime()`). If you don't give a proper method name(), it will hallucinate. Request (`current date?`) goes to AI model and AI model has no idea what current date is. Do we have any available tool, which can give me the current date? Yes, AI model will see description and name of the Tool, which matches with what I want. Then that user request is redirected to that tool and that tool gets executed. The tool will send the response to the AI model. Based on the information, AI model will generate chat response to you. These tools are executed on the Client side not on the AI server. It is the client for the AI model. Say ExampleApplication is using OpenAI model, for OpenAI, ExampleApplication is the client. For ExampleApplication, the end users are the clients. Yes ToolCalling is used by ChatBot, say you want to book an appointment, chatbot can execute a tool.

```

@Tool(description="Get current date and time for user's timezone")
public String getCurrentDateTime(){
    return java.time.LocalDateTime.now().toString();
}

```

for specific timezone

```

@Tool(description="Get current date and time for specified timezone")
public String getSpecifiedDateTime(String timezone){
    // return java.time.LocalDateTime.now().toString();
    System.out.println("in specified timezone");
    return java.time.ZonedDateTime.now(java.time.ZoneId.of(timezone)).toString();
}

```

in local timezone

HTTP <http://localhost:8080/api/current date>

GET <http://localhost:8080/api/current date?>

Docs Params [●](#) Authorization Headers (7) Body Scripts Tests

Query Params

	Key	Value
<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>		
	Key	Value

Body Cookies Headers (5) Test Results

Raw [▼](#) Preview [Visualize](#) [▼](#)

1 The current date is December 18, 2025.

```
2023-12-18T11:28:41.803+05:00 INFO 119044 --- [Exa  
2025-12-18T11:28:41.807-05:00 INFO 119044 --- [Exa  
in local timezone  
ChatResponse [metadata={ id: chatcmpl-CoB9qWW6C5Ss67
```

For specified timezone

HTTP <http://localhost:8080/api/current date in NewYork>

---

GET [▼](#) http://localhost:8080/api/current date in NewYork?

---

Docs Params • Authorization Headers (7) Body Scripts Tests Settings

Query Params

<input checked="" type="checkbox"/>	Key	Value
<input checked="" type="checkbox"/>		
	Key	Value

---

Body Cookies Headers (5) Test Results | ⏱

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Raw ▾  Preview  Visualize ▾

```
1 The current date and time in New York is December 18, 2025, 11:30 AM (EST).|
```

```
2025-12-18T11:28:41.807-05:00 INFO 11
in local timezone
ChatResponse [metadata={ id: chatcmpl-
in specified timezone
ChatResponse [metadata={ id: chatcmpl-
```

HTTP <http://localhost:8080/api/current news in NewYork> Save ▾

GET <http://localhost:8080/api/current news in NewYork?>

Docs Params • Authorization Headers (7) Body Scripts Tests Settings

Query Params

	Key	Value	Description
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>	Key	Value	Description

Body Cookies Headers (5) Test Results | ⏱ 200 OK • 3.74 s • 29

Raw ▾ Preview Visualize | ▾

```
1 I can't provide real-time news updates. You may want to check a reliable news website or app for the latest news in New York.
```

For that we need:

<https://newsapi.ai/>

[https://newsapi.ai/?gad\\_source=1&gad\\_campaignid=16130462799&gclid=Cj0KCQjA6Y7KBhCkARIIsAOxhqtPBFP8BhlEv\\_SywkmAYuC3uu2q-M05BK5dfC\\_1ij-wdFD4iEKPlrPsaAnUOEALw\\_wcB](https://newsapi.ai/?gad_source=1&gad_campaignid=16130462799&gclid=Cj0KCQjA6Y7KBhCkARIIsAOxhqtPBFP8BhlEv_SywkmAYuC3uu2q-M05BK5dfC_1ij-wdFD4iEKPlrPsaAnUOEALw_wcB)

Get API key

Activate your account

To activate your account and start exploring, fill in your details below

Full name

Work email

Password

Repeat password

I agree to the [Terms of service](#)

Must be at least 8 characters

Must contain one special character

Passwords match

I'm not a robot  reCAPTCHA  
Privacy · Terms

[Sign up](#)

Get the API key and store

<https://newsapi.org/docs/endpoints/everything>

GET https://newsapi.org/v2/everything?q=bitcoin&apiKey=API\_KEY

GET http://localhost:8080/api/recent news in NewYork?

The screenshot shows the Postman interface with a GET request to 'http://localhost:8080/api/recent news in NewYork?'. The 'Params' tab is selected, showing a table with one row for 'Key'. The 'Body' tab shows the raw response: 'Here are some recent news headlines from New York:'. The response includes three numbered items with links to external news articles.

Key	Value	Description
Key	Value	Description

Body Cookies Headers (5) Test Results 200 OK 9.14 s 1.76 KB Raw Preview Visualize

```
1 Here are some recent news headlines from New York:  
2  
3 1. **Why college students prefer News Daddy over The New York Times** - College students are increasingly turning to platforms like TikTok for news, preferring influencers like Dylan Page for major story updates. [Read more](https://www.theverge.com/cs/features/818380/college-students-news-sources-tiktok-instagram-newsdaddy)  
4  
5 2. **New York's new law forces advertisers to say when they're using AI avatars** - Governor Kathy Hochul of New York signed a pioneering bill requiring advertisers to disclose the use of AI-generated people in ads. [Read more](https://www.theverge.com/news/842848/new-york-law-ai-advertisements-sag-aftra-labor)  
6  
7 3. **Your Data Might Determine How Much You Pay for Eggs** - A new law in New York requires retailers to disclose if consumer data affects pricing on basic goods, though it doesn't mandate transparency on how. [Read more](https://www.wired.com/story/)
```

## Output

Here are some recent news headlines from New York:

1. **Why college students prefer News Daddy over The New York Times** - College students are increasingly turning to platforms like TikTok for news, preferring influencers like Dylan Page for major story updates. [Read more](https://www.theverge.com/cs/features/818380/college-students-news-sources-tiktok-instagram-newsdaddy)
2. **New York's new law forces advertisers to say when they're using AI avatars** - Governor Kathy Hochul of New York signed a pioneering bill requiring advertisers to disclose the use of AI-generated people in ads. [Read more](https://www.theverge.com/news/842848/new-york-law-ai-advertisements-sag-aftra-labor)
3. **Your Data Might Determine How Much You Pay for Eggs** - A new law in New York requires retailers to disclose if consumer data affects pricing on basic goods, though it doesn't mandate transparency on how. [Read more](https://www.wired.com/story/)

transparency on how. [Read more](<https://www.wired.com/story/algorithmic-pricing-eggs-ny-law/>)

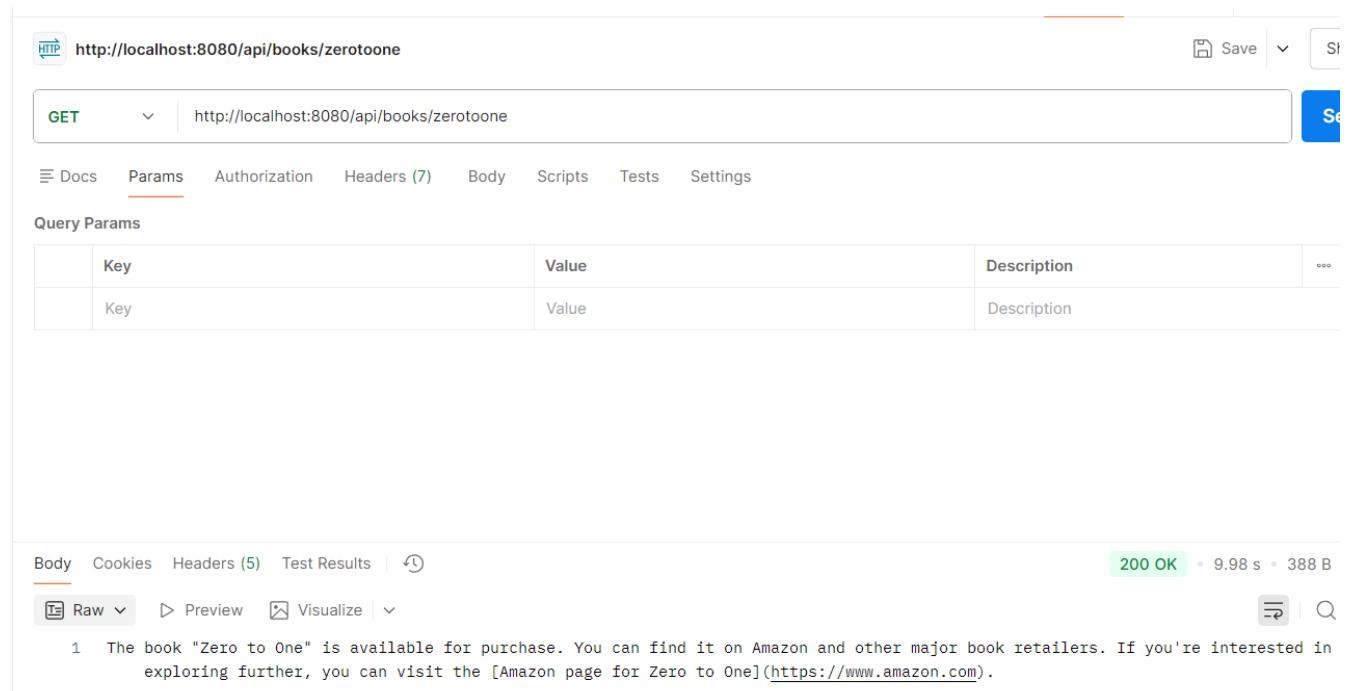
4. \*\*AI's water and electricity use soars in 2025\*\* - AI technologies have significantly increased water and electricity consumption, with environmental impacts compared to New York City's carbon pollution levels. [Read more](<https://www.theverge.com/news/845831/ai-chips-data-center-power-water>)

5. \*\*The Donald Trump v Zohran Mamdani show\*\* - A surprising political dynamic unfolds as US President Donald Trump meets with New York's incoming mayor Zohran Mamdani. [Read more] (<https://www.bbc.co.uk/sounds/play/w3ct8bys>)

These articles cover a variety of topics, including education, technology, environmental concerns, and political interactions.

GET <http://localhost:8080/api/books/zerotoone>

The book "Zero to One" is available for purchase. You can find it on Amazon and other major book retailers. If you're interested in exploring further, you can visit the [Amazon page for Zero to One] (<https://www.amazon.com>).



HTTP <http://localhost:8080/api/books/zerotoone> Save ↻

GET <http://localhost:8080/api/books/zerotoone> Se

Docs Params Authorization Headers (7) Body Scripts Tests Settings

Query Params

Key	Value	Description	...
Key	Value	Description	...

Body Cookies Headers (5) Test Results | ⏱

200 OK • 9.98 s • 388 B

Raw ▾ Preview Visualize | ↻ | ⌂ | ⚙

1 The book "Zero to One" is available for purchase. You can find it on Amazon and other major book retailers. If you're interested in exploring further, you can visit the [Amazon page for Zero to One](<https://www.amazon.com>).

