

# SpringAI

## pom.xml

- pom.xml
  - SpringAI 의존성으로 SpringAI 의존성 추가

```
<dependencyManagement>
  <dependencies>
    <dependency>
      <groupId>org.springframework.ai</groupId>
      <artifactId>spring-ai-bom</artifactId>
      <version>${spring-ai.version}</version>
      <type>pom</type>
      <scope>import</scope>
    </dependency>
  </dependencies>
</dependencyManagement>
```

- ollama 의존성 추가

```
<dependency>
  <groupId>org.springframework.ai</groupId>
  <artifactId>spring-ai-ollama-spring-boot-starter</artifactId>
</dependency>
```

- application.yml
  - ollama URL 설정

```
spring:
  ai:
    ollama:
      base-url: ${url}
      chat:
        model: ${model}
```

- ChatClient
  - ChatClient bean 생성
  - Bean 생성 시 ChatClient 생성 OllamaChatModel builder 사용

```
@Bean
public ChatClient chatClient(OllamaChatModel model){
    return ChatClient.builder(model)
        .defaultSystem("ollama")
        .build();
}
```

- `chatClient` `chatClient` `chatClient`

```
@Autowired
private ChatClient chatClient;
String content = chatClient.prompt()
    .user("用户")
    .call()
    .content();
```

ChatClient

- `ChatClient.defaultSystem()` `ChatClient`
- `ChatClient.defaultAdvisors()` `Advisor`
- `chatClient.prompt()` `ChatClient`
- `chatClient.user()` `ChatClient`
- `chatClient.call()` `ChatClient`
- `chatClient.stream()` `Flux<String> content`
- `chatClient.content()` `ChatClient`
- `chatClient.advisors()` `context`
  - `.advisors(a -> a.param(CHAT_MEMORY_CONVERSATION_ID_KEY, chatId))` `context`
    - `CHAT_MEMORY_CONVERSATION_ID_KEY` `AbstractChatMemoryAdvisor`

SpringAI

`SpringAI` `AOP` `Advisor` `chatClient`



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**Advisor**

- `SimpleLoggerAdvisor`
- `MessageChatMemoryAdvisor`
- `QuestionAnswerAdvisor` `RAG`

ChatMemory

ChatMemory

- `SpringAI` `Redis` `MongoDB`

```
public interface ChatMemory{
    void add(String conversationId, List<Message> messages);
    List<Message> get(String conversationId, int lastN);
}
```

```
void clear(String conversationId);  
}
```

- SpringAI `InMemoryChatMemory` \*\*
- `Advisor`
  - `ChatClient.defaultAdvisors()`
- `id`
  - `chatClient.advisors()`

- `chatId`
- `chatId` `ChatMemory` `get`