**Swagger API**

**What is Swagger API?**

Swagger is a set of open-source tools built around the **OpenAPI Specification (OAS)**. It provides a framework to design, build, document, and consume RESTful APIs efficiently. Swagger ensures that APIs are clearly defined, standardized, and easily consumable by developers, testers.

Automatically generates an interactive API documentation interface.

**Why Use Swagger API?**

* **Interactive Documentation:** Swagger generates clear, interactive documentation, allowing users to test APIs directly within the documentation.
* **Ease of Collaboration:** Provides a common platform for backend developers, frontend developers, and QA teams.
* **Improved API Testing:** Enables real-time testing of endpoints directly from the Swagger UI.

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**Step 1: Add Dependency**

Add the springdoc-openapi-starter-webmvc-ui dependency to your pom.xml:

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**Step 2: Create a Spring Boot Application**

Generate a simple Spring Boot application with the following structure:

**1.Create a Spring Boot project with these dependencies:**

* Spring Web
* Spring Boot DevTools (optional, for live reload)
* springdoc-openapi-starter-webmvc-ui

2.Add the @SpringBootApplication class to run your application.A screen shot of a computer

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**Step 3: Create a REST Controller**

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**Step 4: Run the Application**

1. Start the Spring Boot application.
2. Open a browser and go to: **http://localhost:8080/swagger-ui/index.html**

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1. **Or** [**http://localhost:8060/v3/api-docs**](http://localhost:8060/v3/api-docs)

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You will see the Swagger UI automatically generated by Springdoc, with endpoints from your REST controller.

**Step 5: Customize API Documentation**

**1. Group APIs with @Tag**

Use @Tag at the class level to describe and group APIs.



**2. Describe Operations with @Operation**

Use @Operation at the method level for summaries and descriptions.



**3. Add Response Descriptions with @ApiResponse**

Add expected responses for better documentation.

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**4. Define Request Parameters with @Parameter**

Describe query and path parameters.

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**Step 7: Additional Features**

**1. Add API Info in** application.properties

Configure general metadata for your API:

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**2. Customizing Swagger Path**

If you want to access Swagger on a custom path:

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