Lecture 35: Implementing describe Image

Introduction:

- We implement describe Image using Spring AI by sending both a **query** and an **image file** to the AI model.

Method Setup:

- Create a method with **@PostMapping("/image/describe")**.
- Accept two parameters:
  - **Query**: The instruction or question (e.g., "Name the superhero").
  - **MultipartFile**: The uploaded image file.

Using ChatClient:

- We call the AI model using **chatClient.prompt()**.
- **User Input**:
  - Pass the query text.
  - Attach the image file as media using MimeTypeUtils.IMAGE_JPEG (or PNG/GIF if required).
- AI analyzes both the text and the image together.
- The **response content** is returned as output.

Code Implementation:

```
@PostMapping("/image/describe")
public String descImage(@RequestParam String query, @RequestParam MultipartFile file) {

    return chatClient.prompt()
            .user(us -> us.text(query)
                    .media(MimeTypeUtils.IMAGE_JPEG, file.getResource()))
            .call()
            .content();
}
```

How Does It Work?

- User sends a **POST request** with a query and an image.
- The method passes both to the **ChatClient**.
- AI processes the image and query.
- The model returns a detailed description or answer.

Example Scenario:

- **Query**: “List items in this image.” →**Response**: Bookshelf, plants, decorative items, chair, etc.

Key Notes:

- **MultipartFile** is used for file uploads.
- The user() method allows combining **text and media** inputs.
- Supported media types: JPEG, PNG, GIF.
- The AI can analyze and describe different kinds of images.