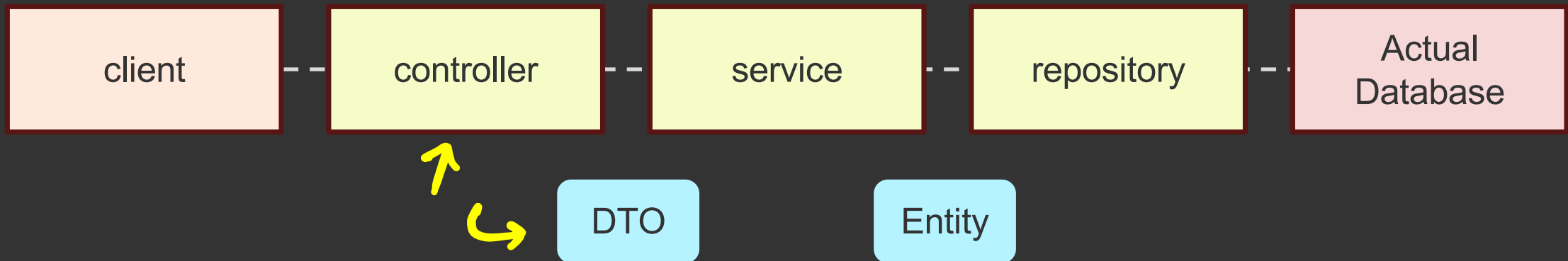


# 2.2



# Presentation Layer

# Spring Boot Web Project Structure



# Annotated Controllers

Spring MVC provides an annotation-based programming model where `@Controller` and `@RestController` components use annotations to express request mappings, request input, exception handling, and more.

The `@RestController` annotation is a shorthand for `@Controller` and `@ResponseBody`, meaning all methods in the controller will return JSON/XML directly to the response body.

# Request Mappings

You can use the `@RequestMapping` annotation to map requests to controllers methods. It has various attributes to match by URL, HTTP method, request parameters, headers, and media types.

There are also HTTP method specific shortcut variants of `@RequestMapping`:

- `@GetMapping`
- `@PostMapping`
- `@PutMapping`
- `@DeleteMapping`
- `@PatchMapping`

# Dynamic URLs Paths

## @PathVariable

*/employees/123*

Use path variables when the parameter is an essential part of the URL path that identifies a resource.

## @RequestParam

*/employees?id=123*

Use query parameters when the parameter is optional and used for filtering, sorting, or other modifications to the request.

# RequestBody

`@RequestBody` is used to bind the HTTP request body to a Java object. When a client sends data in the body of a request (e.g., JSON or XML), `@RequestBody` maps this data to a Java object.

## Use Case:

- Typically used in POST, PUT, and PATCH methods where the client sends data that needs to be processed by the server.
- Converts JSON or XML data from the request body into a Java object using a message converter (e.g., Jackson for JSON).

