

Module 2 - Lecture 13

Server-side APIs

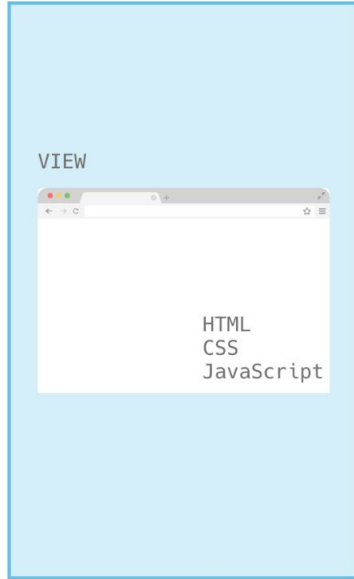


MVC Pattern

- MVC Model-View-Controller
- Why? Separation of concerns.
- **M**odel (Data, Validation Logic, Business Rules)
- **V**iew (Presentation)
- **C**ontroller (Public face of your API. Facilitator)



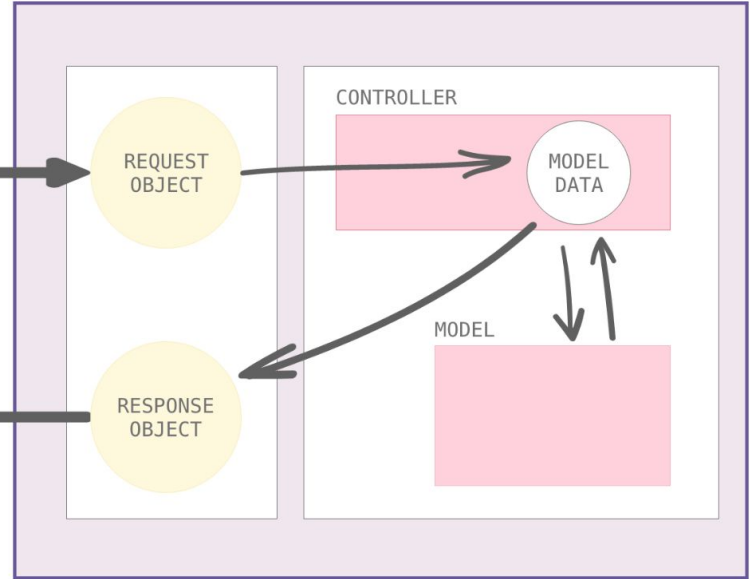
CLIENT



SERVER

Http Request

Http Response



Model

- A class that represents an entity.
 - e.g. City, Country, Hotel, Reservation, etc.
- Models may or may not be a direct mapping from a database table.
- Contains getters, setters, data validation, etc.



View

- Handles the presentation of a model.
- Commonly in Web applications, the View takes in a Model and uses it to create an HTML page that can be rendered by a web browser.
- For APIs, however, we will pass our Model data back in its raw form as JSON.



Controller

- Facilitates the Request/Response.
- Entry point for your Web Application / API.
- Obtains the Model and passes it to the View.



Spring Framework / Spring Boot



Routing / Handler Mapping

- How does Spring know which handler method to call?
- **@RestController**
 - Signals to Spring that this class is a Controller.
- **@RequestMapping**
 - Defines a unique URL and HTTP method.



Data Binding / Model Binding

- The process by which Spring takes parameters we pass in an HTTP request and supplies them to our handler methods.
- Several options. Each use a different annotation.
 - Parameters in the querystring.
 - Parameters in the URL path.
 - Data in the request's body.



@RequestParam

- GET http://localhost:3000/hotels?id=1

```
@RequestMapping(path = "/hotels", method = RequestMethod.GET)
public Hotel get(@RequestParam int id) {
    return hotelDao.get(id);
}
```

These can be set as optional.

```
@RequestParam(required = false)
```



@PathVariable

- GET http://localhost:3000/hotels/1

```
@RequestMapping(path = "/hotels/{id}", method = RequestMethod.GET)
public Hotel get(@PathVariable int id) {
    return hotelDao.get(id);
}
```

These can be set as optional.

```
@PathVariable(required = false)
```



@RequestBody

- POST <http://localhost:3000/hotels>
- Body:

```
{  
    "name": "Marriot Tech Elevator",  
    "stars": 5,  
    "roomsAvailable": 100,  
    "costPerNight": 150,  
}
```

```
@RequestMapping(path = "/hotels", method = RequestMethod.POST)  
public Hotel create(@RequestBody Hotel hotel) {  
    return hotelDao.create(hotel);  
}
```



LET'S CODE

