

Step 1: Spring Boot Essentials for Full-Stack Development

Software Engineering Project

Tutor: Haythem Ghazouani

1 Introduction

Spring Boot is the industry standard for Java-based microservices. In Sprint 1, we focus on building a robust REST API to manage our "Project" resources.

2 Core Components

1. **Entity:** Represents a table in the database (`Project.java`).
2. **Repository:** Interface for database operations (Spring Data JPA).
3. **Controller:** Handles HTTP requests (GET, POST, DELETE).

3 Code Implementation

Sprint 1 Task: The REST Controller

```
1 @RestController
2 @RequestMapping("/api/projects")
3 @CrossOrigin(origins = "*") // Crucial for React integration
4 public class ProjectController {
5     @Autowired
6     private ProjectRepository repository;
7
8     @GetMapping
9     public List<Project> getAll() {
10         return repository.findAll();
11     }
12 }
```

4 Running the Backend

1. Open the project in your IDE (IntelliJ or VS Code).
2. Run `mvn spring-boot:run` or launch the main class.

3. Test the endpoint: `http://localhost:8080/api/projects`.