

Problem 1: Employee Attendance Tracker -----

// Approach: We create Employee and Attendance entities. Use Spring Data JPA for persistence, REST controllers for attendance marking and report viewing, and Spring Security for role-based access.

@Entity

```
public class Employee {  
    @Id  
    @GeneratedValue(strategy = GenerationType.IDENTITY)  
    private Long employeeId;  
    private String name;  
    private String department;  
    private String designation;  
  
}
```

@Entity

```
public class Attendance {  
    @Id  
    @GeneratedValue(strategy = GenerationType.IDENTITY)  
    private Long attendanceId;  
  
    @ManyToOne  
    @JoinColumn(name = "employee_id")  
    private Employee employee;  
  
    private LocalDate date;  
    private String status;  
  
}
```

@RestController

```
@RequestMapping("/attendance")  
public class AttendanceController {  
    @Autowired  
    private AttendanceService service;  
  
    @PostMapping("/mark")  
    @PreAuthorize("hasRole('EMPLOYEE')")  
    public ResponseEntity<?> markAttendance(@RequestBody AttendanceDTO dto) {  
        service.markAttendance(dto);  
        return ResponseEntity.ok("Attendance marked");  
    }  
  
    @GetMapping("/report")  
    @PreAuthorize("hasRole('MANAGER')")  
    public List<AttendanceReport> getReport() {  
        return service.generateReport();  
    }  
}
```