

## Lab 6

**1- Create an Employee Management System with the specified validations and endpoints.**  
**Below is a structured guide on how define the Employee model, and implement the required functionalities:**

**Use:** Spring web Lombok and Validation Dependencies.

**Create:** Employee Model and EmployeeController.

**Employees Model has:** ID , name , age , position , onLeave, employmentYear and annualLeave.

**Validation:**

- ID:
  - Cannot be null.
  - Length must be more than 2 characters.
- Name:
  - Cannot be null.
  - Length must be more than 4 characters.
  - Must contain only characters (no numbers).
- Email:
  - Must be a valid email format.
- Phone Number:
  - Must start with "05".
  - Must consists of exactly 10 digits.
- Age:
  - Cannot be null.
  - Must be a number.
  - Must be more than 25.
- Position:
  - Cannot be null.
  - Must be either "supervisor" or "coordinator" only.
- onLeave:
  - Must be initially set to false.
- hireDate:
  - Cannot be null.
  - should be a date in the past or the present.
  - Must be a valid year (e.g., 1900 or later).

- AnnualLeave:
  - Cannot be null.
  - Must be a positive number.

### **EmployeeController Endpoint:**

1. **Get all employees:** Retrieves a list of all employees.
2. **Add a new employee:** Adds a new employee to the system.
3. **Update an employee:** Updates an existing employee's information.
4. **Delete an employee:** Deletes an employee from the system.  
 Note:
  - Verify that the employee exists.
5. **Search Employees by Position:** Retrieves a list of employees based on their position (supervisor or coordinator).  
 Note:
  - Ensure that the position parameter is valid (either "supervisor" or "coordinator").
6. **Get Employees by Age Range:** Retrieves a list of employees within a specified age range.  
 Note:
  - Ensure that minAge and maxAge are valid age values.
7. **Apply for annual leave:** Allow employees to apply for annual leave.  
 Note:
  - Verify that the employee exists.
  - The employee must not be on leave (the onLeave flag must be false).
  - The employee must have at least one day of annual leave remaining.
  - Behavior:
    - Set the onLeave flag to true.
    - Reduce the annualLeave by 1.
8. **Get Employees with No Annual Leave:** Retrieves a list of employees who have used up all their annual leave.
9. **Promote Employee:** Allows a supervisor to promote an employee to the position of supervisor if they meet certain criteria.  
 Note:
  - Verify that the employee with the specified ID exists.
  - Ensure that the requester (user making the request) is a supervisor.
  - Validate that the employee's age is at least 30 years.
  - Confirm that the employee is not currently on leave.
  - Change the employee's position to "supervisor" if they meet the criteria.

## **2- Validation Checklist Creation:**

- Choose a specific domain or industry, such as healthcare, finance, or education.
- Create a validation checklist for data or processes relevant to that domain.
- Include items that should be validated, validation rules or criteria, and the potential consequences of failing to validate.
- Share your checklist with colleagues or mentors in that domain for feedback and refinement.
- Use this exercise to practice creating comprehensive validation guidelines for a specific context.