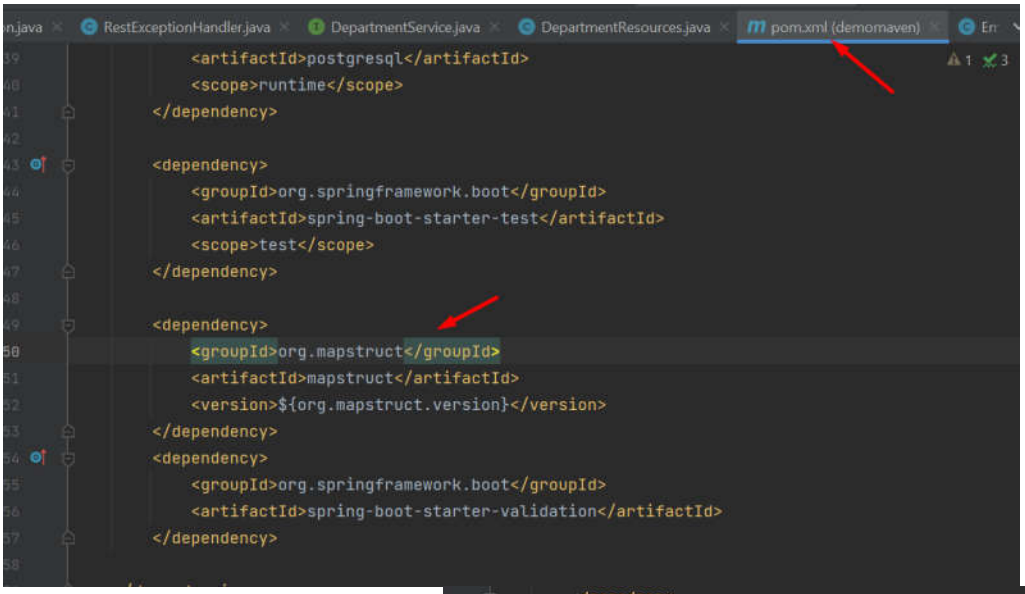
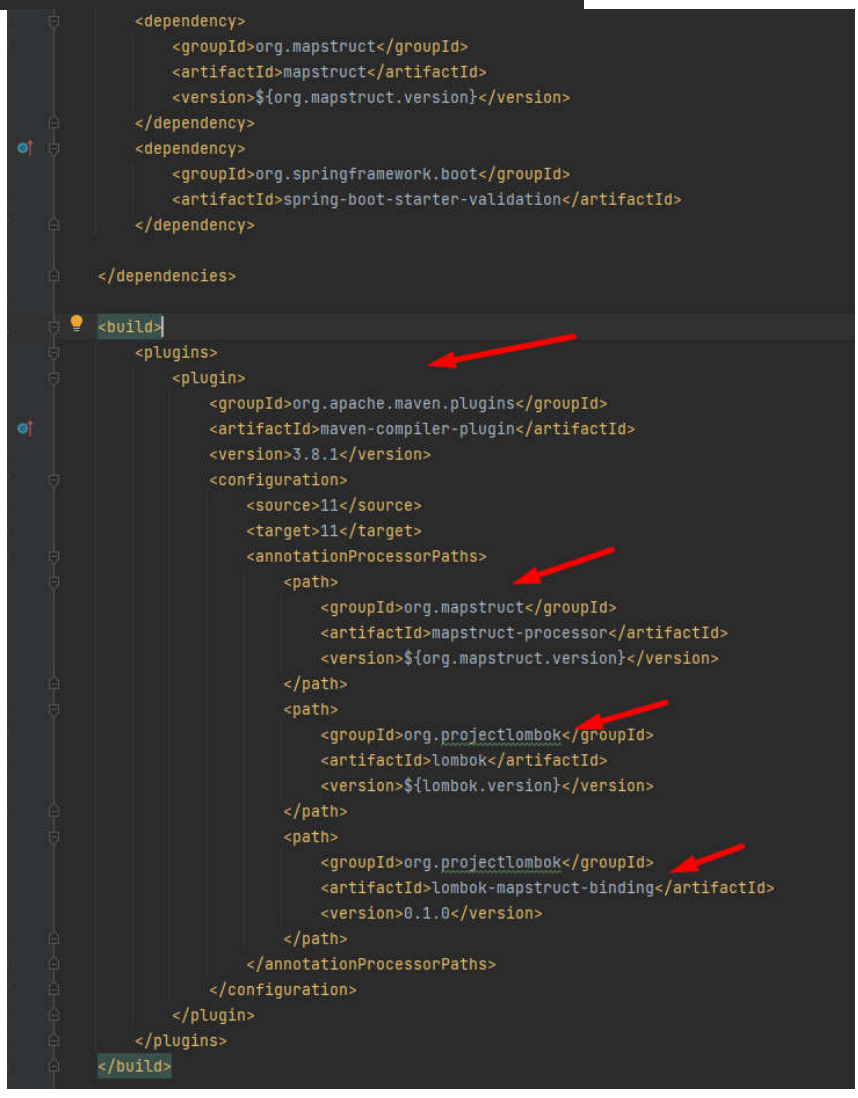
Mapstruct

Step 1: Add dependency & Maven Plugin





Step 2: Define Department mapper to map Entity to Dto:

1. Using INSTANCE:

```
6 usages  1 implementation
@Mapper(unmappedTargetPolicy = ReportingPolicy.IGNORE)
public interface DepartmentMapper {
    2 usages
    DepartmentMapper INSTANCE = Mappers.getMapper(DepartmentMapper.class);


    2 usages  1 implementation
    DepartmentDto toDto(Department department);

    1 usage  1 implementation
    List<DepartmentDto> toDtos(List<Department> departments);

}
```

➔ Then using these Mapper class:

```
import java.util.List;

@Service
@RequiredArgsConstructor
public class DepartmentServiceImpl implements DepartmentService {
    4 usages
    private final DepartmentRepository departmentRepository;

    1 usage
    @Override
    public List<DepartmentDto> getALl() {
        return DepartmentMapper.INSTANCE.toDtos(departmentRepository.findAll());
    }
    1 usage
    @Override
    public List<DepartmentStatisticsDto> getDepartmentStatistics() {
        return departmentRepository.countEmployeesInDepartments();
    }

    @Override
    public List<DepartmentStatisticsDto> getDepartmentStatisticsByJPAQL() {
        return departmentRepository.countEmployeesInDepartmentsJPAQL();
    }

    1 usage
    @Override
    public DepartmentDto findById(Long departmentId) {
        Department department = departmentRepository.findById(departmentId).orElseThrow(DemoException::DepartmentNotFound);
        return DepartmentMapper.INSTANCE.toDto(department);
    }
}
```

Using componentModel

```java
import com.example.demomaven.entity.Employee;
import com.example.demomaven.service.dto.EmployeeDto;
import org.mapstruct.Mapper;
import org.mapstruct.Mapping;

import java.util.List;

3 usages  1 implementation
@Mapper(componentModel = "spring")
public interface EmployeeMapper {

    1 usage  1 implementation
    @Mapping(target = "departmentName", source = "department.name")
    EmployeeDto toDto(Employee employee);

    1 usage  1 implementation
    List<EmployeeDto> toDtos(List<Employee> employees);

}
```

➔ Then Using Employee mapper(using requiredArgConstructor or using @Autowired)

```java
import java.util.List;

@Service
@RequiredArgsConstructor
@Slf4j
public class EmployeeServiceImpl implements EmployeeService {
    1 usage
    private final EmployeeRepository employeeRepository;
    1 usage
    private final EmployeeMapper employeeMapper;

    1 usage
    @Override
    public List<EmployeeDto> getEmployeeByFirstName(String firstName) {

        return employeeMapper.toDtos(employeeRepository.getEmployeebyFirstname(firstName));
    }

}
```