KB금융그룹 | 국민의 평생 금융파트너

2024년 상반기 K-디지털 트레이닝

비즈니스 계층

[KB] IT's Your Life

KB 국민은행

DTO, Data Transfer Object

VO, Value Object

- 데이터베이스 테이블의 모양을 그대로 반영한 객체
- Dao에서 사용

DTO

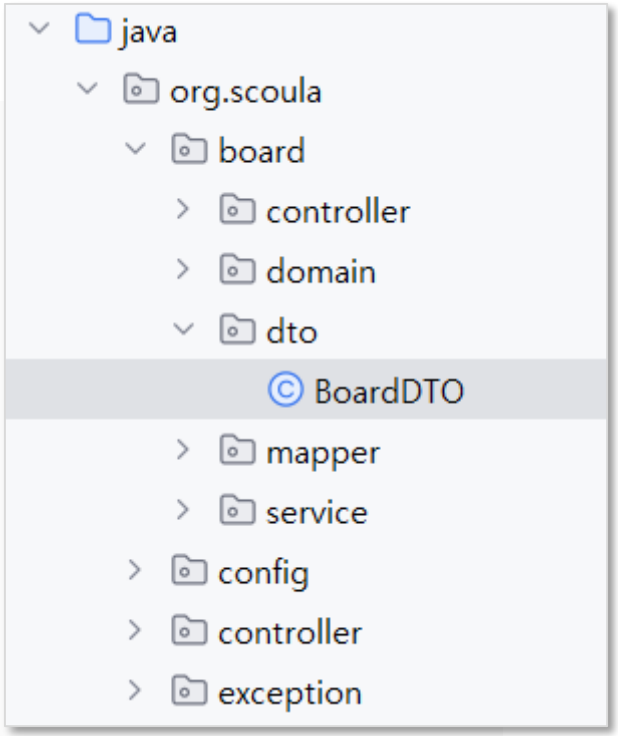
- Dao를 제외한 나머지 계층(Service, Controller, View 등)에서 사용
- 테이블에 없지만 비즈니스 로직에 필요한 추가 정보도 포함 가능

VO와 DTO간 상호 변환 기능 필요

- VO → DTO
- DTO → VO

BoardDTO.java

```
package org.scoula.board.dto;
…

import java.util.ArrayList;
import java.util.Date;
import java.util.List;

@Data
@NoArgsConstructor
@AllArgsConstructor
@Builder
public class BoardDTO {
    private Long no;
    private String title;
    private String content;
    private String writer;
    private Date regDate;
    private Date updateDate;
```



BoardDTO.java

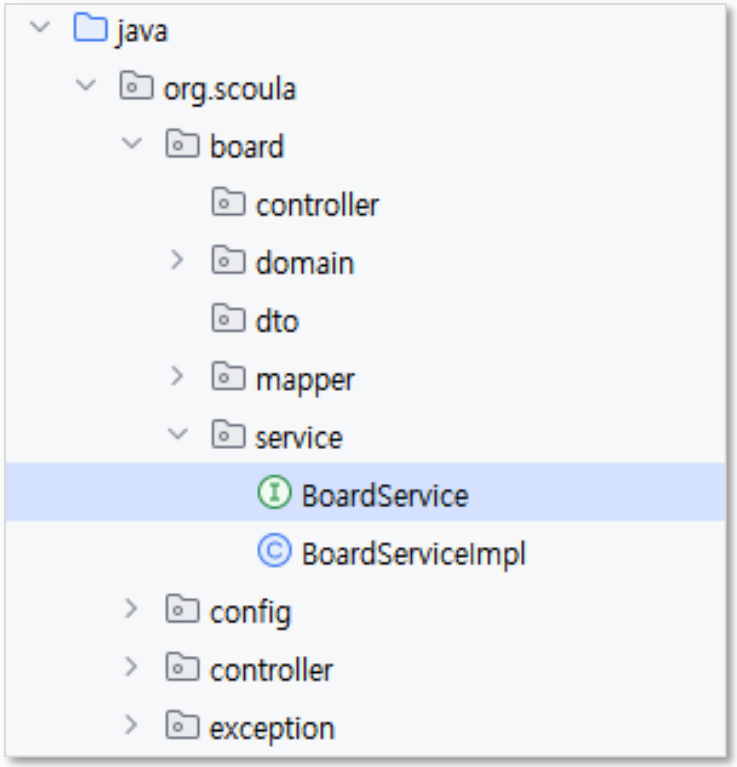
```
    // VO → DTO 변환
    public static BoardDTO of(BoardVO vo) {
        return vo == null ? null : BoardDTO.builder()
                .no(vo.getNo())
                .title(vo.getTitle())
                .content(vo.getContent())
                .writer(vo.getWriter())
                .regDate(vo.getRegDate())
                .updateDate(vo.getUpdateDate())
                .build();
    }

    // DTO → VO 변환
    public BoardVO toVo() {
        return BoardVO.builder()
                .no(no)
                .title(title)
                .content(content)
                .writer(writer)
                .regDate(regDate)
                .updateDate(updateDate)
                .build();
    }
}
```

RootConfig.java

```
package org.scoula.config;

import javax.sql.DataSource;

import org.apache.ibatis.session.SqlSessionFactory;
import org.mybatis.spring.SqlSessionFactoryBean;
import org.mybatis.spring.annotation.MapperScan;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;

import com.zaxxer.hikari.HikariConfig;
import com.zaxxer.hikari.HikariDataSource;

@Configuration
@ComponentScan(basePackages={ "org.scoula.board.service" })
@MapperScan(basePackages  = {"org.scoula.board.mapper"})
public class RootConfig {

    …
}
```

BoardService.java

```
package org.scoula.board.service;

import org.scoula.board.dto.BoarDTO;

import java.util.List;
import java.util.Optional;

public interface BoardService {
    public List<BoardDTO> getList();

    public BoardDTO get(Long no);

    public void create(BoardDTO board);

    public boolean update(BoardDTO board);

    public boolean delete(Long no);

}
```

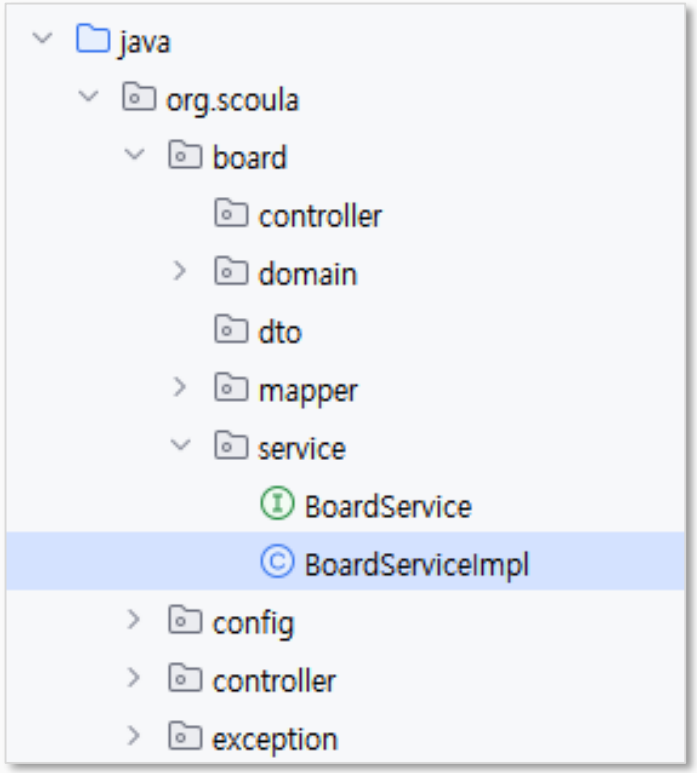


BoardServiceImpl.java

```
package org.scoula.board.service;

import java.util.List;

import org.springframework.stereotype.Service;
import org.scoula.board.domain.BoardVO;
import org.scoula.board.mapper.BoardMapper;

import lombok.AllArgsConstructor;
import lombok.extern.log4j.Log4j;

@Log4j
@Service
@RequiredArgsConstructor
public class BoardServiceImpl implements BoardService {

    final private BoardMapper mapper;
```

final 멤버를 인자로 가지는 생성자 추가

생성자가 1개인 경우 생성자 주입으로 초기화

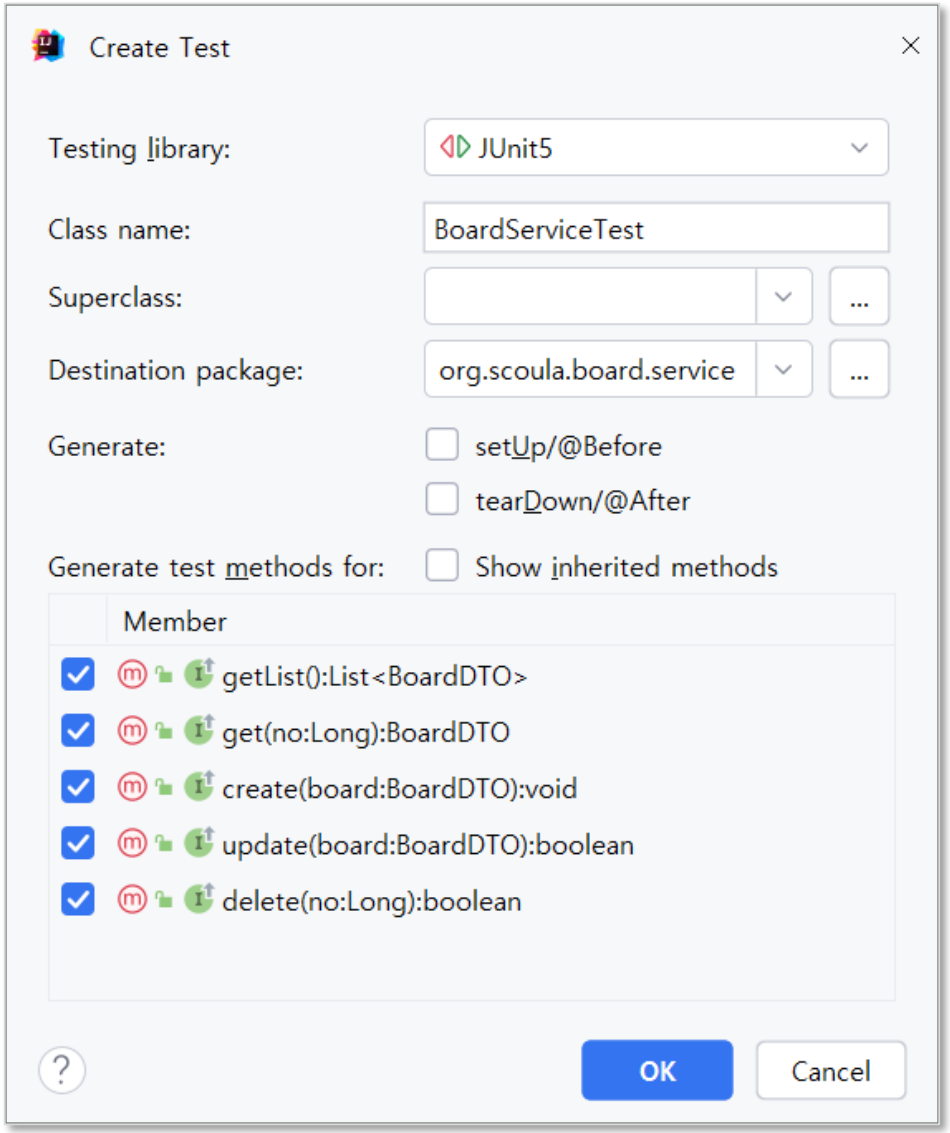


BoardServiceImpl.java

```
  @Override
  public List<BoardDTO> getList() { … }

  @Override
  public BoardDTO get(Long no) { … }

  @Override
  public void create(BoardDTO board) { … }

  @Override
  public boolean update(BoardDTO board) { … }

  @Override
  public boolean delete(Long no) { … }
  }

}
```

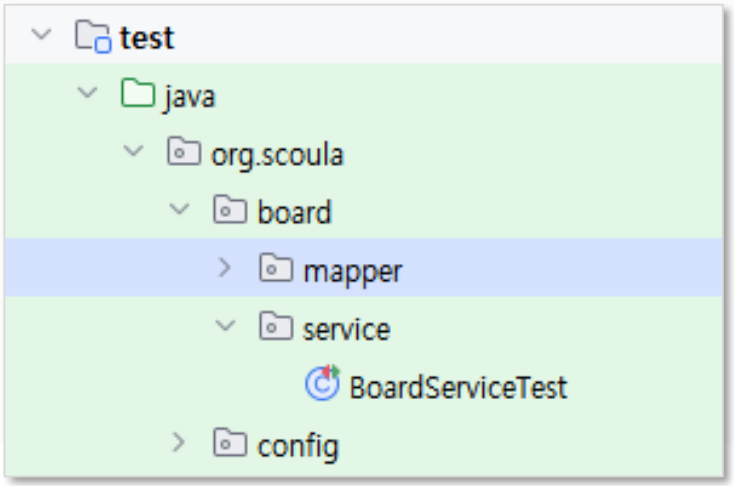
비즈니스 계층의 구현과 테스트

test :: BoardServiceTest.java



test :: BoardServiceTest.java

```
…

@ExtendWith(SpringExtension.class)
@ContextConfiguration(classes = {RootConfig.class} )
@Log4j
public class BoardServiceTest {

  @Autowired
  private BoardService service;

  …

}
```



BoardServiceImpl.java

```
@Override
public List<BoardVO> getList() {

  log.info("getList.........");

      return mapper.getList().stream() // BoardVO의 스트림
              .map(BoardDTO::of)     // BoardDTO의 스트림
              .toList();               // List<BoardDTO> 변환
}
```

test :: BoardServiceTest.java

```
@Test
public void getList() {

  for(BoardDTO board: service.getList()) {
    log.info(board);
  }

}
```

INFO : org.scoula.board.service.BoardServiceImpl - getList.....
INFO : **jdbc.sqlonly - select * from tbl_board**

INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=1, title=테스트 제목1, content=테스트 내용1, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=2, title=테스트 제목2, content=테스트 내용2, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=3, title=테스트 제목3, content=테스트 내용3, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=4, title=테스트 제목4, content=테스트 내용4, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=5, title=수정된 제목, content=수정된 내용, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:58:14 KST 2024)
INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=6, title=새로 작성하는 글, content=새로 작성하는 내용, writer=user0, regDate=Tue Jul 02 13:56:51 KST 2024, updateDate=Tue Jul 02 13:56:51 KST 2024)
> Task :test

BoardServiceImpl.java

```
@Override
public BoardDTO get(Long no) {

  log.info("get......" + no);

  BoardDTO board = BoardDTO.of(mapper.get(no));
  return Optional.ofNullable(board)
              .orElseThrow(NoSuchElementException::new);
}
```

test :: BoardServiceTest.java

```
@Test
void get() {
    log.info(service.get(1L));
}
```

INFO : org.scoula.board.service.BoardServiceImpl - get.....1
INFO : **jdbc.sqlonly - select * from tbl_board where no = 1**

INFO : org.scoula.board.service.BoardServiceImplTest - BoardVO(no=1, title=테스트 제목1, content=테스트 내용1, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
> Task :test

BoardServiceImpl.java

```
@Override
public void create(BoardDTO board) {

  log.info("create......" + board);

  mapper.create(board.toVo());
}
```

test :: BoardServiceTest.java

```
@Test
public void create() {

  BoardDTO board = new BoardDTO();
  board.setTitle("새로 작성하는 글");
  board.setContent("새로 작성하는 내용");
  board.setWriter("user1");

  service.create(board);

  log.info("생성된 게시물의 번호: " + board.getNo());
}
```

INFO : org.scoula.board.service.BoardServiceImpl - create.....BoardVO(no=null, title=새로 작성하는 글, content=새로 작성하는 내용, writer=user1, regDate=null, updateDate=null)
INFO : jdbc.sqlonly - **insert into tbl_board (title, content, writer) values ('새로 작성하는 글', '새로 작성하는 내용', 'user1')**

BoardServiceImpl.java

```
@Override
public boolean update(BoardDTO board) {

  log.info("update......" + board);

  return mapper.update(board) == 1;
}
```

test :: BoardServiceTest.java

```
@Test
public void update() {

    BoardDTO board = service.get(1L);

    board.setTitle("제목 수정합니다.");
    log.info("update RESULT: " + service.update(board));
}
```

INFO : org.scoula.board.service.BoardServiceImpl - update.....BoardVO(no=1, title=제목 수정합니다., content=테스트 내용1, writer=user00, regDate=Tue Jul 02 13:37:07 KST 2024, updateDate=Tue Jul 02 13:37:07 KST 2024)
INFO : jdbc.sqlonly - **update tbl_board set title = '제목 수정합니다.', content = '테스트 내용1', writer = 'user00', update_date = now() where no = 1**

INFO : org.scoula.board.service.BoardServiceImplTest - update RESULT: true
> Task :test

BoardServiceImpl.java

```
@Override
public boolean delete(Long no) {

  log.info("delete...." + no);

  return mapper.delete(no) == 1;
}
```

test :: BoardServiceTest.java

```
@Test
public void delete() {

  // 게시물 번호의 존재 여부를 확인하고 테스트할 것
  log.info("delete RESULT: " + service.delete(2L));

}
```

INFO : org.scoula.board.service.BoardServiceImpl - delete....2
INFO : jdbc.sqlonly - **delete from tbl_board where no = 2**

INFO : org.scoula.board.service.BoardServiceImplTest - delete RESULT: true
> Task :test