Spring JDBC

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/5b3b29bb-ea75-42ee-bc81-415389d97e5d/CarShop_JDBC.zip

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/fa35ad88-b058-4f09-b58d-148243e99937/CarShop_My.zip

Spring JDBC

실습용 DB 데이터 입력

Column	Type
◇ cid	varchar(45)
◇ cname	varchar(45)
◇ cprice	varchar(45)
◇ ccate	varchar(45)
◇ cdesc	varchar(200)
◇ cfilename	varchar(45)

JDBC 기본 연결 설정

pom.xml 의존성 라이브러리 추가 3개

```xml
<!-- <https://mvnrepository.com/artifact/org.springframework/spring-jdbc> -->
<dependency>
    <groupId>org.springframework</groupId>
    <artifactId>spring-jdbc</artifactId>
    <version>5.3.19</version>
</dependency>

<!-- <https://mvnrepository.com/artifact/org.apache.commons/commons-dbcp2> -->
<dependency>
    <groupId>org.apache.commons</groupId>
    <artifactId>commons-dbcp2</artifactId>
    <version>2.5.0</version>
</dependency>

<!-- <https://mvnrepository.com/artifact/mysql/mysql-connector-java> -->
<dependency>
    <groupId>mysql</groupId>
    <artifactId>mysql-connector-java</artifactId>
    <version>8.0.24</version>
</dependency>
```

servlet-context.xml

디비 연결에 필요한 아이디, 비번 등을 설정

```
<beans:bean id="dataSource"
    class="org.springframework.jdbc.datasource.DriverManagerDataSource">
    <beans:property name="driverClassName" value="com.mysql.cj.jdbc.Driver"/>
    <beans:property name="url" value="jdbc:mysql://localhost:3306/yoonkeunsoo?serverTimezone=UTC"/>
    <beans:property name="username" value="#"/>
    <beans:property name="password" value="#"/>
```

앱과 DB 연결 (repository)

carRepositoryImpl.java

```
private JdbcTemplate template;

  @Autowired
  public void setJdbctemplate(DataSource dataSource) {
    this.template = new JdbcTemplate(dataSource);
  }
```
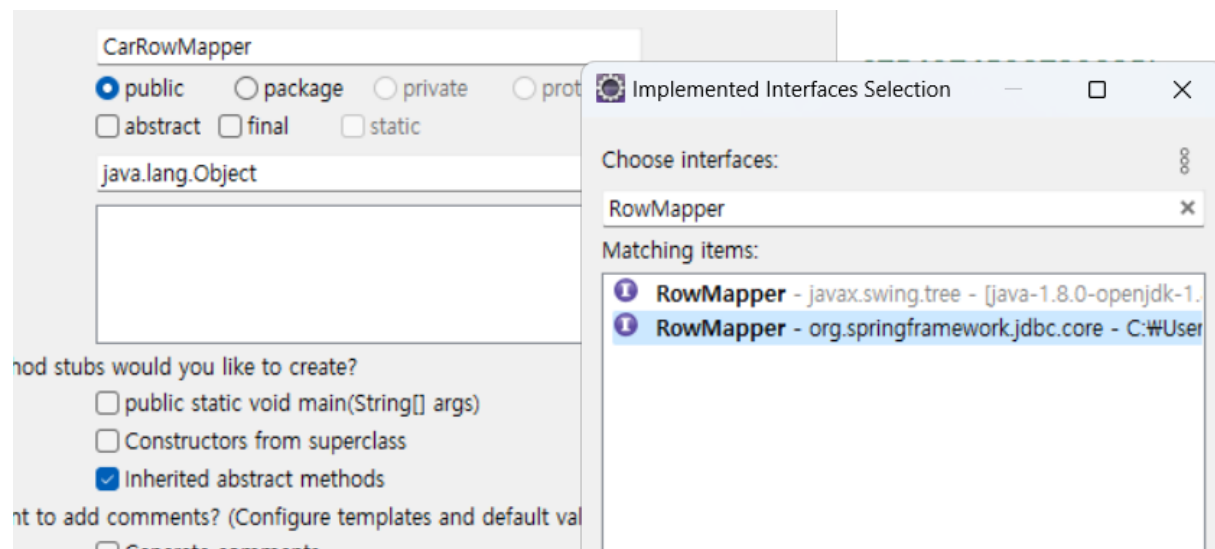
차량 전체 목록 조회 (cars.jsp)

CarDTO 수정


```java
private String cfilename;


public String getCfilename() {
    return cfilename;
}

public void setCfilename(String cfilename) {
    this.cfilename = cfilename;
}
```

CarRowMapper 생성

데이터베이스에 등록된 차량 한대 한대의 객체를 목록에 담기위해 mapper 클래스 생성


```java
package com.carshop.controller;

import java.sql.ResultSet;
import java.sql.SQLException;

import org.springframework.jdbc.core.RowMapper;

public class CarRowMapper implements RowMapper<CarDTO> {

  public CarDTO mapRow(ResultSet rs, int rowNum) throws SQLException {
    CarDTO car = new CarDTO();
```

```
        car.setCid(rs.getString(1));
        car.setCname(rs.getString(2));
        car.setCprice(rs.getString(3));
        car.setCcate(rs.getString(4));
        car.setCdesc(rs.getString(5));
        car.setCfilename(rs.getString(6));

        return car;
    }
}
```

목록을 디비에서 꺼내기 위한 SQL 생성

CarRepositoryImpl.java

CarRowMapper() 를 사용하여 챠량 한대한대를 객체로 만들어 list로 담아서 가지고 나간다.

```
@Override
  public List<CarDTO> getAllCarList() {
    String sql = "SELECT * FROM car";
    List<CarDTO> listOfCars = template.query(sql, new CarRowMapper());
    return listOfCars;
  }
```

차량 전체 목록 보기에 이어서 cars.jsp

차량 한대 자세히 보기 car.jsp

```
public CarDTO getCarById(String carId) {

    CarDTO carInfo = null;

    String sql = "SELECT count(*) FROM car where cid=?";
    int rowCount = template.queryForObject(sql, Integer.class, carId);
    if (rowCount != 0) {
      sql = "SELECT * FROM car where cid=?";
      carInfo = template.queryForObject(sql, new Object[] {carId}, new CarRowMapper());

    }


    if (carInfo == null) {
      throw new IllegalArgumentException("자동차 ID 가 " + carId + "인 자동차는 없습니다. ");
    }

    return carInfo;
  }
```

View 수정

Cars.jsp

기존 임시로 설정했던 사진 파일 부분을 이제 완전한 DB 에서 꺼내온 값으로 대치

```
<div class="container">
    <div class="row" align="center">

    <c:forEach items="${carList}" var="car">
```

```
        <div class = "col-md-4">
                <c:choose>
                        <c:when test="${car.getCarimage()==null}">
                 <img src="<c:url value="/resources/images/${car.getCid()}.jpg"/>" style="width:60%"/>
                        </c:when>
                        <c:otherwise>
        <img src="<c:url value="/resources/images/${car.filename}"/>" style="width:60%"/>
                        </c:otherwise>
                </c:choose>
        <h3>${car.cid}</h3>
        <p>${car.cname}
        <p>${car.cprice} 만원
        <p><a href="<c:url value="cars/car?id=${car.cid}"/>" class="btn btn-primary" role="button">상세보기 &raquo;</
a></p>
        </div>

    </c:forEach>

    </div>
  </div>
```

Car.jsp

```
<div class="container">
        <div class="row">
            <div class="col-md-4">
  <c:choose>
                        <c:when test="${car.getCarimage()==null}">
                <img class="img-responsive center-block" src="<c:url value="/resources/images/${car.getCid()}.jpg"/
>" style="width:100%"/>
                        </c:when>
                        <c:otherwise>
        <img class="img-responsive center-block" src="<c:url value="/resources/images/${car.filename}"/>" style="wi
dth:100%"/>
                        </c:otherwise>
                </c:choose>
             </div>
              <div class="col-md-8">

                <br>
                <p><b>제품코드 : </b>${car.cid}
        <p>${car.cname}
        <p>${car.cprice} 만원
        <p>${car.ccate}
        <p>${car.cdesc}
                <br>
        <form:form name="addForm" method="put">
            <a href="javascript:addcartFunction()" class="btn btn-primary">제품주문 &raquo;</a>
                <%--기존 방식을 ajax 적용--%>
            <a href="<c:url value="/cart"/>" class = "btn btn-warning">장바구니 &raquo;</a>
            <a href="<c:url value="/cars"/>" class = "btn btn-secondary">제품목록 &raquo;</a>
            </form:form>
            </div>

        <h3></h3>

    <p>

    </div>
  </div>
```

신규 차량 등록

CarRepositoryImpl.java

```
//  public void setNewCar(CarDTO car) {
```

```
//    listOfCars.add(car);
// }

public void setNewCar(CarDTO car) {
    String sql = "INSERT INTO car (cid, cname, cprice, ccate, cdesc, cfilename) "
            + "VALUES (?,?,?,?,?,?)";

    template.update(sql, car.getCid(),
                car.getCname(),
                car.getCprice(),
                car.getCcate(),
                car.getCdesc(),
                car.getCfilename());
  }
```

신규 차량 등록을 위해 header 에 관리자 메뉴 생성 후 제품등록 메뉴 생성

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
  pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="<http://java.sun.com/jsp/jstl/core>"%>
<%@ taglib prefix="sec" uri="<http://www.springframework.org/security/tags>" %>

<link
  href="<https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css>"
  rel="stylesheet"
  integrity="sha384-GLhlTQ8iRABdZLl6O3oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD"
  crossorigin="anonymous">

<nav class="navbar navbar-expand navbar-dark bg-dark fixed-top"
  aria-label="Second navbar example">
  <div class="container-fluid">
 <a class="navbar-brand" href="#">
      <img src="<http://austiny.snu.ac.kr/image/mine.jpg>" alt="Bootstrap" width="35" height="40">
    </a>

    <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
      data-bs-target="#navbarsExample02" aria-controls="navbarsExample02"
      aria-expanded="false" aria-label="Toggle navigation">
      <span class="navbar-toggler-icon"></span>
    </button>

    <div class="collapse navbar-collapse" id="navbarsExample02">
      <ul class="navbar-nav me-auto">
        <li class="nav-item"><a class="nav-link active"
          aria-current="page" href="/">홈</a></li>
        <li class="nav-item"><a class="nav-link" href="/cars">차량 보기</a></li>
        <li class="nav-item"><a class="nav-link" href="/cart">장바구니</a></li>
        <li class="nav-item dropdown"><a
          class="nav-link dropdown-toggle" href="#" role="button"
          data-bs-toggle="dropdown" aria-expanded="false"> 회원관리</a>


          <ul class="dropdown-menu">

          <sec:authorize access="isAnonymous()">
            <li><a class="dropdown-item" href="/login">로그인</a></li>
          </sec:authorize>
            <sec:authorize access="isAuthenticated()">
              <li><a class="dropdown-item" href="/logout">로그아웃</a></li>
            </sec:authorize>

          </ul>

        <li class="nav-item dropdown"><a
          class="nav-link dropdown-toggle" href="#" role="button"
          data-bs-toggle="dropdown" aria-expanded="false"> 관리자</a>

          <ul class="dropdown-menu">

          <sec:authorize access="isAnonymous()">
```

```
                  <li><a class="dropdown-item" href="/cars/add">제품등록</a></li>
             </sec:authorize>
               <sec:authorize access="isAuthenticated()">
                 <li><a class="dropdown-item" href="#">회원관리</a></li>
               </sec:authorize>

             </ul>


           </li>
       </ul>


   <sec:authentication property="principal" var="user"/>
   <sec:authorize access="isAuthenticated()">
   <div class="bg-white h6">${user.username} 님 로그인 하셨습니다.</div>          
         <form method="post" action="/logout">
           <input type="submit" class="btn btn-success btn-xs" value="Logout" />
           <input type="hidden" name="${_csrf.parameterName}" value="${_csrf.token}" />
         </form>
   </sec:authorize>

   <sec:authorize access="isAnonymous()">
   <div class="bg-white h6"> 로그인 하세요. </div>                     &nbs
   p;
         <form method="get" action="/login">
           <input type="submit" class="btn btn-primary btn-xs" value="Login" />
           <input type="hidden" name="${_csrf.parameterName}" value="${_csrf.token}" />
     </form>
   </sec:authorize>

       </div>
     </div>
   </nav>
```

버그 리포트

- car.jsp, cars.jsp filename → cfilename 으로 변경하고
  - 사진 링크 부분 테스트용 코드 지우기

```
<img src="<c:url value="/resources/images/${car.cfilename}"/>" style="widt

<h3>${car.cid}</h3>
<p>${car.cname}
<p>${car.cprice} 만원
```

- CarDTO 생성자에 cfilename 추가
- CarController 에 사진명 추출 추가

```java
@PostMapping("/add")
public String submitAddNewCar(@ModelAttribute("NewCar") CarDTO car) {

    MultipartFile carimage = car.getCarimage();

    String saveName = carimage.getOriginalFilename();
    File saveFile = new File(uploadPath + "\\images", saveName);

    if (carimage != null && !carimage.isEmpty()) {
        try {
            carimage.transferTo(saveFile);
            car.setCfilename(saveName);
        } catch (Exception e) {
            throw new RuntimeException("차량 이미지 업로드가 실패했습니다.");
        }
    }
}
```

사진이 안보이면 images 폴더를 한번 리프래쉬

Quiz 관리자 페이지에서 DB 제품 삭제 기능 구현

관리자 전용 메뉴 생성하고

```html
<sec:authentication property="principal" var="user"/>
<sec:authorize access="hasRole('ROLE_ADMIN')">

    <li class="nav-item dropdown"><a
      class="nav-link dropdown-toggle" href="#" role="button"
      data-bs-toggle="dropdown" aria-expanded="false"> 관리자</a>

      <ul class="dropdown-menu">


        <li><a class="dropdown-item" href="/cars/add">제품등록</a></li>
        <li><a class="dropdown-item" href="/cars/product">제품관리</a></li>

    <li><a class="dropdown-item" href="#">회원관리</a></li>


      </ul>
</sec:authorize>
```

제품관리 메뉴를 누르면 cars 처럼 모든 제품목록이 게시판 목록 형태로 출력되고

(사진은 없어도 됨)

오른쪽 끝에 삭제 단추를 누르면 해당 제품이 디비에서 삭제 되도록 할것

> *강세빈*

제출 코드

▼ product.jsp

```jsp
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<%@ taglib prefix="c" uri="<http://java.sun.com/jsp/jstl/core>"%>
<%@ taglib prefix="form" uri="<http://www.springframework.org/tags/form>"%>
<html>
<head>
    <title>Car Detail</title>
    <script>
        function removeCar(cid) {
            $.ajax({
                type:"POST",
                url:"/cars/remove",
                data:{cid: cid },
                beforeSend : function(xhr)
                {   /*데이터를 전송하기 전에 헤더에 csrf값을 설정한다*/
                    xhr.setRequestHeader("${_csrf.headerName}", "${_csrf.token}");
                },
                success: function(result) {
                    alert("제품이 삭제되었습니다.")
                },
                error:function (request, status, error) {
                    alert(request.status + " " + request.responseText);
                }
            })

            window.location.reload();
        }
    </script>
</head>
<body>
<div class="alert alert-dark" role="alert">
    <div class="container">
        <h1>
            제품 목록
        </h1>
    </div>
</div>

<div class="container">
    <div style="padding-top: 50px">
        <table class="table table-hover">
            <tr>
                <th>차량 ID</th>
                <th>이름</th>
                <th>가격</th>
                <th>종류</th>
                <th>비고</th>
            </tr>
            <form:form name="removeForm" method="put">
                <c:forEach items="${carList}" var="car">
                    <tr>
                        <td>${car.cid}</td>
                        <td>${car.cname}</td>
                        <td>${car.cprice}</td>
                        <td>${car.ccate}</td>
                        <td>
                            <a href="javascript:removeCar('${car.cid}')" class="btn btn-danger btn-sm">삭제</a>
                        </td>
                    </tr>
                </c:forEach>
            </form:form>
        </table>
    </div>
    <hr>
</div>
</body>
</html>
```

▼ CarController.java

```java
@GetMapping("/product")
public String manageProduct(Model model) {
    List<CarDTO> list = carService.getAllCarList();
```

```
    model.addAttribute("carList", list);

    return "product";
}

@ResponseBody
@RequestMapping("/remove")
public void removeCar(@RequestParam("cid") String cid) {
    carService.removeCar(cid);
}
```

▼ CarServiceImpl.java

```
@Override
public void removeCar(String cid) {
    carRepository.removeCar(cid);
}
```

▼ CarRepository.java, CarService.java

```
void removeCar(String cid);
```

▼ CarRepositoryImpl.java

```
@Override
public void removeCar(String cid) {
    String sql = "DELETE FROM car where cid = ?";

    template.update(sql, cid);
}
```

요청

header.jsp

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
  pageEncoding="UTF-8"%>
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core"%>
<%@ taglib prefix="sec" uri="http://www.springframework.org/security/tags" %>


<link
  href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css"
  rel="stylesheet"
  integrity="sha384-GLhlTQ8iRABdZLl6O3oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD"
  crossorigin="anonymous">

<nav class="navbar navbar-expand navbar-dark bg-dark fixed-top"
  aria-label="Second navbar example">
  <div class="container-fluid">
 <a class="navbar-brand" href="#">
     <img src="http://austiny.snu.ac.kr/image/mine.jpg" alt="Bootstrap" width="35" height="40">
   </a>

   <button class="navbar-toggler" type="button" data-bs-toggle="collapse"
     data-bs-target="#navbarsExample02" aria-controls="navbarsExample02"
     aria-expanded="false" aria-label="Toggle navigation">
     <span class="navbar-toggler-icon"></span>
   </button>

   <div class="collapse navbar-collapse" id="navbarsExample02">
     <ul class="navbar-nav me-auto">
```

```html
        <li class="nav-item"><a class="nav-link active"
          aria-current="page" href="/">홈</a></li>
        <li class="nav-item"><a class="nav-link" href="/cars">차량 보기</a></li>
        <li class="nav-item"><a class="nav-link" href="/cart">장바구니</a></li>
        <li class="nav-item dropdown"><a
          class="nav-link dropdown-toggle" href="#" role="button"
          data-bs-toggle="dropdown" aria-expanded="false"> 회원관리</a>


          <ul class="dropdown-menu">

          <sec:authorize access="isAnonymous()">
            <li><a class="dropdown-item" href="/login">로그인</a></li>
          </sec:authorize>
            <sec:authorize access="isAuthenticated()">
              <li><a class="dropdown-item" href="/logout">로그아웃</a></li>
            </sec:authorize>

          </ul>
<sec:authentication property="principal" var="user"/>
<sec:authorize access="hasRole('ROLE_ADMIN')">

        <li class="nav-item dropdown"><a
          class="nav-link dropdown-toggle" href="#" role="button"
          data-bs-toggle="dropdown" aria-expanded="false"> 관리자</a>

          <ul class="dropdown-menu">


            <li><a class="dropdown-item" href="/cars/add">제품등록</a></li>
            <li><a class="dropdown-item" href="/cars/product">제품관리</a></li>

      <li><a class="dropdown-item" href="#">회원관리</a></li>


          </ul>
</sec:authorize>

          </li>
        </ul>


<sec:authentication property="principal" var="user"/>
<sec:authorize access="isAuthenticated()">
<div class="bg-white h6">${user.username} 님 로그인 하셨습니다.</div>          
      <form method="post" action="/logout">
        <input type="submit" class="btn btn-success btn-xs" value="Logout" />
        <input type="hidden" name="${_csrf.parameterName}" value="${_csrf.token}" />
      </form>
</sec:authorize>


<sec:authorize access="isAnonymous()">
<div class="bg-white h6"> 로그인 하세요. </div>                      
        <form method="get" action="/login">
        <input type="submit" class="btn btn-primary btn-xs" value="Login" />
        <input type="hidden" name="${_csrf.parameterName}" value="${_csrf.token}" />
  </form>
</sec:authorize>



    </div>
  </div>
</nav>
```