**20-1 데이터베이스 프로그래밍 프로젝트 보고서**

**1인 프로젝트 : 이지혜(1510188)**

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| 연도 | 2020년 | 학기 | 1학기 |
| 과목명 | 데이터베이스 프로그래밍 | 분반 | 02분반 |
| 실습 번호 | **FINAL** | | |
| 이름 | 이지혜 | 학번 | 1510188 |

1. **DB 설계**

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| **1-1. DB 설계도** |
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| **1-2. CREATE TABLE (PL\_SQL/table\_ddl.txt | 포함 내용 : PK,FK,View, Join)** |
| **(1) 학생 정보를 담는 STUDENTS 테이블**  CREATE TABLE STUDENTS(  S\_ID VARCHAR2(10), S\_PWD VARCHAR2(30), S\_MAJOR VARCHAR2(30),  S\_NAME VARCHAR2(13), S\_ADDR VARCHAR2(20), S\_UNIT NUMBER(2),  S\_GRADE NUMBER(1),  CONSTRAINT students\_pk PRIMARY KEY(S\_ID)  );  **(2) 교수 정보를 담는 PROFESSOR 테이블**  CREATE TABLE professor(  P\_ID NUMBER(3),  NAME VARCHAR2(13),  MAJOR VARCHAR2(20),  CONSTRAINT prof\_pk PRIMARY KEY(p\_id)  );  **(3) 전반적인 강의 정보를 담는 COURSE 테이블**  CREATE TABLE COURSE(  c\_year NUMBER(4) NOT NULL, c\_semes NUMBER(1) NOT NULL,  p\_id NUMBER(3),  c\_id NUMBER(8), c\_id\_no NUMBER(1), c\_name VARCHAR2(30), c\_unit NUMBER(1),  c\_personnel NUMBER(3), c\_remain NUMBER(3), c\_type VARCHAR2(9), c\_major VARCHAR2(30),  c\_language VARCHAR2(9),  CONSTRAINT course\_pk PRIMARY KEY (c\_id,c\_id\_no),  CONSTRAINT course\_fk FOREIGN KEY (p\_id) REFERENCES Professor (p\_id)  );  **(4) 강의 장소 정보를 담는 CLASS 테이블**  CREATE TABLE CLASS(  p\_id NUMBER(3),  c\_id NUMBER(8), c\_id\_no NUMBER(1),  c\_where VARCHAR2(30),  CONSTRAINT class\_pk PRIMARY KEY (p\_id,c\_id,c\_id\_no),  CONSTRAINT class\_fk\_prof FOREIGN KEY(p\_id) REFERENCES professor (p\_id),  CONSTRAINT class\_fk\_course FOREIGN KEY (c\_id,c\_id\_no) REFERENCES course(c\_id,c\_id\_no)  );  **(5) 강의 시간 정보를 담는 CLASS\_TIME 테이블**  create table class\_time(  seq number(3),  c\_id number(8), c\_id\_no number(1),  c\_day varchar(3), c\_stime varchar2(5), c\_etime varchar2(5),  constraint time\_pk primary key (seq),  constraint time\_fk\_course foreign key (c\_id,c\_id\_no) REFERENCES course(c\_id,c\_id\_no)  );  **(6) 수강 신청 정보를 담는 ENROLL 테이블**  CREATE TABLE ENROLL(  s\_id VARCHAR2(10),  c\_id NUMBER(8), c\_id\_no NUMBER(1),  CONSTRAINT enroll\_pk PRIMARY KEY (s\_id,c\_id,c\_id\_no),  CONSTRAINT enroll\_fk\_students FOREIGN KEY (s\_id) REFERENCES Students(s\_id),  CONSTRAINT enroll\_fk\_course FOREIGN KEY (c\_id,c\_id\_no) REFERENCES course(c\_id,c\_id\_no)  );  **(7) 강의 +장소 및 시간 + 학생 + 교수 모든 정보를 보여주는 뷰**  복잡한 select 쿼리를 감추고 jsp에서 보다 간편하게 테이블을 볼 수 있다.  CREATE OR REPLACE VIEW TotalCourseVIew  AS  SELECT COUR.C\_YEAR,COUR.C\_SEMES,COUR.C\_ID,COUR.C\_ID\_NO,  COUR.C\_NAME, COUR.C\_UNIT, COUR.C\_PERSONNEL, COUR.C\_REMAIN, COUR.C\_TYPE,  COUR.C\_MAJOR, COUR.C\_LANGUAGE,p.name,  LISTAGG(t.C\_DAY || t.C\_STIME || '~' || t.C\_ETIME || '(' || CL.C\_WHERE || ')' ,'<br/> ')  WITHIN GROUP(ORDER BY T.C\_DAY DESC) AS "TIME"  FROM course cour left outer join class cl  on cour.p\_id = cl.p\_id and cour.c\_id = cl.c\_id and cour.c\_id\_no = cl.c\_id\_no  left outer join class\_time t  on cour.c\_id = t.c\_id and cour.c\_id\_no = t.c\_id\_no  left outer join professor p on p.p\_id = cour.p\_id  GROUP BY COUR.C\_YEAR,COUR.C\_SEMES,COUR.P\_ID,COUR.C\_ID,COUR.C\_ID\_NO,  COUR.C\_NAME, COUR.C\_UNIT, COUR.C\_PERSONNEL, COUR.C\_REMAIN, COUR.C\_TYPE,  COUR.C\_MAJOR, COUR.C\_LANGUAGE, P.NAME; |

1. **웹화면과 JSP, SQL**

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| **2-1 main.jsp & top.jsp** |
| 학생이 시스템에 들어오면 제일 처음 보이는 화면  모든 jsp 안에 top.jsp를 포함해서 유저에게 메뉴 기능을 제공한다.  세션을 통해 로그인 여부를 판단한다. |
| **2-2 login.jsp** |
| 홈화면에서 다른 메뉴를 이용할 때 로그인 하지 않았다면 자동으로 login.jsp로 이동한다. |
| **2-3 login\_verify.jsp (포함 내용 : Statement, executeQuery)** |
| 로그인을 시도하면 아이디와 비밀번호가 맞는지 확인한다.  성공하면 main.jsp로 이동하고  실패한다면 다시 login.jsp로 돌아온다.  >> String mySQL="select s\_id from students where s\_id='"  + userID + "'and s\_pwd='" + userPassword + "'";  stmt = myConn.createStatement();  rs = stmt.executeQuery(mySQL); |
| **2-4 update.jsp** |
| 학생 본인의 정보(비밀번호와 이메일)를 수정할 수 있다.  새로운 데이터 입력칸에는 기존의 데이터가 이미 입력되어 있다.  이메일과 비밀번호 중 둘 중에 하나만 변경하고 싶을 경우 불필요한 타이핑을 줄여준다.    비밀번호 확인 작업을 통해 오타에 의한 수정을 방지한다. |
| **2-5 update\_verify.jsp (포함 내용 : PreparedStatement)** |
| 수정 작업 및 있을 수 있는 예외처리(비밀번호 자릿수, 공란 수정등)를 담당한다.  >> pstmt = myConn.prepareStatement("update students set s\_pwd=?,s\_addr=?  where s\_id='"+session\_id+"'");  pstmt.setString(1,new\_Password);  pstmt.setString(2,new\_address);  result = pstmt.executeUpdate(); |
| **2-6 insert.jsp (포함 내용 : View, Subquery)** |
| 수강 신청 페이지  현재의 시간 정보를 받아서 알맞은 학기의 수업들을 보여준다.  학생이 이미 신청한 수업은 보이지 않는다.  >> mySQL = "select \* from TotalCourseVIew tc "+  "where tc.c\_year = " + year+ " and tc.c\_semes = " + semes  +" and (tc.c\_id,tc.c\_id\_no) not in (select c\_id, c\_id\_no from enroll where s\_id = '"+session\_id+"') ";  //같은 과목번호를 가져도 분반이 다르면 다른 수업으로 취급한다.  stmt = myConn.createStatement();  rs = stmt.executeQuery(mySQL);    **if**(c\_language == **null**) c\_language = ""; //언어 정보가 없다면 공란으로 표시  **if**(p\_name == **null**) p\_name = "미정"; //교수명이 정해지지 않았다면 아직 미정  **if**(time.equals("~()")) time = "사이버강의"; //장소 및 시간이 정해지지 않았다면 사이버강의 |
| **2-7 insert\_verify.jsp (포함 내용 : CallableStatement, Stored Procedure)** |
| 신청버튼을 누르면 학점, 시간, 과목번호, 정원등을 고려해 유효성을 검사한다.  >> CallableStatement cstmt = myConn.prepareCall("{call InsertEnroll(?,?,?,?,?,?,?,?,?,?)}");  cstmt.setString(1, s\_id);  cstmt.setString(2, c\_id);  cstmt.setInt(3,c\_id\_no);  cstmt.setString(4, day1\_day);  cstmt.setString(5, day1\_stime);  cstmt.setString(6, day1\_etime);  cstmt.setString(7, day2\_day);  cstmt.setString(8, day2\_stime);  cstmt.setString(9, day2\_etime);  cstmt.registerOutParameter(10, java.sql.Types.VARCHAR);  **try** {  cstmt.execute();  result = cstmt.getString(10);    String day1\_day = "";  String day1\_time = "";  String day1\_stime = "";  String day1\_etime = "";    String day2\_day = "";  String day2\_time = "";  String day2\_stime = "";  String day2\_etime = "";  //사이버 강의는 시간 및 장소 비교가 무의미, 프로시저 실행 전 파라미터를 정리해준다  **if**(!time.equals("사이버강의")){  String day1 = time.substring(0,discard);  String day2 = time.substring(idx+1,discard2);    day1\_day = day1.replaceAll("[0-9:~]","");  day1\_time = day1.replaceAll("[^0-9:~]","");  day1\_stime = day1\_time.substring(0,5);  day1\_etime = day1\_time.substring(6);    day2\_day = day2.replaceAll("[0-9:~ ]","");  day2\_time = day2.replaceAll("[^0-9:~]","");  day2\_stime = day2\_time.substring(0,5);  day2\_etime = day2\_time.substring(6);  } |
| **2-8 select.jsp (포함 내용 : View, Subquery)** |
| 학생이 이미 신청한 강의들을 보여준다.  여기서 취소를 누르면 delete.jsp로 이동한다.  >> mySQL = "select s.s\_unit, tc.c\_id, tc.c\_id\_no, tc.c\_name, tc.NAME, tc.c\_unit, tc.c\_type, tc.c\_language, tc.time from TotalCourseVIew tc, Students s where (tc.c\_id, tc.c\_id\_no) in (select c\_id,c\_id\_no from enroll where s\_id='"+session\_id+"') and s.s\_id = '"+session\_id+"' "  +"group by s.s\_unit, tc.c\_id, tc.c\_id\_no, tc.c\_name, tc.NAME, tc.c\_unit, tc.c\_type, tc.c\_language, tc.time";  stmt = myConn.createStatement();  rs = stmt.executeQuery(mySQL); |
| **2-9 deletejsp (포함 내용 : CallableStatement, Stored Function)** |
| 수강 신청 취소하면서 남은 학점, 여석등을 되돌리는 작업을 하고 다시 select.jsp로 돌아간다.  >> CallableStatement cstmt = myConn.prepareCall("{? = call DeleteEnroll(?,?,?)}");  cstmt.setString(2, s\_id);  cstmt.setString(3, c\_id);  cstmt.setInt(4,c\_id\_no);  cstmt.registerOutParameter(1, java.sql.Types.VARCHAR);  **try** {  cstmt.execute();  result = cstmt.getString(1); |
| **2-10 logout.jsp** |
| 세션을 지우고 로그아웃한다. |

1. **PL/SQL (폴더명 : PL\_SQL)**

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| **3-1 BeforeUpdateStudents.txt (포함내용 trigger, exception, IF, Null)** |
| * Update.jsp에서 update 쿼리를 실행하면 트리거가 발동된다. 비밀번호 자릿수와 공란을 입력했는지 검사하고 예외처리 해준다.   CREATE OR REPLACE TRIGGER BeforeUpdateStudents  BEFORE UPDATE OF s\_pwd, s\_addr ON students  FOR EACH ROW  DECLARE  pwd\_len NUMBER;  addr\_len NUMBER;  short\_pwd EXCEPTION;  null\_pwd EXCEPTION;  null\_addr EXCEPTION;  BEGIN  SELECT LENGTH(:new.s\_pwd), LENGTH(:new.s\_addr)  INTO pwd\_len, addr\_len  FROM dual;  IF(pwd\_len is null) THEN  RAISE null\_pwd;  ELSIF(pwd\_len< 5) THEN  RAISE short\_pwd;  ELSIF(addr\_len is null) THEN  RAISE null\_addr;  END IF;  EXCEPTION  WHEN short\_pwd THEN RAISE\_APPLICATION\_ERROR(-20002,'4자리 이하 비밀번호');  WHEN null\_pwd THEN RAISE\_APPLICATION\_ERROR(-20003,'비밀번호 공란');  WHEN null\_addr THEN RAISE\_APPLICATION\_ERROR(-20004,'이메일 공란');  END;  / |
| **3-2 InsertEnroll.txt (포함내용 Stored Procedure, Cursor, %TYPE, %ROWTYPE, %NOTFOUND, COUNT(), FOR LOOP)** |
| * Insert.jsp에서 수강 신청하면 실행되는 프로시저다. * 정원, 학점, 시간, 과목 번호를 검사하고 예외처리를 해준다. * 정상적으로 Enroll 테이블에 insert 되면 Students와 Course테이블의 값을 변경해준다.   CREATE OR REPLACE PROCEDURE InsertEnroll(  p\_s\_id IN enroll.s\_id%TYPE,  p\_c\_id IN enroll.c\_id%TYPE,  p\_c\_id\_no IN enroll.c\_id\_no%TYPE,  p\_c\_day1 IN class\_time.c\_day%TYPE,  p\_c\_stime1 IN class\_time.c\_stime%TYPE,  p\_c\_etime1 IN class\_time.c\_etime%TYPE,  p\_c\_day2 IN class\_time.c\_day%TYPE,  p\_c\_stime2 IN class\_time.c\_stime%TYPE,  p\_c\_etime2 IN class\_time.c\_etime%TYPE,  result OUT VARCHAR2)  IS  v\_enroll\_cnt NUMBER;  v\_c\_day class\_time.c\_day%TYPE;  v\_course course%ROWTYPE;  v\_s\_unit students.s\_unit%TYPE;  OVER\_PERSONNEL EXCEPTION;  OVER\_S\_UNIT EXCEPTION;  DUPLI\_TIME EXCEPTION;  DUPLI\_CLASS EXCEPTION;  CURSOR class\_chk //과목번호를 검사해 이미 신청한 수업인지 확인  IS  SELECT c\_id  FROM enroll e  WHERE s\_id = p\_s\_id;    CURSOR time\_chk(v\_s\_id enroll.s\_id%TYPE) //신청한 수업들 중 겹치는 시간이 있는지  IS  SELECT DISTINCT e.s\_id, t.c\_day,t.c\_stime,t.c\_etime  FROM class\_time t  LEFT OUTER JOIN enroll e  ON e.c\_id = t.c\_id and e.c\_id\_no = t.c\_id\_no  WHERE e.s\_id = v\_s\_id;  BEGIN  BEGIN  SELECT COUNT(\*) INTO v\_enroll\_cnt //현재 특정 수업을 신청한 사람의 수  FROM ENROLL WHERE c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  END;  BEGIN  SELECT c\_name,c\_personnel, c\_unit INTO v\_course.c\_name, v\_course.c\_personnel, v\_course.c\_unit  FROM COURSE WHERE c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  END;  BEGIN  SELECT s\_unit INTO v\_s\_unit  FROM STUDENTS WHERE s\_id = p\_s\_id;  END;    BEGIN  OPEN class\_chk;  LOOP  FETCH class\_chk INTO v\_course.c\_id;  EXIT WHEN class\_chk%NOTFOUND;  IF (v\_course.c\_id = p\_c\_id) THEN  RAISE DUPLI\_CLASS;  END IF;  END LOOP;  CLOSE class\_chk;  FOR list IN time\_chk(p\_s\_id)  LOOP  IF(list.c\_day = p\_c\_day1) THEN  IF(p\_c\_stime1 BETWEEN list.c\_stime AND list.c\_etime ) THEN  DBMS\_OUTPUT.PUT\_LINE(list.c\_stime || ' <= ' || p\_c\_stime1 || ' <= ' || list.c\_etime);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;    END IF;  IF(p\_c\_etime1 BETWEEN list.c\_stime AND list.c\_etime ) THEN  DBMS\_OUTPUT.PUT\_LINE(list.c\_stime || ' <= ' || p\_c\_etime1 || ' <= ' || list.c\_etime);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  IF(list.c\_stime BETWEEN p\_c\_stime1 AND p\_c\_etime1) THEN  DBMS\_OUTPUT.PUT\_LINE(p\_c\_stime1 || ' <= ' || list.c\_stime || ' <= ' || p\_c\_etime1);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  IF(list.c\_etime BETWEEN p\_c\_stime1 AND p\_c\_etime1) THEN  DBMS\_OUTPUT.PUT\_LINE(p\_c\_stime1 || ' <= ' || list.c\_etime || ' <= ' || p\_c\_etime1);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  END IF;  IF(list.c\_day = p\_c\_day2) THEN  result := ' IN IF ' || ' D2: ' || p\_c\_day2 || ' list.c\_day ' || list.c\_day;  IF(p\_c\_stime2 BETWEEN list.c\_stime AND list.c\_etime ) THEN  DBMS\_OUTPUT.PUT\_LINE(list.c\_stime || ' <= ' || p\_c\_stime2 || ' <= ' || list.c\_etime);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  IF(p\_c\_etime2 BETWEEN list.c\_stime AND list.c\_etime ) THEN  DBMS\_OUTPUT.PUT\_LINE(list.c\_stime || ' <= ' || p\_c\_etime2 || ' <= ' || list.c\_etime);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  IF(list.c\_stime BETWEEN p\_c\_stime2 AND p\_c\_etime2) THEN  DBMS\_OUTPUT.PUT\_LINE(p\_c\_stime2 || ' <= ' || list.c\_stime || ' <= ' || p\_c\_etime2);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  IF(list.c\_etime BETWEEN p\_c\_stime2 AND p\_c\_etime2) THEN  DBMS\_OUTPUT.PUT\_LINE(p\_c\_stime2 || ' <= ' || list.c\_etime || ' <= ' || p\_c\_etime2);  v\_c\_day := list.c\_day;  RAISE DUPLI\_TIME;  END IF;  END IF;  END LOOP;  IF(v\_enroll\_cnt >= v\_course.c\_personnel) THEN  RAISE OVER\_PERSONNEL;  ELSIF( v\_s\_unit < v\_course.c\_unit) THEN  RAISE OVER\_S\_UNIT;  ELSE  INSERT INTO enroll VALUES(p\_s\_id,p\_c\_id,p\_c\_id\_no);  COMMIT;  BEGIN  SELECT COUNT(\*) INTO v\_enroll\_cnt  FROM ENROLL WHERE c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  END;  UPDATE course SET c\_remain = v\_course.c\_personnel - v\_enroll\_cnt WHERE c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  COMMIT;  UPDATE students SET s\_unit = v\_s\_unit - v\_course.c\_unit WHERE s\_id = p\_s\_id;  COMMIT;  result := v\_course.c\_name || ' 을(를) 신청했습니다.';  END IF;  EXCEPTION  WHEN DUPLI\_TIME THEN  result := v\_c\_day || '요일에 겹치는 수업이 있습니다.';  WHEN OVER\_PERSONNEL THEN  result := '정원 초과로 신청할 수 없습니다.';  WHEN OVER\_S\_UNIT THEN  result := '수강 학점이 부족합니다.';  WHEN DUPLI\_CLASS THEN  result := '이미 신청한 강의입니다.';  END;  END;  / |
| **3-3 DeleteEnroll.txt (포함 내용 : Stored Function, %ROWTYPE)** |
| * Delete.jsp 에서 취소하면 이 함수가 실행된다. * Enroll 테이블에서 삭제하면서 Students, Course 테이블 값을 변경해준다.   CREATE OR REPLACE FUNCTION DeleteEnroll(  p\_s\_id enroll.s\_id%TYPE,  p\_c\_id enroll.c\_id%TYPE,  p\_c\_id\_no enroll.c\_id\_no%TYPE  )  RETURN VARCHAR2  IS  result VARCHAR2(50);  v\_course course%ROWTYPE;    BEGIN  BEGIN  select c\_name,c\_unit into v\_course.c\_name, v\_course.c\_unit  from course  where c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  END;  DELETE FROM enroll WHERE s\_id = p\_s\_id and c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  COMMIT;  UPDATE students set s\_unit = s\_unit + v\_course.c\_unit where s\_id = p\_s\_id ;  COMMIT;  UPDATE course set c\_remain = c\_remain+1 where c\_id = p\_c\_id and c\_id\_no = p\_c\_id\_no;  result := v\_course.c\_name || '을(를) 취소했습니다.';  RETURN result;  END;  / |

1. **논리적 설계의 중요성**

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| **4. 논리적 설계의 중요성** |
| 프로젝트 초반에는 직관적인 테이블 설계로 쿼리 작성할 때 막히는 부분이 많았다.  결국 처음으로 돌아가 테이블 구조와 관계에 대해 깊이 고민할 수 밖에 없었고  오히려 그 후에 프로젝트를 완만히 진행할 수 있었다.  이를 통해 개체 관계의 논리적 설계의 중요성을 느낄 수 있었다. |

1. **소스코드**

**Main..jsp**

<%@ page language= "java" contentType="text/html; charset=UTF-8" pageEncoding= "UTF-8"%>

<!DOCTYPE html>

<html>

<head>

<meta charset= "EUC-KR"> <title>데이터베이스를 활용한 수강신청 시스템입니다.</title>

</head>

<body>

<%@include file= "top.jsp"%> <table width= "75%" align="center" height="100%">

<% if (session\_id != null)

{ %> <tr> <td align= "center"><%= session\_id %> 님 방문을 환영합니다 .</td> </tr> <% }

else

{ %> <tr> <td align= "center"> 로그인한 후 사용하세요 .</td> </tr> <% } %> </table>

</body>

</html>

**Top.jsp**

<%@ page language= "java" contentType="text/html; charset=UTF-8" pageEncoding= "UTF-8"%>

<% String session\_id = (String) session.getAttribute("user");

String log;

if (session\_id == null) log = "<a href=login.jsp>로그인</a>";

else log = "<a href=logout.jsp>로그아웃</a>"; %>

<table width= "75%" align="center" bgcolor ="#FFFF99" border>

<tr>

<td align= "center"><b><a href =" main.jsp "> 홈 </b></td>

<td align= "center"><b><%=log%></b></td>

<td align= "center"><b><a href =" update.jsp "> 사용자 정보 수정 </b></td>

<td align= "center"><b><a href =" insert.jsp "> 수강신청 입력 </b></td>

<!-- <td align= "center"><b><a href =" delete.jsp "> 수강신청 삭제 </b></td> -->

<td align= "center"><b><a href =" select.jsp "> 수강신청 조회 </b></td>

</tr>

</table>

**Update.jsp**

<%@ page contentType="text/html; charset=UTF-8" %>

<%@ page import="java.sql.\*" %>

<html><head>

<title>학생 정보 수정</title>

<script type="text/javascript">

function validation() {

var updateForm = document.update;

var pwd = updateForm.new\_pwd.value;

var chk\_pwd = updateForm.chk\_pwd.value;

if(pwd != chk\_pwd){

alert("비밀번호가 일치하지 않습니다.");

pwd.value = null;

chk\_value = null;

return false;

}else{

updateForm.submit();

}

}

</script>

</head>

<body> <%@ include file="top.jsp" %>

<br>

<br>

<table width="75%" align="center" border="1">

<caption><b><font size="6" color="gray">내 정보</font></b></caption>

<tr>

<th>수강 가능한 학점</th>

<th>학번</th>

<th>전공</th>

<th>이름</th>

<th>학년</th>

<th>이메일</th>

</tr>

<%

if (session\_id==null) response.sendRedirect("login.jsp");

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

ResultSet rs = null;

Statement stmt = null;

Connection myConn = null;

String s\_addr = "";

String s\_pwd = "";

try{

Class.forName(dbdriver);

myConn=DriverManager.getConnection(dburl, user, passwd);

String mySQL = "select \* from students where s\_id='" + session\_id + "'" ;

stmt = myConn.createStatement();

rs = stmt.executeQuery(mySQL);

if(rs.next()){

int s\_unit = rs.getInt("s\_unit");

String s\_id = rs.getString("s\_id");

s\_pwd = rs.getString("s\_pwd");

String s\_name = rs.getString("s\_name");

String s\_major = rs.getString("s\_major");

int s\_grade = rs.getInt("s\_grade");

s\_addr = rs.getString("s\_addr");

%>

<tr><td align="center"><%= s\_unit %></td>

<td align="center"><%= s\_id %></td><%-- <td align="center"><%= s\_pwd %></td> --%>

<td align="center"><%= s\_major %></td><td align="center"><%= s\_name %></td>

<td align="center"><%= s\_grade %></td><td align="center"><%= s\_addr %></td>

</tr>

<%

}else{

}

}catch(Exception e){

out.println(e.toString());

e.printStackTrace();

}finally{

if(rs != null) try { rs.close(); } catch(SQLException ex) {}

if(stmt != null) try { stmt.close(); } catch(SQLException ex) {}

if(myConn != null) try { myConn.close(); } catch(SQLException ex) {}

}%></table>

<form name = "update" method="post" action="update\_verify.jsp" align="center">

<div>

<br><br>

<b><font size="6" color="gray">정보 수정</font></b>

<br><br><br>

<label for="mail">E-mail:</label>

<input type = "text" name = "new\_addr" value = <%= s\_addr %>/><br/>

<label for="pwd">비밀번호:</label>

<input type = "password" name = "new\_pwd" value = <%= s\_pwd %>/><br/>

<label for="pwd">비밀번호 확인:</label>

<input type = "password" name = "chk\_pwd" value = <%= s\_pwd %>/><br/>

</div>

<input type = "button" onclick="validation()" name = "btn\_update" value = "정보 수정">

</form>

</body>

</html>

**Update\_verify.jsp**

<%@ page contentType="text/html; charset=UTF-8" %>

<%@ page import="java.sql.\*" %>

<html> <head><title> 수강신청 사용자 정보 수정 </title></head>

<body> <%@ include file="top.jsp" %>

<%

String new\_Password=request.getParameter("new\_pwd");

String new\_address=request.getParameter("new\_addr");

String chk\_Password = request.getParameter("chk\_pwd");

//out.println(new\_Password + chk\_Password);

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

int result = 0;

PreparedStatement pstmt = null;

Connection myConn = null;

try{

Class.forName(dbdriver);

myConn=DriverManager.getConnection(dburl, user, passwd);

pstmt = myConn.prepareStatement("update students set s\_pwd=?,s\_addr=? where s\_id='"+session\_id+"'");

pstmt.setString(1,new\_Password);

pstmt.setString(2,new\_address);

result = pstmt.executeUpdate();

if(result == 1){

%> <script type="text/javascript"> alert("수정 성공"); location.href='update.jsp'; </script> <%

}else{

%> <script type="text/javascript"> alert("SQL-update fail"); history.go(-1); </script> <%

}

}

catch(SQLException ex){

String sMessage;

if (ex.getErrorCode() == 20002)

sMessage="암호는 5자리 이상이어야 합니다";

else if (ex.getErrorCode() == 20003)

sMessage="암호에 공란은 입력되지 않습니다.";

else if(ex.getErrorCode() == 20004)

sMessage="이메일이 비어있습니다.";

else sMessage="잠시 후 다시 시도하십시오";

response.setContentType("text/html; charset=UTF-8");

response.getWriter().print("<script>alert('"+sMessage+"'); location.href='update.jsp';</script>");

}finally{

if(pstmt != null) try { pstmt.close(); } catch(SQLException ex) {}

if(myConn != null) try { myConn.close(); } catch(SQLException ex) {}

}

%>

</body>

</html>

**Login.jsp**

<%@ page language= "java" contentType ="text/html; charset=UTF-8" pageEncoding ="UTF-8"%>

<!DOCTYPE html>

<html>

<head> <meta charset= "UTF - 8">

<title>수강신청 시스템 로그인 </title>

</head>

<body>

<table width= "75%" align="center" bgcolor ="#FFFF99" border>

<tr>

<td><div align= "center"> 아이디와 패스워드를 입력하세요 </div></td>

</table>

<table width= "75%" align="center" border>

<form method= "post" action="login\_verify.jsp">

<tr>

<td><div align= "center"> 아이디 </div></td>

<td><div align= "center"> <input type= "text" name="userID">

</div></td></tr>

<tr>

<td><div align= "center"> 패스워드 </div></td>

<td><div align= "center"> <input type= "password" name="userPassword">

</div></td></tr>

<tr> <td colspan= 2><div align="center"> <INPUT TYPE= "SUBMIT" NAME="Submit" VALUE=" 로그인 ">

<INPUT TYPE= "RESET" VALUE=" 취소 "> </div></td></tr>

</form>

</table>

</body>

</html>

**Login\_verify.jsp**

<%@ page language= "java" contentType ="text/html; charset=UTF-8" pageEncoding ="UTF-8"%>

<%@page import= "java.sql.\*"%>

<%

String userID=request.getParameter("userID");

String userPassword=request.getParameter("userPassword");

//test -> 1200032 bzxa23

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

ResultSet rs = null;

Statement stmt = null;

Connection myConn = null;

try{

Class.forName(dbdriver);

myConn=DriverManager.getConnection(dburl, user, passwd);

String mySQL="select s\_id from students where s\_id='" + userID + "'and s\_pwd='" + userPassword + "'";

stmt = myConn.createStatement();

rs = stmt.executeQuery(mySQL);

if(rs.next()){

rs.close();

session.setAttribute("user",userID);

response.sendRedirect("main.jsp");

}else{

rs.close();

%> <script> alert("로그인 실패"); history.go(-1); </script> <%

//response.sendRedirect("login.jsp");

}

}catch (Exception e){

out.println(e.toString());

e.printStackTrace();

}finally{

if(rs != null) try { rs.close(); } catch(SQLException ex) {}

if(stmt != null) try { stmt.close(); } catch(SQLException ex) {}

if(myConn != null) try { myConn.close(); } catch(SQLException ex) {}

}

%>

**Insert.jsp**

<%@ page contentType="text/html; charset=UTF-8" %>

<%@ page import="java.sql.\*" %>

<%@ page import="java.net.\*" %>

<%@ page import="java.util.Calendar" %>

<%@ page import="java.text.SimpleDateFormat" %>

<html><head><title>수강신청 입력</title></head>

<body>

<%@ include file="top.jsp" %>

<% if (session\_id==null) response.sendRedirect("login.jsp"); %>

<table width="75%" align="center" border>

<br>

<tr>

<th>학기년도</th><th>학기</th>

<th>과목번호</th><th>분반</th><th>과목명</th><th>학점</th><th>정원</th><th>여석</th>

<th>구분</th><th>주관학과</th><th>언어</th><th>교수</th><th>장소 및 시간</th>

<th>신청</th>

</tr>

<%

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

Connection myConn = null;

Statement stmt = null;

ResultSet rs = null;

String mySQL = "";

/\* java.text.SimpleDateFormat formatter = new java.text.SimpleDateFormat("yyyy-MM");

String today = formatter.format(new java.util.Date());

out.println(today); \*/

Calendar cal = Calendar.getInstance();

int year = cal.get(Calendar.YEAR);

int month =cal.get(Calendar.MONTH)+1;

int semes;

if(month <= 6){

semes = 1;

}else{

semes = 2;

}

try{

Class.forName(dbdriver);

myConn=DriverManager.getConnection(dburl, user, passwd);

mySQL = "select \* from TotalCourseVIew tc "+

"where tc.c\_year = " + year+ " and tc.c\_semes = " + semes

+" and (tc.c\_id,tc.c\_id\_no) not in (select c\_id, c\_id\_no from enroll where s\_id = '"+session\_id+"') ";

stmt = myConn.createStatement();

rs = stmt.executeQuery(mySQL);

if (rs.next()) {

do {

String c\_year = rs.getString("c\_year");

String c\_semes = rs.getString("c\_semes");

String c\_id = rs.getString("c\_id");

int c\_id\_no = rs.getInt("c\_id\_no");

String c\_name = rs.getString("c\_name");

int c\_unit = rs.getInt("c\_unit");

int c\_personnel = rs.getInt("c\_personnel");

int c\_remain = rs.getInt("c\_remain");

String c\_type = rs.getString("c\_type");

String c\_major = rs.getString("c\_major");

String c\_language = rs.getString("c\_language");

String p\_name = rs.getString("NAME");

String time = rs.getString("TIME");

if(c\_language == null) c\_language = "";

if(p\_name == null) p\_name = "미정";

if(time.equals("~()")) time = "사이버강의";

%>

<tr>

<td align="center"><%= c\_year %></td><td align="center"><%= c\_semes %></td>

<td align="center"><%= c\_id %></td> <td align="center"><%= c\_id\_no %></td>

<td align="center"><%= c\_name %></td><td align="center"><%= c\_unit %></td>

<td align="center"><%= c\_personnel %></td><td align="center"><%= c\_remain %></td>

<td align="center"><%= c\_type %></td><td align="center"><%= c\_major %></td>

<td align="center"><%= c\_language %></td>

<td align="center"><%= p\_name %></td><td align="center"><%= time %>

<td align="center"><a href="insert\_verify.jsp?c\_id=<%= c\_id %>&c\_id\_no=<%= c\_id\_no %>&time=<%=time%>">신청</a></td>

</tr>

<%

}while(rs.next());

}

stmt.close(); myConn.close();

}catch(SQLException ex){

System.err.println("SQLException: " + ex.getMessage());

}

%>

</table></body></html>

**Insert\_verify.jsp**

<%@ page language= "java" contentType ="text/html; charset=UTF-8" pageEncoding ="UTF-8"%>

<%@ page import="java.sql.\*" %>

<html><head><title> 수강신청 입력 </title></head>

<body>

<%

String s\_id = (String)session.getAttribute("user");

String c\_id = request.getParameter("c\_id");

String tmp = request.getParameter("c\_id\_no").trim();

int c\_id\_no = Integer.parseInt(tmp);

String time = request.getParameter("time");

int idx = time.indexOf(",");

int discard = time.indexOf("(");

int discard2 = time.lastIndexOf("(");

String day1\_day = "";

String day1\_time = "";

String day1\_stime = "";

String day1\_etime = "";

String day2\_day = "";

String day2\_time = "";

String day2\_stime = "";

String day2\_etime = "";

if(!time.equals("사이버강의")){

String day1 = time.substring(0,discard);

String day2 = time.substring(idx+1,discard2);

day1\_day = day1.replaceAll("[0-9:~]","");

day1\_time = day1.replaceAll("[^0-9:~]","");

day1\_stime = day1\_time.substring(0,5);

day1\_etime = day1\_time.substring(6);

day2\_day = day2.replaceAll("[0-9:~ ]","");

day2\_time = day2.replaceAll("[^0-9:~]","");

day2\_stime = day2\_time.substring(0,5);

day2\_etime = day2\_time.substring(6);

}

%>

<%

Connection myConn = null; String result = null;

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

try {

Class.forName(dbdriver);

myConn = DriverManager.getConnection (dburl, user, passwd);

} catch(SQLException ex) {

System.err.println("SQLException: " + ex.getMessage());

}

CallableStatement cstmt = myConn.prepareCall("{call InsertEnroll(?,?,?,?,?,?,?,?,?,?)}");

cstmt.setString(1, s\_id);

cstmt.setString(2, c\_id);

cstmt.setInt(3,c\_id\_no);

cstmt.setString(4, day1\_day);

cstmt.setString(5, day1\_stime);

cstmt.setString(6, day1\_etime);

cstmt.setString(7, day2\_day);

cstmt.setString(8, day2\_stime);

cstmt.setString(9, day2\_etime);

cstmt.registerOutParameter(10, java.sql.Types.VARCHAR);

try {

cstmt.execute();

result = cstmt.getString(10);

%>

<script>

alert("<%= result %>");

location.href="insert.jsp";

</script>

<%

} catch(SQLException ex) {

System.err.println("SQLException: " + ex.getMessage());

}

finally {

if (cstmt != null)

try { myConn.commit(); cstmt.close(); myConn.close(); }

catch(SQLException ex) { }

}

%>

</form></body></html>

**Select.jsp**

<%@ page contentType="text/html; charset=UTF-8" %>

<%@ page import="java.sql.\*" %>

<%@ page import="java.util.Calendar" %>

<%@ page import="java.text.SimpleDateFormat" %>

<html><head><title>수강신청 조회</title></head>

<body>

<%@ include file="top.jsp" %>

<% if (session\_id==null) response.sendRedirect("login.jsp"); %>

<br>

<table width="75%" align="center" border>

<tr>

<th>과목번호</th><th>분반</th>

<th>과목명</th><th>교수</th><th>학점</th><th>언어</th>

<th>구분</th><th>장소 및 시간</th>

<th>수강 취소</th>

</tr>

<%

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

Calendar cal = Calendar.getInstance();

int year = cal.get(Calendar.YEAR);

int month =cal.get(Calendar.MONTH)+1;

int semes;

if(month <= 6){

semes = 1;

}else{

semes = 2;

}

Connection myConn = null;

Statement stmt = null;

ResultSet rs = null;

String mySQL = "";

String s\_unit = "";

try{

Class.forName(dbdriver);

myConn=DriverManager.getConnection(dburl, user, passwd);

//mySQL="select distinct c.c\_id,c.c\_id\_no, c.c\_name,p.name,c.c\_unit,cl.c\_where,t.c\_day, t.c\_stime,t.c\_etime from course c left outer join class cl on c.p\_id = cl.p\_id and c.c\_id = cl.c\_id and c.c\_id\_no = cl.c\_id\_no left outer join class\_time t on c.c\_id = t.c\_id and c.c\_id\_no = t.c\_id\_no left outer join professor p on p.p\_id = c.p\_id where c.c\_id in (select e.c\_id from enroll e where s\_id='"+session\_id+"')";

mySQL = "select s.s\_unit, tc.c\_id, tc.c\_id\_no, tc.c\_name, tc.NAME, tc.c\_unit, tc.c\_type, tc.c\_language, tc.time "

+"from TotalCourseVIew tc, Students s "

+"where (tc.c\_id, tc.c\_id\_no) in (select c\_id,c\_id\_no from enroll where s\_id='"+session\_id+"') "

+"and s.s\_id = '"+session\_id+"' "

+"group by s.s\_unit, tc.c\_id, tc.c\_id\_no, tc.c\_name, tc.NAME, tc.c\_unit, tc.c\_type, tc.c\_language, tc.time";

stmt = myConn.createStatement();

rs = stmt.executeQuery(mySQL);

if(rs.next()){

do {

s\_unit = rs.getString("s\_unit");

String c\_id = rs.getString("c\_id");

int c\_id\_no = rs.getInt("c\_id\_no");

String c\_name = rs.getString("c\_name");

String p\_name = rs.getString("NAME");

int c\_unit = rs.getInt("c\_unit");

String c\_type = rs.getString("c\_type");

String c\_language = rs.getString("c\_language");

String time = rs.getString("TIME");

if(p\_name == null) p\_name = "미정";

if(c\_language == null) c\_language = "";

if(time.equals("~()")) time = "사이버강의";

%>

<tr>

<td align="center"><%= c\_id %></td> <td align="center"><%= c\_id\_no %></td>

<td align="center"><%= c\_name %></td><td align="center"><%= p\_name %></td>

<td align="center"><%= c\_unit %></td><td align="center"><%= c\_language %></td>

<td align="center"><%= c\_type %></td><td align="center"><%= time %></td>

<td align="center"><a href="delete.jsp?c\_id=<%= c\_id %>&c\_id\_no=<%= c\_id\_no %>">취소</a></td>

</tr>

<%

}while(rs.next());

%>

<table width="10%" align="right" border style="margin:155px; padding:0px">

<br>

<br>

<tr>

<th>남은 학점</th>

</tr>

<tr>

<td align="center"><%= s\_unit %></td>

</tr>

</table>

<%

}else{

//out.println("현재 신청한 수업이 없습니다.");

%>

<tr>

<td align="center" colspan = 9 >현재 신청한 수업이 없습니다.</td>

</tr>

<%

}

stmt.close(); myConn.close();

}catch(SQLException ex){

System.err.println("SQLException: " + ex.getMessage());

}

%>

</table></body></html>

**Delete.jps**

<%@ page language= "java" contentType ="text/html; charset=UTF-8" pageEncoding ="UTF-8"%>

<%@ page import="java.sql.\*" %>

<html><head><title>수강신청 조회</title></head>

<body>

<%

String s\_id = (String)session.getAttribute("user");

String c\_id = request.getParameter("c\_id");

String tmp = request.getParameter("c\_id\_no").trim();

int c\_id\_no = Integer.parseInt(tmp);

%>

<%

Connection myConn = null; String result = null;

String dbdriver = "oracle.jdbc.driver.OracleDriver";

String dburl = "jdbc:oracle:thin:@localhost:1521:orcl";

String user = "db1510188";

String passwd = "test";

try {

Class.forName(dbdriver);

myConn = DriverManager.getConnection (dburl, user, passwd);

} catch(SQLException ex) {

System.err.println("SQLException: " + ex.getMessage());

}

CallableStatement cstmt = myConn.prepareCall("{? = call DeleteEnroll(?,?,?)}");

cstmt.setString(2, s\_id);

cstmt.setString(3, c\_id);

cstmt.setInt(4,c\_id\_no);

cstmt.registerOutParameter(1, java.sql.Types.VARCHAR);

try {

cstmt.execute();

result = cstmt.getString(1);

%>

<script>

alert("<%= result %>");

location.href="select.jsp";

</script>

<%

} catch(SQLException ex) {

System.err.println("SQLException: " + ex.getMessage());

}

finally {

if (cstmt != null)

try { myConn.commit(); cstmt.close(); myConn.close(); }

catch(SQLException ex) { }

}

%>

</form></body></html>

**Lougout.jsp**

<%@ page contentType="text/html; charset=EUC-KR" %>

<% session.invalidate(); %>

<script>

alert("로그아웃 되었습니다.");

location.href="main.jsp";

</script>