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package com.ibm.sqljdemo;

import java.io.IOException;

import javax.naming.Context;
import javax.naming.InitialContext;
import javax.servlet.Servlet;
import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

import java.sql.Connection;
import java.sql.SQLException;
import java.util.*;
import javax.servlet.*;
import javax.sql.*;

/**
 * @version 1.0
 * @author
 */
public class CourseListServlet extends HttpServlet implements Servlet {

    /**
     */
    private static final long serialVersionUID = 1L;

    private static DataSource ds = null;

    private final static String courseListPage =
        "<HTML>" + "\n" +
        "<HEAD>" + "\n" +
        "  <TITLE> Q0 - Course Selection </TITLE>" + "\n" +
        "</HEAD>" + "\n" +
        "<BODY>";

    /**
     * @see javax.servlet.GenericServlet#void ()
     */
    public void init() throws ServletException {
        super.init();
        InitialContext ctx = null;
        Hashtable parms = new Hashtable();
        parms.put(
            Context.INITIAL_CONTEXT_FACTORY,
            "com.ibm.websphere.naming.WsnInitialContextFactory");
        parms.put(Context.PROVIDER_URL, "iiop:///");

        try {
            ctx = new InitialContext(parms);
            ds = (javax.sql.DataSource) ctx.lookup("jdbc/sqlj_test");
        } catch (Exception e) {
            e.printStackTrace();
        }
    } // end of initialize a database

    /**
     * @see javax.servlet.http.HttpServlet#void (javax.servlet.http.HttpServletRequest,
     * javax.servlet.http.HttpServletResponse)
     */
    public void doGet(HttpServletRequest req, HttpServletResponse resp)
        throws ServletException, IOException {
        doService(req, resp);
    }

    /**
     * @see javax.servlet.http.HttpServlet#void (javax.servlet.http.HttpServletRequest,
     * javax.servlet.http.HttpServletResponse)
     */
    public void doPost(HttpServletRequest req, HttpServletResponse resp)
        throws ServletException, IOException {

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        CourseListServlet.java
        doService(req, resp);
    }

    public void doService(HttpServletRequest req, HttpServletResponse resp)
        throws ServletException, IOException {

        ServletOutputStream os;
        os = resp.getOutputStream();

        String tran = req.getParameter("action");
        if (tran == null) {
            displayCourseList(req, resp, os);
        } else if (tran.equals("faculty")) {
            displayFacultyList(req, resp, os);
        } else {
            displayCourseList(req, resp, os);
        }
    }

    private void displayCourseList(HttpServletRequest req, HttpServletResponse resp,
        ServletOutputStream os) {
        try {
            os.println(courseListPage);
            Connection con = ds.getConnection();

            int borderSize = 0;
            String tran = req.getParameter("border");
            if (tran != null) {
                borderSize = Integer.parseInt(tran);
            }

            String courseList = DatabaseAccessUsingSQLJ.getCourseList(con, os,
borderSize);
            os.println(courseList);

            os.println("<BR />");
            os.println("<TABLE WIDTH=\"500\" BORDER=\"0\" >");
            os.println("    <TR>");
            os.println("        <TD VALIGN=\"TOP\">");
            os.println("            <A HREF=\"?action=faculty\">List of Faculty</A>");
            os.println("        </TD>");
            os.println("        <TD ALIGN=\"RIGHT\" VALIGN=\"TOP\">");
            os.println("            <FORM ACTION=\"CourseListServlet\" METHOD=\"GET\"
>");
            if (tran == null || tran.equalsIgnoreCase("0")) {
                os.println("                <INPUT TYPE=\"hidden\" NAME=\"border\"
VALUE=\"1\" >");
                os.println("                <INPUT TYPE=\"submit\" VALUE=\"Show
border\" >");
            } else {
                os.println("                <INPUT TYPE=\"hidden\" NAME=\"border\"
VALUE=\"0\" >");
                os.println("                <INPUT TYPE=\"submit\" VALUE=\"Hide
border\" >");
            }
            os.println("            </FORM>");
            os.println("        </TD>");
            os.println("    </TR>");
            os.println("</TABLE>");
            os.println("<BR>----- End -----<BR>");
            os.println("</BODY>");
            os.println("</HTML>");
            os.close();
        } catch (IOException ie) {
            System.out.println("IOException:" + ie.toString());
        } catch (SQLException se) {
            System.out.println("SQLException:" + se.toString());
        } catch (Exception e) {
            System.out.println("Exception:" + e.toString());
        }
    }

    static void displayFacultyList(HttpServletRequest req, HttpServletResponse resp,
        ServletOutputStream os) {
        try {
            os.println("<INPUT TYPE=\"button\" VALUE=\"Back\"

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onClick=\"history.go(-1)\" >");
        os.println("<BR />");
        os.println("<H3>List of Faculty</H3>");
        os.println("<UL>");
        os.println("    <LI>Arts");
        os.println("    <LI>Business");
        os.println("    <LI>Engineering");
        os.println("    <LI>Science");
        os.println("    <LI>Social Science");
        os.println("</UL>");
        os.println("<BR>----- End -----<BR>");
        os.println("</BODY>");
        os.println("</HTML>");
        os.close();
    } catch (IOException ie) {
        System.out.println("IOException:" + ie.toString());
    } catch (Exception e){
        System.out.println("Exception:" + e.toString());
    }
}

    public void doMenu(HttpServletRequest req, HttpServletResponse res,
ServletOutputStream os)
    throws ServletException, IOException
    {
    } // End of doMenu
}

```



```

package com.ibm.sqljdemo;

import java.sql.*;
import sqlj.runtime.ref.*;
import javax.servlet.*;
import java.util.Vector;

#sql iterator CourseInfo(String, String, String);
#sql context ctx;

public class DatabaseAccessUsingSQLJ {

    public static String getCourseList(Connection con, ServletOutputStream os, int
borderSize) {
        StringBuffer courseListPage = new StringBuffer("ABC");

        CourseInfo results;
        String code = null;
        String title = null;
        String unit = null;
        try {
            ctx thisCTX = new ctx(con);
            courseListPage.setLength(0);
            courseListPage.append("<H3> Optional Courses </H3>" + "\n");
            courseListPage.append("<TABLE WIDTH=\\"500\\" BORDER=\\" + borderSize
+ "\\" >" + "\n");

            courseListPage.append("    <TR>" + "\n");
            courseListPage.append("        <TH>Code</TH>" + "\n");
            courseListPage.append("        <TH>Title</TH>" + "\n");
            courseListPage.append("        <TH>Unit</TH>" + "\n");
            courseListPage.append("    </TR>" + "\n");
            #sql [thisCTX] results={SELECT code, title, unit FROM COURSE};

            while (true) {
                #sql {FETCH :results INTO :code, :title, :unit};
                if (results.endFetch()) {
                    break;
                }
                courseListPage.append("    <TR>" + "\n");
                courseListPage.append("        <TD>" + code + "</TD>" + "\n");
                courseListPage.append("        <TD>" + title + "</TD>" + "\n");
                courseListPage.append("        <TD>" + unit + "</TD>" + "\n");
                courseListPage.append("    </TR>" + "\n");
            }

            courseListPage.append("</TABLE>");
            results.close();
        } catch (Exception e) {
            System.out.println("Exception:" + e.toString());
        }
        return courseListPage.toString();
    }
}

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