The Student Information System

DATA WAREHOUSE

September 2010

First Edition: 1996
Third Edition: October, 2004
Fourth Edition: March 2007
Current Edition: September, 2010

© Oregon State University, 2010
# Table of Contents

**SIS Data Warehouse Overview** ........................................... 31  
Data Warehouse Support  
   SIS Systems Integrator  
   Administrative Systems Trainer  
Security and Access to SIS Data Warehouse

**Confidentiality of Student Information** ............................. 32  
FERPA  
Student Imposed Restrictions

**SIS DW Reports**  
1. Class List (SFASLST) .................................................... 33  
2. Create a Transcript (SHATERM) ...................................... 33

**SIS DW Queries**  
3. Students Registered for Term........................................... 33  
   • Counting Distinctly  
   • Attribute comments  
   • Confidential Students  
4. List of Majors................................................................... 34  
   • Using Val Tables  
   • Combine Qualifications  
   • Modifiers Distinct  
5. Student Class Schedule................................................... 35  
   • Insert a Prompt  
   • Reorder Columns (query)  
   • Sort (query)  
   • Save a Query  
   • Form View  
   • Save Results

**GQL Reports and Buttons**  
6. The Student Class Schedule Report.................................... 36  
   • Page Setup  
   • Hide Columns & Fit All Columns  
   • Format Data  
   • Add Subtotals  
   • Save Report Specifications  
7. The Student Class Schedule Button.................................... 37  
   • Modify Existing Report

**On Your Own**  
8. Labels & Report for Students in Spanish Classes............... 38  
   • Excluding **Confidential**  
   • Labels
SIS Data Warehouse Overview

The Data Warehouse software is a Graphical Query Language (GQL) interface developed and maintained by Hummingbird™ used to access, retrieve, and report on ORACLE database information created and managed by OSU’s Banner software. The SIS Data Warehouse is supported by:

- The SIS Systems Integrator, Carla Cogburn (541-737-2671), who provides user support specific to the SIS Data Warehouse module and administers access to the data. She also supports the web site: http://osu.orst.edu/dept/computing/warehouse/general.htm.
- The Administrative Systems Trainer, Ross Jackson (541-737-8767), who provides user training and assistance in administrative software navigation.

The SIS Data Warehouse Model is a collection of views into OSU student data, each associated with an area of student activity (e.g. term related data, Admissions, Financial Aid, and Accounts Receivable), providing:

- Academic advisers with online access to student transcripts and academic histories.
- Administrative offices with the ability to locate information and create reports needed to support their students and office processes (specifically Web Grading reports).
- University directors and department heads with comprehensive management information in order to monitor and optimize course offerings and faculty scheduling.

Security and Access to SIS Data Warehouse

Security of the SIS Data Warehouse is tied to OSU’s Banner security, and individuals must have access in Banner similar to what they request in the Data Warehouse.

Access to SIS Data Warehouse is based on your legitimate educational need to know, as established by your Dean or Department Head. The Registrar’s Office, which has custodial responsibility for all student data, has established campus-wide departmental access at four levels: General Query (demographic, admissions and registration data), Enrollment Management (course schedule and enrollment data), Advisor (academic history data and PINs), and Head Advisor (class overrides and Web Grading support). Access (with exception of Head Advisor) is query only, limiting users to viewing and reporting database information.

There are two requirements for receiving access to SIS Data Warehouse: 1) completing your access forms (available at: http://osu.orst.edu/dept/computing/banner/access.html), and 2) attending the SIS Data Warehouse training. Data Warehouse Reporting Techniques is highly recommended, though not mandatory for access.

SIS Data Warehouse users are generally granted access using their Banner user name and password at the conclusion of the SIS Data Warehouse class if their request forms have been completed and turned in. For more general information about passwords, refer to the Your User Name and Password section of the BANNER BASICS for OSU guide.
Confidentiality of Student Information

SIS Data Warehouse contains a variety of data associated with the student, including personal data (such as, address and phone number) and academic data (such as, grades and courses). Federal and state legislation, as well as Oregon University System (OUS) and Oregon State University policies guarantee students the right to have their records maintained in a private and confidential manner.

The security of students’ records is an extremely important responsibility of the University. As an authorized SIS Data Warehouse user, you are responsible for maintaining both the security of your computer terminal or workstation and the confidentiality of student records. This includes both the responsibility for all queries and reports you create, and for all information that you release about University students.

To preserve the confidentiality of the students’ records, all SIS Data Warehouse users are expected to read, understand and comply with the Code of Responsibility for Security and Confidentiality of Records and Files and the Guidelines for Release of Student Records. The latter contains a FAQ, is updated annually, and is available on the web at: http://oregonstate.edu/registrar/GuidelinesforReleaseofStudentRecords.html.

As a Banner user, you have the authority and responsibility to deny any request for data that you feel is not legitimate. If you are in doubt, it is better to be cautious than release information that is restricted by law. Refer any questions you may have to your supervisor or to the Registrar, and refer all inquiries from law enforcement officials directly to Tom Watts in the Registrar’s Office, phone (541) 737-4048.

Family Educational Rights & Privacy Act

Federal legislation, the Family Educational Rights and Privacy Act of 1974 (also known as the Buckley Amendment or FERPA), guarantees students the right to have their records maintained in a private and confidential manner. The confidentiality of students’ records is also guaranteed in State of Oregon statutes, and by OUS and Oregon State University policy. These policies apply to all student educational records, either on paper or in computer files, that are explicitly identified by a student’s name or by which students can be individually identified. Information cannot be released to any person (including a parent or a legal subpoena) without a legitimate educational need to know without the student’s written permission.

Faculty and staff performing instructional, supervisory, advisory, or administrative duties for OSU may have a legitimate educational need for access to student data. Data access is granted on an educational need to know basis.

Student Imposed Restrictions

Students may restrict the release of their directory information by completing a Request to Restrict Directory Information form (at the Office of the Registrar), and restrictions remain in effect until removed by the student. When a student has chosen Confidentiality, most Banner SIS forms that contain confidential information will display “CONFIDENTIAL”.

REMEMBER: All SIS Data Warehouse users are expected to comply with OSU confidentiality policies.
SIS Data Warehouse Reports

1. Produce a class list (SFASLST). For Summer and Fall terms use Biology 211; Winter, 212; and Spring, 213 – all for section 001. Include the student’s name, ID, phone number, and email address; their class standing, level, and primary major codes; and the descriptions associated with the codes.
   - Click on [New Query] and select the STUDENT (ALL TERMS) design view.
   - Navigate to the ‘SIS Student – SIS Term Reports’ window.
   - Click on the [Class List | Current Term] button.
   - Enter “BI” in the SUBJ CODE prompt, the appropriate value in the COURSE NUM prompt, and “001” in the SECTION NUM prompt.
   - Click [OK] and get all remaining rows each time you are prompted.

2. Create an academic history report that returns the student’s name, ID; and the term, subject, course number, section number, grade, and credit hours for the class.
   - Navigate to the ‘SIS Student – SIS Admin Reports’ window.
   - Click on the [Student Advising | Student Academic Class History] button.
   - Enter a valid Student ID in the STUDENT ID prompt.
   - Leave the STUDENT LEVEL prompt = “0”.
   - Click [OK] and get all remaining rows each time you are prompted.

SIS Data Warehouse Queries

3. Create a count of students registered for this term.
   - Select [New Query] and select the CURRENT STUDENT design view.
   - Open the REGISTRATION object and select the REGISTRATION TERM attribute.
   - Click in the ‘Function’ box of the PIDM attribute and select ‘Count’.
   - Run the Query.

   The Count PIDM column shows the number of students registered for classes in this term. Each course that a student is registered for adds one to the total. A student registered for three classes is counted each time. To count unique students in the Registration object, we must use the ‘Count Distinct’ function...

   • Close the Results window.
   • In the REGISTRATION object, click in the ‘Function’ box of the PIDM attribute and select ‘Count Distinct’.
   • Run the Query.

   Remember to ask the question “Are the results reasonable?”

   There are three attributes that can impact your results: the Head Count Flag...

   • Select [New Query] and open the CURRENT object.
   • Click in the ‘Function’ box of the PIDM attribute and select ‘Count’.
   • Scroll down and click on the [?] to the left of the HEAD COUNT FLAG attribute.
   • Select the HEAD COUNT FLAG attribute.
   • Run the Query.

   The Schedule Type Code discriminates between labs, recitations, lectures, etc., and the number that is released for publication by the Institutional Research office is a combination of Schedule Types...

   • Select [New Query] and open the REGISTRATION object.
   • Click in the ‘Function’ box of the PIDM attribute and select ‘Count Distinct’.
Select the **Schedule Type Code** and **Schedule Type Code Desc** attributes.

Run the Query.

*The Registration Status Code describes the registration status of each student for each CRN...*

Deselect the **Schedule Type Code** and **Schedule Type Code Desc** attributes.

Select the **Registration Status Code** and **Registration Status Code Desc** attributes.

Run the Query.

Let’s check out one other influence on usability of results, **Confidentiality**...

Select [New Query] and open the STUDENT object.

Click in the ‘Function’ box of the **PIDM** attribute and select ‘Count’.

Select the **Confidential Flag** attribute.

Run the Query.

So where is the real answer? It depends upon who is asking and what they are looking for!

---

**NOTE:** In the All Terms window, you should consider applying some filters by qualifying:

- **In the Registration object**, **Registration Term** equal to the current term, and **Registration Status Code** equal to “AC, AU, GN, GS, RE, RR, and RW”.
- **In the Schedule object**, for OSU qualify **Section Campus Code** equal to “C, I, and J” and “N” to include HMSC. For Bend, qualify **Section Campus Code** equal to “B”, and Distance begins with “D”.

---

4. Create a list of all Animal Science majors for the Current term. Return **LFM Name**, **Student ID**, **Class Standing**, **Hours Registered**, and **Primary Degree** for each Animal Science major.

Using Val Tables

- Click on [New Query] and select the **VAL TABLES** design view.
- Open the MAJOR MINOR CONC object, select all the attributes, and Qualify the **DESCRIPTION** attribute contains “Animal” ... Run the Query.
- Click on [New Query] and select the **STUDENT** design view.
- Open the STUDENT object and select the attributes: **LFM NAME** and **STUDENT ID**
- Close the STUDENT object, open the CURRENT object, and select the attributes: **CLASS STANDING & DESC** and **HOURS REGISTERED**
- Qualify the **HEAD COUNT FLAG** attribute equal to “Y”.
- Select the remaining attributes: 
  - **Primary Degree Sought** and **Desc**
  - **Primary Major 1 & Primary Major 2** and **Secondary Major 1 & Secondary Major 2**
  - Select the **Major All** attribute, and qualify it to Contains “/125/”.
  - Sort the Query by **Class Standing** and **LFM Name** in ascending order.
  - Run the Query and get all of the remaining rows.

Remember that any class the student registered for and then dropped will be included in the results set ...

Combine Qualifications

- Close the Results set and the CURRENT object and open the REGISTRATION object.
- Qualify **Registration Status Code** equal to “AC, AU, GN, GS, RE, RR, and RW”.
- To combine two qualifications, hold down the shift key while clicking in their ‘Select Boxes’ then select ‘Query | Qualification | Combine’.
- Run the Query and you should have an error ...
- Close the REGISTRATION object, click the missing relationship line, and run the query.

Note that the results contain duplicates ....

Modifiers Distinct

- Remove duplicates by selecting ‘Query | Modifiers | Distinct’
- Re-run the query.
5. Produce a student class schedule (SFAREGQ) for a current student. Include the subject, course and section numbers, date, time and location of the class, hours registered, date registered, and the instructor’s name. Save the query and use a prompt for the student ID.

- Click on [New Query] and select the CURRENT STUDENT design view.
- Open the STUDENT object, and select the STUDENT ID attribute.
- Click in the ‘Qualify’ box of the STUDENT ID attribute.
- Select ‘Edit | Prompts …’

There are a number of prompts that are included as part of the model, indicated by the locks at their left. To see the prompted text, click on the prompt name, and the verbiage will be displayed in the Prompt String area. The prompts that include a ‘….!’ can be combined into a single prompt window.

- Select the ‘GetID’ prompt, and click on the ‘Insert Prompt’ button.
- Close the STUDENT object and open the REGISTRATION object.
- Select the attributes:

<table>
<thead>
<tr>
<th>Subj and Course Num</th>
<th>Section Num</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule Type Code and Desc</td>
<td>Instructor Name</td>
<td></td>
</tr>
</tbody>
</table>

- Close the REGISTRATION object, open the SCHEDULE object, and select the attributes:

  | Section Campus Code and Desc | Begin and End Time | Building Code Desc |
  | Room Number | Day Flag |

- Select ‘Query | Reorder Attributes…’ from the pull down menu.
- Select SECTION CAMPUS CODE and Desc to follow the STUDENT ID. Click on one attribute and drag to select the other, then click on the double up arrow button, click the single down arrow button.
- Click [OK].
- Select ‘Query | Sort …’ from the pull down menu.
- Move STUDENT ID to the Sort Order side by clicking on it and then clicking once on the right arrow (>) button. Add SECTION CAMPUS CODE, SUBJ AND COURSE NUM, and SECTION NUM.
- Click [OK].
- Select ‘Query | Save …’.
- Enter “Class Schedule by Student ID”, or a descriptive name of your own, in the Query Name area. The name can be any number of characters, and it will save a .qry file to the Student/user directory on your hard drive when you click ‘Save’.
- Run the Query and the prompt windows will appear.
- Type in a valid Student ID, and click the [OK] button.

As the attribute list gets longer, it may be easier to view in the ‘Form’ view. NOTE: You can not move the ‘Form’ view of the results into a report, you must close it beforehand.

- Double click on the line number (leftmost column) of the record you want to see.
- To save a Results set, close the Form view, select ‘Results | Save as… | Results …’, and name the results set.

Note that you will be saving the file in your User folder. When you click the save button, two files will be saved: one with an extension of .qrd, and one with an extension of qrr - the .qrd file is the one that you can import from other applications.
**GQL Reports and Buttons**

6. Use the saved query from Example 5 and create a report.

- Close all results windows.
- Select ‘Query | Open...’ from the pull down menu.
- Double click on the filename that you created in Example 5 and GQL will both ‘Open’ and ‘Run’ the Query. The prompt values you entered before will be displayed in the Query Script window, so all you do is click [OK].
- Select ‘Results | Show as Report | BI Query Standard’ from the pull down menu.

You should now have a ‘Query Results X’ report on your screen, containing one column for each attribute that you selected. Notice that the columns run past the borders of the page ...

**Page Setup**

- Select ‘File | Print Setup...’ from the pull down menu, click ‘Landscape’ and [OK].
- Adjust the column width of each column to remove or add space in each column. Click in any column, place your cursor on the dividing line between columns and drag the right edge of the column to the left or right, until the columns look right to you.
- Since this report has so many attributes, we may want to exclude some of them from the report. Select ‘Report | Column Settings...’ from the pull down menu, click each column that you want to hide (SECTION CAMPUS CODE and SCHEDULE TYPE CODE), set the ‘Column width’ to zero, and then click [OK].

To get the last pesky columns on one page, select ‘Report | Column Settings...’ from the pull down menu, click ‘Fit All Columns on Page’ and then click [OK].

**NOTE:** The ‘Fit All Columns on Page’ function does not adjust the column widths. It merely reduces the page by the percentage necessary to fit all the data on the width of the paper.

**Hide Columns**

**Fit All Columns**

**Format Data**

- Select ‘Report | Reorder Columns...’ from the pull down menu, move STUDENT ID to the top, move SECTION CAMPUS CODE Desc up once, and click [OK].
- Click in the STUDENT ID column, hold down the shift key, and click in the SECTION CAMPUS CODE Desc column so that a box appears around both columns.
- Select ‘Report | Suppress Duplicates’ from the pull down menu.
- Align Center the CREDIT HOURS column by selecting ‘Report | Text Style ...’. Right click in the BEGIN TIME column, and align center, likewise the END TIME column.
- Change the format in the number columns by clicking in the CREDIT HOURS column to select and then select ‘Report | Format...’. Click in the ‘Hide zero values’ checkbox, and choose the format you want to display.
- To change the font in all columns, click in the left or right margin to select them all, and then select ‘Report | Text Style ...’.
- Add a SECTION CAMPUS CODE Desc subtotal and format to match the columns.
- Change the text in the headings by double clicking on a heading.
- Change the report title by double clicking on it and clicking on 'Edit Text'. Add the prompt you used in the Query to the report title before clicking [OK].
- Save your report setup by selecting ‘Report | Save Report Specification...’ from the pull down menu. Notice that the same name is selected for you, just click on ‘Save’ and then [OK] when it asks if you want to save it over the existing file name.
Creating a Button

7. Use the saved report from Example 6 and create a button.
   - Close the report and the results windows and start a new query.
   - Click on the [User Queries] button.
   - Click on the [Design Mode] button.
   - Click on the [Button] button at the top of the vertical toolbar, and create a new button by clicking and dragging diagonally in a free area of the 'User Queries' design window.
   - To edit the button, double click on the new button, and click on ‘Edit Text …”
   - Create the Link to the saved Report Specification.
   - Click [OK] and place button where you want it … resize if necessary.
   - To exit edit mode, click again on the [Design Mode] button
   - Select ‘File | Save’ from the pull down menu to save the button in your model.

Check it out ...

Let’s say, just for fun that you want to create a spreadsheet of class lists for a group of students that requires most of the same data.

   - Close the report and the results windows and start a new query.
   - Click on the button that you just created, and click the [Cancel] button rather than [OK] in the prompts window.
   - Click on the [SIS Student - All Terms] button to find your query.
   - Open the REGISTRATION object.
   - Add a primary sort by STUDENT ID.
   - Select ‘Query | Save …’ and change the name to “Class Schedule Spreadsheet”, or a descriptive name of your own, in the Query Name area. Click [Save].
   - Click on the [User Queries] button.
   - Click on the [Design Mode] button and create a second button.
   - Name the button and link it to your new query.
   - In ‘Output to’ change ‘Results Window’ to ‘Application’ and click on the [Export Options…] button.
   - Change the ‘Application’ to ‘Microsoft Excel’.
   - Click on the [...] button next to the ‘Execute command line’ and use your browser to find the .exe file for Microsoft Excel.
   - Click the [OK] button.
   - Select ‘File | Save’ from the pull down menu to save the second button.
   - Exit edit mode by clicking on the [Design Mode] button.
   - Run the Query and the combined prompt windows will appear. Keep the current term code, Tab, and add a second Student ID, and click the [OK] button.

Voila ...!!

Please close the software and any open desktop folders, choose ‘Shut Down’ from the [Start] button, and choose ‘Log Out’.
On Your Own …

8. Create a mailing list for all students that took Spanish 111, 112, or 113 in the last four terms. Include only (and all) information needed for mailing labels, and sort the labels by zip code. Also create a corresponding report with an alphabetical list of the students the mailing went to, and the term, class, and section number attended.

- Click on [New Query] and select the STUDENT design view.
- Open the STUDENT object and select each of the following fields: FML NAME, CURRENT ADDR COMBINED WINDOWS, CURRENT ADDR ZIPCODE. - Select ‘Sort’
- Close the STUDENT object and open the TRANSCRIPT object.
- Click in the ‘Qualify’ box on the SUBJ CODE attribute and type in “SPAN”.
- Click in the ‘Qualify’ box on the COURSE NUM attribute and type in “111”.
- Add “112” and “113” to the list by using the cursor control down arrow key.
- Click in the ‘Qualify’ box on the TRANSCRIPT TERM attribute and type in the term code for this term last year, press the cursor control down arrow key, and type in the term code for last term.
- Click on the operator once and choose ‘BETWEEN’ from the pop-up menu.
- Run the Query and stop the query.
- Close the Query Results window.

Note that the results contain duplicate labels ....

- Remove duplicates by selecting ‘Query | Modifiers | Distinct’.
- Run the Query and get all of the remaining rows.

Note that the results may include students that have chosen confidentiality!!

- Close or minimize the Query Results window.
- Close the TRANSCRIPT object and open the STUDENT object.
- Qualify the CONFIDENTIAL FLAG attribute not equal to “Y” and Run the Query.

Now you have the data to create your labels. Move the data into labels, choose the label you wish to use, and then edit the label to remove the zip code attribute and expand the combined address attribute ...

- Select ‘Results | Show as Report | Labels’.
- Select ‘Report | Set Label Dimensions’.
- Select ‘Form | Avery 5160, 5260 Address’ and click [OK].
- Select ‘Report | Edit Layout’.
- Drag CURRENT ADDR ZIPCODE off the label, and change attribute dimensions as needed.
- Close the Report and Query Results windows.

Note that you already have the qualifications that created the query even though the data you want in the report is different. It is the qualifications that limit the records selected rather than the information in them.

- Deselect FML NAME, CURRENT ADDR COMBINED WINDOWS and CURRENT ADDR ZIPCODE by clicking on them again, select LFM NAME and select ‘Sort’.
- Close the STUDENT object, open the TRANSCRIPT object, and select the attributes: TRANSCRIPT TERM, SUBJ AND COURSE NUM, SECTION NUM
- Run the Query and get all of the remaining rows.