

Topic Title **Updating the Data Mart: Preparing and Running Jobstreams**

Instructional Goal: Institutional Research staff should be able to update the department’s data mart.

Specific instructional objective(s):
Learners will be able to:

- Arrange the components of the data flow model
- Determine the values for data extract parameters
- Connect to a remote computer
- Review and set data extract parameters
- Run jobstreams and review results
- Disconnect from a remote computer

TOPIC / STRATEGY	RESOURCES / ACTIVITY	INSTRUCTIONS TO LEARNERS	TIME
1. What is a data mart? Review/ Discussion	Review the advance organizer, which presents the concept of a data mart and its context within the reporting environment.	Active listening, discussion. Ref: Advance organizer: “A Basic Primer on Data Marts.” Learners arrange components of model in correct order.	10:00 — 10:15
2. Prepare to update the data mart. Presentation (rule—e.g. and elaboration)	Present rules for determining values of parameters. Show examples of parameter values.	Develop a decision tree for determining the values of parameters. Ref: Decision tree handout. Quiz	10:15 – 10:45
3. Connect to the remote computer. Demonstration, practice	Demonstrate the steps for connecting to a remote computer.	Active listening with student guide. Practice with instructor feedback.	10:45 – 11:00
4. Break	Relax, stretch.		11:00 – 11:10
5. Review and set parameters. Demonstration, practice	Demonstrate how to query and set the parameter values.	Active listening with student guide. Using decision tree, practice with instructor feedback.	11:10 – 11:30
6. Run the jobstreams and view the results. Demonstration, practice	Demonstrate how to run jobstreams, review results, disconnect when finished.	Active listening with student guide. Practice with instructor feedback.	11:30 – 11:45

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7. Disconnect from the remote computer. Demonstration, practice	Demonstrate the steps for disconnecting from a remote computer.	Active listening with student guide. Practice with instructor feedback.	11:45 – 11:55
8. Close	Briefly summarize and introduce topic for Session 2: Reviewing logs and troubleshooting errors.		11:55 – 12:00

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What is a data mart?

Review the advance organizer, “A Brief Primer on Data Marts,” which presents the concept of a data mart and provides a data flow model showing the data mart’s context in a reporting environment.

Instructor	Learner
<p>Key concept: A data warehouse is a definitive source of information for analysis and decision support, created using a systematic approach to gathering, organizing, and storing data.</p>	<p>Make sure student brought her copy of the advance organizer. Answer any questions about data marts.</p>
<p>Key concept: A data mart is like a warehouse but with limited scope.</p>	
<p>Key concept: Data from a data source are extracted and loaded into data marts and presented to users who access them using a variety of tools.</p>	<p>Make sure student understands the data flow model.</p> <p>Have student put away advance organizer. Then give her the components of the model and ask her to arrange them in the correct order.</p> <p>If she makes a mistake, review the data flow model with her. Then have her take the test again.</p>

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Prepare to update the data mart

Discuss the Student Guide and introduce the concept of parameters.

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<p>The process of updating the data mart seems long and complicated at first. But when you break it down into its major tasks, you see that there are only a few tasks. And when you break down those tasks into steps, you find that the steps are easy to understand and follow. The student guide may seem long, but it’s full of pretty, color pictures that you can refer to throughout the process.</p> <p>When updating the data mart, basically all you have to do is decide what values to use for a few parameters, then connect to the data mart and enter those parameters. Then you click on some icons and wait until the new data are in the data mart.</p>	<p>Distribute Student Guide and ask learner to follow along as you introduce the concept of updating the data mart.</p>
<p>Key concept: Parameters are special variables that specify the scope of the data to be extracted from the source database. For the IR data mart, the parameters indicate the population (i.e. School of Law or all other careers) and point in time (i.e. the term and census/final enrollment date).</p> <p>Determine the type of data to extract: annual or term. If you are collecting new data for degrees conferred, you are extracting annual data. Otherwise you are extracting term data.</p> <p>If you are extracting annual data, determine the terms for which you want to extract data. The terms range from the Summer</p>	<p>Activity:</p> <p>Distribute the decision tree activity.</p> <p>Instruct the student to pay attention to the rules for determining parameter values and attempt to construct a decision tree that reflects those rules.</p>

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<p>term through the Spring term.</p> <p>If you are extracting term data, determine whether you are extracting data for the School of Law or for all other careers.</p> <p>If you are extracting term data, determine whether you are extracting census or final data. Then determine the effective date to use.</p>	
<p>Examples:</p> <p>The DEGREE_TERMS parameter specifies the terms for which to extract annual data related to degrees conferred. For the 2003-2004 academic year, use ('2460', '2500', '2520', '2540').</p> <p>The CENSUS_TERM parameter specifies the PeopleSoft enrollment term for which to extract data. To extract data for Fall 2005, use the value '2700'. PeopleSoft term codes are in the PS_ACAD_CALTRM_TBL.</p> <p>The CENSUS_RUN parameter specifies whether to extract data for census or final enrollment. For Winter 2006 census enrollment, use the value '2720CEN'. For final enrollment for the same term, use '2720FIN'.</p> <p>The CENSUS_CAREER parameter specifies the student population(s) for which to extract data. To extract data for the School of Law, use 'LAWS'; otherwise use ('ARTS', 'BUSN', 'CPED', 'CNED', 'ENGR', 'UGRD').</p>	<p>Inform the student that you will show examples of parameter values.</p>

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<p>The CENSUS_DATE parameter specifies the particular date within the term for which to extract data. The census date is aligned with deadlines for adding/dropping classes and receiving tuition refunds. The census date may be obtained by contacting the data manager in the Student Records Office, or by querying the PeopleSoft PS_ACAD_CALTRM_TBL for the “CENSUS_DT” field for the appropriate term/career. For final enrollment, use the date on which you extract the data.</p>	<p>If the student has no questions, administer the quiz.</p> <p>If she makes any errors on the quiz, ask her why she answered as she did. Show her where she misunderstood or misapplied the principles. Then ask her to retake the quiz with slightly different conditions.</p>

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Connect to the remote computer

Demonstrate the process for connecting to the remote computer that hosts the data mart. Then observe as the student attempts to complete the task.

Instructor	Learner
<p>The data mart is hosted on a remote computer behind a firewall. The only other computers that can access it with administrator rights are the database administrator's and the DMIR administrator's computer in this office (Institutional Research). We use software called "pcAnywhere" to connect to the remote computer.</p> <p>First I'll demonstrate the procedure; then I'll have you try it.</p>	<p>Ask the learner to follow along in the Student Guide as you demonstrate the process.</p>
<p>1. Double-click the "pcAnywhere" icon on the desktop to open the software for connecting to a remote computer. The name of the remote computer that hosts the data mart is "itnt33." In the pcAnywhere window, double-click the "itnt33" icon. This should establish a connection to the remote computer. If access is denied because the computer is locked, send e-mail to Mai Anh [mky@scu.edu] and Ed [emulliken@scu.edu]. If they are not using the computer, they can unlock it.</p>	
<p>2. Log on to the remote computer. The username and password are in the office password folder.</p>	
<p>3. The Welcome screen will prompt you to press Ctrl-Alt-Delete to begin. Don't do it! That only pertains to someone who is sitting in front of the remote computer. If you press Ctrl-Alt-Delete you will open the Windows Task Manager</p>	

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<p>window on the local computer. Instead click the Ctrl-Alt-Delete icon at the top of the screen as shown below.</p>	
<p>4. Open the Cognos DecisionStream software.</p> <ul style="list-style-type: none"> a. On the remote computer, click the Windows “Start” button. b. Click “Cognos DecisionStream Designer.” c. When DecisionStream starts, it will prompt you to create a new catalog or open an existing catalog. Click on “Open an existing catalog”. d. If the value in the “Database Name” field is “DMIR”, click the “OK” button. e. Otherwise click the “Recent” tab, select the first instance of “DMIR_CATALOG” in the list, and click the “OK” button. 	<p>When finished demonstrating the task, ask the learner to sit at the computer and use her Student Guide to complete the task.</p>
<p>10 - MINUTE BREAK</p>	

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Review and set parameters

Demonstrate the process for reviewing and setting parameters. Then observe as the student attempts to complete the task.

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<p>Now that you’re in DecisionStream and have opened the DMIR catalog, you should review the current parameters. This isn’t strictly necessary, but it may save you time. For example, if you’re extracting final enrollment data, the parameters from the previous census enrollment extract may still be set. In that case you may need to change only the “CENSUS_RUN” and “CENSUS_DATE” parameters.</p>	<p>Ask the learner to follow along in the Student Guide as you demonstrate the process.</p>
<p>Demonstrate how to view parameters: First we’ll go through the process of reviewing the current parameters. This involves a simple query of a table in the data mart called “CEN_PARAMS” which has two fields: “VARIABLENAME” and “RESULT.”</p>	
<ol style="list-style-type: none"> 1. In DecisionStream, click on the “SQL Term” icon to open the SQL Term window. 2. At the top of the SQL Term window, use the drop-down menu to select “ODS_CURRENT”. 3. In the Database Objects frame, click the “+” (plus) button next to “ODS_CURRENT”. 4. Click the “+” (plus) button next to “dbo” to open the database schema and view the tables in the database. 5. Scroll down to the “CEN_PARAMS” table. This table contains the parameters used to extract data from the source 	

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<p>database.</p> <p>6. Right-click on “CEN_PARAMS” and select “Select rows”.</p> <p>7. The SQL command ‘SELECT * FROM “dbo”.”CEN_PARAMS”’;’ should appear in the “Source SQL” frame. This command will select all rows from the “CEN_PARAMS” table.</p> <p>8. Run the SQL command by clicking the button with a green triangle just above the “Source SQL” frame.</p>	
<p>9. Running the command should result in rows of data appearing in the “Results” frame at the bottom of the screen. Each row should have two columns: “VARIABLENAME” and “RESULT”. The first column, “VARIABLENAME,” contains the names of variables (i.e. the parameters) used in extracting the new data. The second column, “RESULT,” is the current value associated with the “VARIABLENAME”. For example, the first row contains the value “CENSUS_TERM” in “VARIABLENAME” while the value in “RESULT” is “2640”. When new data are extracted, whenever the “CENSUS_TERM” variable is used, the value “2640” is substituted.</p>	<p>When finished demonstrating the task, ask the learner to sit at the computer and use her Student Guide to complete the task.</p>
<p>Demonstrate how to set parameters:</p> <p>Now that we’ve reviewed the parameters, we’ll use what we learned about determining parameter values to set new values for the parameters.</p>	<p>Ask the learner to follow along in the Student Guide as you demonstrate the process.</p>

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<p>Open digital version of Student Guide.</p> <p>To set the values for parameters, you must run SQL update statements. All of the necessary SQL statements are in Appendix A of the Student Guide. The easiest approach is to open the digital version of that document, find the SQL statement you want to use, change the values as described below, and copy the statement into DecisionStream’s SQL Term window. However, there is a special process for copying text from your computer and pasting it into the remote computer.</p>	<p>Refer student to Appendix A of Student Guide.</p>
<p>Demonstrate editing an SQL statement.</p> <p>I prefer to copy the SQL statement into a new document so that I’m not modifying the original SQL statement, which I have tested and know works. Then if my modified version doesn’t work, I can compare it with the original and see where I made a mistake. Usually I accidentally deleted a comma or apostrophe.</p> <p>Let’s say we’re running a term extract for Fall 2006. So we’ll edit the UPDATE statement for CENSUS_TERM so that it’s value in the RESULT field of the CEN_PARAMS table is ‘2800.’</p> <pre> UPDATE CEN_PARAMS SET RESULT = '2600' WHERE VARIABLENAME='CENSUS_TERM'; </pre> <p>We’ll just change ‘2600’ to ‘2800’ and we’re ready to copy and paste the statement into DecisionStream.</p>	

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<p>Demonstrate copy and paste.</p> <ol style="list-style-type: none"> 1. The copying part of the process is unchanged. Highlight the text and press CTRL-C to copy. 2. On the remote computer in the SQL Term window, make sure there is nothing in the Source SQL area. If there is text in that window, press the “Clear SQL Query and Results” icon. 3. On the pcAnywhere toolbar, click the “Transfer Clipboard” icon. In the “Direction” section, click the radio button next to “Transfer your clipboard to the host’s clipboard.” In the “Items to transfer” section, make sure the “Text” checkbox is checked. Click “OK.” 4. Place your cursor in the Source SQL frame of the SQL Term window and press CTRL-V to paste your text. 	
<p>Demonstrate executing the statement.</p> <p>Now that we have the appropriate SQL code, all we have to do is run it by clicking the button with a green triangle just above the Source SQL frame.</p> <p>In the Results frame, we see a copy of the statement we executed and the phrase “1 row updated.”</p>	<p>When finished demonstrating the task, ask the learner to sit at the computer and use her decision tree and Student Guide to complete the task while you observe. Have her use the same conditions as described on the quiz to prepare for a term extract.</p>
<p>Demonstrate saving your work.</p> <p>When you’re finished setting all of the necessary parameters, close the SQL Term window and save the changes you made to the catalog.</p>	

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Run the jobstreams and review

Demonstrate the process for running and reviewing the jobstreams. Then observe as the student attempts to complete the task.

Instructor	Learner
<p>Key concept: Jobstreams are processes that use the parameters you set to extract data from the source database (PeopleSoft) and insert the data into the target database (DMIR).</p> <p>In the main DecisionStream window, run the appropriate jobstreams depending on whether you’re doing a term or an annual update.</p> <p>Note: If there are errors during the jobstream process, a pop-up window will alert you and provide further information. This doesn’t happen often, but when it does you have to resolve the problem. Techniques for identifying and handling jobstream errors are covered in Session 2 of your training.</p>	<p>Ask the learner to follow along in the Student Guide as you demonstrate the process.</p>
<p>Demonstrate running a jobstream.</p> <p>Running the jobstream for the annual extract of degree data is easier, or at least faster, than running a term extract. The annual extract has just one jobstream to run. I’ll show you how to do it and then how to review the results. Then I’ll have you do it.</p>	
<p>1. In the DMIR_CATALOG (left) frame of the main window, click the “+” (plus) button next to “JobStreams” to open this list of jobstreams.</p>	

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<ol style="list-style-type: none"> 2. Scroll down to the “RECORDS_8.REC_ACAD_DEGREE” jobstream. 3. Right-click the “RECORDS_8.REC_ACAD_DEGREE” jobstream and select “Execute” from the popup menu. A command window will show the progress of the jobstream. 4. When the jobstream is finished running, the command window will alert you and prompt you to close the command window. 	
<p>Demonstrate reviewing a jobstream.</p> <p>After you’ve run your jobstream(s), it is good practice to review the results. To do this you use a SELECT statement instead of an UPDATE statement, just as you did when you reviewed the extract parameters before setting new values.</p>	
<ol style="list-style-type: none"> 1. Open the SQL Term window. 2. In the Database Object frame, select one of the tables that were updated, such as the ADM_APPL_DATA_DIM table if you extracted term data. 	
<ol style="list-style-type: none"> 3. Modify the SQL statement in the Source SQL frame by adding a “WHERE” clause. This is used to specify a condition for filtering the results. If you extracted census enrollment data for the summer term of 2004, for example, the SQL statement would look like this: <pre>SELECT * FROM "dbo"."ADM_APPL_DATA_DIM"</pre>	

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<p>WHERE CENSUS_RUN = '2640CEN';</p> <p>Note that the semi-colon is at the end of the statement. If you add the “WHERE” clause after the semi-colon, it will be ignored by the SQL engine that runs your query.</p>	
<p>4. Run the SQL command by clicking the button with a green triangle just above the “Source SQL” frame. In the Results frame, you will see all of the rows of data which were extracted from the source database and inserted into DMIR by the jobstream(s). The fact that there are results in the Results frame indicates that there are data in DMIR with a “CENSUS_RUN” value of ‘2640CEN.’</p> <p>5. Query tables from other jobstreams using the same “WHERE” clause to ensure that they received new data as well.</p>	<p>When finished demonstrating the task, ask the learner to sit at the computer and use her Student Guide to complete the task.</p>

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Disconnect from the remote computer

Demonstrate the process for disconnecting from the remote computer that hosts the data mart.

Instructor	Learner
<p>The final step is to disconnect from the remote computer. It's a simple process, but it must be followed to ensure that the remote computer can subsequently be accessed by the database administrator. Once again, I'll demonstrate the process first; then I'll have you try it.</p>	<p>Ask the learner to follow along in the Student Guide as you demonstrate the process.</p>
<ol style="list-style-type: none"> 1. When you're finished reviewing the data, close DecisionStream. Then click the "disconnect" icon in the pcAnywhere toolbar. 2. When the Windows Security window appears, click the "Log Off" button. 3. A Windows dialog box will ask "Are you sure you want to log off?" If you are sure, click the "Log Off" button. Otherwise click the "No" button. 4. And finally, you will be prompted to end the remote session. Click "Yes." 	<p>When finished demonstrating the task, ask the learner to sit at the computer and use her Student Guide to complete the task.</p>

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Close

By now you should be able to update the data mart. The process may have seemed daunting at first, but by breaking it down into major tasks and breaking down those tasks into steps, you've seen that there's really nothing too difficult about it. In the next session, we'll examine some logs that have information about the jobstreams we ran. We'll learn how to look for problems and then figure out how to resolve them.