



Check Processing, Electronic Refund,
Document Enhancement, Web Enabled Reporting

Argos Basic Training - Report Writer Workbook

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Introduction

Welcome to Report Writer Training

Welcome to the Report Writer training sessions for Argos. As you move through the exercises that follow, you will learn the basics of creating, formatting, and running reports from existing Argos DataBlocks.

The exercises that follow will give you hands-on training with many features of the report designer tool, and they will also will give you experience creating and configuring a variety of different types of reports from scratch.

Before We Begin: Find Your Logo

In one of the later exercises, you're going to need a copy of your school's logo, which you will include in one of your report designs. Please find a copy of your school's logo (you can simply download the image from your website). Make sure you have the file available to you on your workstation.

Glossary of Useful Terms

As you proceed through this workbook, you'll find definitions for different terms and commands as you come across them in the exercises. Before getting started, though, it might be helpful to review the definitions of some general Argos terminology. Below are definitions for some common terms we'll be using in this training:

DataBlock – DataBlocks are containers that hold Structured Query Language (SQL) queries, which return data from your institution's data sources. Each DataBlock has been designed and built by a DataBlock Designer to return a particular subset of data. Some DataBlocks are very simple, while others can be quite complex and may include multiple forms, charts or graphs. Every report you create in Argos will be based on a DataBlock and will draw from the data being returned by the DataBlock's Report Query.

Dashboard – Each DataBlock has a dashboard, which consists of all of the DataBlock elements that are visible to the end user. Any forms, variables, control objects, charts, graphs, OLAP cubes, etc. that can be seen by any Argos end user are part of the dashboard. The dashboard is the DataBlock's control panel, where you can input choices, view the resulting data set, and print it off exactly as it appears on screen.

Variable – A variable is an element that is used to constrain the data returned by SQL queries in a DataBlock. Often, variables are attached to control objects—like drop downs, list boxes, radio buttons, etc.—on the dashboard. These control objects allow users to select values for the different variables, which will be used to constrain the data returned to the DataBlock. In these exercises, we'll often use the term 'variable' when referring to these control objects, since they are directly related to the variables.

Control Objects – As mentioned above, most of the control objects you'll encounter will be drop downs, list boxes, radio buttons, checkboxes, etc. that are intended to collect user input. In addition to these, there are several other types of control objects that you'll run into on a DataBlock dashboard. Multi-column list boxes, for example, are often used to display the data being returned to the Dashboard. Buttons on the dashboard that execute certain commands are also a type of control object.

Report Query – There are a number of SQL queries at work in any given DataBlock, but perhaps the most important for report writers is the report query. Using the values you select from the form objects, the report query retrieves the data set that you've defined. This data set is what you'll use when constructing reports. While you can build many reports from a single DataBlock, there is only one report query per DataBlock.

Report – Because reports in Argos come in a variety of formats, serving a variety of purposes, it can be hard to come up with a definition that describes them all. The best way to think about an Argos report is simply as a design structure, a framework that allows report writers to decide how they're going to display the data returned by the report query. For more information on each of the individual report types, see the next section.

Guide to Argos Report Types

There are three basic report types in Argos. Within each type, you'll have a variety of different options to choose from, but let's start with a quick overview of each type and their comparative advantages:

Comma Delimited (CSV) Report

A Comma Delimited (CSV) report is the simplest of the three Argos report types. Comma-delimited files are very basic spreadsheet-type files. Each record is on a single row and each field is separated by a comma.

Extract Report

Extract Reports produce text files that are tailored to meet strict format specifications. They come in three varieties:

- **Fixed Width** – Fixed Width Extract Reports allow you to define the precise width of each column. Fixed width files are often required by government agencies.
- **Delimited** – Delimited Extract Reports allow you to build more complex delimited files than a standard CSV file.
- **XML** – XML Extract Reports allow you to extract your data into an XML file. XML is a relatively new file format, but it is being specified more and more often in institutional reporting.

Each type of Extract Report has a variety of options so you can configure the output to meet even the most rigid specifications. Extract reports are particularly useful when preparing data for submission to government agencies, higher education clearinghouses, or other third party organizations.

Banded Report

Banded Reports are fully formatted reports that can contain special formatting, grouping, subtotals, totals, summary information, rich text fields, charts, graphs, images, and other special information. Banded Reports get their name from the fact that each report is organized into 'bands' or sections, each of which can be designed however you choose. Complete Banded Reports are exported as PDF files.

Banded Reports are built with the Banded Report Editor, a suite of design tools within Argos that make it easier to navigate all of the different options available with Banded Reports. Banded Reports can be used not only to create user-friendly reports that include images and graphics, but they're also ideal if you need to create formatted mailing labels or correspondence using data from your institutions data sources.

Important Note About this Workbook

Please note that this workbook is not designed to replace the user documentation—it simply provides step-by-step instructions you can follow along with for these training exercises. If, at any point, you'd like more details on a particular feature or are curious about a feature that the exercise does not cover, please refer to the in-product help.

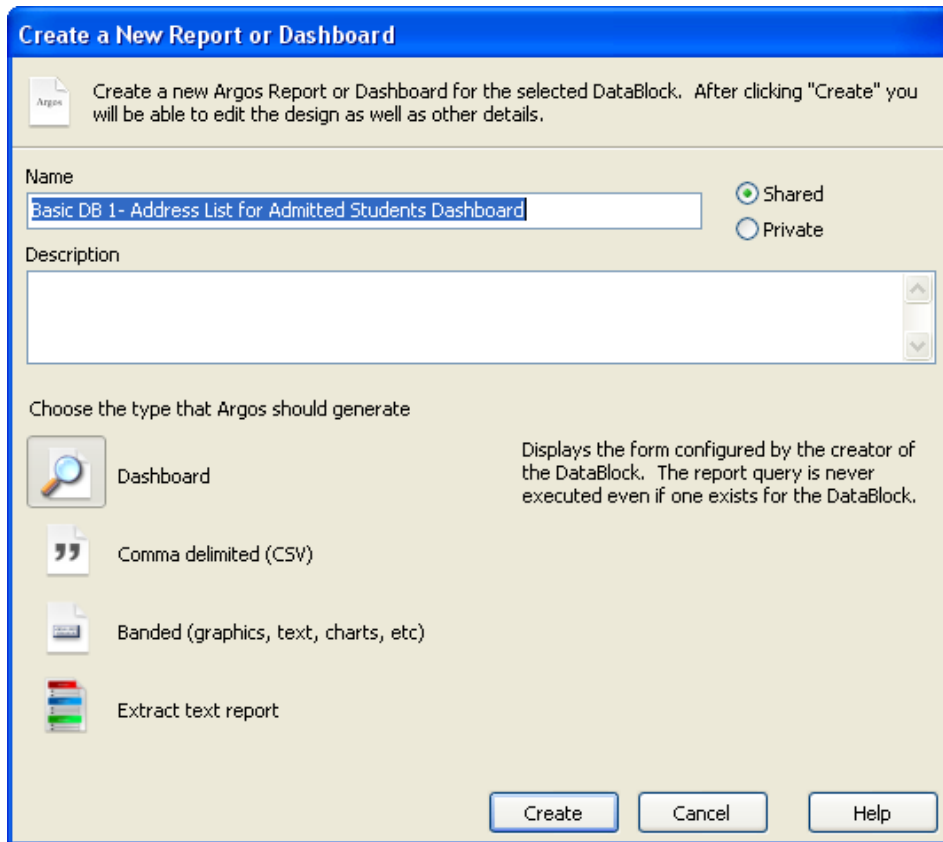
First Steps: Introduction to Report Creation

The 'Create New Report' Window

Every exercise in this workbook will start with the same process. You'll locate the DataBlock from which you want to create a report, you'll click to select it, and then, on the right-hand side of the screen, you'll click the **New** button, beneath the **Report Writer Actions** heading:



This will open up the **Create New Report** window. Since we'll be seeing a lot of this window, we're going to start with a quick overview of the options here. Later on, as you work through the exercises, we won't be describing these steps in much detail, so if you ever have questions about creating a new report, you can refer to this section.



Here is a description of the options available to you in this window:

- **Name** – Type a name for the report you’re creating. It’s very important to choose a clear, specific name for each report—preferably one that adheres to a well-defined naming convention. This will make it much easier to find your report quickly and easily later, with minimal confusion.
- **Shared/Private** – You can choose to make any new report ‘Shared’ or ‘Private’ by selecting the corresponding radio button. Shared reports are viewable by any Argos user that has access to the folder where the report is located. Private reports are only viewable by the report creator (in this case, you) and by administrator-level users. It’s often useful to keep reports ‘Private’ while you’re editing them, and only make them Shared when you’ve completed all of your edits.
- **Description** – As with naming, you’ll want to write a clear, specific description that will make it impossible to get this report confused with any other. This will become especially important as the number of reports in your Argos system grows, making it more difficult to distinguish between existing reports. Be as specific as possible in this area.
- **Report Type** – And of course, the final section is where you choose the type of report you’ll be creating—a CSV Report, a Banded Report, or an Extract Report.
NOTE: Wondering about the ‘Dashboard’ option? See ‘A Note About Dashboards’ down below.

When you’ve completed each section in the **Create New Report** window, click the **Create** button at the bottom to create (and begin configuring) your new report.

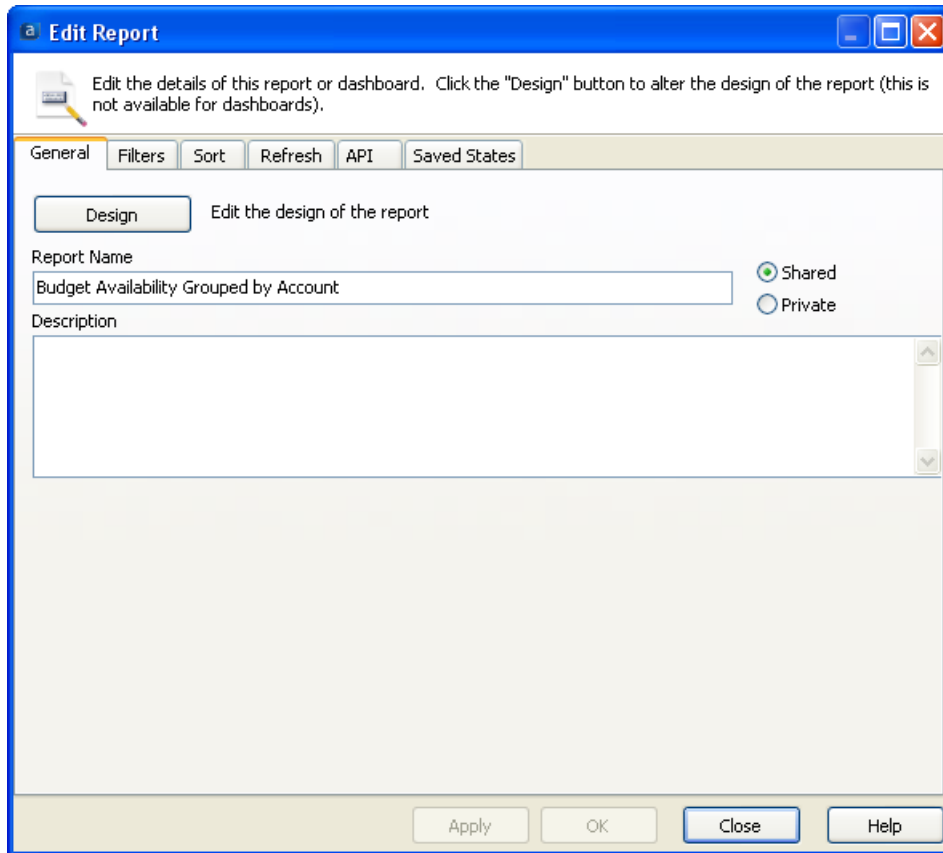
A Note About Dashboards

You may have noticed that the first option on the **Create New Report** window is **Dashboard**. (Indeed, the window’s full title is really ‘Create a New Report or Dashboard’.) You may also have noticed that we’ve thus far ignored that option. That’s because, even though it’s listed on this page, dashboard is not really a report type.

It may seem like you can use this tool to create a new dashboard for the chosen DataBlock, but that’s not really the case. You cannot create or configure any new dashboard elements or functionality using this option. Rather, selecting the **Dashboard** option will simply create a duplicate shortcut to the DataBlock’s dashboard. Creating an additional dashboard shortcut is useful when you want to create a unique schedule task. Other than that, it’s likely that you won’t ever need to use the **Dashboard** option.

The 'Edit Report' Window

When you create a new report, of any variety, the first thing you'll see is the **Edit Report** window. In the exercises that follow, you won't be spending a whole lot of time in this window. It's mostly just a gateway to more sophisticated report design tools. However, there are some options available in the **Edit Report** window that will be very useful when you start to write your own reports. This section will introduce you to the different sections of the **Edit Report** window.



You'll see that there are a variety of tabs available in this window. Below is a quick description of the options available on each tab, and some situations in which they might come in handy.

The General Tab

The most important part of this tab is the **Design** button. For all of the report types, the **Design** button will open up the editing window where you'll configure your report. You can also edit the name, sharing settings, and description of your report on this tab.

The Filters Tab

On this tab, you can add a filter, which will limit the report to data that matches certain criteria. At the top of the tab, click the **Activate Additional Filtering** checkbox to add a filter to your report. The **Available Fields** list will show you what fields you can use in your filter. Add whatever fields you like to the **Filters** list, and then define the conditions your data must meet to be included in the report. Once you've added a filter, the report will only include data that meets the conditions you've specified.

Adding a filter at the report level like this makes it easy to create very specific reports. Say, for example, you regularly need a budget report that only contains data from a particular fiscal period. If your budget DataBlock's dashboard does not include a variable for specifying a fiscal period, you can create a report filter to limit the report data to the fiscal period you're after.

NOTE: The field you want to filter by—in this case fiscal period—does have to be included on the DataBlock's report query.

When deciding whether or not you should use a report filter, though, keep in mind that it's not your only option for creating more specific reports. In this scenario, if you only ever need budget information for *one specific fiscal period*, this is a great solution. If, however, you'll eventually want users to be able to filter this report by *other* fiscal periods, you'd be better off having the DataBlock Designer add a new variable to the form. That way the end user can select which fiscal period to limit the report by, and you won't have to create a new version of the report for each individual period.

The Sort Tab

This tab lets you define the sort order for the data in a report. If you don't edit this tab, the report data will simply be sorted according to the sort order defined in the report query. However, there will be times, as we'll see in a few of the exercises below, where it will be useful to be able to define a different sort order for your report data.

In order to enable the **Sort** tab, you'll need to click the **Override Main Report Query Sort** checkbox at the top of the tab. Then it's simply a matter of moving fields, in the order you want the results to be sorted by, from the **Available Fields** list to the **Ordered Fields** list.

The Refresh Tab

On this tab, you can set a specific variable (or variables) to refresh at regular intervals when a user runs the report. To select which variables should refresh, click the **Add Variable** button (the green plus on the toolbar) and then type an interval (in seconds) to define how often it will refresh. This comes in handy if you want to run a report and leave the dashboard open over a long period of time so you can monitor the data in real time.

The API Tab *(only available to administrator-level users)*

Argos' optional API add-on enables you to integrate Argos reports into various portals, web pages, and third party applications. There are a variety of steps involved in making a report accessible via the API, one of which is enabling the API for a particular report. This tab is where you would accomplish that.

NOTE: This tab will only appear if you're logged in with an administrator-level user account.

The Saved States Tab

OLAP cubes can be scheduled to create snapshots. Those snapshots are called Saved States. The Saved States tab is used by DataBlock Designers who schedule OLAP cubes.

First Exercise: CSV Report – Addresses by Zip Code

	A	B	C	D	E	F	G	H	I	J	K
1	Id	FirstName	LastName	StreetLine1	StreetLine2	City	State	ZipCode	Report Date		
2	610009604	Nathan	Holister	39 North Road		Malvern	PA	19355	2/1/13 17:33		
3	210009602	Rose	Best	PO Box 210		Malvern	PA	19355	2/1/13 17:33		
4	210009604	Nancy	Childress	2103 South Street		Malvern	PA	19355	2/1/13 17:33		
5	610009609	Holly	Miller	219 Parker Road		Villanova	PA	19085	2/1/13 17:33		
6	210009609	Sandra	Phillips	PO Box 281	Grand Central Station	New York	NY	10013	2/1/13 17:33		
7											
8											
9											
10											
11											
12											
13											
14											
15											

Exercise Description

In this exercise we're going to create a simple CSV report that displays addresses for the subset of students the user chooses, sorted by zip code. We'll also use one of Argos' built-in functions to add the date that the report was run to the final report file.

Instructions

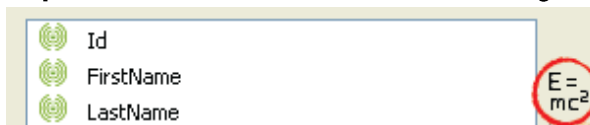
Create a new CSV report

1. In the **Explorer** tab, find the folder with the DataBlocks you'll be working from.
2. Find 'Address List for Admitted Students' and click to select it.
3. Create a new report by clicking on the **New Report** button under Report Writer actions
4. Fill out the **Name**, **Shared/Private**, and **Description** sections. Name the report 'Addresses by Zip Code'.
5. Click the **Comma Delimited (CSV)** button, and then click the **Create** button.
NOTE: For more details, refer to the 'First Steps: Introduction to Report Creation' section at the beginning of this workbook.

Configure fields and report organization

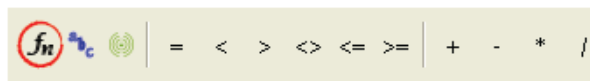
6. You'll now see the **Edit Report** window.
7. Click the **Design** button, in the top left corner of the screen, to open the **Edit CSV Report** window:
 - a. On the left, there is a list of fields from the DataBlock that can be included in our CSV report. Double-click on the student ID field in the left column. You'll see it appear in the list on the right.
NOTE: The alias for this field will differ depending on your school's data dictionary. Select whichever field is the student ID number at your institution.

- b. Do the same for the following fields: 'LastName', 'FirstName', 'StreetLine1', 'StreetLine2', 'City', 'State', 'ZipCode'
NOTE: You can add multiple fields simultaneously by holding the CTRL key while clicking on each field. Once all of the fields are selected, click the blue right arrow button. You can also add all of the available fields by clicking the double-arrow button, and you can remove a field by clicking the red X button next to the right-hand column.
- c. The order of the fields in this list will determine the order of the columns in the final report. For this report, we want the 'FirstName' field to be in the second column rather than the third. Click the 'FirstName' field to select it, and click on the blue up arrow button to move the field up to the second place in the list.
- d. The last thing we're going to add in this window is a report date, which will help prevent confusion if you have multiple versions of the same report. To include the report date on our report, we're going to create a new expression. Click the **Add Expression** button (the E=MC² button on the right)



to open the **Expression Builder** window:

- i. Click the **Add Expression Function** button (the Fn button on the toolbar)



to open the **Choose a Function** window:

- (1) In the **Categories** list, click 'Date & Time' to see a list of date- and time-related functions.
- (2) From the **Functions** list, click on 'Now' to select it.
NOTE: When you select a function, a description of that function appears at the bottom of the window.
- (3) Click the **OK** button.

- ii. The **Expression Builder** window should display 'Now()'.

- iii. Click the **OK** button.

- iv. The **Field Name** window will pop up. Type 'Report Date' to name the expression.

- v. Click the **OK** button.

- e. You'll see that 'Report Date' has now been added to the list of fields.

- f. Click the **OK** button to close the **Edit CSV Report** window.

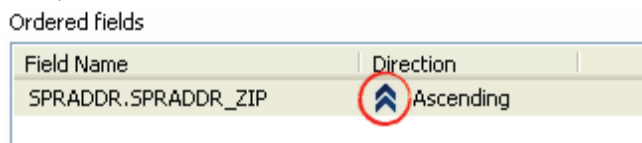
- 8. Now that we have our fields selected, we're going to tell the report how to sort them. Click on **Sort** tab:

- a. By default, reports will be sorted according to the order specified by the DataBlock's Report Query. We want to override that for this report, so click the **Override the Main Report Query Sort** checkbox.

- b. Find 'ZipCode' in the **Available Fields** list.

- c. Double-click to move it to the **Ordered Fields** list.

- d. By default, the sort direction for 'ZipCode' will be 'Ascending'. In the **Direction** column, click the **Ascending** button (dark blue double up arrow)






to change the sort order to 'Descending'.

- 9. Click the **OK** button to save your changes and exit the **Edit Report** window.

Run your report and check your changes

- 10. Make sure your new report is selected on the **Explorer** tab.

11. On the right-hand side of the screen, under the **Report Viewer Actions** header, click the **Run Report** button.
12. You'll see the dashboard for the DataBlock—use the control objects to select the subset of students whose addresses should be included in your report.
13. Once you've constrained your dataset, you have several options for producing the report. On the top menu, you'll see three buttons:
 -  **Save Report** – This option will simply save your report as a file in whatever location you specify.
 -  **Create & Email Report** – This option will create a file and email it as an attachment to one or more recipients. Once you click this button, you'll have the chance to specify recipients, a subject line, and body text for the email message and a filename for the report.

NOTE: This option won't save a copy of the report to your hard drive—if you want a local copy, use the Save Report option.
 -  **Save & Open Report** – This option saves the file to your hard drive and then opens it automatically with the program that is associated with that file type.

NOTE: Usually .csv files will open in Excel or your computer's default spreadsheet program. If your computer does not have a spreadsheet program installed, the report will open in Notepad.
14. Click the **Save & Open Report** button (the green gear on the toolbar), which will open the **Save Report** window:
 - a. Choose 'Desktop' from the **Save in:** drop down.

NOTE: You can also choose to save the report in any other folder—desktop is just quick and easy to navigate to.
 - b. In the **File name** test box, type a descriptive filename.

NOTE: In this case, you could use 'Address List by Zip Code'.
 - c. Click the **Save** button.
15. The report should now open in separate window:
 - a. Take a look at the report and make sure it includes all of the fields you chose and that they are in the right order.
 - b. Close out of your report.

NOTE: From now on, when you see "Run your report from the DataBlock to view the finished product." in these instructions, follow the preceding steps.
16. Congratulations! You've created and run your first Argos report. Close out of the 'Addresses by Zip Code' window to get back to the Argos folder tree.

Second Exercise: Extract Report – Budget Availability

	A	B	C	D	E	F	G	H
1	Account	Total Adopted Budget	Total Budget Adjustments	Total YTD Activity	Total Encumbrances	Total Budget Reservations	Fiscal Year:	96
2	Fiscal Period: 00	Fund: 1110	Organization: 11001					
3	7240	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		
4	Fiscal Period: 00	Fund: 1110	Organization: 11003					
5	7510	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		
6	Fiscal Period: 01	Fund: 1110	Organization: 11001					
7	6111	\$372,750.00	\$0.00	\$0.00	\$0.00	\$0.00		
8	6112	\$68,565.00	\$0.00	\$0.00	\$0.00	\$0.00		
9	6121	\$26,460.00	\$0.00	\$0.00	\$0.00	\$0.00		
10	6122	\$4,410.00	\$0.00	\$0.00	\$0.00	\$0.00		
11	6210	\$70,000.00	\$0.00	\$0.00	\$0.00	\$0.00		
12	7110	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
13	7120	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
14	7210	\$26,250.00	\$0.00	\$453.95	\$0.00	\$0.00		
15	7220	\$5,250.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
16	7230	\$2,100.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
17	7240	\$20,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
18	7260	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
19	7510	\$21,000.00	\$0.00	\$17,995.00	\$0.00	\$0.00		
20	7520	\$3,150.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
21	7615	\$25,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
22	7810	\$3,150.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
23	Fiscal Period: 01	Fund: 1110	Organization: 11003					
24	6111	\$372,750.00	\$0.00	\$0.00	\$0.00	\$0.00		
25	6112	\$68,565.00	\$0.00	\$0.00	\$0.00	\$0.00		
26	6121	\$26,460.00	\$0.00	\$0.00	\$0.00	\$0.00		
27	6122	\$4,410.00	\$0.00	\$0.00	\$0.00	\$0.00		
28	7110	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
29	7120	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
30	7210	\$26,250.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
31	7220	\$5,250.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
32	7230	\$2,100.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
33	7260	\$40,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
34	7510	\$21,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
35	7520	\$3,150.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
36	7615	\$25,000.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
37	7810	\$3,150.00	\$0.00	\$4,000.00	\$0.00	\$0.00		
38	Totals:	\$1,446,170.00	\$0.00	\$94,448.95	\$0.00	\$0.00		
39								
40								

Exercise Description

For this exercise, we're going to switch gears to the Budget Availability DataBlock and create a delimited extract report displaying budget information grouped and sorted by fiscal period, fund, organization, and account. We'll also include some subtotals at the bottom of the report.

Instructions

Create a new extract report

17. In the **Explorer** tab, find the folder with the DataBlocks you'll be working from.
18. Find 'Budget Availability' and click to select it.
19. Create new report by clicking the **New Report** button.
20. Fill out the **Name**, **Shared/Private**, and **Description** sections. Name the report 'Budget Availability'.
21. Click the **Extract Text Report** button, and then click the **Create** button.

NOTE: For more details, refer to the 'First Steps: Introduction to Report Creation' section at the beginning of this workbook.

Configure your new delimited extract report

22. In the **Edit Report** window, click the **Design** button to open the **Extract Report Editor** window:
 - a. On the **Configure Report** pane, on the **Settings** tab:
 - i. Where it says **Report Format**, select 'Delimited'.
 - ii. A warning will pop up telling you that you cannot undo changing the report format, and if you've made any changes to the report, they will be lost. Click the **Yes** button to proceed.
 - iii. Where it says **Delimiter** type a comma.
NOTE: You can choose to delimit the report with other symbols, but a comma is the standard delimiter.
 - iv. Where it says **Default Ext** type 'csv'.
NOTE: You don't need to put in a period before the 'csv'.
 - b. Click the **Save** button (the floppy disk icon on the toolbar) to save your changes.

Add and configure a title section

23. Still in the **Extract Report Editor** window:
 - a. On the **Report Structure** pane, click the down arrow for the **Add Section** button (green plus sign), and select **Add Title Section** from the menu.
 - b. In the **Configure Section: Title** pane, make sure the **Section Properties** tab is selected.
 - i. In the **Name** field, change the name to 'sect_TT_ColumnHeaders'
 - c. On the **Configure Section: Title** pane, go to the **Fields** tab:
 - i. Click the down arrow for the **Add Field** button (green plus sign), and select **Add Constant Field**. This is the first of several constant fields that will act as column headers in the final report.
 - ii. At the bottom of the pane, configure your new constant field:
 - (1) Where it says **Name**, type 'Acct'.
 - (2) Where it says **Value**, type 'Account'.
 - iii. Follow the same procedure to add and configure six more constant fields, configured as follows:
 - (1) **Name:** 'AdptBudget', **Value:** 'Total Adopted Budget'
 - (2) **Name:** 'BudAdjust', **Value:** 'Total Budget Adjustments'
 - (3) **Name:** 'YTD', **Value:** 'Total YTD Activity'
 - (4) **Name:** 'Encumbrances', **Value:** 'Total Encumbrances'
 - (5) **Name:** 'Reservations', **Value:** 'Total Budget Reservations'
 - (6) **Name:** 'FiscYr Constant', **Value:** 'Fiscal Year Selected.'
 - iv. Click the **Add Field** button (green plus sign) one more time to add a dataset field. This field will display the Fiscal Year of the selected data.

- v. In the **Pick a Field** window:
 - (1) Click the **+** button next to 'main_DD_FiscalYr' to expand it out.
 - (2) Double-click on 'FiscalYrCode' to add it to the section and get back to the **Fields** tab.
- d. At the top of the window, click the **Save** button (the floppy disk icon on the main toolbar)



to save all the changes you've made to your report.

- e. On the same toolbar, click the **Preview** button (the green play button)



to preview the report with your edits so far. You'll see the **Parameter Entry** window open up:

- i. Use the control objects to select the subset of students whose addresses should be included in your report.
- ii. At the bottom of the window, where it says **Maximum Record Count**, type '100', so the test report only returns the first 100 records.
- iii. Click the **OK** button to open up an example of your report so far.
- iv. Review your report. It's not very exciting at this point, but this is a good opportunity to make sure your column headers are appearing correctly.

NOTE: The preview function will open your report in a text editor, but when the final report is run, it will open in the computer's default spreadsheet program.
- v. Click the **Close** button to close your example report.
- f. If there are any corrections or adjustments you need to make, do so before continuing.

NOTE: From now on, when you see "Save and test your extract report." in these instructions, follow the preceding steps.

Add and configure a detail section

- 24. Still in the **Extract Report Editor** window:
 - a. Back on the **Report Structure** pane, click the **Add Section** button (green plus sign) to add a new detail section. This section will display the budget data.
 - b. On the **Configure Section: Detail** pane, go to the **Section Properties** tab:
 - i. Where it says **Name**, type 'sect_DT_BudgetAvailability'.
 - ii. Where it says **Associated Dataset**, make sure that 'ArgosData' is selected.
 - c. Click on the **Fields** tab to display it.
 - d. On the **Datasets** pane, click the **+** button next to 'ArgosData (main)' to expand it out.
 - e. Double-click on the following fields to add them to the section:
 - i. 'Acct'

NOTE: It will appear in the list as 'Acct 2' since we already have an 'Acct' field in the title section. Argos does not allow for two objects with exactly the same name to appear in one report.
 - ii. 'TotalAdoptedBudget'
 - iii. 'TotalBudgetAdjustments'
 - iv. 'TotalYTDActivity'
 - v. 'TotalEncumbrances'
 - vi. 'TotalBudgetReservations'
 - f. The values for these last five fields are going to be in dollar amounts, so we want to format them to make them easy to read. Click 'TotalAdoptedBudget' to select it.
 - g. At the bottom of the pane, configure the field:
 - i. Where it says **Formatting Mask**, type '\$0.00; (\$0.00)'.

- h. Follow the same procedure to add the '\$0.00; (\$0.00)' mask to the other four fields.
- i. Save and test your extract report. (Follow the instructions in steps 23.d & 23.e.)
NOTE: You want to check that the column headers are matching the data in that column. The easiest way to check this is to hit the Run Dashboard button in the Parameter Entry window and make note of a couple of figures. For example, say the top row in the list box says that account '6111' has a total adopted budget of '\$372,750.00'. Make a note of those, and then hit the OK button. Now, check the comma-separated file. 'Account' and 'Total Adopted Budget' should be the first two headers, and '6111' and '\$372,750.00' should be the first and second values on the first row.

Add and configure a header section

25. Still in the **Extract Report Editor** window:

- a. On the **Report Structure** pane, click the down arrow for the **Add Section** button (green plus sign), and select **Add Header Section** from the menu. This section will be interspersed throughout the detail section in the final report. It will appear at the beginning of each set of grouped results and display the fiscal period, fund, and organization for the results that follow.

b. On the **Configure Section: Header** pane, go to the **Section Properties** tab:

- i. Where it says **Name**, type 'sect_GH_FisPerFundOrgValues'
- ii. Where it says **Detail Section**, make sure that 'sect_DT_BudgetAvailability' is selected.
- iii. Where it says **Group By**, click the ellipsis button to open the **Expression Builder** window:
 - (1) Click the **Insert Field** button (the green neutron-looking icon on the toolbar),



(2) to pull up the **Choose a Field** window:

- (a) Click the + button next to 'ArgosData' to expand it out.
- (b) Click on 'FiscalPeriod' to select it.
- (c) Click the **OK** button
- (3) Back in the **Expression Builder** window, after '{ArgosData.FiscalPeriod}', type '+'
- (4) Follow the same procedure to add two more fields from 'ArgosData':
 - (a) 'Fund'
 - (b) 'Orgn'
- (5) Now **Expression Builder** window should display:
'{ArgosData.FiscalPeriod}+{ArgosData.Fund}+{ArgosData.Orgn}'
- (6) Click the **OK** button.

c. Save and test your extract report. (Follow the instructions in steps 23.d & 23.e.)

NOTE: You should see the data grouped and sorted by fiscal period, fund, and organization. You won't see anything in the header row yet because we haven't defined any of the header fields yet.

d. Back on the **Configure Section: Header** pane, go to the **Fields** tab:

- i. Click the down arrow for the **Add Field** button (green plus sign), and select **Add Expression Field**. This is the first of several expression fields that will display labels and values for the fiscal period, fund, and organization for each group of results.
- ii. At the bottom of the pane, configure your new expression field:
 - (1) Where it says **Name**, type 'Fiscal Period – Label & Value'.
 - (2) Where it says **Expression**, click the ellipsis button to open the **Expression Builder** window:
 - (a) Type the following:

'Fiscal Period:'

NOTE: Make sure you include the single quotes, as well as the space after the colon in this and the next two expression fields.

- (b) After "Fiscal Period:" type in a '+'.
 - (i) Click the **+** button next to 'ArgosData' to expand it out.
 - (ii) Click on 'FiscalPeriod' to select it.
 - (iii) Click the **OK** button.
 - (c) Click the **Insert Field** button (the green neutron on the toolbar) to pull up the **Choose a Field** window:
 - (i) Click the **+** button next to 'ArgosData' to expand it out.
 - (ii) Click on 'FiscalPeriod' to select it.
 - (iii) Click the **OK** button.
 - (d) The **Expression Builder** window should display:

"Fiscal Period: '+{ArgosData.FiscalPeriod}'"
 - (e) Click the **OK** button to exit the **Expression Builder** window.
- iii. Follow the same procedure to add to more expression fields, configured as follows:
 - (1) **Name:** 'Fund – Label & Value', **Expression:** "Fund: '+{ArgosData.Fund}'"
 - (2) **Name:** 'Organization – Label & Value', **Expression:** "Organization: '+{ArgosData.Orgn}'"
- e. Save and test your extract report. (Follow the instructions in steps 23.d & 23.e.)

NOTE: You should see a header row above each group of results displaying the fiscal period, fund, and organization of the group below.

Add and configure a summary section

26. Still in the **Extract Report Editor** window:

- a. On the **Report Structure** pane, click the down arrow for the **Add Section** button (green plus sign), and select **Add Summary Section** from the menu. This section will show the totals for each column in the final report.
- b. On the **Configure Section: Summary** pane, go to the **Section Properties** tab:
 - i. Where it says **Name**, type 'sect_SM_Totals'
- c. On the **Configure Section: Summary** pane, go to the **Fields** tab:
 - i. Click the down arrow for the **Add Field** button (green plus sign), and select **Add Constant Field**.
 - ii. At the bottom of the pane, configure your new field:
 - (1) Where it says **Name**, type 'Totals'.
 - (2) Where it says **Value**, type 'Totals:'
 - iii. Click the down arrow for the **Add Field** button (green plus sign), and select **Add EZ Expression Field**, go to **SUM** in the submenu, go to 'ArgosData', and click on 'TotalAdoptedBudget' to select it.
 - iv. At the bottom of the pane, configure your new field:
 - (1) Where it says **Expression**, confirm that it displays 'SUM({ArgosData.TotalAdoptedBudget})'.
 - (2) Where it says **Controlled by Detail Section**, select 'Budget Availability'.
 - (3) Where it says **Formatting Mask**, type '\$0.00; (\$0.00)'.
 - v. Follow the same procedure to add four more EZ expression fields, configured as follows:
 - (1) **Expression:** 'SUM({ArgosData.TotalBudgetAdjustments})', **Controlled by Detail Section:** 'Budget Availability', **Formatting Mask:** '\$0.00; (\$0.00)'
 - (2) **Expression:** 'SUM({ArgosData.TotalYTDActivity})', **Controlled by Detail Section:** 'Budget Availability', **Formatting Mask:** '\$0.00; (\$0.00)'
 - (3) **Expression:** 'SUM({ArgosData.TotalEncumbrances})', **Controlled by Detail Section:** 'Budget Availability', **Formatting Mask:** '\$0.00; (\$0.00)'
 - (4) **Expression:** 'SUM({ArgosData.TotalBudgetReservations})', **Controlled by Detail Section:** 'Budget Availability', **Formatting Mask:** '\$0.00; (\$0.00)'

27. Save and test your extract report. *(Follow the instructions in steps 23.d & 23.e.)*
NOTE: Check to make sure the totals in your summary section are returning the right figures.
28. Click the **Exit** button (the door button on the toolbar) to close the **Extract Report Editor** window.

Adjust the sort order so the data is sorted by fiscal period, fund, organization, and account

29. Back in the **Edit Report** window, there's one more change we need to make. Even though we've told the extract report how we want it to group our results, those groups are still going to be sorted according to the DataBlock sort order. We want to adjust that, so click the **Sort** tab:
 - a. Click the **Override the Main Report Query Sort** checkbox to enable the rest of the tab.
 - b. The DataBlock sort order is pretty close to what we're after, with one major difference—we want the results sorted first by fiscal period (so that all of the results in the first period are grouped together, and so on). So from the **Available Fields** list, double-click on 'FiscalPeriod' to move it to the **Ordered Fields** list.
 - c. Follow the same procedure to move 'Fund', 'Orgn', and 'Acct' to the **Ordered Fields** list.
 - d. Click the **Apply** button to save your changes.
30. Back on the **General** tab, click the **Design** button to get back to the **Extract Report Editor** window:
 - a. Save and test your extract report. *(Follow the instructions in steps 23.d & 23.e.)*
 - b. Click the **Exit** button (the door button on the toolbar) to close the **Extract Report Editor** window.
31. Congratulations! You've completed your second extract report. Click the **Close** button to exit the **Edit Report** window.
32. Run your report from the DataBlock to view the finished product. *(Follow steps 10-15.)*

Third Exercise: Banded Report – Student Course List by Student

Report Date: 4/2/2013



210009506 Course	Abbe, Anthony Credit Hours	Registration Status	Grade
ANTH2020	3	RE	B
PHIL1005	3	RE	A
CHSM1001	3	RE	A
ECON1102	3	RE	A
ENGL1006	3	RE	A

Total Number of Courses: 5

Exercise Description

In this exercise, we're going to start in on banded reports by building one that displays students course information—what courses they're registered for, their registration status, and their grade. You'll learn to configure a number of different band types and how to create a report that groups results and displays one group of results per page.

Instructions

Create a new banded report

33. In the **Explorer** tab, find the folder with the DataBlocks you'll be working from.
34. Find 'Student Course List' and click to select it.
35. Open the **Create a New Report** window.
36. Fill out the **Name**, **Shared/Private**, and **Description** sections. Name the report 'Student Course List by Student'.
37. Click the **Banded Report** button, and then click the **Create** button.

NOTE: For more details, refer to the 'First Steps: Introduction to Report Creation' section at the beginning of this workbook.

Configure your new banded report

38. In the **Edit Report** window, click the **Design** button to open the **Banded Report Editor** window:
 - a. The **Banded Report Wizard** window will pop up immediately:

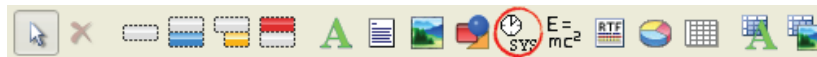
- i. On the **Report Type** tab, click the **List Report** button.
 - ii. Click the **Next** button.
 - iii. On the **Report Data** screen, find 'SubjectCode' in the list on the left, and double-click on it to add it to the report.
NOTE: You'll see it move to the list on the right.
 - iv. Follow the same procedure to add four more fields to the report:
 - (1) 'CrseNo'
 - (2) 'CreditHours'
 - (3) 'RegistrationStatus'
 - (4) 'GradeCode'
 - v. Click the **Next** button.
 - vi. On the **Report Options** screen, on the **Band Selection** tab, click the **Title Band** checkbox to deselect it.
NOTE: You can see, in the Band Selection tab, a list of the bands you're about to create. We're unchecking the title band, but we are going to be creating a page header band (which will appear at the top of each page in the report) as well as a column header band, and a detail band.
 - vii. Click the **Finish** button.
- b. You'll now find yourself in the **Banded Report Editor** window.
 - c. Click on the **Save** button (the page and floppy disk button on the toolbar)



to save your changes.

Configure the page header band

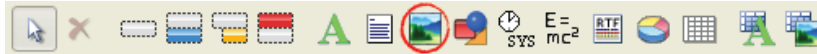
39. Still in the **Banded Report Editor** window:
 - a. Before we start adding content to our page header band, we're going to change the default font for the entire report. From the **Objects** drop down on the toolbar, make sure '<report>' is selected.
NOTE: You can also select the report object by clicking in the margins of the report layout.
 - b. From the **Font** drop down, select 'Verdana'.
 - c. Next we're going to add the report date to the page header band. Click the **Add System Data Field** button (the button that says 'SYS' with a little clock on the toolbar)



to add a system variable to your report.

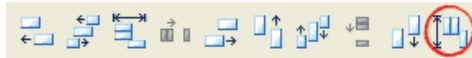
- d. Click inside the page header band on the report layout to add the data field to that band. The **Edit System Data Field** window will open:
 - i. Where it says **Text**, type 'Report Date: '.
NOTE: Make sure you include a space after the colon.
 - ii. Where it says **Type**, select 'Date'.
 - iii. Click the **OK** button.
 - e. Click and drag your new date object to the upper left-hand corner of the band.
40. Next we're going to add your school's logo to the page header band.
 - a. Click on the page header band to select it.
 - b. Click one of the lower corners of the band and drag it down until the band is approximately three inches tall.
NOTE: The rulers and grid on the report layout will help you determine how large your bands are.

- c. Click on the **Add Image** button (the picture icon on the toolbar)



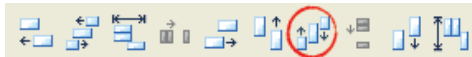
to add an image to your report.

- d. Click inside the page header band to place the image. The **Image** window will open:
- Where it says **File**, click on the ellipsis button to browse for your logo file:
 - Find your logo file and click to select it.
 - Click the **Open** button.
 - Click the **Autosize Report Element to Fit Picture** checkbox.
 - Click the **OK** button.
- e. Click and drag the logo into the upper right-hand corner of the page header band.
- f. Click one of the lower corners of the page header band and drag it back up, so the band is only slightly taller than the logo.
- g. We want to center the logo inside the page header band vertically. Click on the logo to select it.
- h. Click the **Align to Vertical Center of Parent Object** button (the furthest button to the right on the alignment toolbar)



to align the logo to the vertical center of the band.

- i. We also want the 'Report Date: ' object lined up with logo. Click the logo to select it.
NOTE: When you aligning to objects to one another, the first object you select will be the reference object.
- j. Hold down the **Shift** key and click the 'Report date: ' object to select it as well.
NOTE: The second object you select will be aligned based on the position of the reference object.
- k. Let go of your **Shift** key. Both objects should be selected.
- l. Click the **Align by Vertical Centers** button (the fourth button from the right on the alignment toolbar)



to align the center of the report date object with the center of the logo object.

- m. Click the **Save** button (the page and floppy disk button on the toolbar) to save your changes.
- n. Click the **Preview** button (the piece of paper with the magnifying glass on the toolbar)



to open the **Parameter Entry** window:

- Use the control objects to select the subset of students whose course information should be included in the report.
 - Click the **Get List of Students** button.
 - At bottom of the window, where it says **Maximum Record Count**, type '100', so the test report only returns the first 100 records.
 - Now click back in the list box hit the **Ctrl+A** keys to select all of the results in the list box.
NOTE: You can also hold the Shift or Ctrl key while clicking to select a smaller subset of students.
 - Click the **OK** button.
 - Review your report. You should see a list of subject codes, course numbers, credit hours, registration status codes, and grade codes, with a header on each new page.
 - Click the **Close** button to exit the preview window.
- o. If there are any corrections or adjustments you need to make, do so before continuing.
NOTE: From now on, when you see "Save and test your banded report." in these instructions, follow the preceding steps.

Add a band group and configure the group header band

41. Back in the **Banded Report Editor** window:

- a. Click the **Create Band Group** button (the red bar on the toolbar)



to add a new band group. The band group will let you select a field by which to group the results in your detail band, and it will also create a group header band that will appear at the top of each group of results.

- b. Click anywhere on the report layout to place the band group. The **Header1** window will open:
- i. Where it says **Group-by Field or Expression**, click the ellipsis button to open the **Expression Wizard** window:

- (1) Click the **Database Field** button.

(a) From the **Select Dataset** list, click 'ArgosData' to select it.

(b) From the **Available Fields** list, click the student ID field for your institution to select it. This will group our results by student ID.

NOTE: The alias for this field will differ depending on your school's data dictionary. Select whichever field is the student ID number at your institution.

(c) Click the **OK** button.

(2) Click the **OK** button again to exit the **Expression Wizard** window.

- ii. Immediately below the **Font** button, click on the **Color** button to open the **Color** window:

(1) Choose a dark color, and click on the swatch to select it as the background color for your group header band.

NOTE: In a moment, we'll change the font color for the band to white so it will stand out better.

(2) Click the **OK** button.

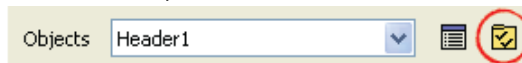
- iii. Beneath the **Print** heading, click the **Force New Page (before)** checkbox.

NOTE: By selecting this option, it tells the report to add a page break before each new group of results. This way, we'll end up with a report that has one student's course list per page.

iv. Click the **OK** button to get back to the main report layout.

- c. We want to give the group header band a unique name, to avoid confusion later. Click inside the group header band on the report layout to select it.

- d. Click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar)



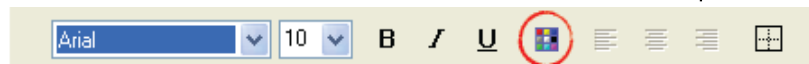
to open the **Options** window:

- i. Where it says **Name**, type 'bnd_GH_StudentID'.

NOTE: Spaces are not allowed in object names.

ii. Click the **OK** button.

- e. With 'bnd_GH_StudentID' still selected click the **Font Color** button (the color palette on the font toolbar)



to open the **Color** window:

i. Click the white color swatch to select it.

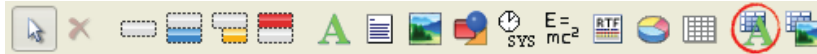
ii. Click the **OK** button.

- f. Click the **Bold** button (the B on the toolbar) to change the group header font to bold.

g. From the **Font Size** drop down, select '12'.

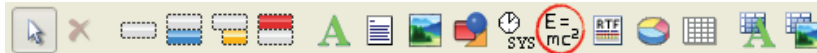
- h. Now we're going to add some content to the group header band. Click one of the lower corners of the band and drag it down until the band is approximately an inch tall.

- i. Click the **Add Database Text Field** button (the spreadsheet with the letter A on the toolbar)



to add a text field from the database to your report.

- j. Click inside the group header band to place the field. The **Edit Database Text Field** window will open:
- The first drop down should default to the 'ArgosData' dataset.
NOTE: If it does not, select 'ArgosData' from the first drop down.
 - From second the drop down, just to the right, select the student ID field.
NOTE: Remember, the name of this field will depend on your institution's data dictionary.
 - Click the **OK** button.
- k. Back on the report layout, click and drag the student ID field to the upper-left corner of the group header band.
- l. With the field still selected, go up to the **Font Size** drop down and select '14'.
- m. Click and drag one of the corners of the field to resize it to display the entire student ID number.
NOTE: This size will depend on how many digits there are in your institution's ID numbers.
- n. Next, we're going to use an expression to display the first and last name of the student. Click the **Add Expression** button (the E=mc² button on the toolbar)



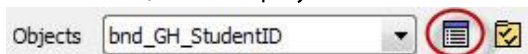
to add a new expression field to your report.

- o. Click inside the group header band to place the expression. The **Edit Expression Field** window will open:
- Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - Click the **Database Field** button.
 - From the **Select Dataset** list, click 'ArgosData' to select it.
 - From the **Available Fields** list, click 'LastName' to select it.
 - Click the **OK** button.
 - In the **Enter Expression** text box, immediately after 'ArgosData.LastName', type in the following:
+', '+
NOTE: There should be a space between the comma and the second single quote.
 - Click the **Database Field** button again.
 - From the **Select Dataset** list, click 'ArgosData' to select it.
 - From the **Available Fields** list, click 'FirstName' to select it.
 - Click the **OK** button.
 - The **Enter Expression** text box should now read:
ArgosData.LastName+', '+ArgosData.FirstName
 - Click the **OK** button to exit the **Expression Wizard** window.
 - Back in the **Edit Expression Field** window, click the **Font** button to open the **Font** window:
 - From the **Size** list, select '14'.
 - Click the **OK** button.
 - Click the **OK** button.
- p. Click and drag your name field to the top of band, to the right of the student ID field.
- q. Click and drag one of the corners of the name field to resize so it's wide enough to show the entirety of a long first and last name combination.
- r. Select the student ID field and, holding the **Shift** key, click the name field to select it as well.
- s. Click the **Align by Vertical Centers** button (the fourth button from the right on the alignment toolbar) to line the two objects up vertically.

- t. Save and test your banded report. (Follow the instructions in step 40.m & 40.n)
 NOTE: You should see the group header band, complete with the student's ID and name, appear at the top of each page.

Add and configure a group footer band

42. Back in the **Banded Report Editor** window:
- Now we're going to add a group footer band to our band group as well, which will display the total number of courses for which each student is registered. Click on the group header band to select it.
 - Click the **Edit Object Properties** button (the monopoly card icon on the toolbar)



to open the **bnd_GH_StudentID** window:

- In the top right corner of the window, where it says **Footer Band**, click the **Create** button to add a footer band to the group.
 - Click the **OK** button
- Click inside your new group footer band on the report layout to select it.
 - Click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - Where it says **Name**, type 'bnd_GF_StudentID'.
 - Click the **OK** button.
 - Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) to add a new expression field.
 - Click inside the group footer band to place the expression. The **Edit Expression Field** window will open:
 - Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - In the **Enter Expression** text box, type in the following:
 'Total Number of Courses: '+
 NOTE: Make sure to include the space between the colon and the closing single quote.
 - Click the **Function** button.
 - From the **Category** list, click 'Statistical' to select it.
 - From the **Available Functions** list, click 'COUNT' to select it.
 NOTE: The Available Functions list will, by default, display all available functions, and you can search for and select 'COUNT' directly from there, if you'd prefer.
 - Click the **Continue** button.
 - The **Enter Expression** text box should now read:
 'Total Number of Courses: '+COUNT
 - Click the **OK** button to exit the **Expression Wizard** window.
 - Back in the **Edit Expression Field** window, toward the bottom of the window, click the **Reset After Print** checkbox.
 NOTE: Without this box checked, the COUNT function will do a running count, instead of counting the number of courses within each group.
 - Click the **OK** button to get back to the report layout.
 - Click and drag your total field over to the right-hand side of the group footer band.
 - Click and drag one of the corners of the total field to resize it so it's wide enough to display all of the text and the total number of courses.
 - One last edit to the group footer band—we're going to add a border to the top of it. Click on the group footer band to select it.

- j. Click the **Edit Object Properties** button (the monopoly card icon on the toolbar) to open the **bnd_GF_StudentID** window:
NOTE: You can also open this window by double-clicking on any band in the report layout.
- Beneath the **Frame** heading, click the **Top** checkbox.
 - Where it says **Width** enter '2'.
 - Click the **Color** button to the right to open the **Color** window:
 - Find the same swatch you used for the background of your group header band, and click to select it as the color of your border.
 - Click the **OK** button.
- k. Save and test your banded report. (*Follow the instructions in steps 40.m & 40.n*)
NOTE: Confirm that the count in your group footer band is functioning correctly, and that the border is displaying properly, as well.

Move the column headers to the group header band

43. Back in the **Banded Report Editor** window:

- The column header band was created automatically when we created our report, and it's handy because it automatically contains labels for each of the fields we chose for our detail band. However, since we want those headers to be right above our data, we're going to need to move them down to our group header band. While holding the **Shift** key, click on the 'SubjectCode', 'CrseNo', 'CreditHours', 'RegistrationStatus' and 'GradeCode' labels in the column header band.
- Click the **Cut** button (the scissors icon on the toolbar)



to cut the labels from the column headers band.

NOTE: You could also use the Ctrl+X keys as a shortcut to cut the labels.

- Click inside the group header band, and click the **Paste** button (the clipboard icon on the toolbar)



to paste the labels on the group header band.

NOTE: You could also use the Ctrl+V keys as a shortcut to paste the labels.

- Still with all of the labels selected, click the **Edit Object Properties** button (the monopoly card icon on the toolbar) to open the **Multiple Control Edit** window:
NOTE: You'll notice that the properties window that opens when you click the Edit Object Properties button is different, depending on what type (and how many) objects you have selected at the time.
 - On the right, where it says **Same as Band**, click the checkbox to select it.
 - Below that, next to the **Color** button, select 'Same as Band' from the drop down.
NOTE: Selecting 'Same as Band' here will reformat the labels to match the styles defined for the group header band.
 - On the left, click the **Autosize Width** checkbox so the label objects will resize to fit the width of their contents.
 - Click the **OK** button.
- Click in the margins of the report layout to deselect the labels.
- Next, we're going to make the labels a little more human-friendly. Double-click on the 'SubjectCode' label to open the **Edit Text Field** window:
 - In the text box, type 'Course'.
 - Click the **OK** button.
- Follow the same procedure to edit the other labels as follows:

- i. 'CreditHours': change **Name** to 'Credit Hours'.
- ii. RegistrationStatus': change **Name** to 'Registration Status'.
- iii. 'GradeCode': change **Name** to 'Grade'.
- h. Finally, right-click the 'CrseNo' label and select **Delete** from the menu.
NOTE: We're going to combine the subject code and course number below, so we won't need this label.
- i. Click and drag the labels to arrange them how you want in the group header band.
NOTE: Since the data in each field will take up different amounts of space, it's useful to experiment with some different layouts, using the controls on the alignment menu. You can always come back and adjust later, if needed.
- j. When you've got everything about where you want it, click and drag one of the bottom corners of the group header band to make it only as large as it needs to be to accommodate all your labels.
- k. And since the column header band isn't serving much purpose anymore, we're going to shrink it down as well. Click on the column header band to select it.
- l. Click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Height**, type '0.25'.
 - ii. Click the **OK** button.
- m. Save and test your banded report. (*Follow the instructions in steps 40.m & 40.n*)

Configure the detail band

44. Back in the **Banded Report Editor**:
- a. Click inside the detail band, below the group header band, to select the band.
NOTE: Be careful not to select any of the fields in the band. You can always use the Objects drop down list to select the Detailband
 - b. Click and drag one of the bottom corners of the band so it's just slightly taller than the field objects.
 - c. Now that we've got a little elbow room, hold the **Shift** key and click the 'SubjectCode' and 'CrseNo' fields to select them.
 - d. Right-click on them and select **Delete** from the menu.
 - e. Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) to do add an expression field that will display both the 'SubjectCode' and the 'CrseNo'.
 - f. Click inside the detail band to place the expression. The **Edit Expression Field** window will open:
 - i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) Click the **Database Field** button.
 - (a) From the **Select Dataset** list, click 'ArgosData' to select it.
 - (b) From the **Available Fields** list, click 'SubjectCode' to select it.
 - (c) Click the **OK** button.
 - (2) In the **Enter Expression** text box, immediately after 'ArgosData.SubjectCode', type '+ '.
 - (3) Click the **Database Field** button again.
 - (a) From the **Select Dataset** list, click 'ArgosData' to select it.
 - (b) From the **Available Fields** list, click 'CrseNo' to select it.
 - (c) Click the **OK** button.
 - (4) The **Enter Expression** text box should now read:
ArgosData.SubjectCode+ArgosData.CrseNo
 - (5) Click the **OK** button to exit the **Expression Wizard** window.
 - ii. Click the **OK** button.

- g. Click your new expression field and then click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Name**, type 'CourseDetail'.
 - ii. Click the **OK** button.
- h. Click and drag the 'CourseDetail' expression to the top of the detail band with the other fields.
- i. Hold the **Shift** key and click on each of the four fields in the detail band—'CourseDetail', 'CreditHours', 'RegistrationStatus', and 'GradeCode'—to select them all.
- j. Click the **Edit Object Properties** button (the monopoly card icon on the toolbar) to open the **Multiple Control Edit** window:
 - i. Like we did with the header labels, click the **Same as Band** checkbox.
 - ii. Next to the **Color** button, select 'Same as Band' from drop down.
NOTE: This band doesn't have any special formatting defined, but by assigning these fields to match the band formatting, we can change them all at once by editing the band's default formatting.
 - iii. Click the **OK** button.
- k. Back on the report layout, click in the margins to deselect the fields.
- l. Now we're going to arrange the fields so they line up with their respective labels in the group header band. Click and drag the 'CourseDetail' field to the left, until a blue guideline appears on the left side of the object, linking it to the 'Course' label above.
NOTE: The alignment tools do not work with objects in different bands, but these blue guides do. They will appear to show you when the object you're moving is aligned with another object.
- m. Follow the same procedure to align the 'CreditHours', 'RegistrationStatus' and 'GradeCode' fields with their respective labels.
NOTE: For the 'GradeCode' field, you might want to align the label and the field by their right sides.
- n. When you have the fields in their proper positions, hold the **Shift** key and click on them all to select them one more time.
- o. Click the **Align by Vertical Center button** (the fourth button from the right on the alignment toolbar) to line the fields up vertically.
- p. Our last step on this band is to resize the objects. Click and drag one of the corners of each data field until it is large enough to display the data it will be returning.
- q. Resize your detail band so that it is only high enough for the data that is being displayed.
- r. Save and test your banded report. (Follow the instructions in steps 40.m & 40.n)
NOTE: Make sure your labels and fields are lining up the way you want them to.

Add and configure a page footer band

45. Back in the **Banded Report Editor** window:
 - a. Now we're going to add a footer band that will appear at the bottom of every page. Click the **Create Band** button (the gray single band icon on the toolbar)

 to add a new band to the report.
 - b. Click anywhere on the report layout to place the band. The **Band2** window will open:
 - i. Where it says **Type**, select 'Page Footer' from the drop down.
 - ii. Click the **OK** button.
 - c. Click the new page footer band and click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:

- i. Where it says **Name**, type 'PageFooter'.
- ii. Click the **OK** button.
- d. Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) to do add an expression field that will display a page count.
- e. Click inside the page footer band to place the expression. The **Edit Expression Field** window will open:
 - i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) In the **Enter Expression** text box, type in the following:
'Page '+
NOTE: There is a space between Page and the closing single quote.
 - (2) Click the **Function** button.
 - (a) From the **Category** list, click 'Other' to select it.
 - (b) From the **Available Functions** list, click 'PAGENUMBER' to select it.
 - (c) Click the **Continue** button.
 - (3) In the **Enter Expression** text box, add the following:
' of '+
NOTE: This time, there is a space before and after the word of.
 - (4) Click the **Function** button again.
 - (a) From the **Category** list, click 'Other' to select it.
 - (b) From the **Available Functions** list, click 'PAGECOUNT' to select it.
 - (c) Click the **Continue** button.
 - (5) The **Enter Expression** text box should now read:
'Page '+PAGENUMBER+' of '+PAGECOUNT
 - (6) Click the **OK** button.
 - ii. Back in the **Edit Expression Field** window, where it says **Alignment** select 'Right' from the drop down.
 - iii. Click the **Autosize Width** checkbox as well.
 - iv. Click the **OK** button to get back to the report layout.
- f. Click and drag the page number expression over to the right margin.
- g. Now, for one addition—an expression to display the name of the report. Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) to add a new expression field.
- h. Click inside the page footer band to place the expression. The **Edit Expression Field** window will open:
 - i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) Click the **Variable** button.
 - (a) From the **Select Variable** list, click 'GETVARIABLE('\$REPORT.NAME')' to select it.
 - (b) Click the **OK** button.
 - (2) Click the **OK** button again, to exit the **Expression Wizard** window.
 - ii. Click the **Autosize Width** checkbox.
 - iii. Click the **OK** button to get back to the report layout.
- i. Click and drag the report title expression over to the left margin.
- j. Holding the **Shift** key click on the report name and page number expressions to select them both.
- k. Click the **Align the selected controls by their Vertical Centers** button and then the **Align to Vertical Center of Parent Object** button to align the expressions with the vertical center of the band.
- l. Click in the margin of the report to deselect the fields in the page footer.
- m. Save and test your banded report. (*Follow the instructions in steps 40.m & 40.n*)
NOTE: Make sure your page footer band is showing up correctly at the bottom of every page.

Add and configure a summary band

46. Back in the **Banded Report Editor** window:

- a. Before we declare victory on our report design, there's one more band to add—a summary band. This band will print at the end of the report, displaying the name of person who ran the report and which term the report results are from.
- b. Click in the margin of the report to deselect the fields in the page footer.
- c. Click the **Create Band** button (the gray single band icon on the toolbar) to add a new band to the report.
- d. Click anywhere on the report layout to place the band. The **Band2** window will open:
 - i. Where it says **Type**, select 'Summary' from the drop down.
 - ii. Where it says **Print**, click the **Force New Page (before)** checkbox.
 - iii. Click **OK** to close.
- e. With 'Band2' still selected, click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Name**, type 'ReportSummary'.
 - ii. Click **OK** to close.
- f. Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) to add an expression field that will display the name of the person who ran the report.
- g. Click anywhere inside the summary band to place the expression. The **Edit Expression Field** window will open:
 - i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) In the **Enter Expression** text box, type the following:
'Report Run by: '+
NOTE: Include the single quotes and make sure there is a space after the colon.
 - (2) Click the **Variable** button.
 - (a) From the **Select Variable** list, click 'GETVARIABLE('\$USER.NAME')' to select it.
 - (b) Click the **OK** button.
 - (3) The **Enter Expression** text box should now read as follows:
'Report Run By: '+ GETVARIABLE('\$USER.NAME')
 - (4) Click the **OK** button to exit the **Expression Wizard** window.
 - ii. At the bottom of the **Edit Expression Field** window, click the **Autosize Width** checkbox.
 - iii. Click the **OK** button to return to the report layout.
- h. Click and drag your new expression to the left margin of the summary band.
- i. Click the **Add Expression** button (the $E=mc^2$ button on the toolbar) again to add an expression field that will display the term the report results are from.
- j. Click anywhere inside the summary band to place the expression. The **Edit Expression Field** window will open:
 - i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) In the **Enter Expression** text box, type the following:
'Term Selected: '+
NOTE: Include the single quotes and make sure there is a space after the colon.
 - (2) Click the **Database Field** button.
 - (a) From the **Select Dataset** list, click 'main_DD_term' to select it.
 - (b) From the **Available Fields** list, click 'Display' to select it.
 - (c) Click the **OK** button
 - (3) The **Enter Expression** text box should now read as follows:
'Term Selected: ' + main_DD_Term.Display

- (4) Click the **OK** button to exit the **Expression Wizard** window.
- ii. At the bottom of the **Edit Expression Field** window, click the **Autosize Width** checkbox.
- iii. Click the **OK** button to return to the report layout.
- k. Click and drag your new expression to the left margin, beneath the first one.
NOTE: You may need to resize the band.
- l. Save and test your report. Verify that the last page contains your user name and the correct term.
- m. Once you've closed the report preview, click the **Exit** button (the door icon on the toolbar)



to exit the **Banded Report Editor** window.

Adjust the sort order to sort by student last name

- 47. Back in the **Edit Report** window, there's just one last change we need to make. You may have noticed that the report is currently being sorted by student ID. We're going to change that so the pages are sorted alphabetical by the student's last name. Click the **Sort** tab:
 - a. Click the **Override the Main Report Query Sort** checkbox to enable the rest of the tab.
 - b. From the **Available Fields** list, double-click on 'LastName' and 'FirstName' to move them to the **Ordered Fields** list.
 - c. Click the **Apply** button to save your changes.
- 48. Congratulations! You've completed your first banded report. Click the **Close** button to exit the **Edit Report** window.
- 49. Run your report from the DataBlock to view the finished product. (*Follow steps 10-15.*)

Supplemental Exercise: Create Two Banded Report Templates

Although banded reports offer a huge amount of design flexibility, you'll want some of your report elements to stay consistent from one report to the next. Creating report templates makes that very easy, by allowing you to save certain elements of your report structure and design to the Argos library. In this supplemental exercise, we're going to create two banded report templates—one based on the banded report we just completed, and one that we'll use in the next exercise, to create a landscape-oriented banded report.

Instructions

Create a banded report template, 'Banded Report with One Group Per Page'

50. In the **Explorer** tab, click on the 'Student Course List' banded report to select it.
51. Right-click on the report and select **Duplicate** from the menu, which will open the **Paste** window:
 - a. Click the **Paste** button to create a second copy of the report.
52. Right-click on the new report ('Student Course List by Student(2)'), and select **Rename** from the menu.
53. Type 'Template Exercise'.
54. On the right-hand side of the screen, under the **Report Writer Actions** header, click the **Edit Report** button.
55. In the **Edit Report** window, click the **Design** button to open the **Banded Report Editor** window:
 - a. To build our report template, we're going to add elements from this report design to Argos' Library of Objects. We'll start with the logo. Click the logo image to select it.
 - b. Click the **Add to Library** button (the stack of books with the green plus on the toolbar)



to add your logo to the Library of Objects. You should see the **Add Object** screen:

NOTE: If the Choose An Object screen opens instead, it means you clicked the other stack of books button. Click the Cancel button, and click the books button with the green plus.

- i. In the folder list, your folder should be automatically highlighted. If it's not, click to select it.
 - ii. Where it says **Name**, type 'Banded Logo'.
 - iii. Click the **OK** button.
 - c. Click on the page footer band to select it.

NOTE: Make sure you select the band itself—the Object drop down on the toolbar should display 'PageFooter'.
 - d. Click the **Add to Library** button (the stack of books with the green plus on the toolbar). The **Add Object** window will open:
 - i. Make sure your folder is selected.
 - ii. Where it says **Name**, type 'Banded Page Footer'.
 - e. Now we're going to remove DataBlock-specific objects that we don't want in the template. Holding the **Shift** key, click on all of the objects in the group header band—the student ID, name expression, and the labels for 'Course', 'Credit Hours', 'Registration Status', and 'Grade'—to select them.
 - f. Hit the **Delete** key to remove them from the report.

NOTE: You can also click the red X button on the toolbar to delete objects.
 - g. Double-click on the group header band to open the **bnd_GH_StudentID** window:
 - i. Where it says **Group-by Field or Expression** delete the student ID field.
 - ii. Click the **OK** button.
 - h. Make sure the group header band is still selected, and click on the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:

- i. Where it says **Name**, type 'bnd_GH_Desc'.
 - ii. Click the **OK** button.
 - i. Click the column header band to select it.
 - j. Click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Height**, type '0.42'.
 - ii. Click the **OK** button.
 - k. Holding the **Shift** key, click all four fields in the detail band to select them.
NOTE: Be careful not to select the band itself.
 - l. Hit the **Delete** key to delete the fields.
 - m. Click to select the count expression in the group footer band and hit the **Delete** key to remove it.
 - n. Click the group footer band to select it, and click **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Name**, type 'bnd_GF_Desc'.
 - ii. Click the **OK** button.
 - o. Click to select the term expression in the summary band and hit the **Delete** key to remove it.
NOTE: We're going to leave the 'Report Run By' expression, as it useful to include on any report.
 - p. Now that we have everything cleaned up, we're going to create our template. Click in the margins of the report layout to select the report itself.
NOTE: The Object drop down on the toolbar should display '<report>'.
 - q. Now that we have everything cleaned up, we're going to create our template. Click in the margins of the report layout to select the report itself.
NOTE: You can also select '<report>' from the Object drop down on the toolbar.
 - r. Click the **Add to Library** button (the stack of books with the green plus on the toolbar). The **Add Object** window will open:
 - i. Make sure your folder is selected.
 - ii. Where it says **Name**, type 'Banded Report with One Group Per Page'.
 - iii. Where it says **Description**, type 'No title band, group header and footer, prints one group per page.'
 - iv. Click the **OK** button.
 - s. Click the **Save** button (the page and floppy disk button on the toolbar) to save your changes, and then the **Exit** button (the door on the toolbar) to close out of the **Banded Report Editor** window.
56. Congratulations! You've created your first report template. We're going to make one more template, this one with a landscape orientation. Click the **Close** button to exit the **Edit Report** window.

Create a second banded report template, 'Landscape Banded Report with One Band Group'

- 57. For our second template, we're going to create a new report based on the first template, modify it slightly, and then save those modifications as a second template in the library. So, back in the **Explorer** tab, find the 'Budget Availability' DataBlock and click to select it.
- 58. On the right-hand side of the screen, under the **Report Writer Actions** header, click the **New Report** button to open the **Create a New Report or Dashboard** window:
 - a. Where it says **Name**, type 'Landscape Template Exercise'.
 - b. Click the **Banded Report** button.
 - c. Click the **Create** button.

59. In the **Edit Report** window, click the **Design** button to open the **Banded Report Editor** window:
- a. The **Banded Report Wizard** window will pop up immediately:
 - i. On the **Report Type** tab, click the **Add From Library** button.
 - ii. On the **Report Template** tab, navigate to your folder, and click on the 'Banded Report with One Group Per Page' template we just created.
 - iii. Click the **Next** button.
 - iv. Click the **Finish** button.
 - b. Back in the **Banded Report Editor** window, click the **Save** button (the page and floppy disk button on the toolbar) to save your work.
 - c. Click in the margins of the report layout to select the report object.
 - d. Click the **Edit Object Properties** button (the monopoly card icon on the toolbar) to open the **Report Options** window:
 - i. Under the **Orientation** header, select 'Landscape'.
 - ii. Click the **OK** button.
 - e. For this template we're going to want a title band, instead of the page header band. Click the **Create Band** button (the gray single band icon on the toolbar) to add a new band.
 - f. Click anywhere on the report layout to place the band. The **Band2** window will open:
 - i. Where it says **Type**, 'Title' should be selected by default. If it's not, select it from the drop down.
 - ii. Click the **OK** button.
 - g. Click the new title band to select it, and click the **Edit Object Options** button (the yellow folder with the checkmarks on the toolbar) to open the **Options** window:
 - i. Where it says **Name**, type 'bnd_TT_Title'.
 - ii. Click the **OK** button.
 - h. Click and drag one of the bottom corners of the title band to make it a bit larger than your logo.
 - i. Click the logo to select it, and click the **Cut** button (the scissors icon on the toolbar).
 - j. Click in the title band, and click the **Paste** button (the clipboard icon on the toolbar).
 - k. Click and drag the logo to the upper right-hand corner of the title band.
 - l. Click the title band to select it. We're going to make some changes to the band's default formatting.
 - m. From the **Font Size** drop down, select '18'.
 - n. Click the **Bold** button (the B on the font toolbar) to change the title band font to bold.
 - o. Click the **Font Color** button (the color palette on the font toolbar) to open the **Color** window:
 - i. Click to select the swatch for the color used as the background for the group header band.
 - ii. Click the **OK** button.
 - p. We're going to want our title band to say the name of the report. Down in the page footer band, click on the report name expression to select it.
 - q. Click the **Copy** button (the two pages icon in the toolbar)



to copy the expression.

- r. Click inside the title band, and click the **Paste** button (the clipboard icon on the toolbar).
- s. Click and drag the expression over to the left margin.
- t. Align the expression object with the logo, using the guidelines that appear.
NOTE: You can either align them by their centers or by their top sides.
- u. Double-click on the report name expression to open the **Edit Expression Field** window:
 - i. Click the **Autosize Width** checkbox to deselect it.

- ii. Where it says **Alignment**, select 'Centered' from the drop down.
 - iii. Click the **Automatic Word-Wrap** checkbox.
 - iv. Click the **Autostretch Height** checkbox.
 - v. Click the **OK** button.
- v. Click and drag one side of the report name expression so it takes up most of the room between the left margin and the logo. The text should be centered in the middle of the object.
- w. Click and drag one of the bottom corners of the title band to make it only as large as it needs to be to accommodate the object in it.
- x. In the page header band, click and drag the report date expression up to the upper-left corner of the band.
- y. Click and drag one of the bottom corners of the page header band until it's only a little taller than the report date expression.
- z. Click the column header band to select it.
- aa. From the **Font Size** drop down, select '12'.
- bb. Double-click on the group header band to open the **bnd_GH_Desc** window:
- i. Click the **Reprint on New Page** checkbox.
 - ii. Click the **Force New Page (before)** checkbox to deselect it.
 - iii. Click the **OK** button.
- cc. In the page footer band, click and drag the page number expression to the right margin.
- dd. Still in the page footer band, double-click on the report name expression. Since the report name will be displayed up in the title band, we're going to change this expression to display the DataBlock instead. In the **Edit Expression Field** window:
- i. Where it says **Expression**, click the ellipsis button to open the **Expression Wizard** window:
 - (1) The 'GETVARIABLE('\$REPORT.NAME')' expression should be highlighted. Hit the **Delete** key to erase it.
 - (2) In the **Enter Expression** text box, type the following:
'DataBlock: '+
NOTE: There is a space between the colon and the closing single quote.
 - (3) Click the **Variable** button.
 - (a) From the **Select Variable** list, click 'GETVARIABLE('\$DATABLOCK.NAME')' to select it.
 - (b) Click the **OK** button.
 - (4) The **Enter Expression** text box should now read as follows:
'DataBlock: '+GETVARIABLE('\$DATABLOCK.NAME')
 - (5) Click the **OK** button to exit the **Expression Wizard** window.
 - ii. Click the **OK** button to get back to the report layout.
- ee. Now that we have our layout configured, we can create our second template. Click in the margins to select the report object.
NOTE: Remember, '<report>' should display in the Object drop down on the toolbar.
- ff. Click the **Add to Library** button (the stack of books with the green plus on the toolbar). The **Add Object** window will open:
- i. Make sure your folder is selected.
 - ii. Where it says **Name**, type 'Landscape Banded Report with One Group Band'.
 - iii. Click the **OK** button.
- gg. Click the **Save** button (the page and floppy disk button on the toolbar) to save your changes, and then the **Exit** button (the door on the toolbar) to close out of the **Banded Report Editor** window.
60. Congratulations! You've created a landscape banded report template. Click the **Close** button to exit the **Edit Report** window.

Appendix I: Report Naming Conventions

Using a naming convention to keep track of all of the different elements of a Report is incredibly useful (especially when looking for a particular element in a list, troubleshooting a complex expression, etc.).

If your institution already has naming conventions, please feel free to follow them when naming variables in these exercises. (And let your trainer know, too, so they can get everyone in the class on the same page.)

If your institution does not already have naming conventions, there's no better time to get into the habit than now. Below, you'll find some suggested conventions, as well as lists of useful abbreviations.

Naming Convention for Form Objects

[FormName]_[AbbreviatedObjectType]_[VariableDescription]

For example: *main_DD_FiscalYr* would refer to a variable on the *main* form, with a *drop down (DD)* control object that contains a list of *Fiscal Years (Yr)*.

Although you won't be creating any form objects while you're writing reports, you will often need to refer to them in your report objects. If the DataBlock designer has named their form objects according to the naming convention, then the format of the object name should tell you exactly what and where that element is.

- QB – OLAP Cube
- MC – Multi-Column List Box
- LB – Single Column List Box
- DD – Drop Down Control
- CT – Chart
- BT – Button
- CB – Check Box
- RB – Radio Button
- DT – Date Control
- EB – Edit Box
- MB – Memo Box
- PL – Panel
- LL – Labels
- SP – Shape
- IM – Image
- SB – Scroll Box

Naming Convention for Extract Report Sections

sect_[SectionType]_[SectionDescription]

For example: *sect_DT_CourseList* would be a good section name for a *detail section (DT)* that listed *course information*.

- DT – Detail Section
- TT – Title Section
- GH – Group Header
- GF – Group Footer
- SM – Summary Section
- CD – Child Section

Naming Convention for Report Bands

bnd_[AbbreviatedBandType]_[BandDescription]

For example: *bnd_GH_StudentGroup* would be a good band name for a *group header (GH)* for a *student group* detail band.

- TT – Title Band
- PH – Page Header
- CH – Column Header
- DT – Detail Band
- GF – Group Footer
- SM – Summary Band
- PF – Page Footer
- LP – Loop Band
- CD – Child Band
- SD – Sub Detail Band
- GH – Group Header Band

Naming Convention for Report Controls

ctl_[AbbreviatedControlType]_[ControlDescription]

For example: *ctl_EX_PageNumber* would be a good control name for an *expression (EX)* that displays the current *page number* in a multi-page report.

When abbreviating report control objects, you can use the 2-character codes below:

- LL – Label
- MB – Memo Box
- IM – Image
- SP – Shape
- RT – Rich Text Field
- CT – Chart
- LG – Line Grid
- TF – Database Text Field
- DI – Database Image
- SV – System Variable
- EX – Expression

Naming Convention for Report Datasets

sql_get[DatasetDescription]

For example: *sql_getAddressData* would be a good name for a SQL query that returns *address data* from the database.

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