

Cleo Integration Cloud™ | Clarify

Chapter | Transforming database to spreadsheet

Overview | This topic demonstrates how to transform data selected from a database to a spreadsheet.

Features, functions, and tips not discussed in previous demos include: using the Database Wizard (instead of creating the three mandatory database objects individually and then relating them) and copying an entire Composite Rule (and consequently all child Simple Rules).

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Scenario

The source database's four tables are populated as below.

HEADER

PO_Number	Date	ContactName	Phone	Email	Lines	Quantity	Cost	Processed	DateProcessed
BestValue_22	1/1/2013	BOB SMITH	(555) 555-5555	BSMITH@BVGS.COM	2	1100	3875 U		(null)
GoodStuff 303	1/2/2013	SUSAN JOHNSON	(555) 555-6666	SJOHNSON@BVGS.COM	3	190	2380 U		(null)
FV-2013_0047	1/3/2013	BOB SMITH	(555) 555-5555	BSMITH@BVGS.COM	1	1	375 U		(null)

NOTES

PO_Number	Note1	Note2	Note3
BestValue_22	(null)	(null)	(null)
GoodStuff 303	New Billing Address	Please handle with care	(null)
FV-2013_0047	New Billing Address	Please handle with care	(null)

ADDRESS

PO_Number	Type	Customer_Indicator	Name	Address1	Address2	City	State	ZipCode
BestValue_22	CI	HI-BVGS	BEST VALUE GOOD STUFF	1 BEST VALUE BOULEVARD	(null)	HONOLULU	HAWAII	96815
BestValue_22	ST	Same as Company	(null)	(null)	(null)	(null)	(null)	(null)
BestValue_22	BT	Same as Company	(null)	(null)	(null)	(null)	(null)	(null)
GoodStuff 303	CI	HI-BVGS	BEST VALUE GOOD STUFF	1 BEST VALUE BOULEVARD	(null)	HONOLULU	HAWAII	96815
GoodStuff 303	ST	New	ABC DISTRIBUTION COMPANY	1234 MAIN STREET	PO BOX 938	CLEVELAND	OHIO	44109-1234
GoodStuff 303	BT	Same as Shipping	(null)	(null)	(null)	(null)	(null)	(null)
FV-2013_0047	CI	WY-FV	FAMILIAR VASES	100 INDUSTRIAL WAY	SUITE 123	CASPER	WYOMING	82640
FV-2013_0047	ST	Same as Company	(null)	(null)	(null)	(null)	(null)	(null)
FV-2013_0047	BT	New	BOB SMITH	23 SOUTH CENTER ST	(null)	POTTSVILLE	PENNSYLVANIA	17901

DETAIL

PO_Number	LineNumber	YourNumber	Description	Brand	OurNumber	Qty	Units	UnitPrice	ExtendedPrice
BestValue_22	1	PINGBALL	WHITE PING PONG BALLS (100)	TABLE GAME ITEMS	500682	200	Case	16	3200
BestValue_22	2	BARSOAP	DECORATIVE SOAP BAR	KEEP IT CLEAN	500227	900	Each	0	675
GoodStuff 303	1	LMWG01	LARGE MANS WORK GLOVES BLACK	GLOVELY STUFF	500151	160	Pair	9	1480
GoodStuff 303	2	LMWC01	LARGE MANS WINTER COAT BLACK	MANITZ COLDOUT	500155	6	Each	100	600
GoodStuff 303	3	SWG-RED	SMALL WOMENS GLOVES - RED	GLOVELY STUFF	500001	24	Pair	12	300
FV-2013_0047	1	PV-28 EQ	28-INCH PORCELAIN VASE	FANCY VASES	(null)	1	Each	375	375

The target spreadsheet for the *GoodStuff 303* purchase order appears below.

Purchase Order									
Number GoodStuff 303									
Date 1/2/2013									
Company Information									
ID HI-BVGS									
Name BEST VALUE GOOD STUFF									
Address Line 1 1 BEST VALUE BOULEVARD									
Address Line 2									
City HONOLULU									
State HAWAII									
Zip Code 96815									
For Internal Purposes									
DEMO COMPANY PURCHASE ORDER SPREADSHEET									
Ship To				Bill To					
Indicator New				Indicator Same as Shipping					
Name ABC DISTRIBUTION COMPANY				Name					
Address 1 1234 MAIN STREET				Address 1					
Address 2 PO BOX 938				Address 2					
City CLEVELAND				City					
State OHIO				State					
Zip Code 44109-1234				Zip Code					
Contact Information									
SUSAN JOHNSON		(555) 555-6666		SJOHNSON@BVGS.COM					
Special Instructions									
Please note the new SHIPTO address									
Line Items									
#	Your SKU	Item Description	Brand	Our SKU	Qty	Unit	Cost	Extended Cost	
1	LMWG01	LARGE MANS WORK GLOVES BLACK	GLOVELY STUFF	500151	160	Pair	9.00	1,480.00	
2	LMWC01	LARGE MANS WINTER COAT BLACK	MANITZ COLDOUT	500155	6	Each	100.00	600.00	
3	SWG-RED	SMALL WOMENS GLOVES - RED	GLOVELY STUFF	500001	24	Pair	12.00	300.00	
TOTALS							Line Items	3	
							Quantity	190.00	
							Cost	2,380.00	
_____		_____							
<i>date</i>		<i>authorized by</i>							

Resources

The resources needed to accomplish this transformation are meant to provide a basic understanding of how Clarify objects work together. All resources are created and defined on the *Clarify Workbench* perspective's *Project Explorer* view.

- Project [**com.training.demo05.dbtoss**] – A Project is a directory within the Workspace.
- Package [**com.training.demo05.dbtoss**] – A Package is a directory within a Project.
- File Adapter [**WriteSsFA**] – This File Adapter sends the target data out of Clarify.
- Spreadsheet Schema [**PurchaseOrderSS**] – This Schema describes the spreadsheet data.
- Data Source [**Demo05DS**] – This Data Source defines the location and login credentials for the (source) database.
- Database Schema [**Demo05DB**] – This Schema describes the source data.
- Database Adapter [**Demo05DBA**] – This Schema allows for selecting data from the source tables.



The Data Source, Database Schema, and Database Adapter resources are automatically created when using the Database Wizard.

- Transformation Settings [**UndefinedTS**] – This Transformation Settings object requires no special instructions for the Business Process, as both database and spreadsheet formats require none.
 - Ruleset [**DbToSsRS**] – This Ruleset transforms the data from the source format to the target format.
 - Business Process [**DbToSsBPS**] – This Business Process sequences three user-defined objects to select the source data, transform it to the target format, and write that out to a spreadsheet on the local file system.
-
-
-
-

Project: **com.training.demo05.dbtoss**

Select *File* | *New* | *Clarify Project*.

Type **com.training.demo05.dbtoss** in the *Project name* field.

Click **Finish**.

When Clarify creates a Project, it automatically creates a Package named the same as the Project. All resources for this Project are created in its *com.training.demo05.dbtoss* Package.

File Adapter: WriteSsFA

Select the Package.

Select *File* | *New* | *File Adapter*.

Choose *Write* and click **Next**.

Type **WriteSsFA** in the *Name* field.

Click **Finish**. The object is created, and its editor appears.

Click in the *File Path* field. Click the **Browse For Folder** button, locate/select the *C:\Clarify_demos\demo\out* folder, and click **OK**.

Type **target_data.xlsx** in the *File Name* field.

Save the object and close the editor.

Schema: PurchaseOrderSS

To create a Schema from a sample file, the sample must reside in the Workspace.

If a sample spreadsheet is used to create a Schema that will serve as the target of a transformation, its *Unbounded* areas must only contain one row of data.

Bring the sample file to Clarify

Right-click the Project and select *New | Folder*.

Type **samples** in the *Folder name* field and click **Finish**.

Copy the *sample_PurchaseOrder.xlsx* file in the *C:\Clarify_demos\demo05* folder.

Right-click the Project's *samples* folder and select *Paste*.

Create the Schema

Select the Package.

Select *File | New | Spreadsheet Schema*. A wizard assists with creating and defining this object.

The *Spreadsheet Schema* panel allows for specifying the object's location and name. Type **PurchaseOrderSS** in the *Name* field and click **Next**.

The *Version Selection* panel allows for specifying the version. Select **Version2** and click **Next**.

The *Create* panel allows for using a sample flat file or creating an empty one. Choose *Create From Sample* and click **Next**.

The *Create From Sample* panel allows for selecting the spreadsheet to use. Click **Browse**, select the *sample_PurchaseOrder.xlsx* file and click **OK**. Click **Next**.

The *Worksheet* panel allows for selecting the worksheet housing the data to be defined. Select *PO* and click **Next**.

Several panels allow for defining a spreadsheet Schema: *Create Area*, *Cell Names*, *Create Row Expression*, and *Area*. Repeat these, as necessary, to define this spreadsheet's eight areas.

The *Create Area* panel allows for defining areas on the worksheet (refer to the table below).

Area	Name	Type	Cells	Notes
1	PurchaseOrder	Fixed	E4:E5	
2	Company	Fixed	E8:E14	
3	ShipTo	Fixed	H8:H14	
4	BillTo	Fixed	K8:K14	
5	Contact	Fixed	G17,I17,K17	Control-click to select non-contiguous cells
6	Notes	Fixed	G20:G22	
7	LineItems	Unbounded	C26:L26	
8	Totals	Fixed	L28:L30	

Provide a *Name* and (optionally) a *Description* for the area. Indicate the *Type* (either *Fixed* or *Unbounded*).

Select the cells containing the data.

Click **Next** to continue to the next panel.

The *Cell Names* panel proposes labels for the data cells selected in the previous panel. Re-naming is used here for two areas only. If no re-naming is necessary, click **Next**.

For the *Contact* area, click each of the three proposed cell names and type the new name, as indicated here.

Proposed Name	New Name
Contact_Information	Name
ContactName	Phone
ContactPhone	Email

For the *Notes* area, click each of the three proposed cell names and type the new name, as indicated here.

Proposed Name	New Name
Special_Instructions	Note1
Note1	Note2
Note12	Note3

Click **Next**.

The *Create Row Expression* panel only appears when defining an *Unbounded* area.

For the *LineItems* area, select *C* from the *Column* dropdown, select *NOTEMPTY* from the associated expression dropdown, and click **Add Phrase**. Click **Next**.

The *Area* panel allows for defining another area. Select *Create Another Area* and click **Next** to loop back to the *Create Area* panel.

After defining the *Totals* area, click *No More Areas* and click **Finish**.

The object is created, and its Editor appears.

As the spreadsheet merges some cells and the wizard treats each cell individually, the Schema includes an unnecessary node. To delete that node, expand the *PO* sheet node to displays its areas, expand the *LineItems* area's node to displays its cells, select the *cell_G* entry (in the *Cell 5* column), and click the **Delete** button.

As “#” is an invalid character, the wizard converted the spreadsheet's column header for the line item numbers to “Pound”. To rename that node, select it (in the *Cell 1* column). In the *Properties* view's *Properties* tab, click in the *Name* field, type **LineNumber**, and click **OK**.

Also, the *Date* cell for the *PurchaseOrder* area must have its default *Type* changed to *String*.

Save the object and close the editor.

Database Wizard

The Data Source, Database Schema, and Database Adapter resources are automatically created when using the Database Wizard.

Select the Package.

Select *File | New | Database Wizard*.

The *Database Objects* panel allows for defining the location and prefix for the resulting object's names. Type **Demo05** in the *Prefix* field and click **Next**.

The *Data Source* panel allows for creating a new Data Source or using an existing one. Choose **Create New Data Source** and click **Next**.

The *JDBC Driver* panel allows for selecting the JAR file(s) and appropriate JDBC driver.

Click the **Add** button and then click the **Open** button.

Locate/select the *hsqldb-2.3.3.jar* file in the *C:\Clarify_demos\DEMO_DB* folder and click **Open**. Click **OK**. Click in the *Driver Name* field and double-click the *org.hsqldb.jdbc.JDBCdriver* entry. Click **Next**.

The *Database Connection* panel allows for specifying the connection Information. Enter the values as below.

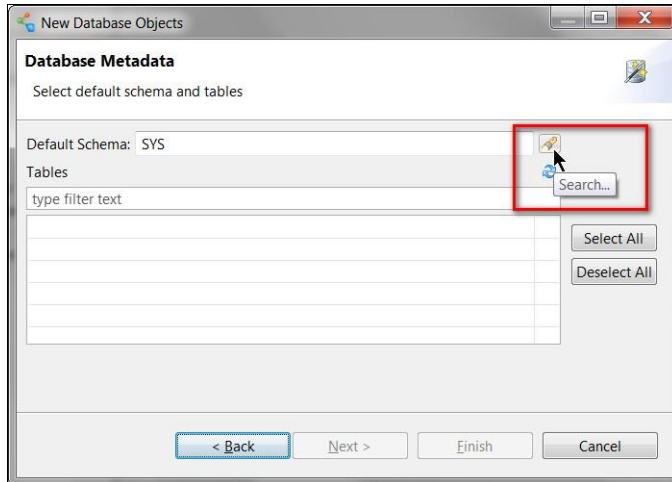
Field	Value
URL	jdbc:hsqldb:file:C:\Clarify_demos\DEMO_DB\database\dbschematest; hsqldb.lock_file=false;shutdown=true
Username	atl
Password	atl
Catalog	PUBLIC

You may wish to copy the line below from this PDF document and paste it into the URL field.

`jdbc:hsqldb:file:C:\Clarify_demos\DEMO_DB\database\dbschematest;hsqldb.lock_file=false;shutdown=true`

Click **Next**.

The *Database Metadata* panel allows for selecting the database's default Schema/tables. Click the **Search** button.



Select *PUBLIC* and click **OK**.

That Schema's tables appear, all checked for inclusion. Click **Next**.

The *Table Bindings* panel allows for creating the hierarchy (parent-child relationships) of the tables. Drag the *HEADER* table from the *Database Metadata* area to the *Clarify Database Schema* area.

Multi-select the three remaining tables and drag them to the *HEADER* table on the right side – they should appear as child tables, nested under the parent *HEADER* table. Click **Finish**.

Three Clarify objects are created. The *Demo05DS* Data Source and the *Demo05DB* Database Schema require no changes. However, the *Demo05DBA* Database Adapter must be modified.

Database Adapter: Demo05DBA

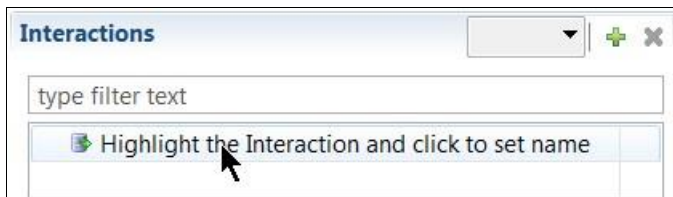
This Database Adapter must be modified to (1) create an interaction to select data from the database, (2) specify which records are to be selected, and (3) define the parent-child relationships between the tables. Its editor is already open.

Create an interaction

Click the *Interactions* section's **Add** button.



Double-click the *Highlight the Interaction and click to set name* entry.



Type **select_GoodStuff**.

Ensure that *Select* is indicated as the interaction type. Select all four tables in the *Data Bindings* section and drop them on the *select_GoodStuff* interaction.

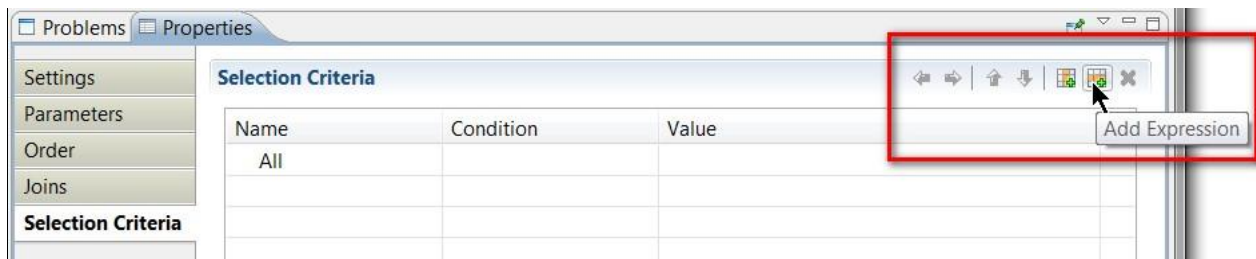
Specify Selection Criteria

A *Select* interaction brings all data in the designated table to Clarify unless specified otherwise. To select only the *GoodStuff 303* purchase order, perform these steps.

In the *Interactions* section, select the *HEADER* table under the *select_GoodStuff* interaction.

Display the *Properties* view's *Selection Criteria* tab.

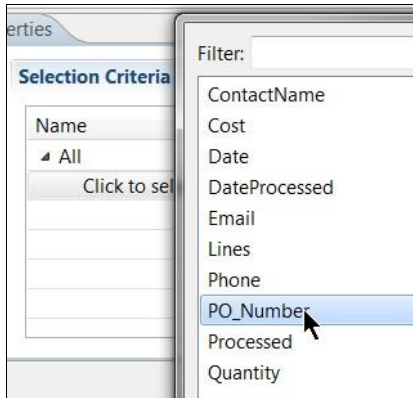
Click the **Add Expression** button.



Double-click the *Click to select column...* entry in the *Name* column.

Selection Criteria		
Name	Condition	Value
<ul style="list-style-type: none"> ▾ All Click to select column... 	Equal To	""

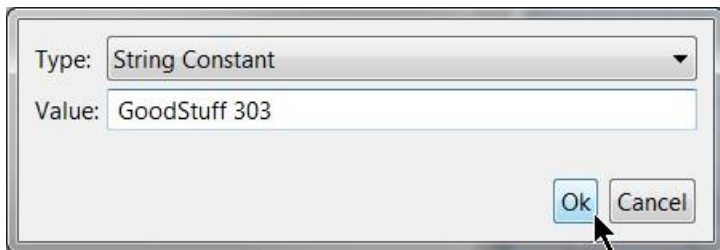
Double-click *PO_Number* in the list of the table's columns.



The default *Equal To* entry in the *Condition* column is correct.

Click in the *Value* column. The default *String Constant* entry in the *Type* column is correct.

Type **GoodStuff 303** in the *Value* field and click **Ok**.

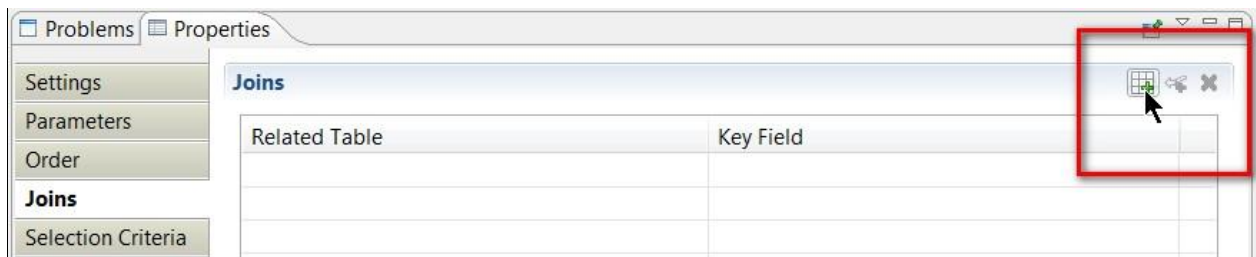


Specify Joins

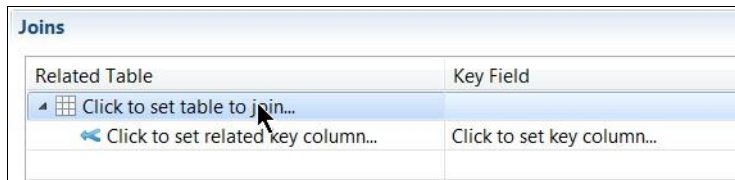
If a hierarchical structure exists for a database's tables, those parent-child relationships MUST be defined if that data is to be selected as the source for a transformation. To identify the HEADER table's child tables, perform these steps.

Ensure that the *HEADER* table under the *select_GoodStuff* interaction In the *Interactions* section is selected.

Display the *Properties* view's *Joins* tab. Click the **Add** button.



Double-click the *Click to set table to join* entry in the *Related Table* column.



Double-click *ADDRESS* in the list of the tables. Double-click the *Click to set related key column* entry in the *Related Table* column. Double-click *PO_Number* in the list of the table's columns, as this is the column in the child table that relates back to its parent table.

Double-click the *Click to set key column* entry in the *Key Field* column. Double-click *PO_Number* in the list of the table's columns, as this is the column in the parent table to which the child table relates.

Repeat these steps for both the *DEATIL* and *NOTES* child tables.

Save the object and close the editor.

Transformation Settings: UndefinedTS

Select the Package.

Select *File* | *New* | *Transformation Settings*.

Type **UndefinedTS** in the *Name* field.

Click **Finish**. The object is created, and its editor appears.

Save the object and close the editor.

Ruleset: DbToSsRS

This Ruleset transforms the data from the source format to the target format.

Select the Package.

Select *File | New | Ruleset*.

Type **DbToSsRS** in the *Name* field.

Click **Next**. A wizard assists with defining this object.

The *Schema Types* panel allows for selecting both the source and target Schemas. Choose *Database* for the source and *Spreadsheet* for the target. Click **Next**.

The *Source Schema* panel allows for selecting an existing Schema. Click **Browse**, select the *Demo05DB* object, and click **OK**. Click **Next**.

The *Target Schema* panel allows for selecting an existing Schema. Click **Browse**, select the *PurchaseOrderSS* object, and click **OK**.

Click **Finish**. The object is created, and its editor appears.

Click the **Expand All** button in the *Source* section to display all levels.

Click the **Expand All** button in the *Target* section to display all levels.

This Ruleset requires five Composite Rules and several child Simple Rules for each. Three Composites Rules must be conditioned.

Composite Rule 1: Purchase Order, Contact, Totals, and Notes

This Composite Rule serves as the parent for Simple Rules designed to populate various target Schema cells.

To create this Composite Rule, click the **New Composite Rule** button. This rule appears in the *Rules* section.

Simple Rules for Composite Rule 1

Ensure that this Composite Rule is selected before creating its child Simple Rules, as indicated here.

Source Table: Column	Target Area: Cell
HEADER: PO_NUMBER	PurchaseOrder: Number
HEADER: DATE	PurchaseOrder: Date
HEADER: CONTACTNAME	Contact: Name
HEADER: PHONE	Contact: Phone
HEADER: EMAIL	Contact: Email
HEADER: LINES	Totals: Line_Items
HEADER: QUANTITY	Totals: Quantity
HEADER: COST	Totals: Cost
NOTES: NOTE1	Notes: Note1
NOTES: NOTE2	Notes: Note2
NOTES: NOTE3	Notes: Note3

To create and define these rules, drag the source Schema node to the target Schema node.

Composite Rule 2: ADDRESS

To create this Composite Rule, right-click the previous Composite Rule and select *Add sibling | Composite Rule | Composite Rule*. The undefined rule appears in the *Rules* section.

To define this Composite Rule, drag the source's *ADDRESS* node to the *Properties* view's *Source* property.

This parent Composite Rule needs three child Composite Rules to handle three different sets of address information.

Composite Rule 2a: Company

To create this Composite Rule, right-click the previous Composite Rule and select *Add child | Composite Rule | Composite Rule*.

Condition Composite Rule 2a

This Composite Rule must be conditioned to execute only when the source data is for the company address.

Select the Composite Rule and display the *Properties view's Condition* tab.

Display the Ruleset editor's *Actions* panel, type **str** in the *Filter* field to restrict the display to items containing that text and drag *StringEquals* to the *Condition* tab's *Condition* field.

Drag the source's *ADDRESS* node's *TYPE* column node to the *Condition* tab's *SourceString1* property.

Type **CI** in the *Condition* tab's *SourceString2* property and press **Enter**.

Simple Rules for Composite Rule 2a

Ensure that this Composite Rule is selected before creating its child Simple Rules, as indicated here.

Source Table: Column	Target Area: Cell
ADDRESS: CUSTOMER_INDICATOR	Company: ID
ADDRESS: NAME	Company: Name
ADDRESS: ADDRESS1	Company: Address_Line_1
ADDRESS: ADDRESS2	Company: Address_Line_2
ADDRESS: CITY	Company: City
ADDRESS: STATE	Company: State
ADDRESS: ZIPCODE	Company: Zip_Code

To create and define these rules, drag the source Schema node to the target Schema node.

Composite Rule 2b: ShipTo

The structure of the Composite Rule and its Simple Rules designed in the previous step (2a) to populate the target's *Company* area can be re-used to populate its *ShipTo* area. Some minor adjustments must then be made.

To create this Composite Rule, right-click the previous Composite Rule and select *Copy*. Then, right-click the *For each ADDRESS* Composite Rule and select *Paste*.

Re-Condition Composite Rule 2b

Select the *Properties view's Condition* tab.

This Composite Rule must be conditioned to execute only when the source data is for the ship to address. Display the *Properties view's Condition* tab.

Type **ST** in the *Condition* tab's *SourceString2* property and press **Enter**.

Re-Define Simple Rules for Composite Rule 2b

Each of this Composite's Simple Rules must be re-defined to populate the target's *ShipTo* area.

Select the *Properties view's Rule* tab.

One at a time, select each Simple Rule and drag the new target node over the existing value in the Return Assignments area, as indicated here.

Simple Rule	New Target Area: Cell	Existing Target Area: Cell
Move: [SourceNode=Customer_Indicator]	ShipTo: Indicator	Cell: ID
Move: [SourceNode=Name]	ShipTo: Name	Cell: Name
Move: [SourceNode=Address1]	ShipTo: Address_1	Cell: Address_Line_1
Move: [SourceNode=Address2]	ShipTo: Address_2	Cell: Address_Line_2
Move: [SourceNode=City]	ShipTo: City	Cell: City
Move: [SourceNode=State]	ShipTo: State	Cell: State
Move: [SourceNode=ZipCode]	ShipTo: Zip_Code	Cell: Zip_Code

Composite Rule 2c: BillTo

The structure of the Composite Rule and its Simple Rules designed in the previous step (2b) to populate the target's *ShipTo* area can be re-used to populate its *BillTo* area. Some minor adjustments must then be made.

To create this Composite Rule, right-click the previous Composite Rule and select *Copy*. Then, right-click the *For each ADDRESS* Composite Rule and select *Paste*.

Re-Condition Composite Rule 2c

Select the *Properties view's Condition* tab.

This Composite Rule must be conditioned to execute only when the source data is for the bill to address. Display the *Properties view's Condition* tab.

Type **BT** in the *Condition* tab's *SourceString2* property and press **Enter**.

Re-Define Simple Rules for Composite Rule 2c

Copy all Simple Rules for the previous Composite Rule, select this Composite Rule, and paste.

Each of this Composite's Simple Rules must be re-defined to populate the target's *BillTo* area.

Select the *Properties view's Rule* tab.

One at a time, select each Simple Rule and drag the new target node over the existing value in the Return Assignments area, as indicated here.

Simple Rule	New Target Area: Cell	Existing Target Area: Cell
Move: [SourceNode=Customer_Indicator]	BillTo: Indicator	Cell: Indicator
Move: [SourceNode=Name]	BillTo: Name	Cell: Name
Move: [SourceNode=Address1]	BillTo: Address_1	Cell: Address_Line_1
Move: [SourceNode=Address2]	BillTo: Address_2	Cell: Address_Line_2
Move: [SourceNode=City]	BillTo: City	Cell: City
Move: [SourceNode=State]	BillTo: State	Cell: State
Move: [SourceNode=ZipCode]	BillTo: Zip_Code	Cell: Zip_Code

Composite Rule 3: LinelItems

To create this Composite Rule, right-click the *For each ADDRESS* Composite Rule and select *Add sibling | Composite Rule | Composite Rule*. The undefined rule appears in the *Rules* section.

To define this Composite Rule, drag the source's *DETAIL* node to the *Properties* view's *Source* property, and then drag the target's *Area: LinelItems* node's *Row: _row26* node to the *Target* property.

Simple Rules for Composite Rule 3

Ensure that this Composite Rule is selected before creating its child Simple Rules, as indicated here.

Source Table: Column	Target Area: Cell
DETAIL: LINENUMBER	LinelItems: LineNumber
DETAIL: YOURNUMBER	LinelItems: Your_SKU
DETAIL: DESCRIPTION	LinelItems: Item_Description
DETAIL: BRAND	LinelItems: Brand
DETAIL: OURNUMBER	LinelItems: Our_SKU
DETAIL: QTY	LinelItems: Qty
DETAIL: UNITS	LinelItems: Unit
DETAIL: UNITPRICE	LinelItems: Cost
DETAIL: EXTENDEDPRICE	LinelItems: Extended_Cost

To create and define these rules, drag the source Schema node to the target Schema node.

Save the object and close the editor.

Business Process: DbToSsBPS

Select the Package.

Select *File | New | Business Process*.

Choose *No Template* and click **Next**.

Type **DbToSsBPS** in the *Name* field.

Click **Finish**. The object is created, and its editor appears.

This Business Process requires three tasks to (1) read the source data, (2) transform the data, and (3) write the target data.

Task 1: Read the source data

To create this task, click the **Add** button in the *Script* section. Click that step's *Click to select task* entry. In the list of available tasks, type **select** in the *Filter* field to restrict the display to tasks containing that text. Double-click the *Demo05DBA - select_GoodStuff 303* user-defined object to select it. That task is displayed on the top line.

To define this task, click the *Properties* view tab.

This task has one parameter.

Click in the *adapterPayload* parameter's field. This parameter represents the data selected from the database. The bold-italic text indicates that this is a mandatory parameter. A list of available parameters and variables appears. As none yet exist, that list is empty. Click **New Variable**. An AdapterPayload may be an Array, Object, or StorageNode. Double-click *StorageNode* to indicate it as the type for this variable. *newVariable* appears in the *Properties* view and also appears in the *Variables* section, with its name pre-selected, ready for a name change. Type **source** and press **Enter** to rename this variable. This new name is reflected in the *Properties* view.

Task 2: Transform the data

To create this task, click the **Add** button in the *Script* section. Click that step's *Click to select task* entry. In the list of available tasks, type **rs** in the *Filter* field to restrict the display to tasks containing that text. Double-click the *DbToSsRS* user-defined object to select it. That task is displayed on the second line.

To define this task, click the *Properties* view tab.

This task has several parameters. Provide values for the first three; the last three are not necessary here.

Click in the *sourceNode* parameter's field. This parameter represents the *StorageNode* containing the data to be transformed. In the list of available parameters and variables, double-click the previously-defined *source* variable, as the data selected by the first task is the data to be transformed.

Click in the *targetNode* parameter's field. This parameter represents the *StorageNode* containing the transformed data. A list of available parameters and variables appears. Click **New Variable**. *newVariable* appears in the *Properties* view and also appears in the *Variables* section, with its name pre-selected, ready for a name change. Type **target** and press **Enter** to rename this variable. This new name is reflected in the *Properties* view.

Click in the *settings* parameter's field. This parameter represents the Transformation Settings object to be used during transformation. Click the *TransformationSettings Literal* tab and double-click the previously-defined *UndefinedTS* object to select it.

Task 3: Write the target data

To create this task, click the **Add** button in the *Script* section. Click that step's *Click to select task* entry. In the list of available tasks, type **write** in the *Filter* field to restrict the display to tasks containing that text. Double-click the *WriteSsFA* object to select it. That task is displayed on the third line.

To define this task, click the *Properties* view tab.

This task has only one parameter.

Click in the *storageNodes* parameter's field. This parameter represents the *AdapterPayload* (the data to be written to the target file). In the list of available parameters and variables, double-click the previously-defined *sstarget* variable, as the data converted by the third task is the data to be written.

Save the object and close the editor.

Deploy, Launch, Audit

Now that all of the Project's resources are created on the *Clarify Workbench | Project Explorer*, the remaining activities take place on various views of the *Admin Console* perspective.

The Project's top-level object – in this case, the Business Process – must be deployed to the *Local Test* server. Then, that Business Process can be launched and the result audited.

Deploy

Access *Admin Console | Projects*.

In the *Workspace* section, expand the *com.training.demo05.dbtoss* Project, and then expand its Package node.

Drag the *DbToSsBPS* object to the *Selected Scenarios* section.

Start the *Local Test* server by ensuring that it is displayed in the *Server Environment* dropdown and then clicking the **Start** button.

When fully-expanded, the *Server Projects* section shows all installed objects.

Launch

Access *Admin Console | Business Process*.

Select *com.training.demo05.dbtoss.DbToSsBPS* and click the **Launch** button.

Audit

Access *Admin Console | Auditor*.

The *Log Entries* section shows the results.
