

The background of the slide is a dark blue field filled with glowing green and white lines that form a complex circuit or network pattern. Interspersed within this pattern are various sequences of binary code (0s and 1s) in a light blue color, some of which are slightly blurred to create a sense of depth and motion.

**Semarchy**

**xDI DEV**

**G** Variable Metadata



**Semarchy**

**xDI DEV**

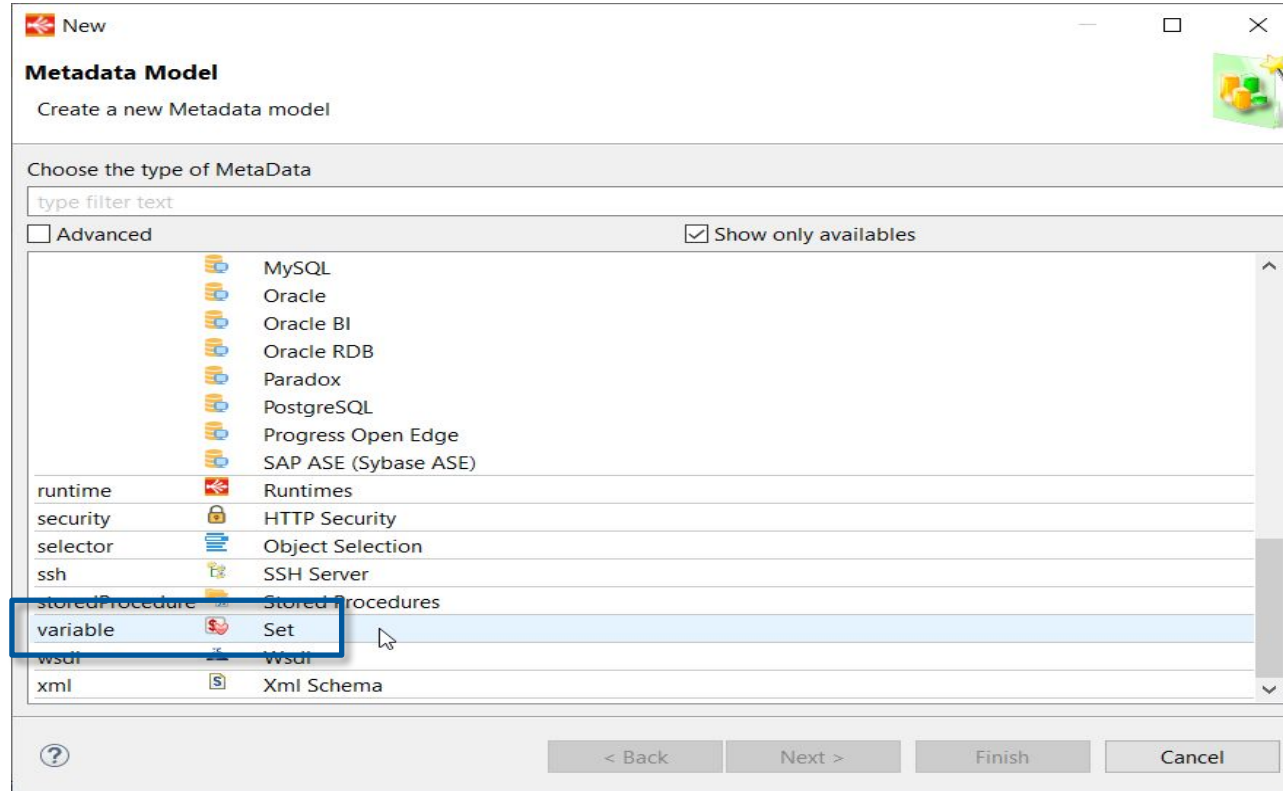
**G** Variable Metadata

G1 - Variable Metadata

# Variable Metadata

Variable Metadata may be used to store persistent values and re-use them

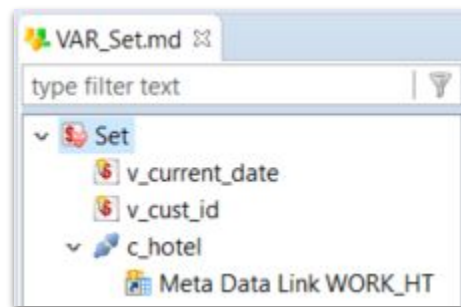
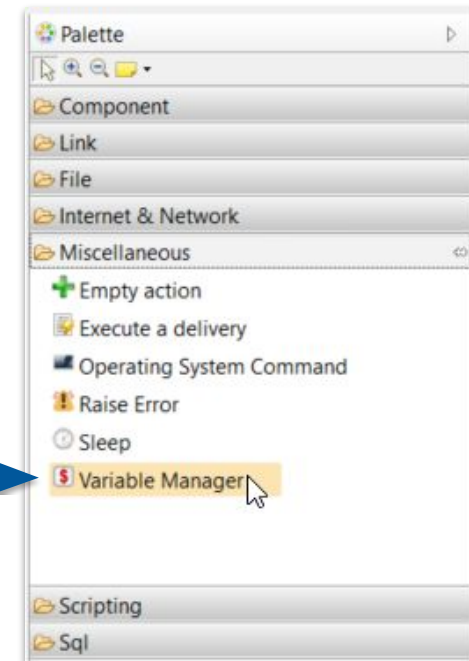
- Powerful way to define and use global variables in several processes





# Variable Metadata

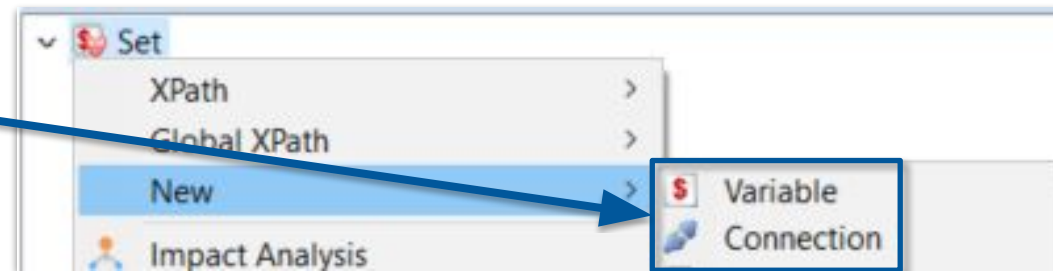
- Variables Metadata are fully objects
- They are reusable and configurable
- They are used in processes and mappings to parametrize executions
- They are managed through the palette action “Variable Manager”



*Two node types*

*Variables*

*Connections*



# Variable Metadata

Properties of Variable Metadatas must be defined to properly use them

The screenshot displays the 'VAR\_Set.md' window in the Semarchy Intelligent Data Hub. On the left, a tree view shows a 'Set' of variables: 'v\_current\_date', 'v\_cust\_id', 'v\_cust\_max', 'v\_schema\_name' (selected), 'c\_hotel\_management', and 'c\_work\_ht'. The main panel shows the configuration for 'v\_schema\_name'. The 'Name' field is set to 'v\_schema\_name'. The 'Description' field contains 'Refresh Query'. The 'Default Value' is 'HOTEL\_MANAGEMENT'. The 'Type' is set to 'String'. The 'Default Operation' is set to 'Refresh Query'. The 'Use native Xpath Expression' checkbox is unchecked. The 'Saving Connection' and 'Refresh Connection' dropdowns are empty. The 'Disable Saving (default)' checkbox is unchecked.

Property	Value
Name	v_schema_name
Description	Refresh Query
Default Value	HOTEL_MANAGEMENT
Type	String
Default Operation	Refresh Query

# Variable Metadata

Connection must be defined and used in case of “Refresh Query” specified or to save the values of the variables

The screenshot displays the Semarchy Intelligent Data Hub interface for configuring a variable metadata link. The interface is divided into several sections:

- Tree View (Left):** Shows a hierarchy of metadata links. A callout labeled '2' points to the 'c\_work\_ht' link, with the instruction: "Drag & drop a database schema on a connection". A callout labeled '3' points to the 'Meta Data Link WORK\_HT' link, with the instruction: "A metadata link is created".
- Configuration Panel (Center):** Displays the configuration for the selected variable 'v\_cust\_max'. It includes fields for Name, Description, Refresh Query, Default Value, Use native Xpath Expression, Saving Connection, Refresh Connection, Type, and Default Operation. A callout labeled '4' points to the 'Refresh Query' field, with the instruction: "Specify a SQL order in the 'Refresh Query' field to get a value". A callout labeled '5' points to the 'Saving Connection' and 'Refresh Connection' dropdowns, with the instruction: "Choose connections".
- Right-Hand Menu:** A callout labeled '1' points to the 'New' button, with the instruction: "Specify a SQL order in the 'Refresh Query' field to get a value".

Numbered callouts 1 through 5 provide step-by-step instructions for creating and configuring the metadata link.

1. Click 'New' to create a new variable.
2. Drag & drop a database schema on a connection.
3. A metadata link is created.
4. Specify a SQL order in the "Refresh Query" field to get a value.
5. Choose connections.

# Variable Metadata

The syntax to refer to a schema in the “Refresh Query” of a metadata variable:

```
{md:objectPath(ref:schema(), '<table_name>')}
```

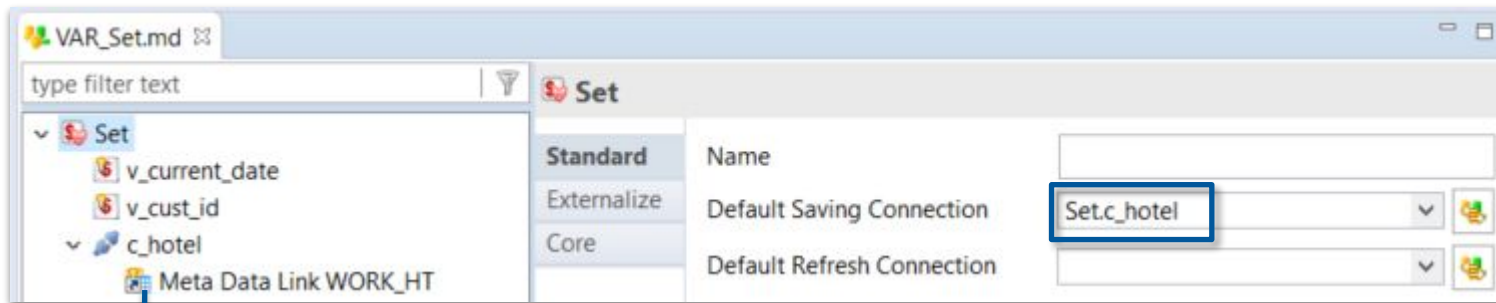
The screenshot displays the 'Variable' configuration window in Semarchy Intelligent Data Hub. On the left, a tree view shows the hierarchy: 'Set' > 'v\_max\_cust\_id' > 'c\_hotel' > 'c\_hotel\_datamart'. The 'c\_hotel\_datamart' node is selected, and its 'Meta Data Link HOTEL\_DATAMART' is highlighted. The right pane shows the configuration for the variable 'v\_max\_cust\_id'. The 'Refresh Query' field contains the SQL: 'SELECT MAX(CUS\_ID) FROM (md:objectPath(ref:schema(), 'DIM\_CUSTOMER'))'. The 'Refresh Connection' dropdown is set to 'Set.c\_hotel\_datamart'. A blue arrow points from the 'ref:schema()' part of the SQL query to the 'c\_hotel\_datamart' node in the tree.



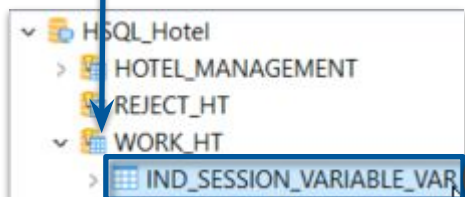
*The schema will be the schema that is referenced (metadata link) in the Refresh connection*

# Variable Metadata

Saving connection can be defined on the “Set” node or on a “Variable” node



1. A table is created in the related schema dropped on the connection
2. Each time a variable is used, defined with a saving connection, a row is inserted into this table



2

```
select * from WORK_HT.IND_SESSION_VARIABLE_VAR
```

VAR_NAME	VAR_TYPE	VAR_NO_LINE	VAR_VALUE	VAR_CONF	VAR_DATE	VAR_SESS_ID
v_cust_id(_mSQqMDfCEeyYIL-Ke2hBSw)	Integer	1	90	Default	2021/10/29 22:44:10.775	c0a87001017ccdcbaed762827f1437da
v_current_date(_Z_qBYDfIEeyYIL-Ke2hBSw)	String	1	20211029	Default	2021/10/29 22:44:10.890	c0a87001017ccdcbaed762827f1437da

VAR\_NAME is full technical name of the variable.  
 VAR\_TYPE is the variable type  
 VAR\_NO\_LINE when the value is a long string, it may be written over several rows (depending on the database's varchar max size). Usually there is only one line  
 VAR\_VALUE the value to set  
 VAR\_CONF the configuration which applies. Note that a variable may be stored with one value per configuration in the same table.  
 VAR\_DATE when the variable was last saved  
 VAR\_SESS\_ID the session that did the last save



# Variable Metadata

Variable Metadatas can be used to parametrize other Metadata properties

The syntax to retrieve the value of a variable metadata is `%{<variable_name>}%`

Drag & drop the metadata variable either on the node where the variable is mentioned (file node in the illustration) or on the root node in order to use it on multiple nodes

This syntax will be the same in

- Mappings (expression & filters)
- Templates
- Processes (actions & properties)



If the parametrized metadata is used in a mapping, the related variable Metadata must be drag & drop in this mapping

**Semarchy**

**xDI DEV**

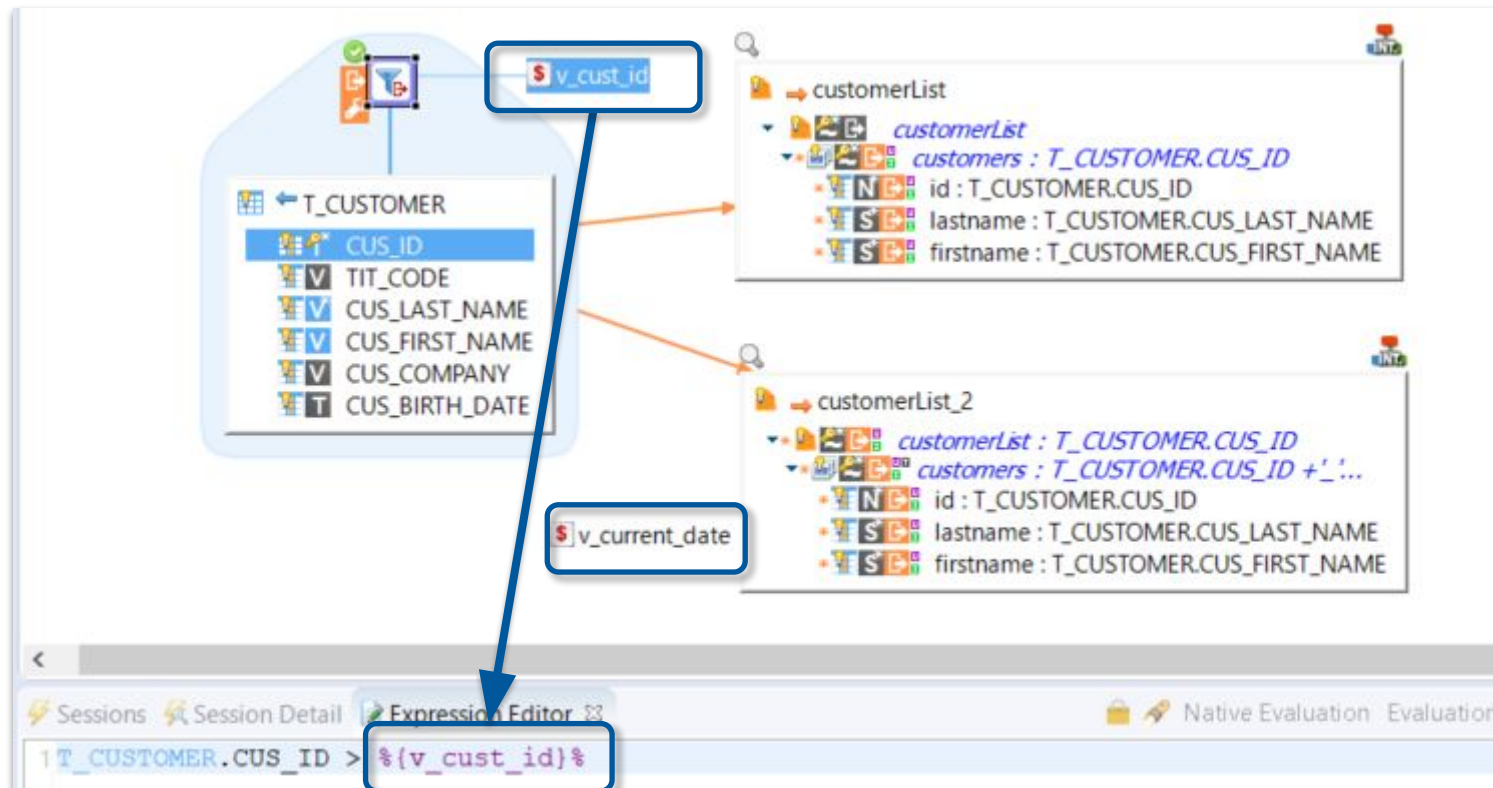
**G** Variable Metadata

G2 - Using Variable Metadata



# Using Variables Metadata

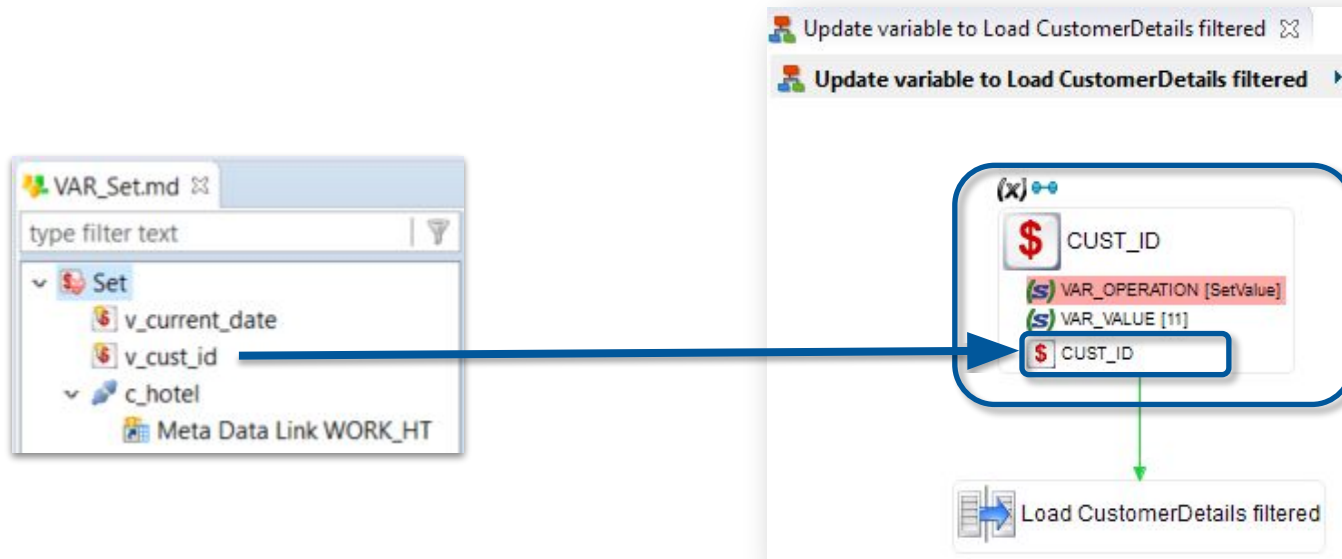
Drag & drop variable metadatas to use them in a mapping





# Using Variables Metadata

When the variable is drag & dropped into a process, an instance of a Variable Manager action is automatically created



Variable Manager

# Using Variables Metadata

In a Variable manager action, the “Var Operation” property drive the operation to apply on the related variable metadata

The diagram illustrates the configuration of a variable manager action. On the left, a workflow editor shows a sequence of actions: a variable manager action (labeled CUST\_ID), a 'Set Value' action (labeled VAR\_OPERATION [SetValue]), a 'Set Value' action (labeled VAR\_VALUE [11]), and another variable manager action (labeled CUST\_ID). A blue arrow points from the first variable manager action to its configuration window on the right.

The configuration window, titled 'Action Code CUST\_ID', has a 'Standard' tab selected. It shows the variable name 'CUST\_ID' and a list of properties. The 'Var Operation' property is highlighted with a blue box, and its value 'SetValue' is shown in a dropdown menu. The dropdown menu lists the following options: SetValue, AutomaticValue, IncrementValue, PurgeHistory, RefreshValue, SaveCurrentValue, SetToDefaultValue, SetToSavedValue, and SetValue.

**Standard** Name CUST\_ID

☐ Var Dont Save

Var Name

Var Type

Var Default Value

Var Save Connection

Var Save Transaction Name

Var Save Transaction Type AUTOCOMMIT

Var Save Schema Name

Var Save Type

Var Value 11

Var Increment Value

Var Operation SetValue

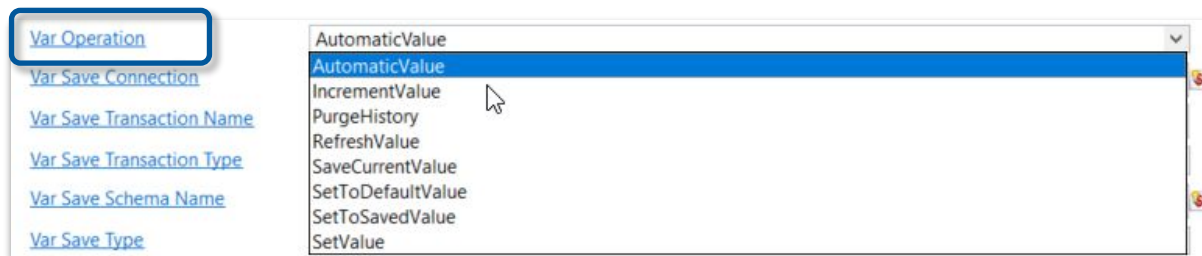
AutomaticValue  
IncrementValue  
PurgeHistory  
RefreshValue  
SaveCurrentValue  
SetToDefaultValue  
SetToSavedValue  
SetValue

*A Variable Manager allows to*

- *Set a variable value*
- *Increment a variable value*
- *Refresh the value from a SQL Query*
- *Retrieve a previously stored value*

# Using Variables Metadata

- Choosing **“AutomaticValue”** in the “Var Operation” property of a Variable manager action will provide the following value, in order of **precedence**:



1. *In-memory value of the Session*
2. *Latest saved value if any*
3. *Value returned by the Refresh Query if any*
4. *Default value of the Metadata Variable*



***If no value is found an error is raised !***



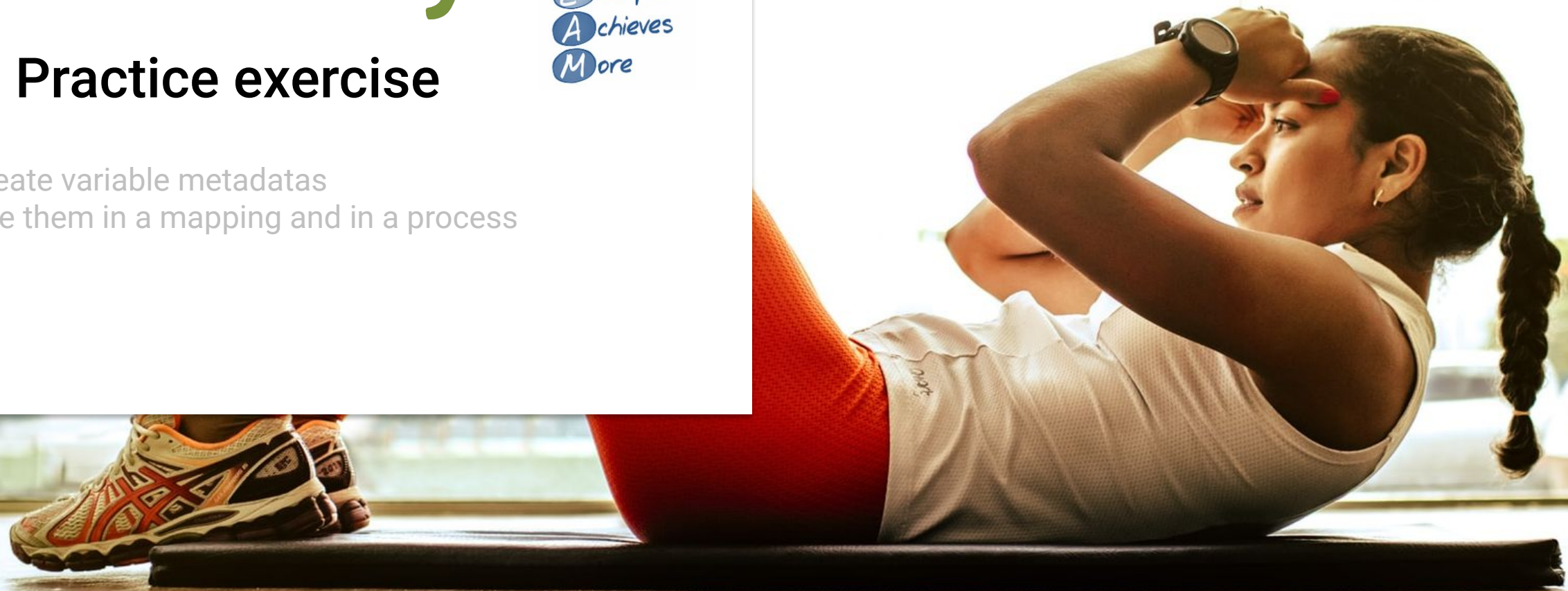


T ogether  
E veryone  
A chieves  
M ore

## Practice exercise

Create variable metadatas

Use them in a mapping and in a process



# To go further

Document Type	Link
Stambia.org article Storing variables in a database for global use in several processes	<a href="https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/279-storing-variables-in-a-database-for-global-use-in-several-processes">https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/279-storing-variables-in-a-database-for-global-use-in-several-processes</a>
Stambia.org article How to reference a schema in a variable's refresh query	<a href="https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/61-how-to-reference-a-schema-in-a-variable-s-refresh-query">https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/61-how-to-reference-a-schema-in-a-variable-s-refresh-query</a>
Stambia.org article How to use a variable as a table physical name	<a href="https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/23-how-to-use-a-variable-as-a-table-physical-name">https://stambia.org/doc/87-development-hints-and-tips/variables-and-parameters/how-to/23-how-to-use-a-variable-as-a-table-physical-name</a>



A large crowd of people is shown from behind, with many hands raised in the air, suggesting a concert or festival. The scene is dimly lit, with some stage lights visible in the background.

# Semarchy

Questions?