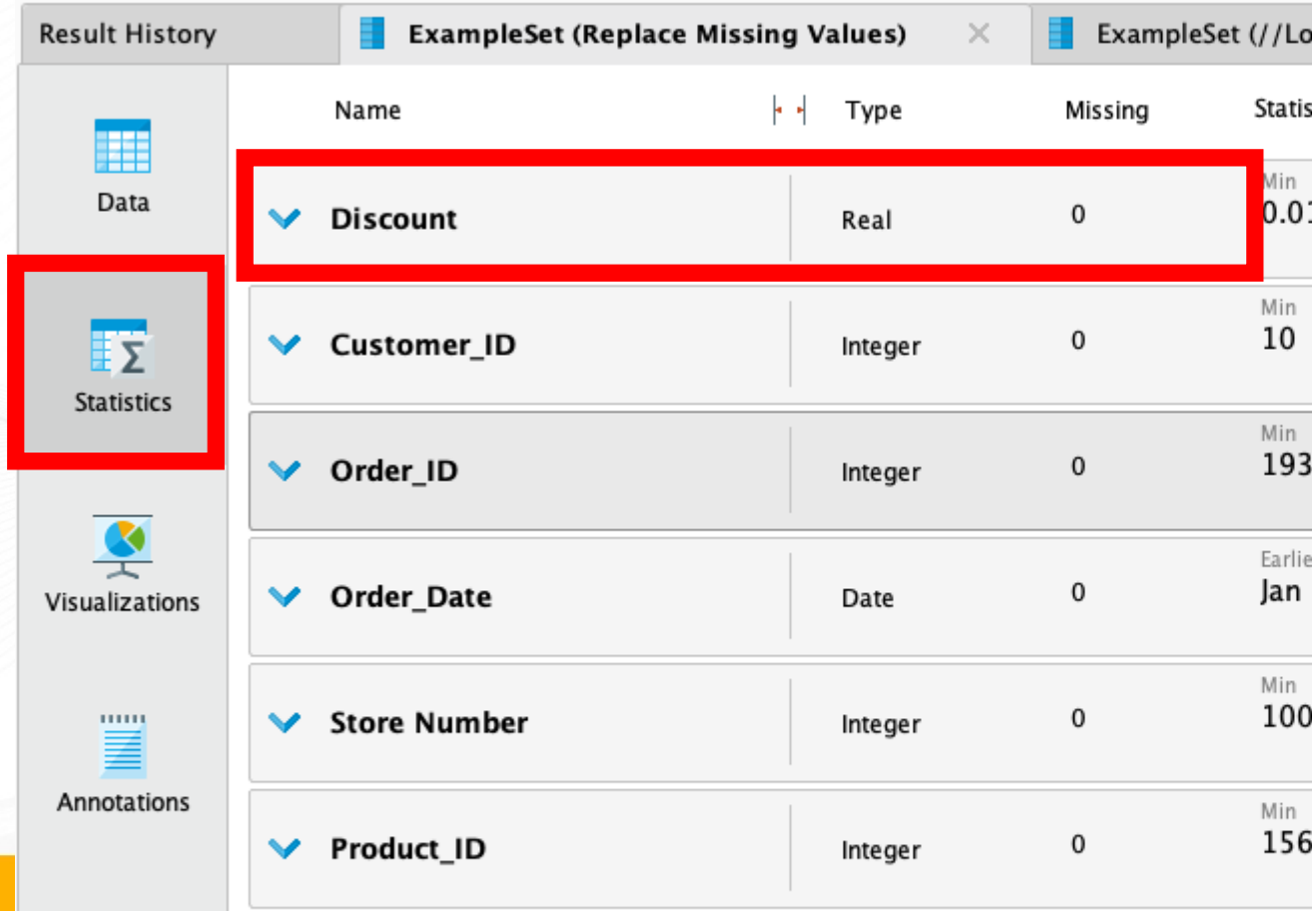
Data Preparation

No more missing values in the *Discount* attribute.



UNIVERSITY OF SANTO TOMAS

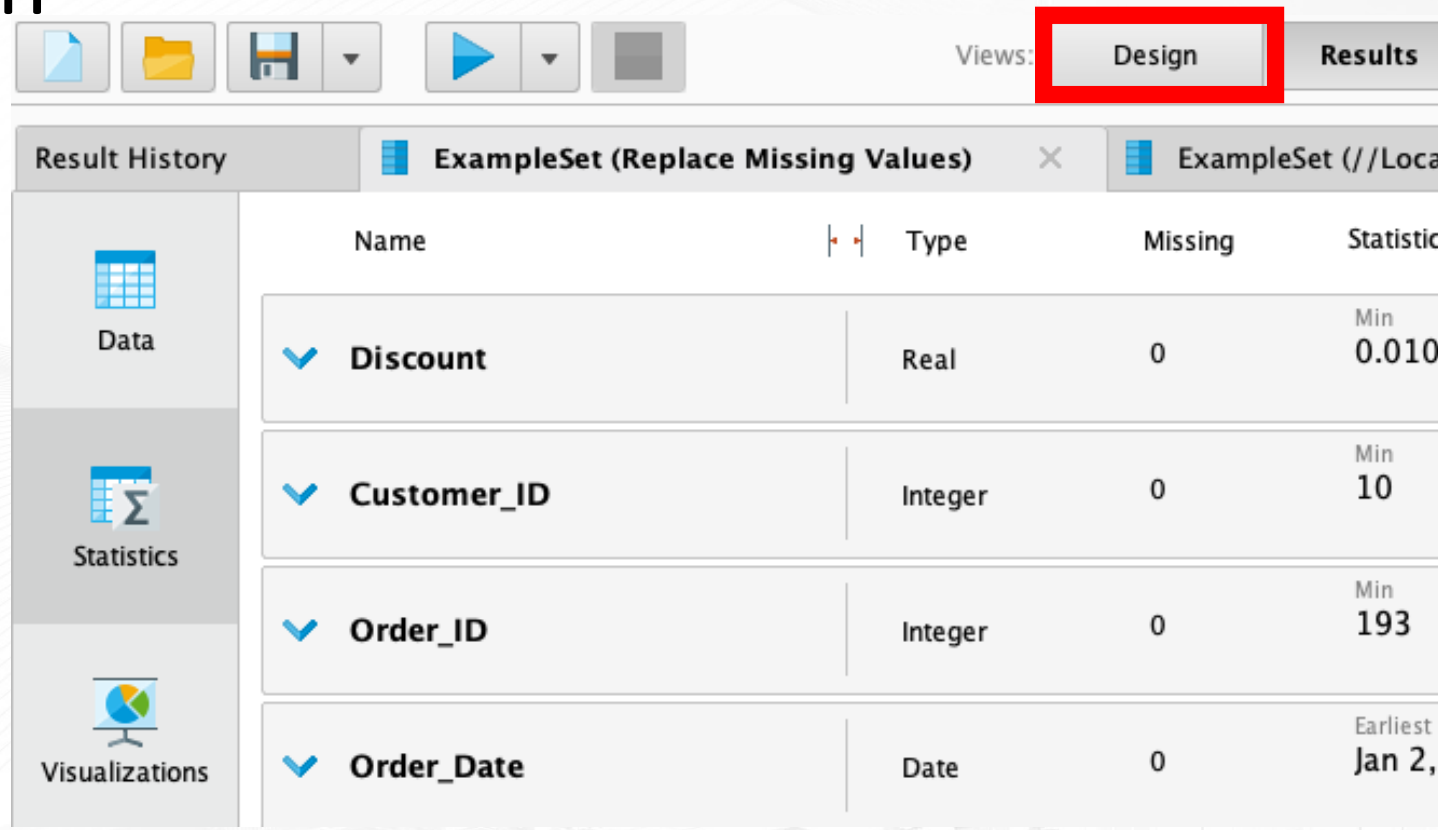
Dealing with Miscoded entries

using

Altair® AI Studio

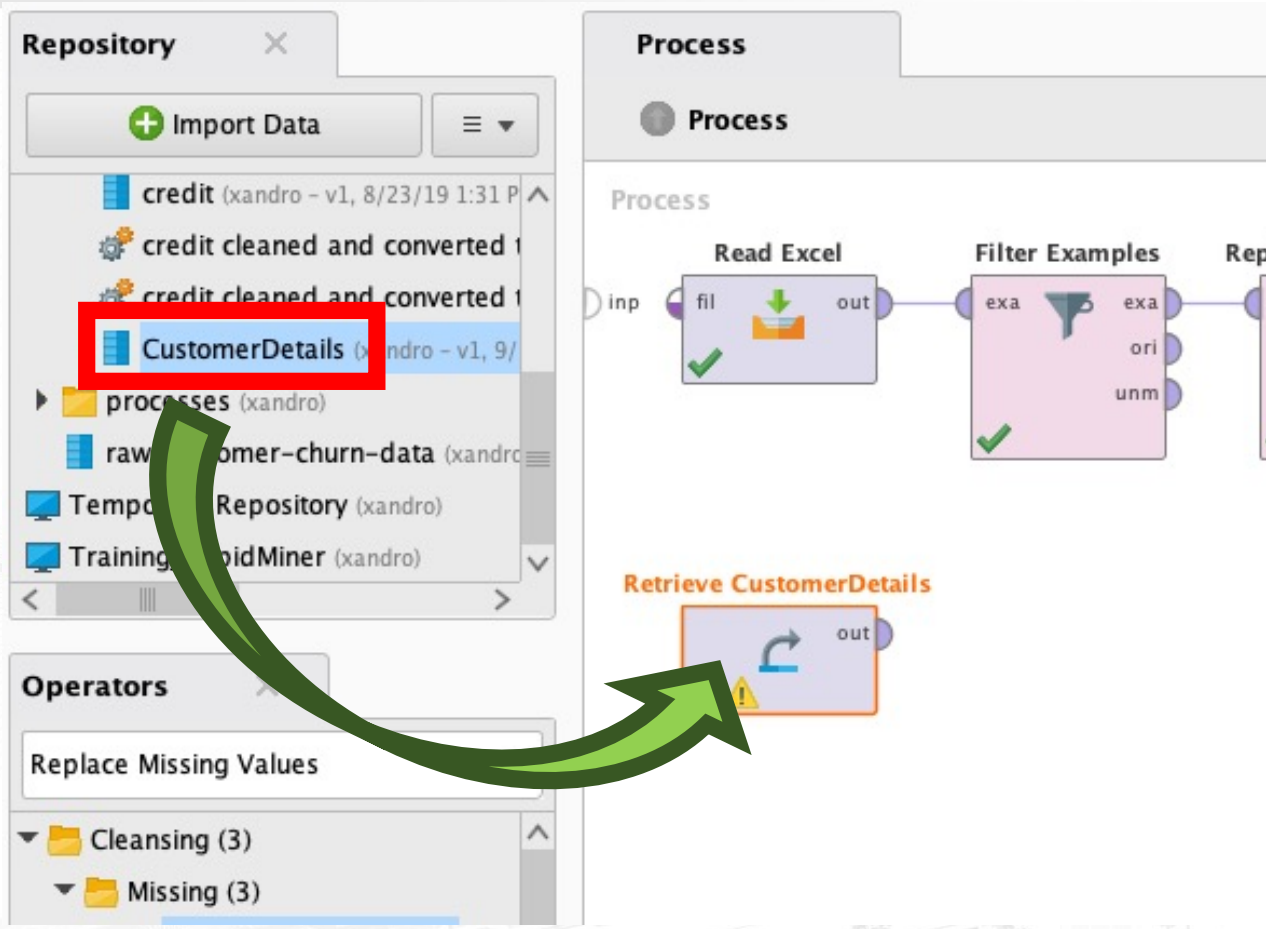
Data Preparation

Go back to **Design** view.



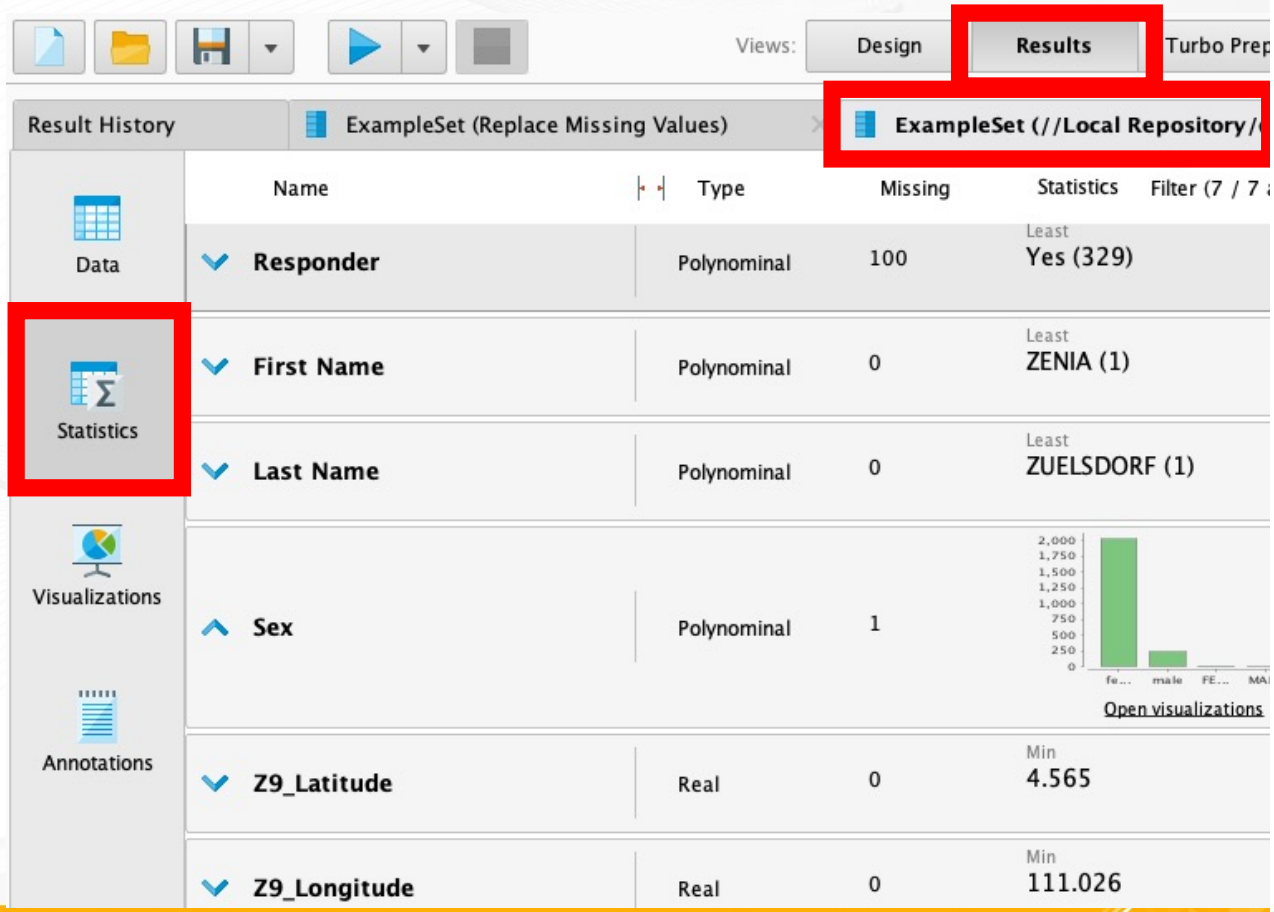
Data Preparation

- Instead of the Order Details data, we will use the **Customer Details** data.
- Drag and drop the **Customer Details** in the canvas.



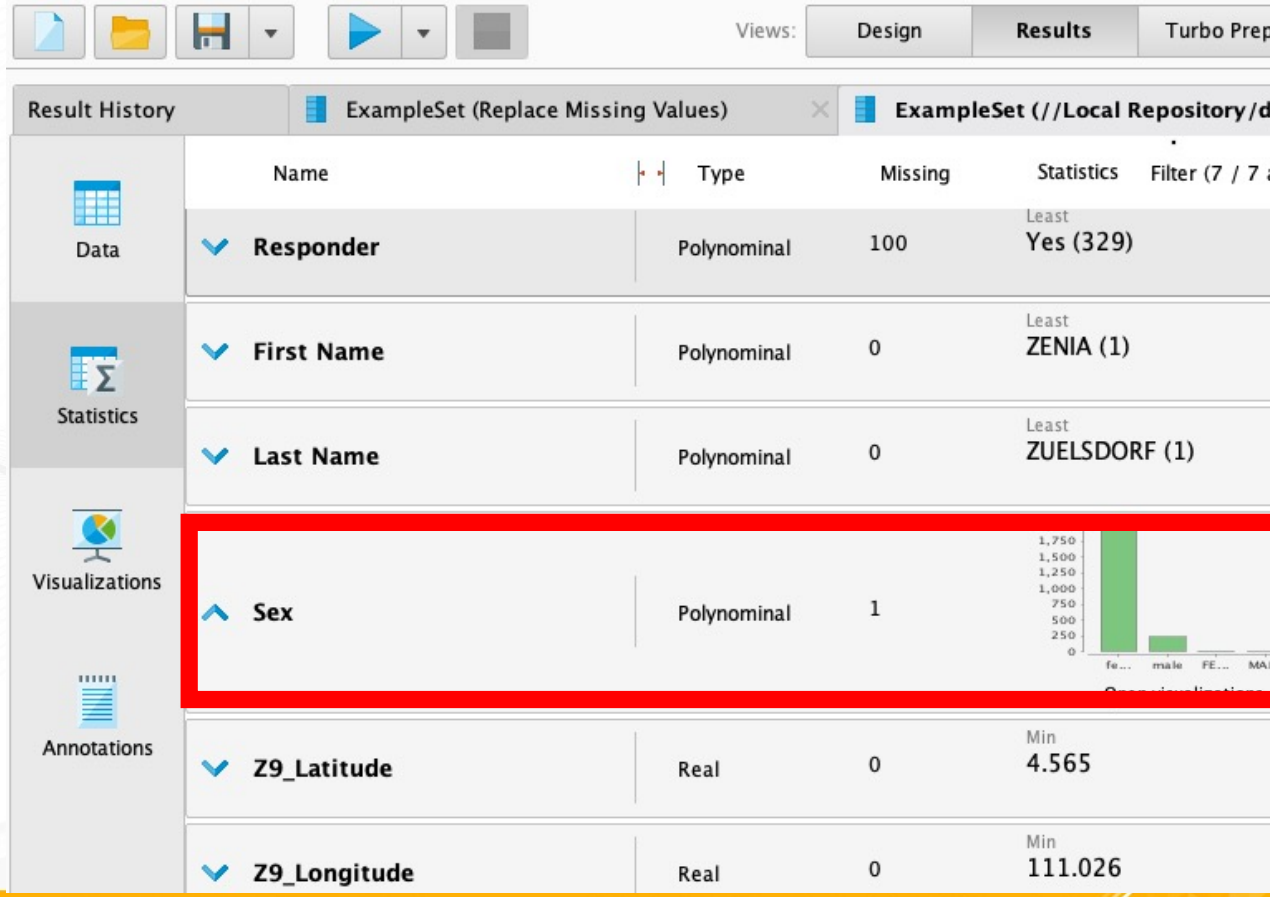
Data Preparation

- The **Customer Details** data can be viewed in the Results view.



Data Preparation

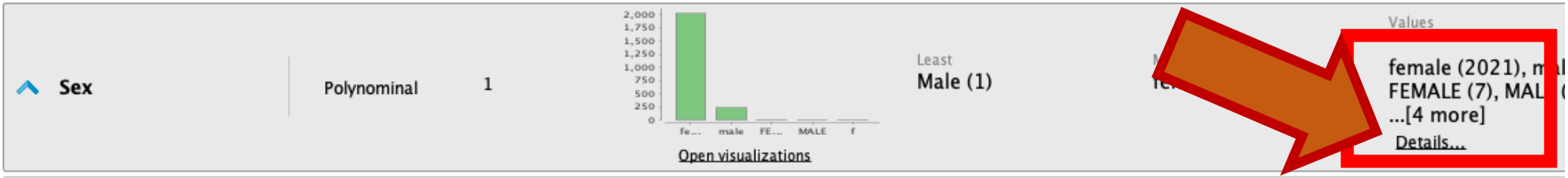
- Notice in the statistics tab, the **Gender** attribute has miscoded entries.



Data Preparation

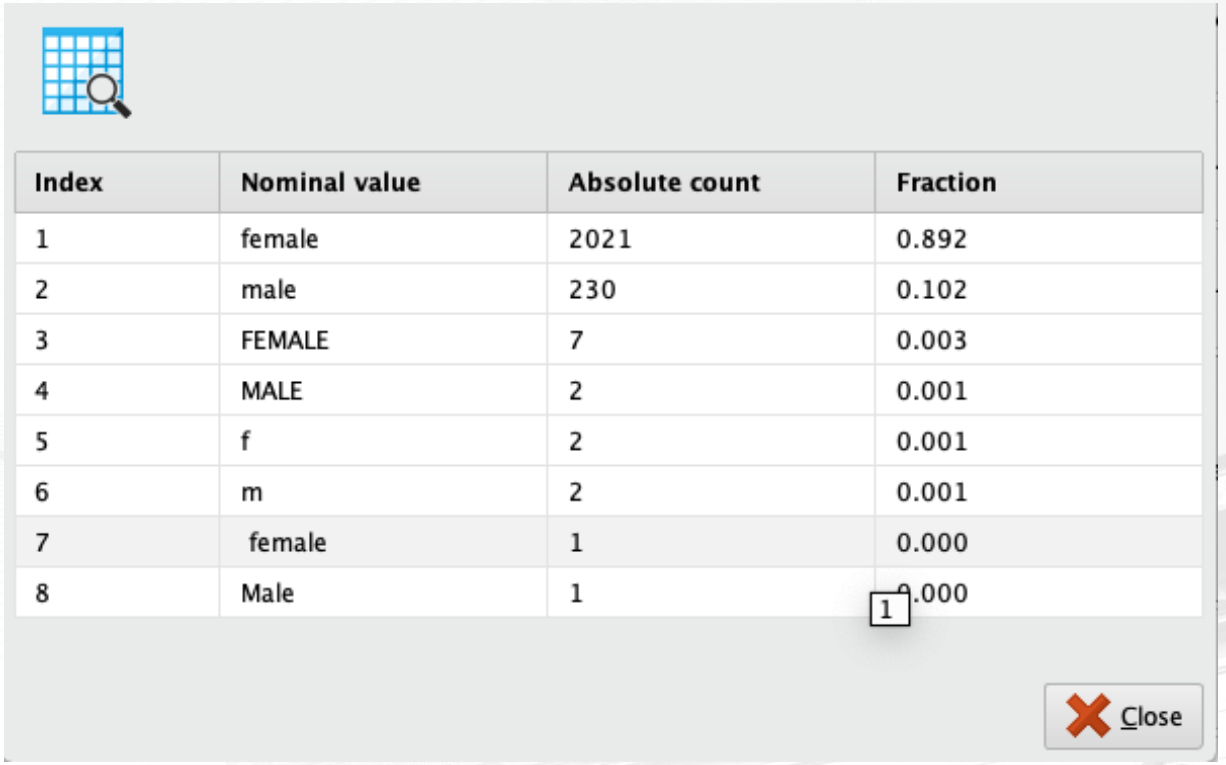
- Notice in the statistics tab, that the **Gender** attribute has miscoded entries.

Click Details…



Data Preparation

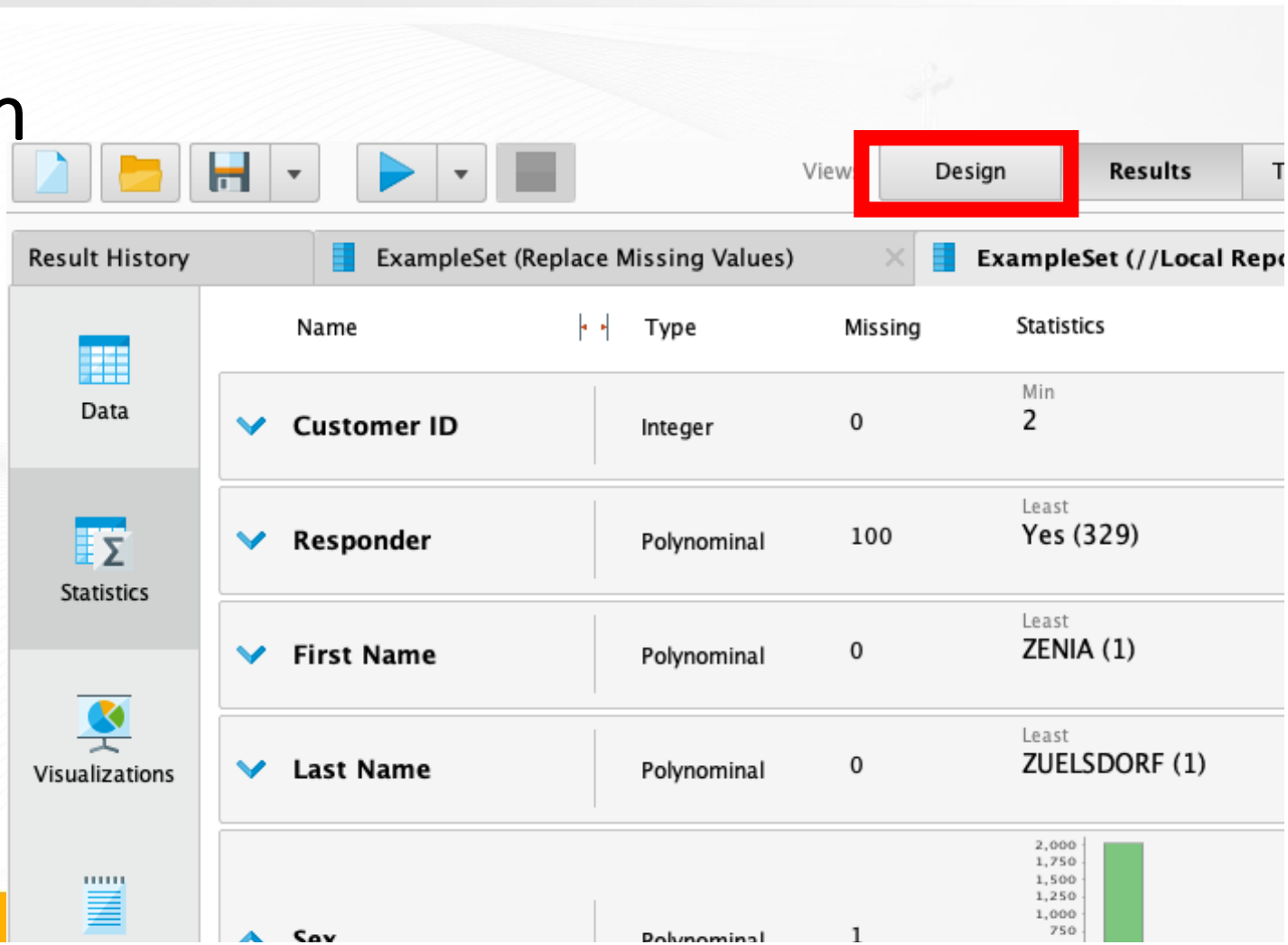
- Notice in the statistics tab, that the **Gender** attribute has miscoded entries.



Index	Nominal value	Absolute count	Fraction
1	female	2021	0.892
2	male	230	0.102
3	FEMALE	7	0.003
4	MALE	2	0.001
5	f	2	0.001
6	m	2	0.001
7	female	1	0.000
8	Male	1	0.000

Data Preparation

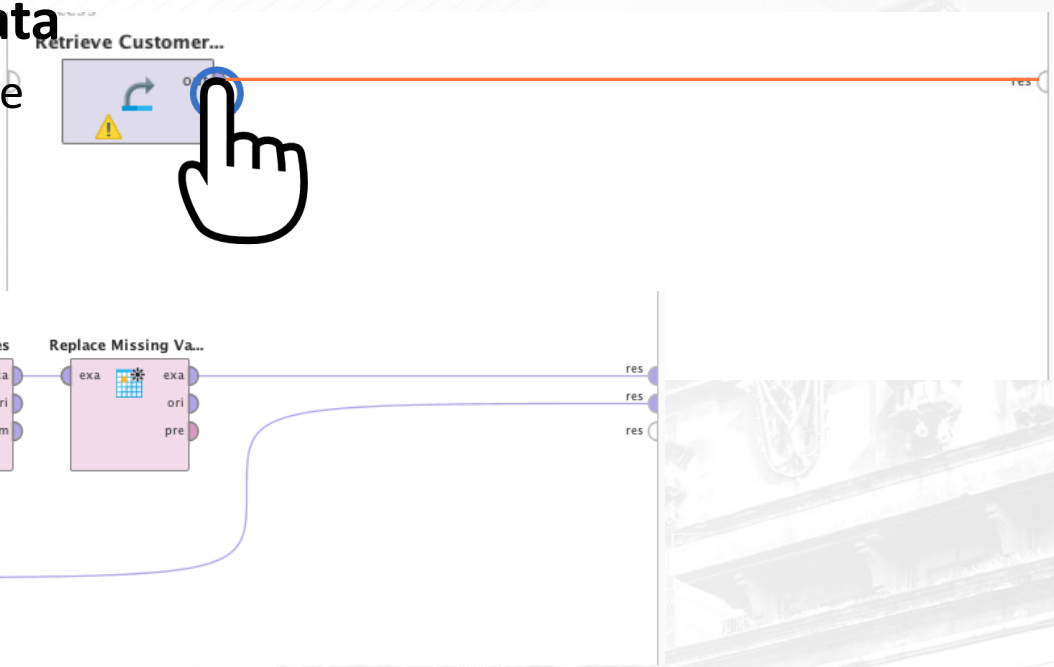
Go back to **Design** view.



Data Preparation

3. Dealing with miscoded data

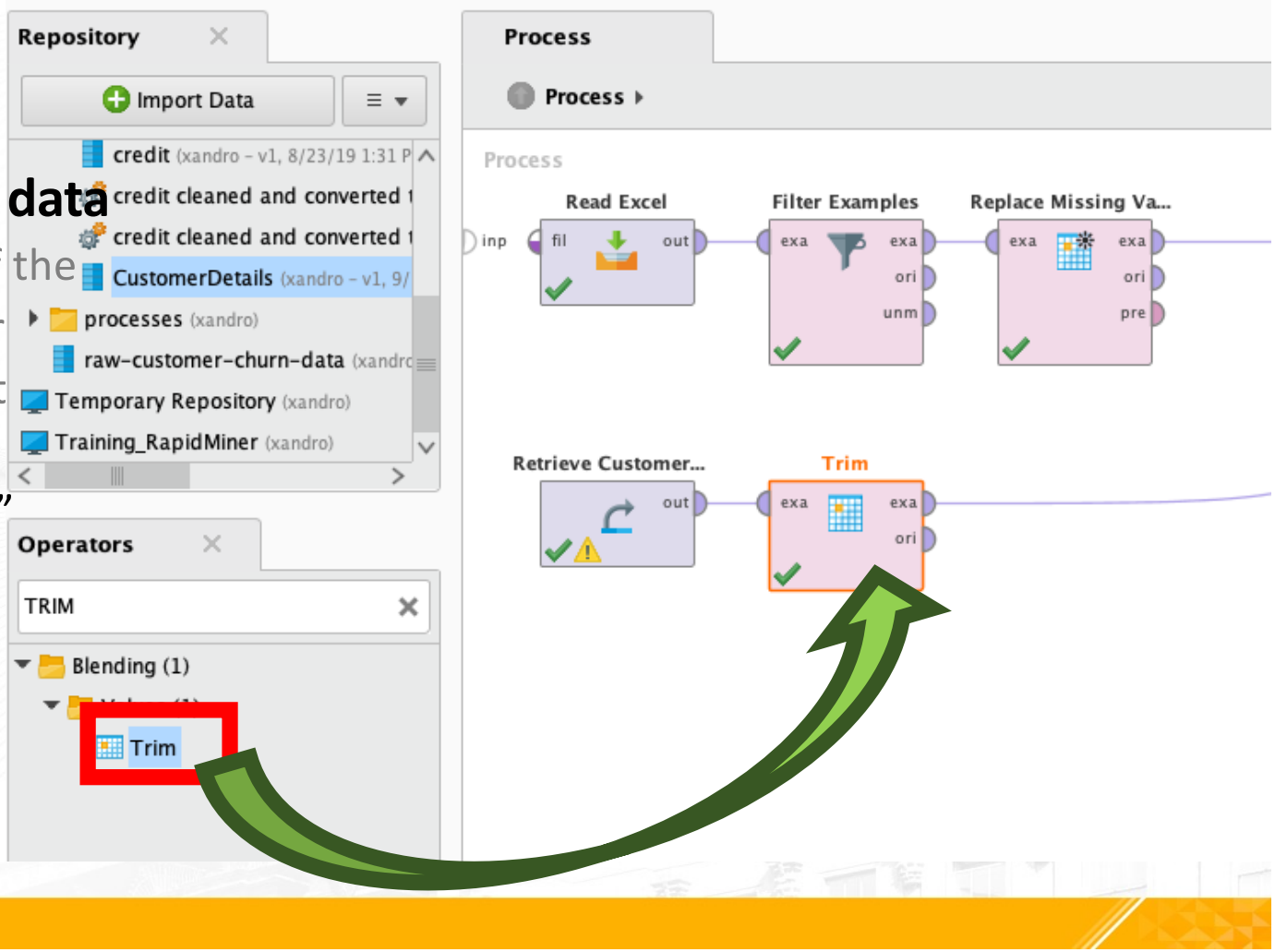
- Connect the **Out** node of the Retrieve Customer operator and **second** **res** of the result knob.



Data Preparation

3. Dealing with miscoded data

- Connect the **Out** node of the Retrieve Customer operator and **second res** of the result knob.
- To remove “white spaces” in the encoding, use the **TRIM** operator.

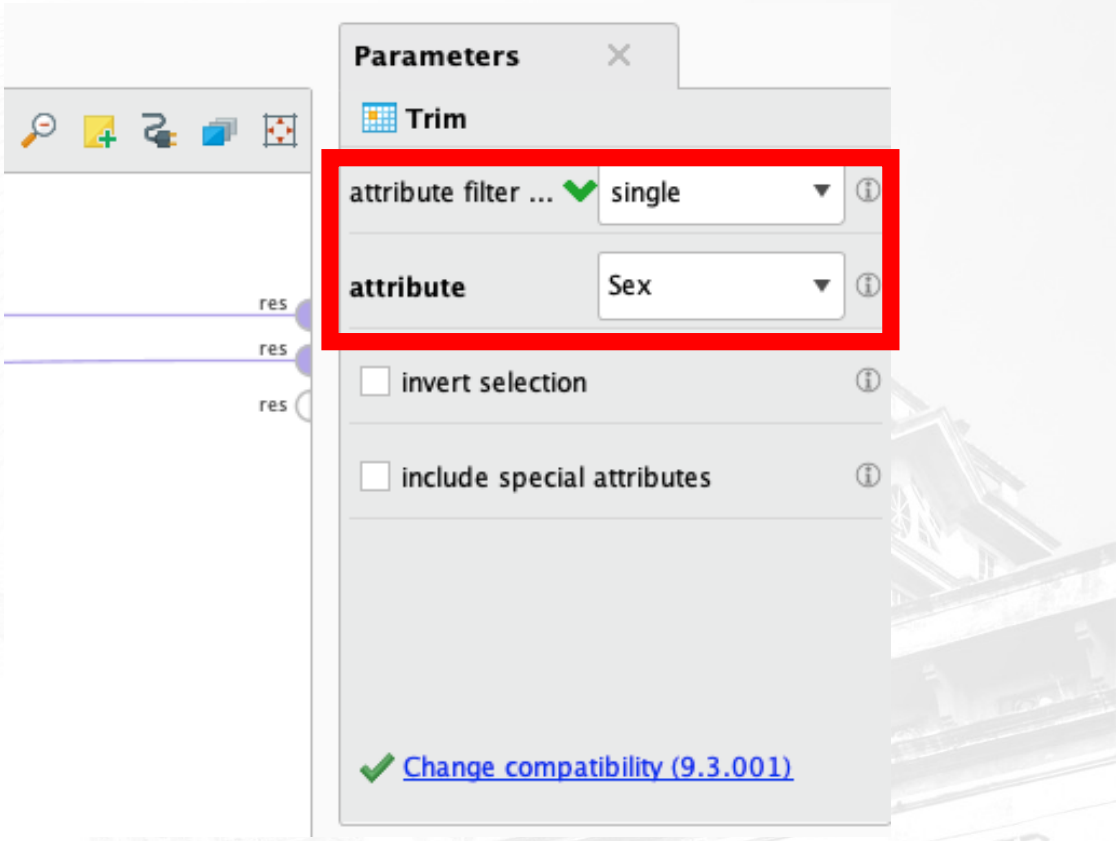


Data Preparation

3. Dealing with miscoded data

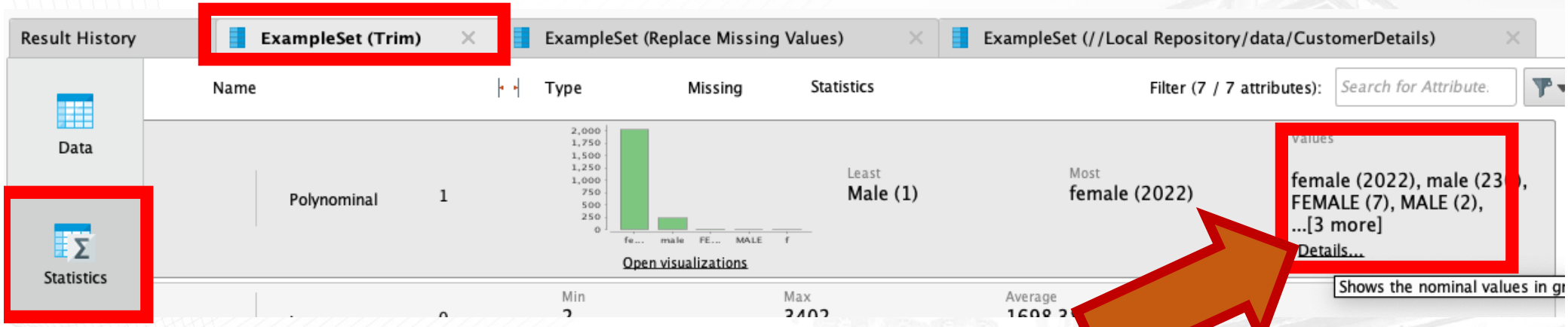
- Select single if trimming shall be applied to a single attribute.

Then click the **Play** button.



Data Preparation

You may see the *trimming* result by viewing the statistics.



Click Details...

Data Preparation

You may see the *trimming* result by viewing the statistics.

Before

Index	Nominal value	Absolute count	Fraction
1	female	2021	0.892
2	male	230	0.102
3	FEMALE	7	0.003
4	MALE	2	0.001
5	f	2	0.001
6	m	2	0.001
7	female	1	0.000
8	Male	1	0.000

Close

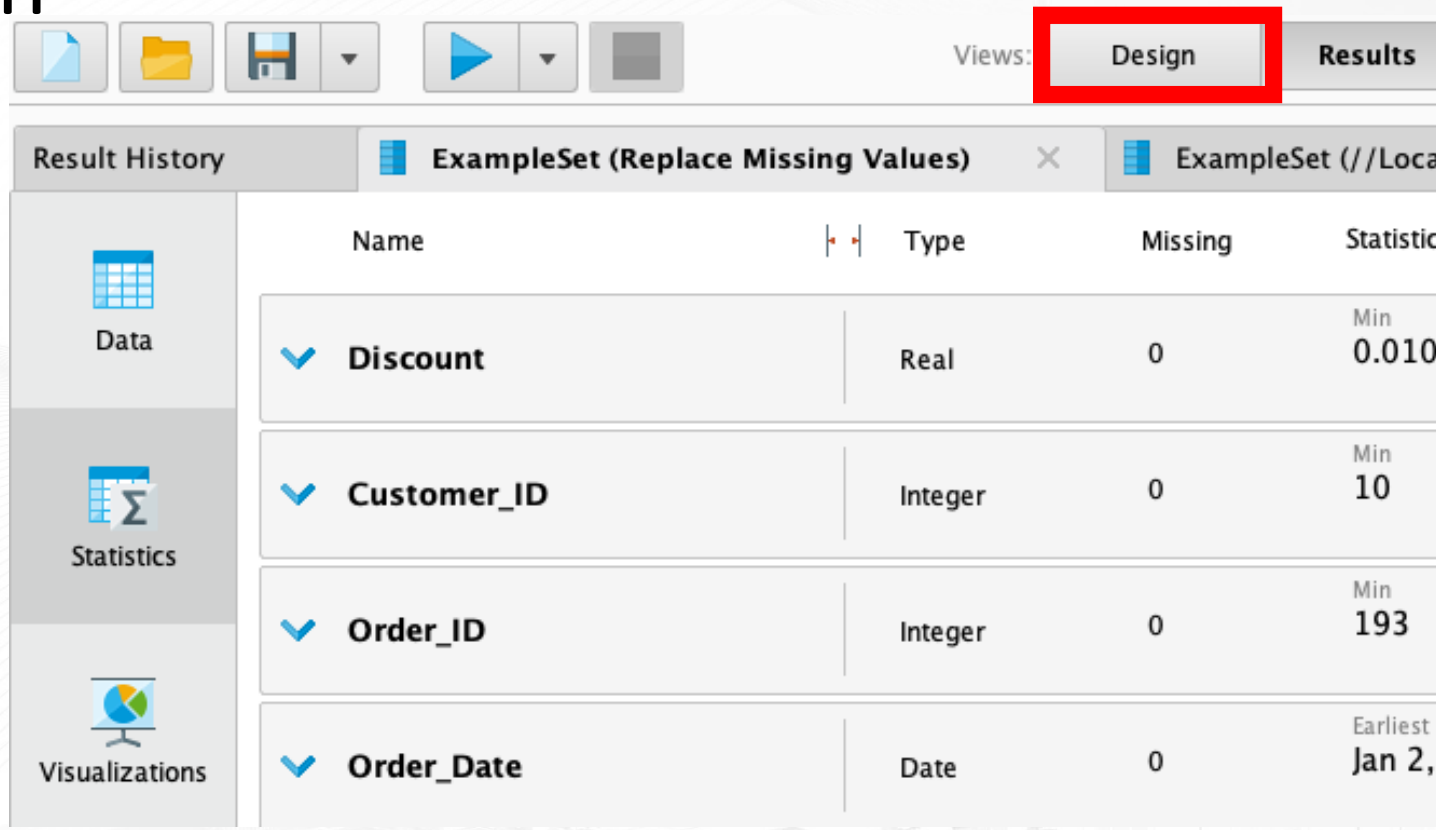
After

Index	Nominal value	Absolute count	Fraction
1	female	2022	0.892
2	male	230	0.102
3	FEMALE	7	0.003
4	MALE	2	0.001
5	f	2	0.001
6	m	2	0.001
7	Male	1	0.000

Close

Data Preparation

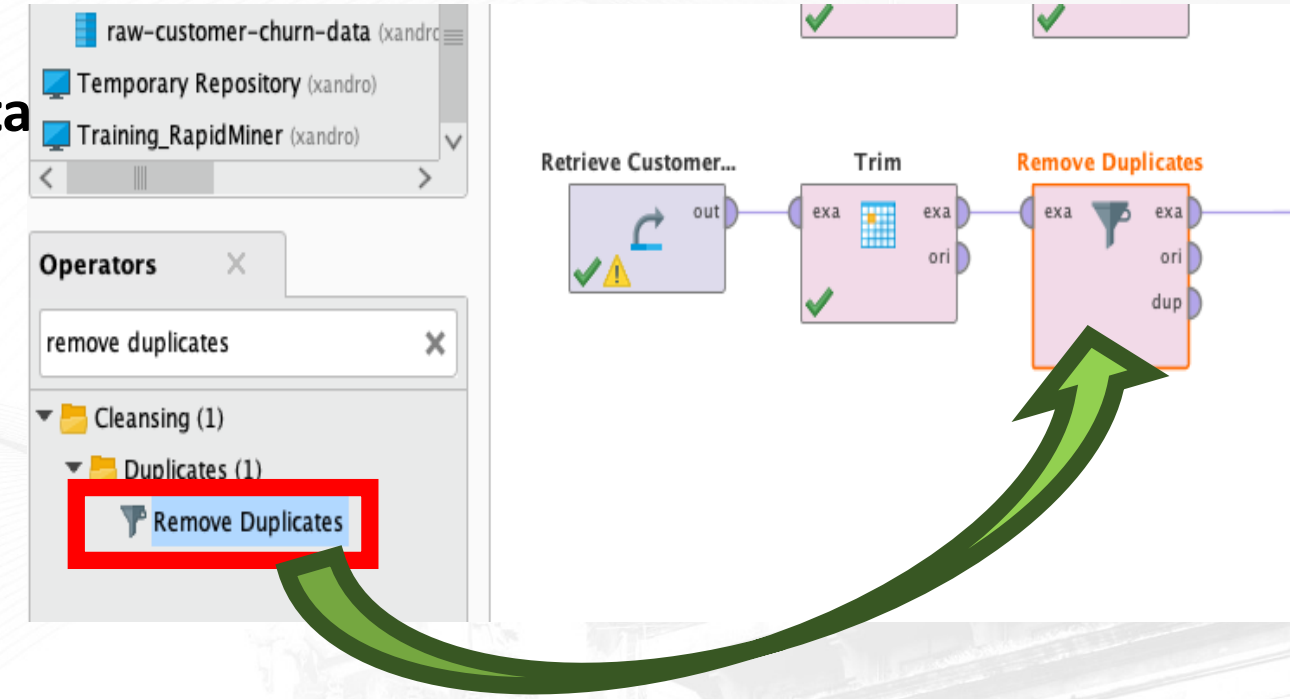
Go back to **Design** view.



Data Preparation

3. Dealing with miscoded data

- To remove “duplicates” in the encoding, use the **Remove Duplicates** operator.

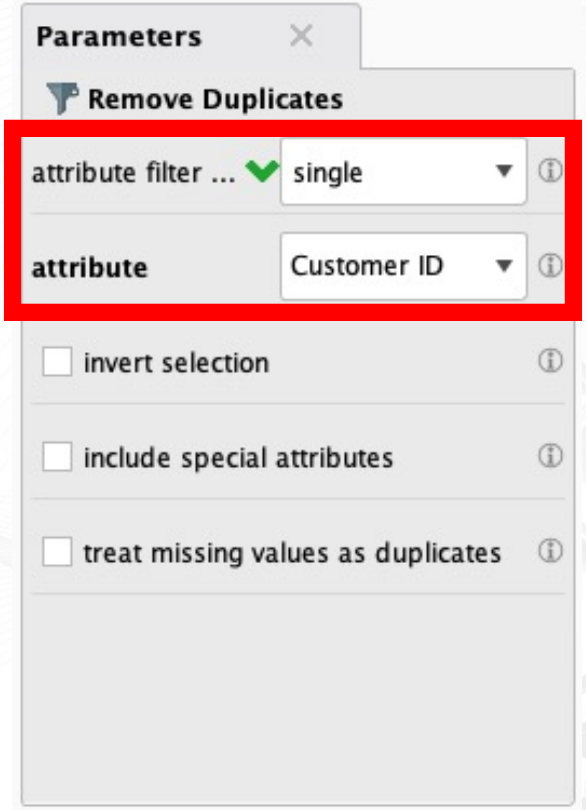


Data Preparation

3. Dealing with miscoded data

- Select single if trimming shall be applied to a single attribute.

Then click the **Play** button.



This will retain only one entry if duplicate Customer IDs have been found.

Data Preparation

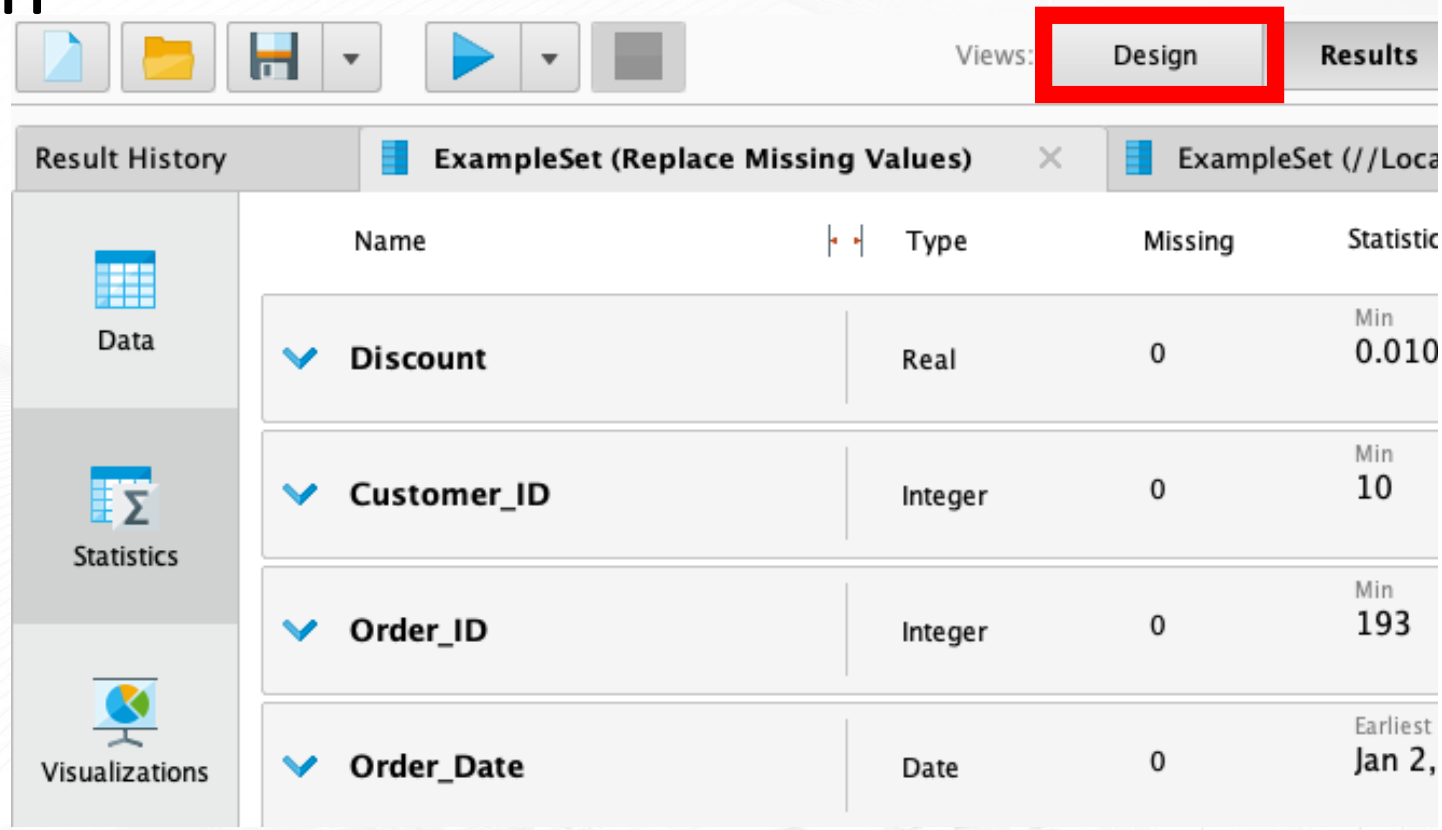
Still, 2267 cases are retained, indicating that there are no duplicates in Customer IDs.

Filter (2,267 / 2,267 examples):

Last Name	Z9_Latitude	Z9_Longitu...
SMITH	14.558	121.079
CARRERA	14.508	121.154
MACK	14.727	121.020
GAULDEN	14.607	120.974
WRIGHT	14.639	121.054
GONZALEZ	14.543	120.934
MAYBERRY	14.514	121.100

Data Preparation

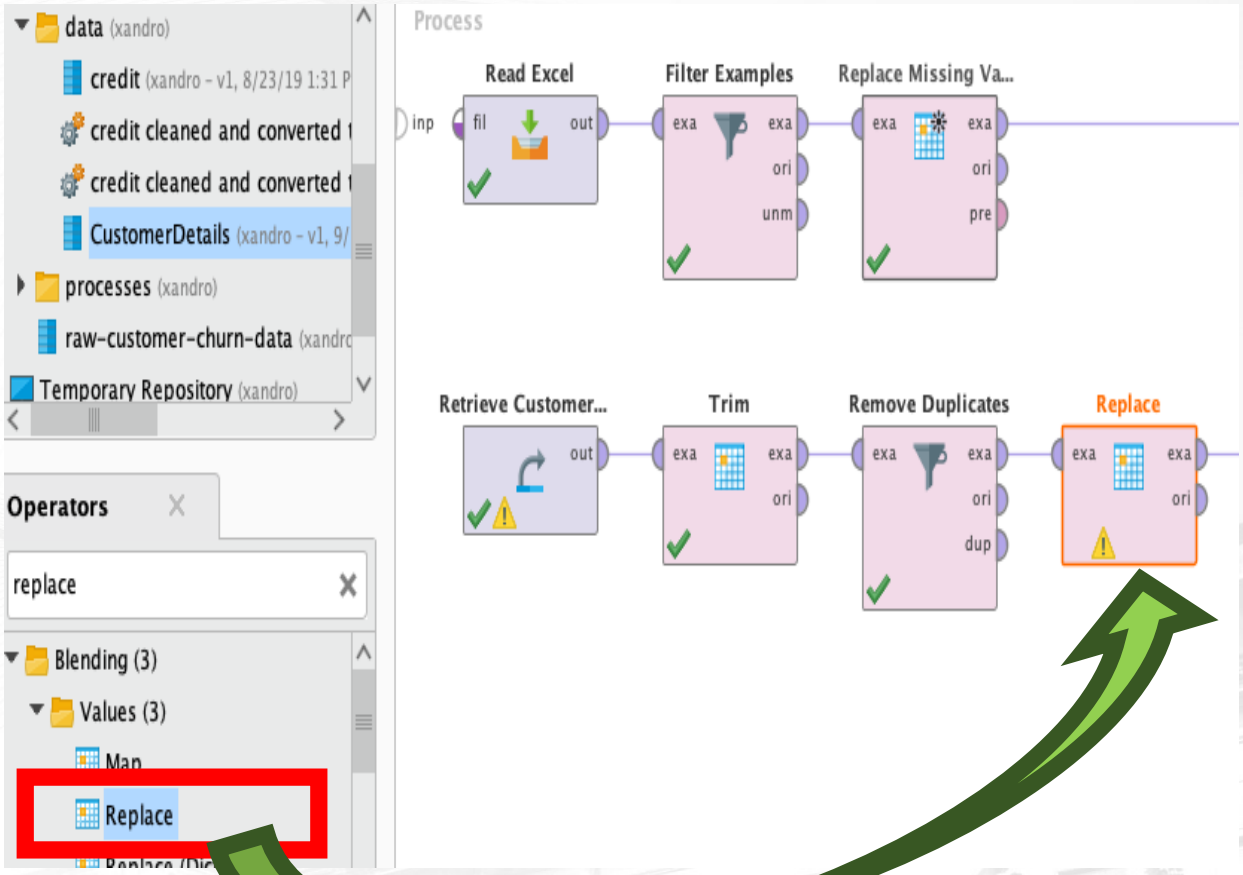
Go back to **Design** view.



Data Preparation

3. Dealing with miscoded data

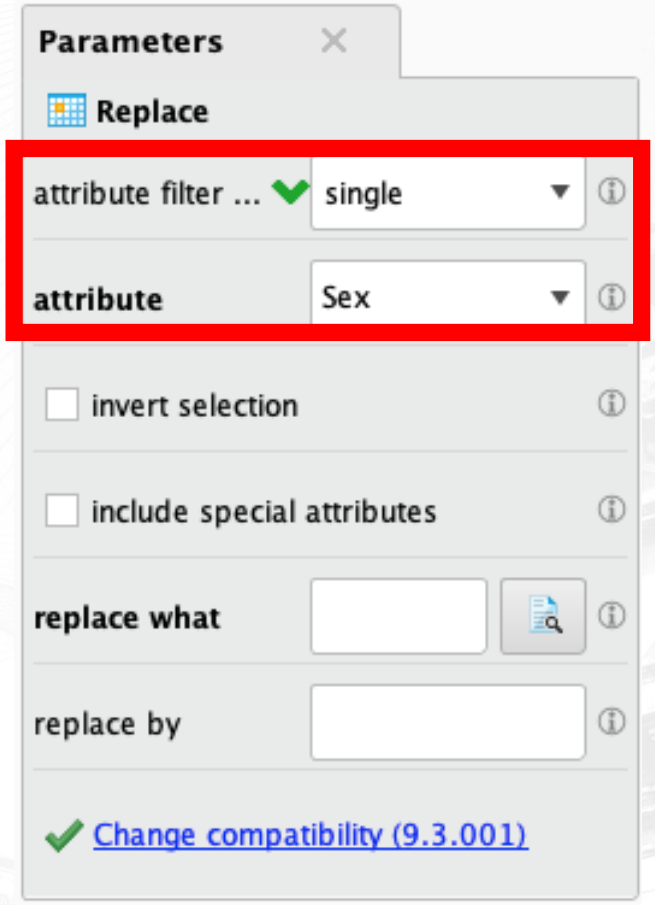
- To recode miscoded values, use the **REPLACE** operator.



Data Preparation

3. Dealing with miscoded data

Select single if replacing of values shall be applied to a single attribute.



Data Preparation

Temporarily,
female → girl

Index	Nominal value	Absolute count	Fraction
1	female	2022	0.892
2	male	230	0.102
3	FEMALE	7	0.003
4	MALE	2	0.001
5	f	2	0.001
6	m	2	0.001
7	Male	1	0.000

Close

Parameters

Replace

attribute filter ... single

attribute Sex

invert selection

include special attributes

replace what female

replace by girl

Change compatibility (9.3.001)

Data Preparation

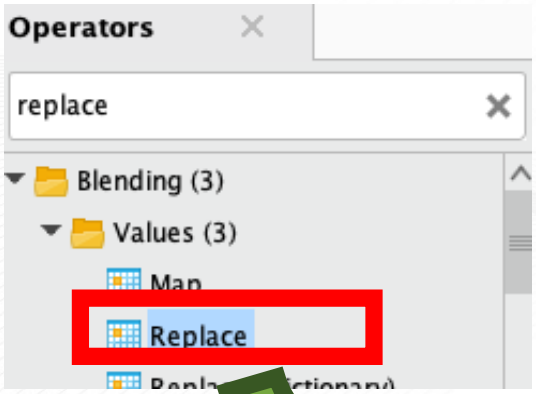
3. Dealing with miscoded data

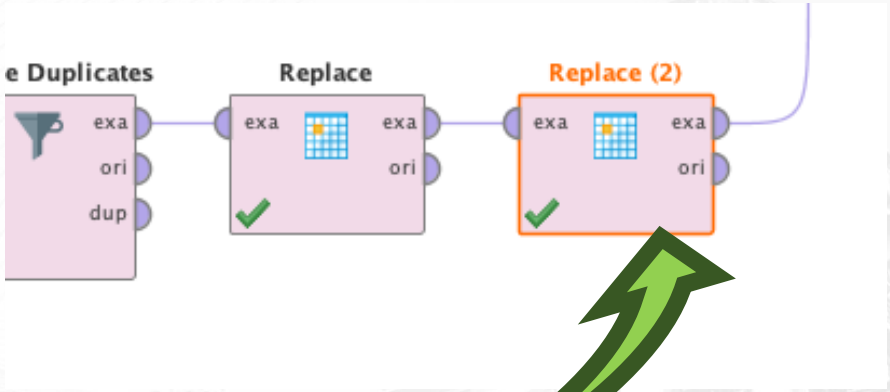
Select single if replacing of values shall be applied to a single attribute.

Data Preparation

3. Dealing with miscoded data

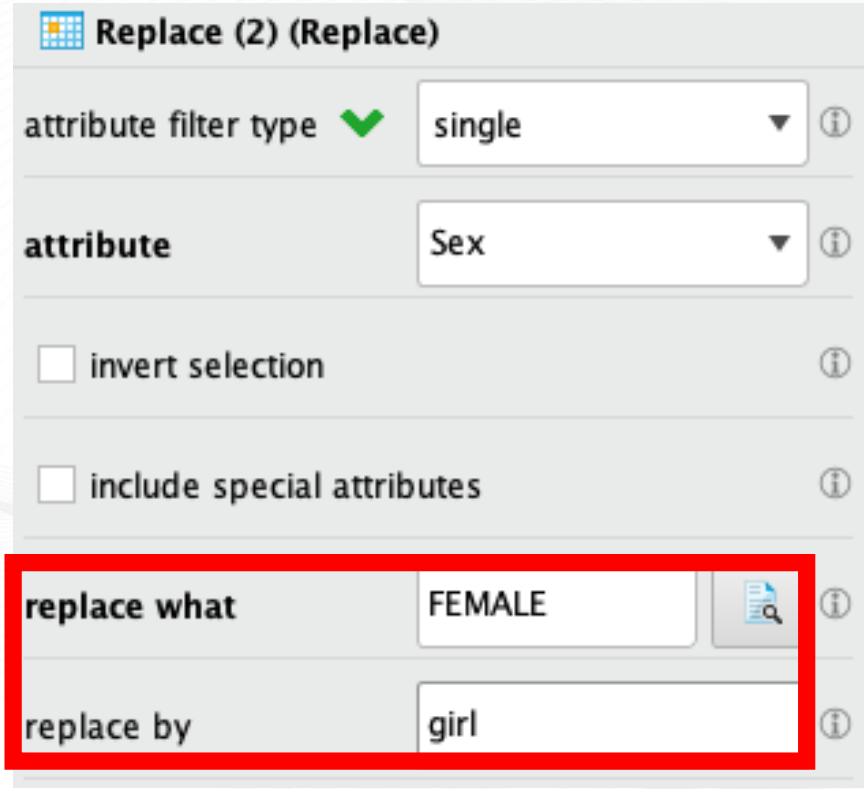
- Add another **REPLACE** operator,





Data Preparation

Replace FEMALE with girl.



Data Preparation

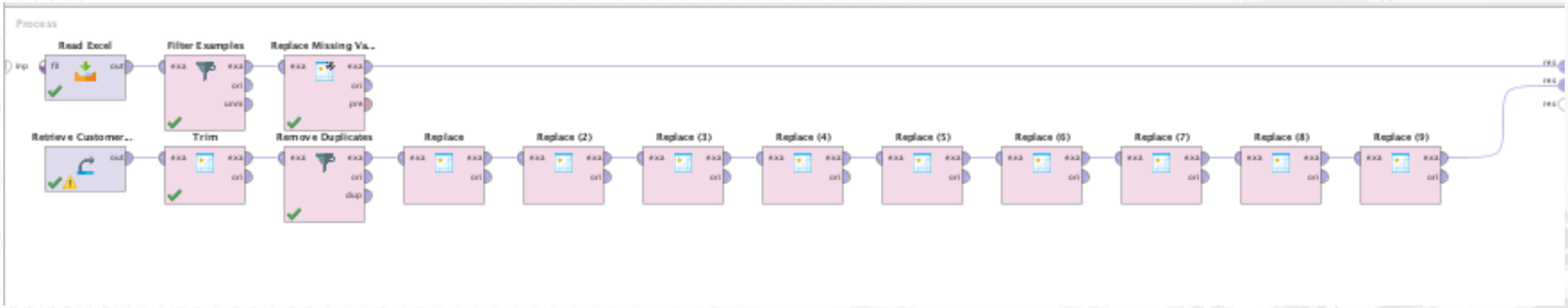
3. Dealing with miscoded data

- Add another **REPLACE** operator replacing male with boy;
- Add another **REPLACE** operator replacing m with boy;
- Add another **REPLACE** operator replacing f with girl;
- Add another **REPLACE** operator replacing MALE with boy;
- Add another **REPLACE** operator replacing Male with boy;

To replace back girl and boy to female and male, respectively,

- Add another **REPLACE** operator replacing girl with female;
- Add another **REPLACE** operator replacing boy with male.

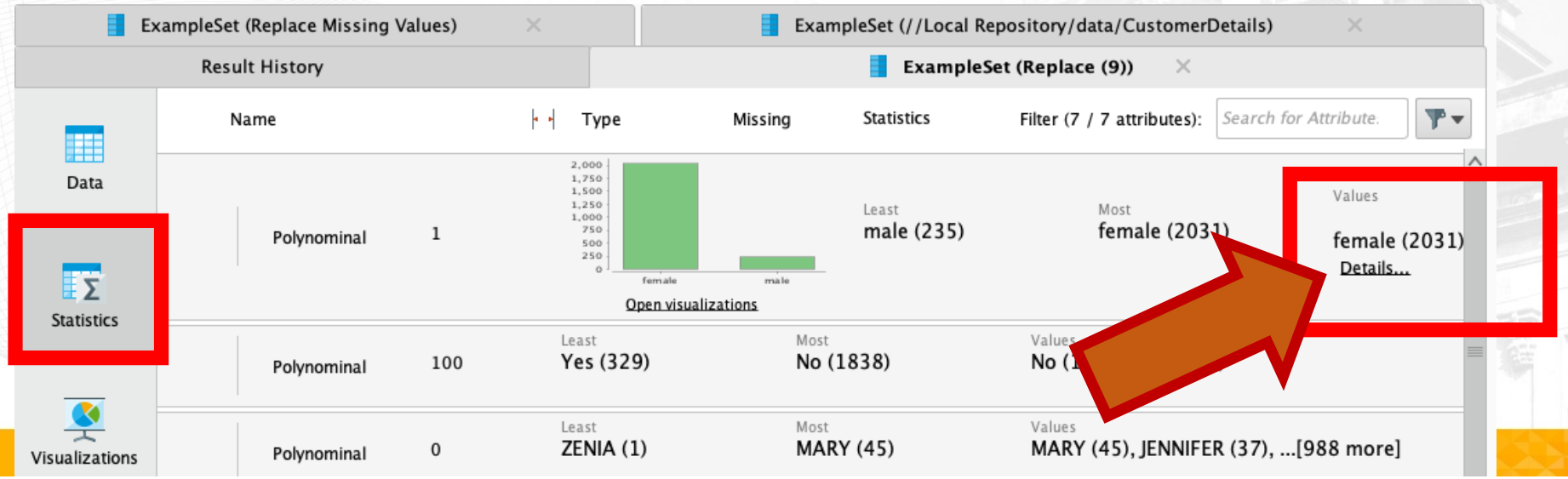
Data Preparation



Data Preparation

3. Dealing with miscoded data

- Click the **Play** button to verify the process.
- Once done, click Statistics, and on the Sex attribute, click Details…



Data Preparation

3. Dealing with miscoded data

- Click the **Play** button to verify the process.
- Once done, click Statistics, and on the Sex attribute, click Details…

Index	Nominal value	Absolute count	Fraction
1	female	2031	0.896
2	male	235	0.104

Data Preparation

You may impute missing values using **REPLACE MISSING VALUES** operator in other attributes.

Name	Type	Missing	Statistics	Filter (7 / 7 attributes):	Search for Attribute
Sex	Polynominal	1	Least: male (242)	Most: female (2024)	
Responder	Polynominal	100	Least: Yes (329)	Most: No (1838)	

UNIVERSITY OF SANTO TOMAS

Selecting and Setting Roles of Attributes

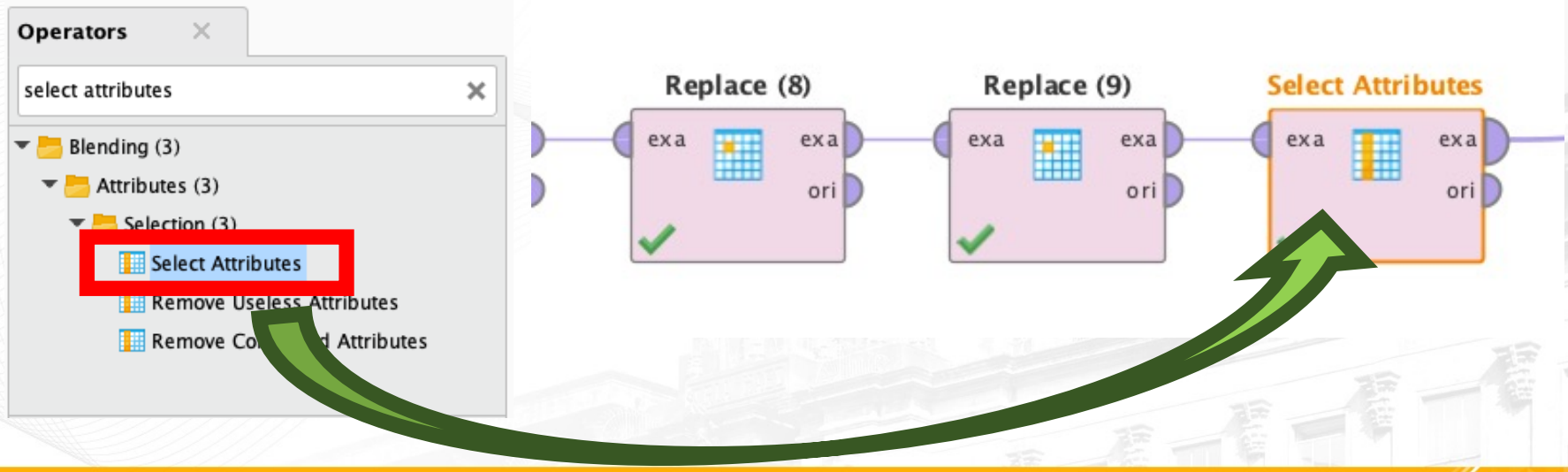
using

Altair® AI Studio

Data Preparation

4. Selecting the Attributes for Analysis

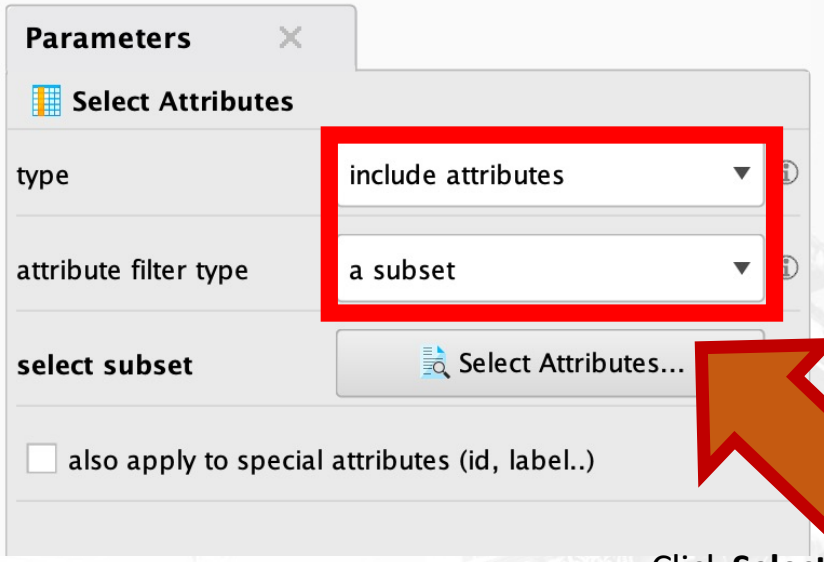
- Use the **Select Attributes** operator to select the attributes needed in the analysis.



Data Preparation

4. Selecting the Attributes for Analysis

- You can select all the attributes, single, and or a subset.

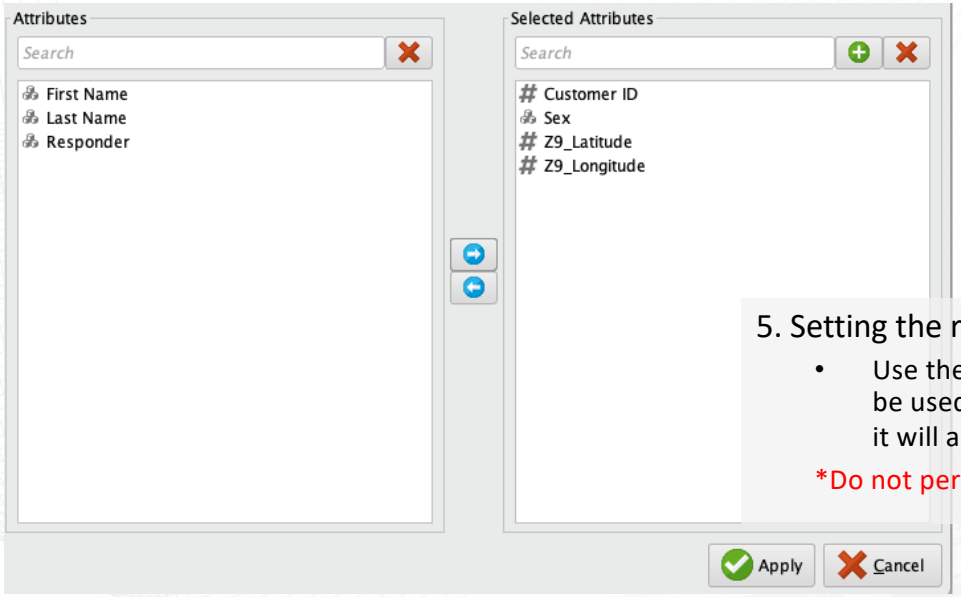


Click **Select Attributes...**

Data Preparation

4. Selecting the Attributes for Analysis

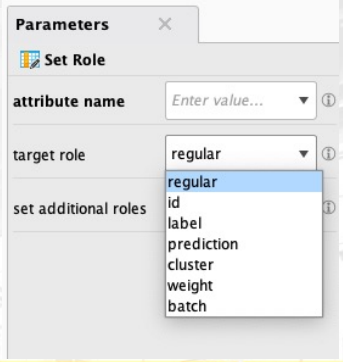
- Select the Attributes that will be used for analysis.



This will remove the names and Responder attribute in the final data.

5. Setting the role that an attribute to perform.
   - Use the **Set Role** operator to tag the attribute that will be used as the label (Target Variable) or any other role it will act in the analysis.

*Do not perform this yet on this topic.



UNIVERSITY OF SANTO TOMAS

Combining Data Sets

using

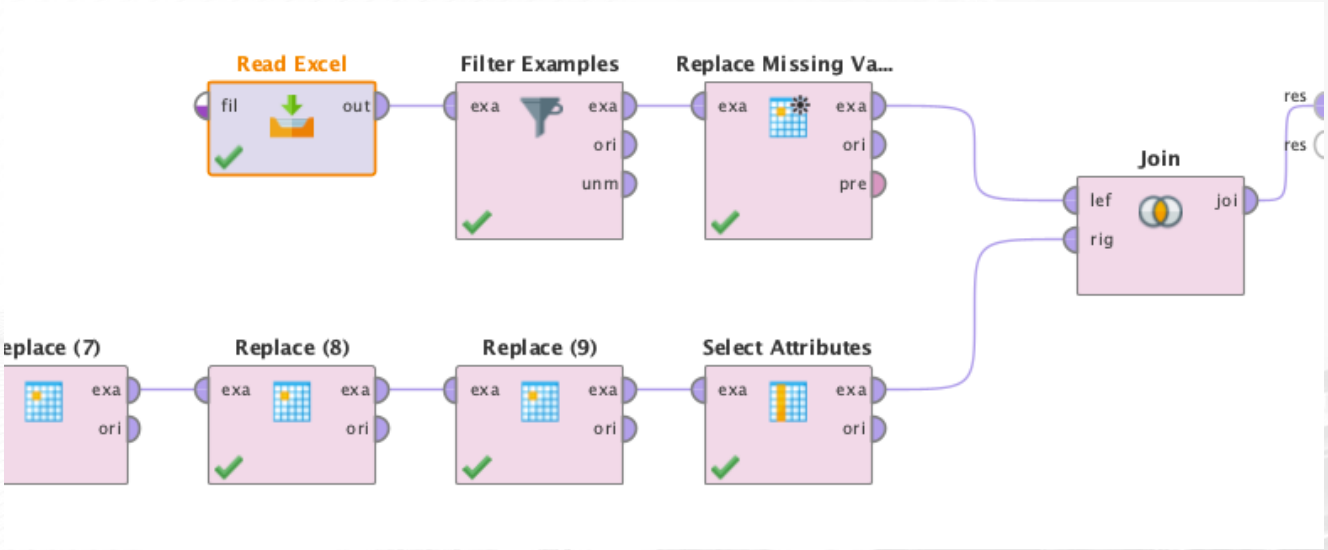
Altair® AI Studio

Data Preparation

6. Joining Two Data Sets

If two data sets are needed to be merged in order to make an analysis, use the **Join** operator.

- Connect the first data set or its result in the left node of the **Join** operator and the other data set at the right node.

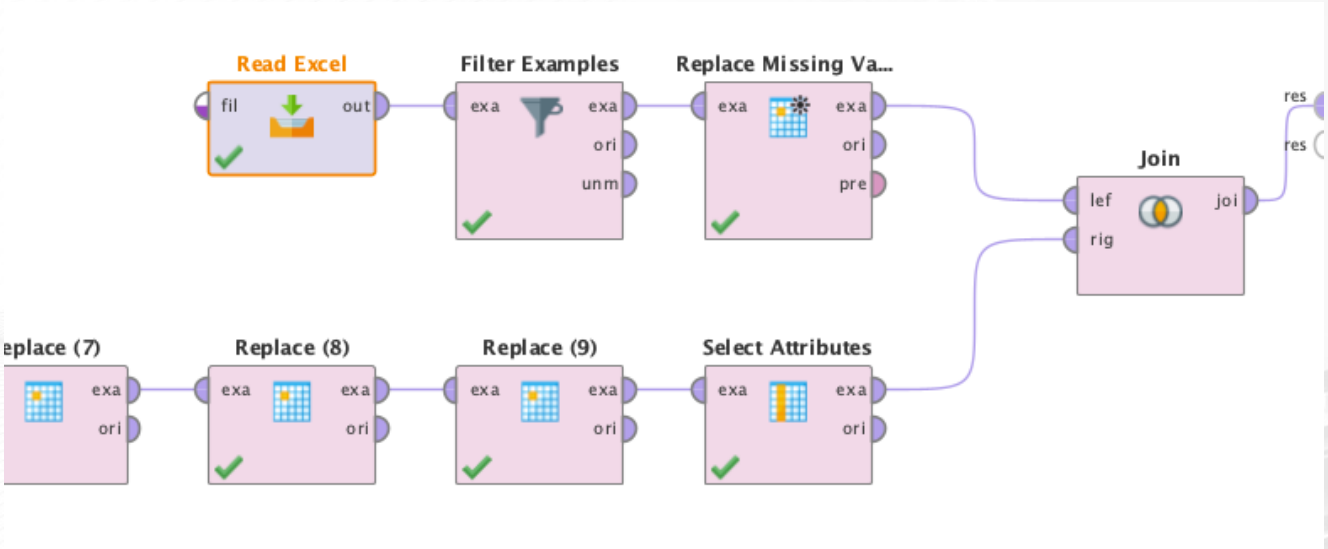


Data Preparation

6. Joining Two Data Sets

If two data sets are needed to be merged in order to make an analysis, use the **Join** operator.

- Connect the first data set or its result in the left node of the **Join** operator and the other data set at the right node.

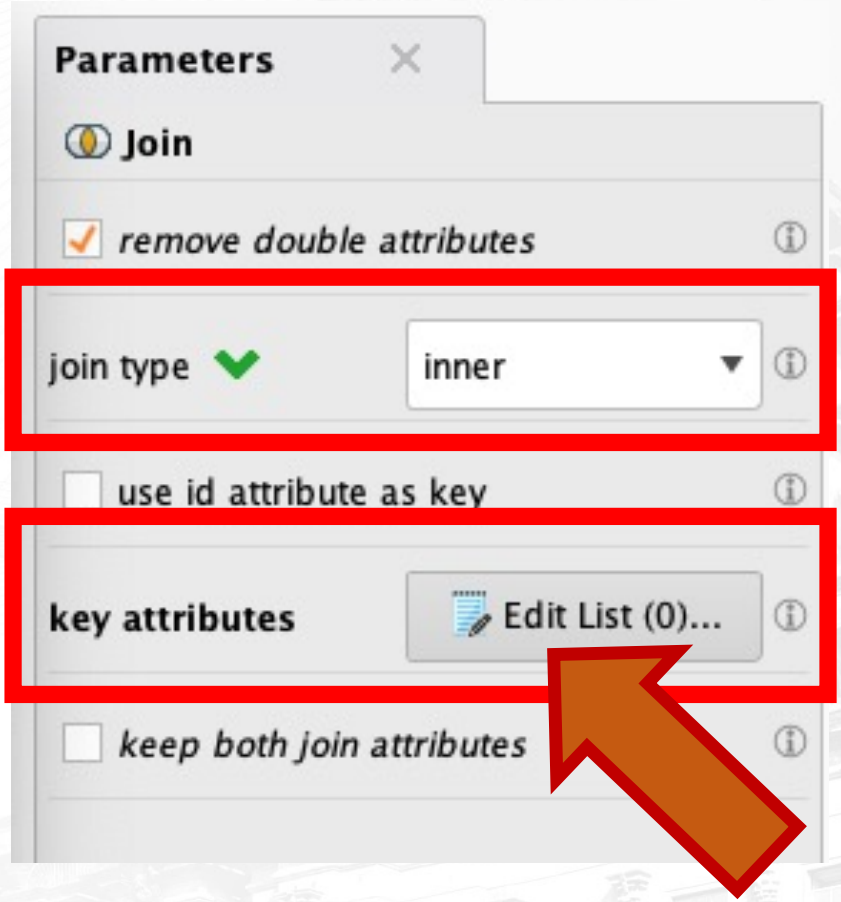


Data Preparation

6. Joining Two Data Sets

In the parameter tab, use **Inner** as join type.

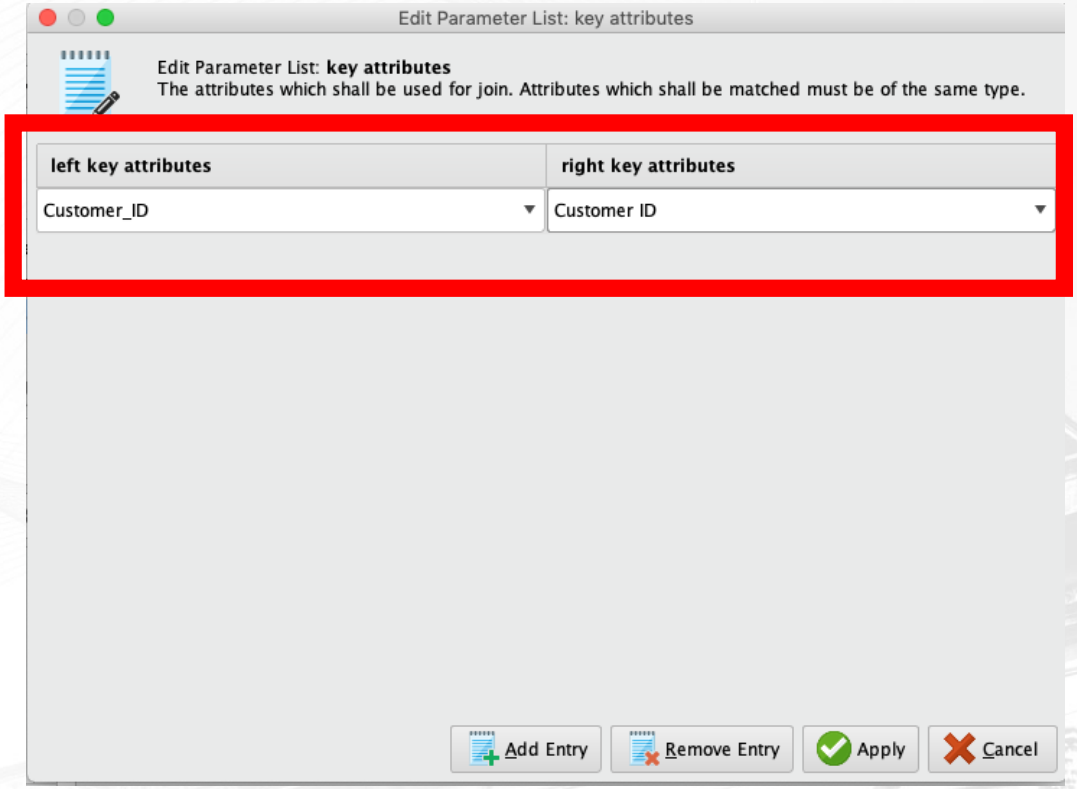
Click **Edit List**.



Data Preparation

6. Joining Two Data Sets

Select the attribute on the first data (left) and the second data (right) that will be used in matching the two data sets.



Data Preparation

6. Joining Two Data Sets

Select the attribute on the first data (left) and the second data (right) that will be used in matching the two data sets.

Click **Apply**, then click the **Play** button.

Open in Turbo Prep Auto Model

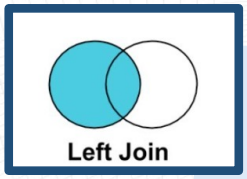
Filter (2,262 / 2,262 examples): all

Row No.	Discount	Customer_I...	Order_ID	Order_Date	Store Num...	Product_ID	Unit_Price	Quantity
1	0.090	101	88209	Apr 26, 2014	100	16474	145.450	13
2	0.090	102	16710	Apr 26, 2014	103	16474	145.450	53
3	0.100	129	86698	Nov 30, 2015	101	16124	111.030	43
4	0.090	180	90784	Nov 4, 2015	100	16238	291.730	21
5	0.070	180	90785	Dec 14, 2015	100	16566	140.980	21
6	0.080	1025	89013	Nov 9, 2014	108	16182	284.980	20
7	0.080	1027	89016	Dec 29, 2015	103	15956	449.990	20
8	0.090	1030	89622	Apr 22, 2014	100	15653	175.990	11
9	0.060	1043	87851	Sep 8, 2015	100	16083	270.970	12
10	0.060	1056	90215	Jan 15, 2013	106	16244	113.980	12
11	0.090	1060	58628	Mar 25, 2012	105	15872	138.750	23
12	0.060	1074	86424	Jan 27, 2014	107	16474	145.450	11
13	0.080	1106	45824	Dec 8, 2012	103	16253	140.810	81
14	0.090	1118	86773	Nov 15, 2013	102	16361	209.840	26

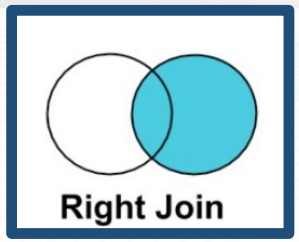
Joining two data sets

Data file 1		
ID	Sex	Amount Deposited
1	M	3000
2	M	4000
4	M	20000
5	F	8000
7	F	10000
8	F	40000

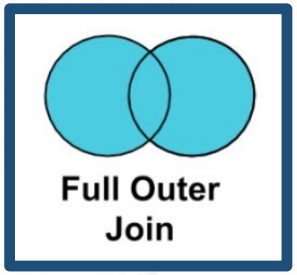
Data file 2		
ID	Age	Total Balance
1	25	15000
2	29	20000
3	30	35000
4	38	210000
6	51	80000
8	45	120000



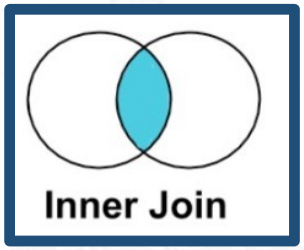
ID	Sex	Amount Deposited	Age	Total Balance
1	M	3000	25	15000
2	M	4000	29	20000
4	M	20000	38	210000
5	F	8000	-	-
7	F	10000	-	-
8	F	40000	45	120000



ID	Sex	Amount Deposited	Age	Total Balance
1	M	3000	25	15000
2	M	4000	29	20000
3	-	-	30	35000
4	M	20000	38	210000
6	-	-	51	80000
8	F	40000	45	120000



ID	Sex	Amount Deposited	Age	Total Balance
1	M	3000	25	15000
2	M	4000	29	20000
3	-	-	30	35000
4	M	20000	38	210000
5	F	8000	-	-
6	F	40000	51	80000
7	F	10000	-	-
8	F	40000	45	120000



ID	Sex	Amount Deposited	Age	Total Balance
1	M	3000	25	15000
2	M	4000	29	20000
4	M	20000	38	210000
8	F	40000	45	120000

Data Preparation

7. You may save your work using File >> **Save Process.**
8. You may also creating a new data set from the cleaned/pre-process data.
   - You may add the **Store** operator to create a RapidMiner data set from the process;
   - and use the **Write** *** operator to store the data in a format you want.

UNIVERSITY OF SANTO TOMAS

Data Preparation

using

Altair® AI Studio