

## Praktika 10 Extract

Step 1 Install EasyMorph (windows only)

Step 2 Perform Example 1 (See pdf in tool or in this document

Step 3 (Optional) Choose another example ( Include tool only)

# Example “2 spreadsheets merged”

A simple demo project that loads and merges two Excel spreadsheets:

1. “Companies.xlsx” -- a sample list of companies with metrics like revenue or number of workers
2. “Cities States Counties.xlsx” – a reference table with cities, counties and states

The two spreadsheets are merged by city and state. As a result the list of companies has two new columns “State full” and “County” appended from the reference table.

The result is exported into another spreadsheet named “Result.xlsx”.

## How to use this example

- Open the project – it will run all actions automatically (except the “Export to Excel” action, see note [1] below).
- Notice transformation steps (actions) shown as icons above each table. Actions transform tables, step-by-step. You can see the result of each action by clicking its action in the table.
- Click action icons in tables to explore action properties (shown in the sidebar on the left) and their results (shown in the data grid). Explore the properties of the “Merge another table” action. Notice that the dotted line from the “Cities States Counties.xlsx” table points right into the “Merge” action, showing a dependency.

The screenshot shows two windows in a data transformation tool. The top window, 'Cities States Counties.xlsx', contains a table with columns: City, State short, State full, and County. The bottom window, 'Companies.xlsx', contains a table with columns: company, state\_short, city, workers, revenue, industry, County, and State full. A dotted line connects the 'City' column of the top table to the 'city' column of the bottom table. Another dotted line connects the 'State full' column of the top table to the 'State full' column of the bottom table. Blue arrows point to the 'Import from Excel' icon above the top table, the 'Merge another table' icon above the bottom table, and the 'Export to Excel' icon above the bottom table.

City	State short	State full	County
El Segundo	CA	California	Los Angeles
Arlington	VA	Virginia	Arlington
Palo Alto	CA	California	Santa Clara
Maynard	MA	Massachusetts	Middlesex
Auburn	ME	Maine	Androscoggin
South San Fr...	CA	California	San Mateo
Scottsdale	AZ	Arizona	Maricopa
Portland	OR	Oregon	Washington
Wilmington	NC	North Carolina	New Hanover
Boulder	CO	Colorado	Boulder
Lenexa	KS	Kansas	Johnson

company	state_short	city	workers	revenue	industry	County	State full
Fuhu	CA	El Segundo	227	195640000	Consumer Pro...	Los Angeles	California
Quest Nutriti...	CA	El Segundo	191	82640563	Food & Bever...	Los Angeles	California
Reliant Asset...	VA	Arlington	145	85076502	Business Prod...	Arlington	Virginia
Superfish	CA	Palo Alto	62	35293000	Software	Santa Clara	California
Acacia Comm...	MA	Maynard	92	77652360	Telecommunica...	Middlesex	Massachusetts
Provider Pow...	ME	Auburn	50	137977203	Energy	Androscoggin	Maine
Crescendo Bi...	CA	South San Fr...	129	27308000	Health	San Mateo	California
Plexus World...	AZ	Scottsdale	130	159897088	Health	Maricopa	Arizona
Vacasa	OR	Portland	264	26263454	Travel & Hospit...	Washington	Oregon
Go Energies	NC	Wilmington	11	32851754	Energy	New Hanover	North Carolina
Minute Kev	CO	Boulder	113	15782039	Consumer Pro...	Boulder	Colorado

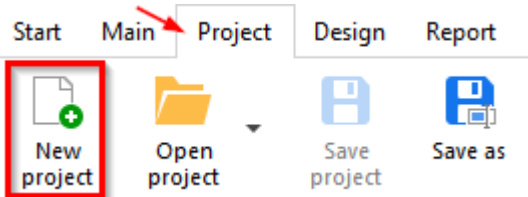
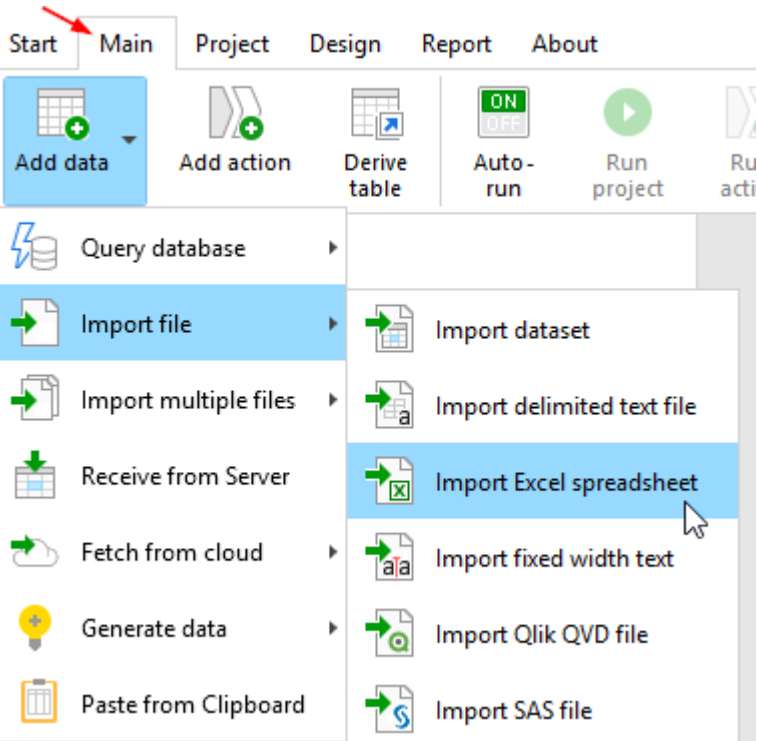
- Press the “Run project” button on the Main toolbar (or F5) to run the remaining uncalculated action which is the export action.

- Find “Result.xlsx” in the example folder. By default the example folder is C:\Users\<username>\AppData\Local\EasyMorph\Examples\2 spreadsheets merged\. Note that the AppData folder may be hidden depending on your Windows Explorer settings.
- Open “Result.xlsx” in Excel. See that the list of companies now has two new columns “State full” and “County” appended from the reference table.

## Notes

[1] Export actions can alter data in external files and systems, and therefore are not calculated automatically in order to avoid unnecessary or undesired modifications.

## Recreate the example step-by-step

What to do	How to do it
<b>Create a new EasyMorph project.</b>	<p>Press the “New project” button in the “Project” menu.</p> 
<b>Load spreadsheet “Cities States Counties.xlsx” into EasyMorph.</b>	<p>Press the “Add data” button in the “Main” menu. Select “Import Excel spreadsheet”.</p>  <p>By default the “Cities States Counties.xlsx” file is located in</p>

C:\Users\<username>\AppData\Local\EasyMorph\Examples\2  
spreadsheets merged\

where <username> is your Windows account.

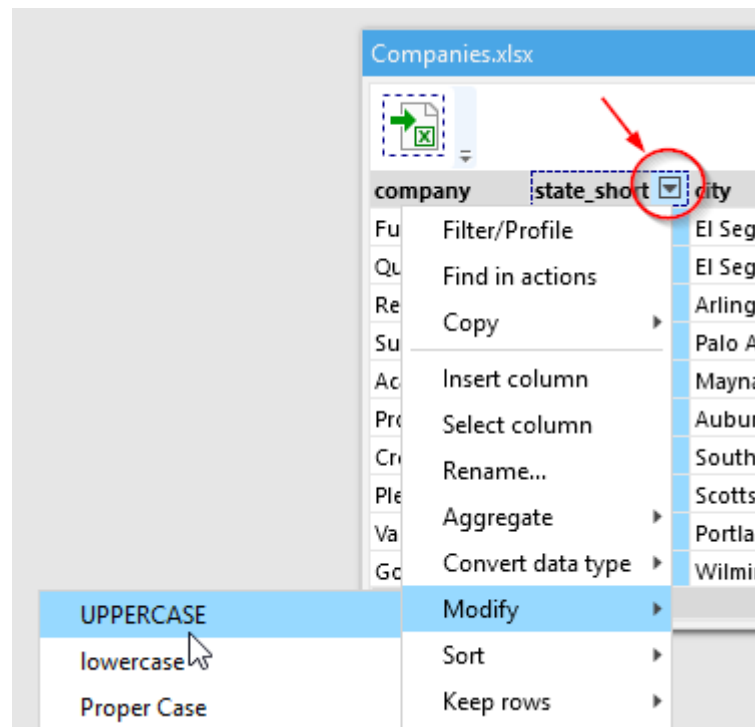
**Load “Companies.xlsx”  
into EasyMorph.**

File “Companies.xlsx” is also located in example folder. Load it as described in the previous step above.

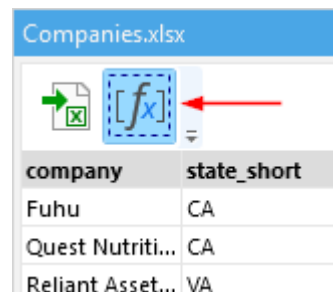
**In table “Companies.xlsx”  
make all values in column  
“state\_short” uppercase.**

The 2-letter state abbreviations in “Companies” are in the lower case, but in the “Cities States Counties” table they are in the uppercase. Because merging is case-sensitive, we need to bring all names to the same case.

Hover mouse over the header of column “state\_short”. Click the black arrow button to open the context menu, and select “Modify” then “UPPERCASE”



Notice that EasyMorph automatically created a new “Modify column” action:



with the following expression (you can see it in the action properties in the sidebar):

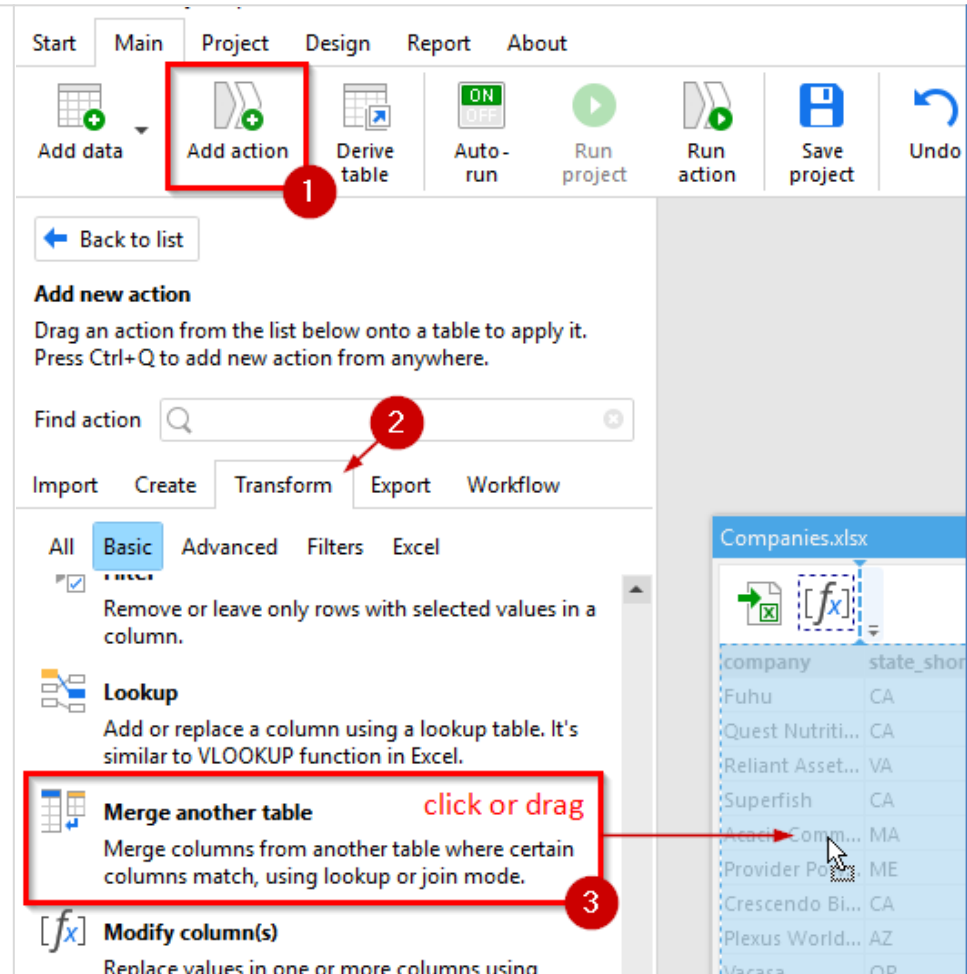
```
upper([state_short])
```

Also notice that the short state names are now in the upper case.

## Merge the two tables.

Merging in EasyMorph is done by applying the “Merge another table” action.

Click the “Add action” button in the “Main” menu to open the list of all available actions in EasyMorph. The “Merge” action is located in category “Transform”. Find it in the list of actions and click or drag onto table “Companies.xlsx”.



After the “Merge” action is added, configure it by setting up its properties as depicted below. If you don’t see the action properties in the sidebar then select the action first by clicking its icon in the table.

(scroll down to the next page)

**Merge another table**

Merge columns from another table where certain columns match, using lookup or join mode.  
[More](#)

Add columns from table Cities States Counties.xlsx

Where all these columns match

This table		"Cities States Count..."
city	to	City
state_short	to	State short

[+ Add more matching columns](#)

Merge mode:

- ☒ Lookup: for each row in this table get any one matching row from "Cities States Counti..." and ignore other matches
- ☐ Left join: for each row in this table add all matching rows from "Cities States Counti..."
- ☐ Full join: add matching rows from both tables and also not matching rows from each table

[Select all](#) [Unselect all](#)

- ☐ City
- ☒ County
- ☒ State full
- ☐ State short

When the "Merge" action is configured as depicted above, the "Companies.xlsx" table should have two new columns "County" and "State full" appended.

Companies.xlsx

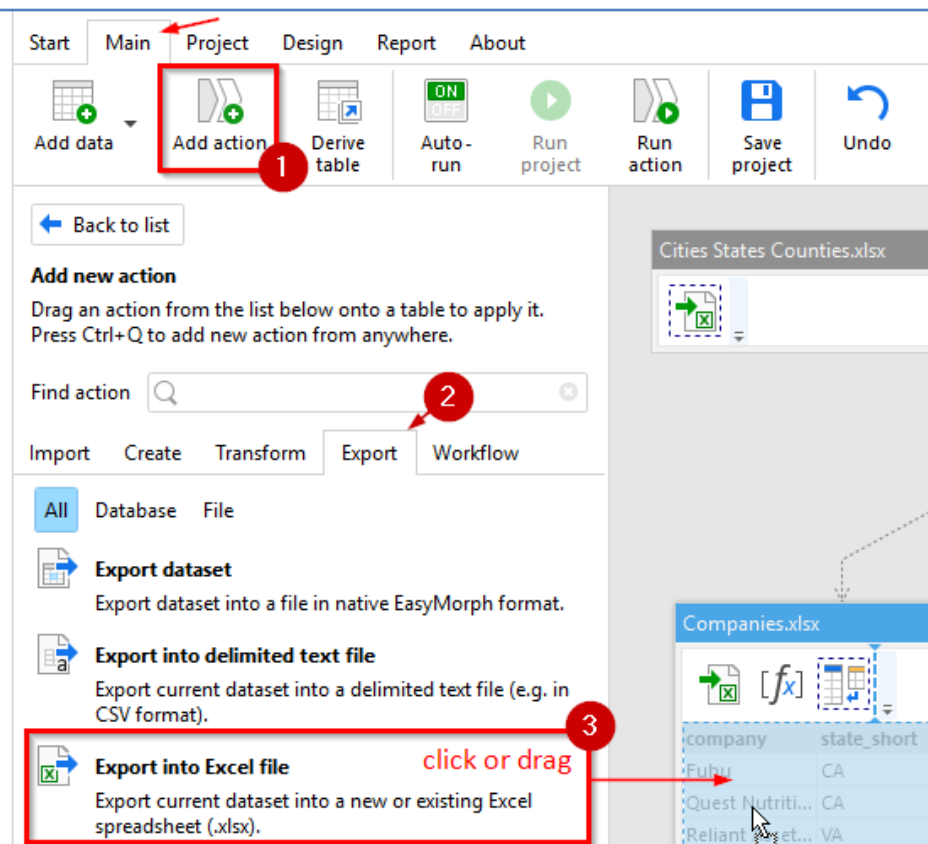
**Merged**

company	state_short	city	workers	revenue	industry	County	State full
Fuhu	CA	El Segundo	227	195640000	Consumer Pro...	Los Angeles	California
Quest Nutriti...	CA	El Segundo	191	82640563	Food & Bever...	Los Angeles	California
Reliant Asset...	VA	Arlington	145	85076502	Business Prod...	Arlington	Virginia
Superfish	CA	Palo Alto	62	35293000	Software	Santa Clara	California

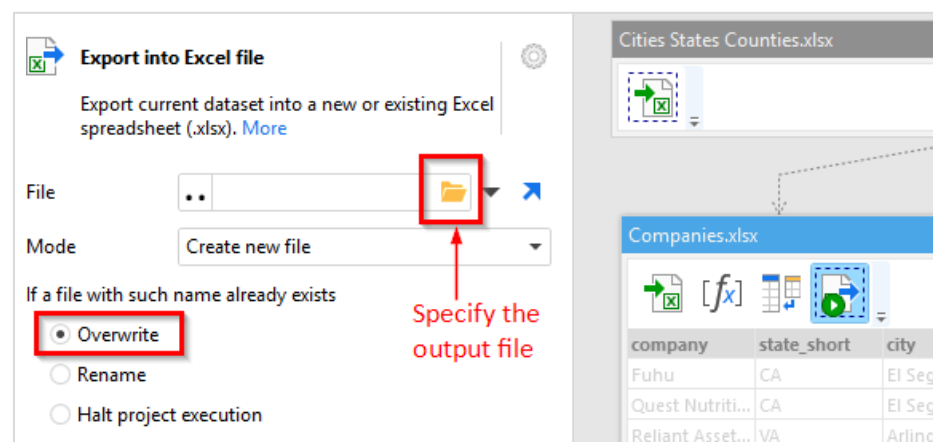
**Export the result into a new spreadsheet.**

Exporting in EasyMorph is done by export actions. To export a table into a spreadsheet insert the "Export to Excel" action after the "Merge" action created in the previous step described above.

To insert the "Export to Excel" action, press the "Add action" button, find the action in the "Export" category and click it or drag onto table "Companies".

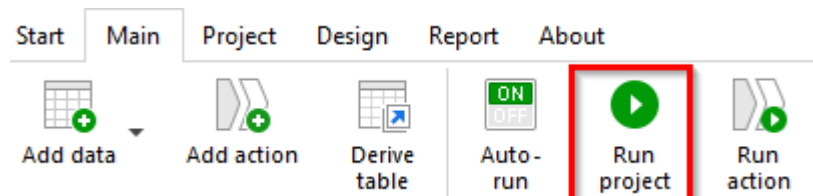


After the action has been added, configure its properties in the sidebar as depicted below. Click the browser icon to specify the output file name and location.



### Run the project.

The "Export to Excel" action is not executed automatically after it was created. Press the "Run project" button to run the project and execute the action.



### Open Result.xlsx

The simplest way to open the result file is to click the "Open file" button in the

"Export to Excel" action:

File

• • Result.xlsx

