

# Example “Iterations”

This example demonstrates the use of iterations in EasyMorph. Iterations is a powerful feature that allows arranging loops, processing lists of files, running projects for a range of dates, and re-using logic between different projects. To understand better how iterations work check out this article: [Tutorial – Loops and iterations](#).

Since for iterations there should be 2 projects (one project performs iterations and the other one is iterated) we took a project from another example (“Character count”). That project counts characters in first N lines of a text file. In this example we will call that project for 3 different text files in a loop, and append results into one table.

Here is what **Iterations.morph** does:

1. Generate a list of files in specified folder.
2. Generate a list with 3 numbers (these will be used for the number of lines to count).
3. Merge both lists to create a table with file names and numbers of lines to count in each file.
4. Iterate (run) **Character\_count.morph** passing file names and numbers of lines through its parameters {File name} and {Number of lines}. Append (concatenate) results into one table.

## How to use the example

- Open **Iterations.morph**. Here is what you should see:

The screenshot shows the EasyMorph interface with two windows. The top window, titled 'Numbers', contains a table with the following data:

RowNo	Number of lines
1	1
2	10
3	20


The bottom window, titled 'Files and Numbers', contains a table with the following data:

File name with full path	Number of lines	Result
D:\Documents\Projects\morph3\Examples\Iterations\Texts\beatles.txt	1	First row contains 45 characters.
D:\Documents\Projects\morph3\Examples\Iterations\Texts\queen.txt	10	First 10 rows contain 227 characters.
D:\Documents\Projects\morph3\Examples\Iterations\Texts\the rolling stones.txt	20	First 20 rows contain 612 characters.

A red arrow points to the 'Iterations' transformation icon in the 'Files and Numbers' window, which is labeled 'Transformation "Iterate"'.

- Click “Iterate” transformation and explore its properties:

**Iterate**  
Iterate through a list of values passing them to another EasyMorph project. [More](#)

Project to run:  

Iteration mode

☐ Iterate

☒ Iterate and append results

Result table:

Assign parameters of the project using these columns:

Parameter in Character_count		Column
File name	=	File name with full path
Number of lines	=	Number of lines

[Assign more parameters](#)

**Annotations:**

- Click to open the iterated project, if needed (points to the open project button)
- Iteration mode (points to the 'Iterate and append results' radio button)
- Parameters in the iterated project (points to the left column of the parameter mapping table)
- Columns in the iterating (i.e. current) project (points to the right column of the parameter mapping table)

A few remarks:

- An iterated project should already have one or more parameters created. Otherwise there would be no parameters to assign.
- When a result table is returned, one or more columns are appended. These columns contain parameter values that were used for each iteration. This is done for convenience so that one can see actual iteration parameters and iteration results in the same table.
- An iterated project can in turn iterate other projects.
- Transformation “Iterate external application” can similarly run external applications in a loop.