QuixSync is a synchronization-tool.  
You must think “There are so many others working sync tools, why they make another one more?”

The answer of this question is simple:

The most other modern programs (e.g. from big companies) run in a cloud or need an internet connection. And maybe they will cost money and you don’t know what the program does in the background.

You would like to say me, that there are alternatives in the Open Source segment. And I would answer “We know.” But in single cases these programs are overloaded with unnecessary functions (for us).

Therefore, we thought, we make our own sync tool. The reasons are obvious why those programs are extremely useful:

There are students with notebooks for the university, which would like work further on a Desktop-PC at home.

Furthermore, there lecturers, which would like to update their directories for the students, without thinking about which specific file is no longer up-to-date.

Also let see us, what we have done the last 2 months.

Basically, QuixSync is a program, which can synchronize two directories.

For this purpose, it was divided in 3 steps:

1. Indexing

2. Comparing

3. Syncing

I would like to describe short each single task for you:

1. Indexing runs through every directory and save the included files.

We decided us to use Nested Sets to build up the file tree, because it is the simplest way to get a tree structure. And with a tree structure we can skip on comparing certain folders with their included files and folders, which have no changing last modified dates. This will increase the performance extremely.

2. The way, how we compare the two tress is too complex to explain it completely today.

But I can say on the end of this process we have a file, in which is two arrays declared which contain the file path of those which must be copied or which must be deleted target directory.

3. This file will be used by the synchronization. Here we will iterate about the two arrays and execute the appropriate command.