# Optimizing performance

## Baseline for the optimization

For a baseline to compare after the improvements the time was measured bevor the improvements. The conditions for the measurements were, that the WLAN was turned off, unimportant tasks on the computer were closed and the tasks was set to the highest possible priority (real time).

Baseline measurements:

|  |  |
| --- | --- |
| Nr.: | Measurement [ms]: |
| 1 | 16.82 |
| 2 | 13.66 |
| 3 | 08.21 |
| 4 | 13.55 |
| 5 | 12.81 |
| 6 | 13.40 |
| 7 | 09.66 |
| 8 | 14.49 |
| 9 | 08.80 |
| 10 | 08.72 |

The first measurement is always bigger than the other because the CSV-file has to be created and opened before the customer can be saved. The main components of the measurements are two methods in the FrmMainWindow, WriteCustomerDB() and UpdateView().

## Improvements

At first instead of the WriteCustomerDB() and UpdateView() methods the new methods WriteNewCustomerDB() and AddNewCustomerToView() are used. The advantages of this methods are that just the new customer is saved in the CSV-file und written to the Listbox.   
Furthermore, all foreach-loops were changed to for-loops and class methods for validation are called just once and the result is saved on a variable.

## Results

|  |  |
| --- | --- |
| Nr.: | Measurement [ms]: |
| 1 | 15.58 |
| 2 | 06.37 |
| 3 | 05.07 |
| 4 | 06.73 |
| 5 | 05.54 |
| 6 | 04.86 |
| 7 | 04.24 |
| 8 | 05.14 |
| 9 | 04.77 |
| 10 | 04.37 |

The measurements after the improvements show the effectiveness of these, on average the saving time is 5ms faster than before.