1. **How to compile**
2. The project was created in C++ in Visual Studio 2017 (you can get it free for academic purposes).
3. To compile it successfully, please run the compilation on *Release* and on *x64*
4. The main project is EATester (use the “Set as startup project” option)
5. **How to execute**
6. The examples of how to run considered methods by hand are given in “run me yourself” folder.
7. To run experiments, you need to:

* Put *EATester.exe*, *zobristkey* and settings file in one folder.
* To run an experiment, you need the following settings files:
  + The main settings file (for instance, in *0\_01max* folder, the settings files are: *settings\_01max\_25\_mogomea.txt*, *settings\_01max\_50\_mop3ok.txt*, *settings\_01max\_moead\_400pop\_100.txt*, *settings\_01max\_nsga2\_400pop\_25.txt*)
  + Problem definition file
    - Sometimes you will need the additional file with a problem definition. (for instance, in *0\_01max* folder, the files with problems definitions are: *dec\_concat\_25.txt*, *dec\_concat\_50.txt*, *dec\_concat\_100.txt*, *dec\_concat\_200.txt*, *dec\_concat\_400.txt*).
    - The problem definition files are directly referenced in the settings files (for instance, in *settings\_01max\_moead\_400pop\_100.txt* the problem definition file is referenced in the line: *dec\_concat\_100.txt\\evaluation\_config\_file\_path*).
    - Sometimes you will not need any problem definition file. For instance, in *1\_LOTZ* folder the problem definitions are directly sewed in the settings files.
  + The entry file *X\_entry.txt* where x is the entry file number. The entry file shall contain the name of the settings file (for instance, in *0\_01max* folder, the entry file *1\_entry.txt* contains the following text: “settings\_01max\_50\_mop3ok.txt”).
* Once you have all the necessary files you run your command-prompt console (you can type *cmd* to your system search box) go to the folder containing *EATester.exe* and the settings files. Then, just type:
  + “**EATester.exe 0**” to run the experiment using the *0\_entry.txt* entry file
  + “**EATester.exe 1**” to run the experiment using the *1\_entry.txt* entry file
  + and so on…
* The program will produce the following files:
  + The detailed log file using the name pointed in the settings file. For instance, running “**EATester.exe 0**” in the *0\_01max* folder will use *0\_entry.txt* file that uses *settings\_01max\_25\_mogomea.txt* settings file. The first line of *settings\_01max\_25\_mogomea.txt* (*\_mogomea\_01max\_25\\destination\_file*) defines that the results file name should start with *\_mogomea\_01max\_25*. Therefore, subsequent executions of “**EATester.exe 0**” will create *\_mogomea\_01max\_25\_000.txt*, *\_mogomea\_01max\_25\_001.txt*, *\_mogomea\_01max\_25\_002.txt* and so on.
  + The pareto front file named *Ypf.txt*, where *Y* is the name of the detailed log file. For instance, for the log file *\_mogomea\_01max\_25\_002.txt*, the Pareto front file will be *\_mogomea\_01max\_25\_002.txtpf.txt*.
  + The other files will be the *X\_log.txt* file and the *X\_out.txt* file, where X is the entry file number (for instance, for *1\_entry.txt,* the program will create *1\_log.txt* and *1\_out.txt* files). These files are not important for the user of these source codes. They are used by our experiment supervisor program, which is not a part of this pack.

1. Using the run-me-yourself settings files you can execute any experiment for any of the four algorithms: MOEA/D, MO-P3, MO-GOMEA and NSGA-II. The complete settings files that were employed in our experiments are given in *PaintProblemSettings* folder (the settings for single- and many-halls experiments are separated).

Thank you for downloading our source codes and paying attention for our research. In case of any problem, please do not hesitate to contact us using the following email [michal.przewozniczek@pwr.edu.pl](mailto:michal.przewozniczek@pwr.edu.pl).

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