



## Best Practice Exercises

8 July 2024

### Trainer for Mental Arithmetic [basic]

The file `trainer.py` contains the code for a simple program to train mental arithmetic. Download the file and run it to understand what it does.

The source code violates many good practices and should clearly be improved. Apply the suggestions from the Best Practice presentation:

- improve the names of variables, functions, ...
- improve the formatting
- try `pylint`/`flake8`/`black`/...
- add docstrings
- fix the import
- reduce duplication
- use an exception to handle bad input
- add type hints (and run `mypy`)

Before changing the code, create a git repository and commit the file. Then remember to create a new commit after each major improvement. This is especially useful to see the effect of tools like `black`.

*Off Topic:* Once you are happy with the code, you might also try to improve the distribution of the calculations presented. The current code produces a large amount of zero summands.