EE2T21 bonus assignment 1

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### The assignment:

The goal of the assignment is to simulate the S&W protocol and to do several experiments with this simulation. In order to do this we have chosen to use python as our programming language, due to the familiarity and easy of use.

### How to run the program:

The program is configured to run all 3 experiments, as described in the assignment, at once. Therefor there is no configuration needed on the user side. However, we have added the possibility to manually define P1, P2 and the input list of integers.

One can use *python(3) SnW.py*  in order to run all experiments at once.

To run a custom experiment, one can use the following command: *python(3) SnW.py*  *<infile> <p1> <p2>*, in which *<infile>* refers to the file path of the input data file, and *<p1>* and *<p2>* refer to the probabilities p1 and p2, respectively.

The input data file is a *.txt*  file, in which each new row is treated as a new integer. An example of this can be found in the code repository.

### Experiment 1

In experiment one both P1 and P2 were zero. This means that we had an errorless data transmission. Therefor we expect a linear relationship between the number of integers to be transmitted and the number of transmissions. This is also what we found, as can be seen in the following graphChart, line chart

Description automatically generated