

**The task:**

1. Implement a small library that allows you to write and read files of fixed-width format. The file structure is described in the table below.

2. Write an application with a CLI interface that provides the following possibilities:

- get the value of any field
- change field values
- add transactions (for transaction definition - read the second page)

**Nice to have:**

- A possibility to close some fields for changes
- Validation of the file structure
- Production-like error handling mechanism
- Properly implemented logging according to python logging cookbook
- Tests

**General requirements:**

- It is important how you organize the project.
- The code must be first - readable, second - reliable, and third - fast. In that exact order of importance.
- Pay attention to the type of data used to present financial information.

Code should be provided in an archive, uploaded to the google drive. The link should be shared with interviewers.

The file has a fixed width structure and consists of records of different types. Length of each line is 120 symbols. Each record is delimited by a line ending symbol, which should be OS-agnostic. Unused space is padded at the left by whitespaces.

Schematized structure of the file (all lines are placed in the strict order):

- 1 Header (mandatory)
- 2 Transaction (can be repeated from 1 to 20000 times)
- 3 Footer (mandatory)

Description of fields:

| Position<br>(from-to)                               | Data type | Field name      | Extra info   |
|---|-----------|-----------------|--|
| Header  |           |                 |  |
| 1-2   | string    | Field ID        | fixed value "01"   |
| 3-30  | string    | Name            |  |
| 31-60   | string    | Surname         |  |
| 61-90   | string    | Patronymic      |  |
| 91-120  | string    | Address         |  |
| Transaction (can be repeated from 1 to 20000 times) |           |                 |  |
| 1-2   | string    | Field ID        | fixed value "02"   |
| 3-8   | string    | Counter         | format 000001 - 020000 (should be incremented automatically)                                       |
| 9-20  | number    | Amount          | format 000000002000 (two last digits are decimal part, contains leading zeros to reach max length) |
| 21-23   | string    | Currency        | fixed list of possible values  |
| 24-120  | string    | Reserved        | Spaces   |
| Footer  |           |                 |  |
| 1-2   | string    | Field ID        | fixed value 03   |
| 3-8   | number    | Total Counter - | format 000001 - 020000 (overall number of transactions in the file)                                |
| 9-20  | number    | Control sum     | format 000000002000, total amount of all transactions in the file                                  |
| 21-120  | string    | Reserved        | Spaces   |