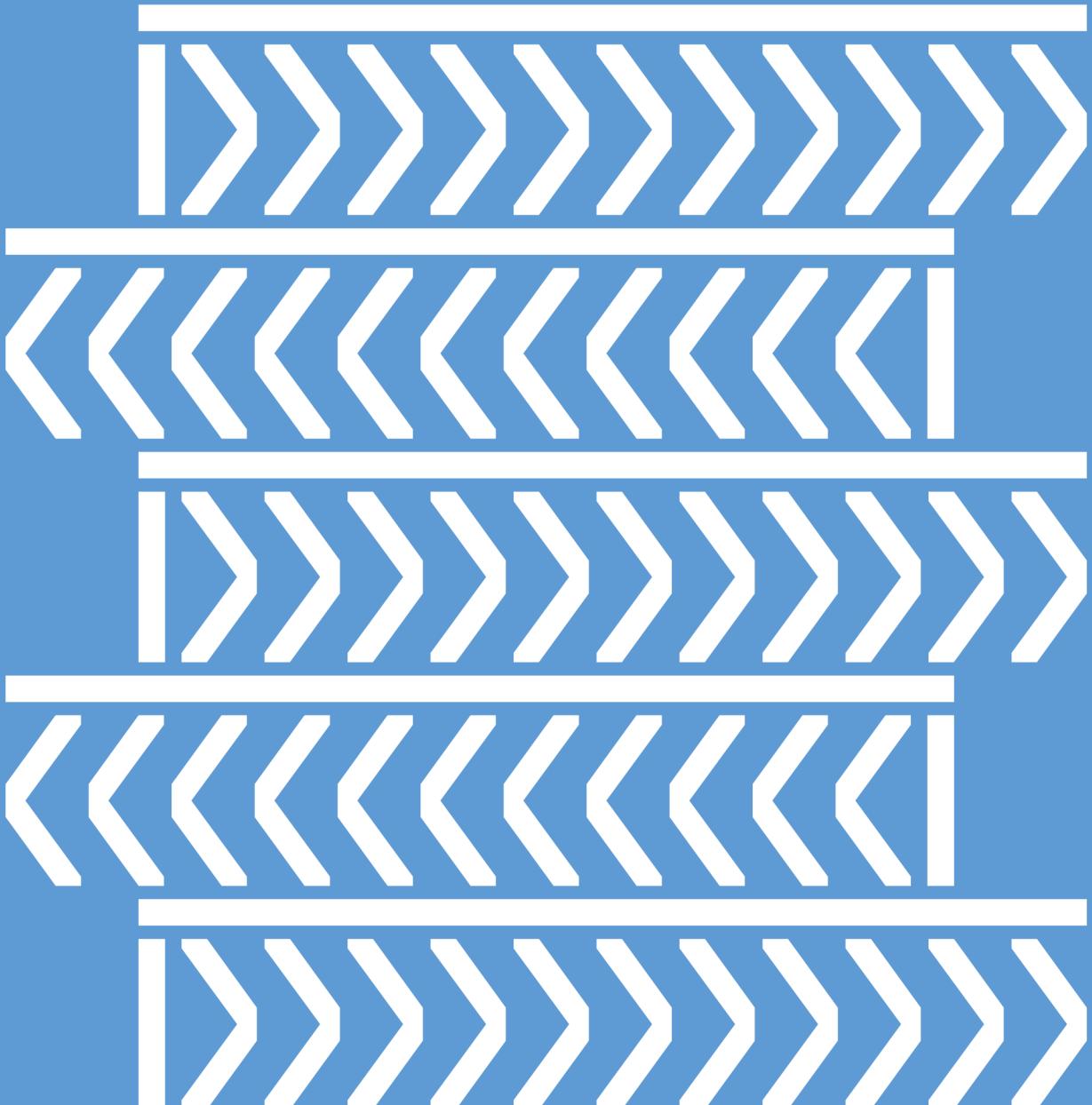




Backend developer

Assignment



Assignment

We have formulated a three-part assignment to see how you code and think about problems, related to:

- Python coding
- RESTful APIs (separate file)
- DBs / SQL (separate file)

The time limit for this assignment is **3 hours**. With this in mind, try not to get stuck on details.

To submit your answers, collect all deliverables into a **zip file** and send it to us over email.

Coding

We are running a store which sells three kinds of products: books, software licenses and music albums (CD's). It can be assumed that each of the products has the following properties:

A book has the following properties:

- ID
- Title
- Author
- Number of pages
- Price in euros
- Weight in kilograms

A music album has the following properties:

- ID
- Artist
- Title
- Number of tracks
- Price in euros
- Weight in kilograms

A software license has the following properties:

- ID
- Price in euros
- Name of the software license

You are asked to supply the code for a simple Python model of this store. In this model you should be able to create a shopping cart and fill it with products, or remove them. We should be able to easily calculate the price of all the items in the shopping cart and the weight of all the items.

Optional:

We want to develop a recommendation system, based on a number of measurements. One of them is the order in which products are added in the cart. To measure that, write a function which takes a list of shopping carts as input and calculates for each product, the most usual product after which it is added, and the number of occurrences.

For example, in the below scenario:

- B is added after A
- B is added after A
- C is added after A
- B is added after C

B is mostly added after A, 2 times in our dataset, and C after A, 1 time.

Requirements:

- In this problem it is key to provide clean code that can easily be used by someone else and is easily extendable in the future.
- Write the program in Python, preferably Python 3.
- Keep it simple and use extra dependencies only if you think it is required.

Deliverable:

The Python source code files.

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