Practice tasks

**Title:**Modeling API for Library

**Purpose:**

The purpose of this task is to model a REST API for a Library, thus gain some experience with API modeling.

**Main Task: Modeling API for Library**

**Estimated time: 2h – 6h**

You goal is to model an API for Library, to make it clear we will describe our business needs for this API.

1. As a librarian or a reader, I want to know on which bookshelf a book is located.
2. A book could be found by ISBN code or name.
3. Every book has unique ID in our system.
4. We can have multiple books that matches criteria of search and they can be located on multiple bookshelf's
5. We want to be able to search books by genre or author.
6. As a librarian, I want to be able to put a new book on a shelf.
7. As a librarian, I want to be able to transfer a book between shelfs.
8. As a librarian, I want to be able to get a book information by its id.
9. As a reader, I want to be able to take a book to read it during some period.
10. As a librarian, I want to know which reader took a book.
11. As a librarian, I want to know which books were taken and when they will be returned.
12. As a librarian, I want to know which books a reader took.
13. As a reader, I want to be able to book a book to read it next if it was taken by someone else.
14. If a book already booked for provided period of time we should reject this request.
15. As a reader I want to be able to reject a booking.
16. As a reader I want to know which books I booked.
17. As a librarian or reader, I want to be able to know what books located on a shelf.
18. Let’s say that every shelf has a unique number, shelf ID.

For modeling process your goal to describe every endpoint that you would add to your API. We will use the following template for endpoint description.

|  |  |
| --- | --- |
| **PUT**/something/:id | |
| Can Access: | Librarian or Reader |
| Params description: | id – ID of a something in application that you want to change. |
| Query params description: | Describe here possible query params if any, otherwise delete this row.  For example, a query param description could look in the following way.  name (required) - name of something that we want to receive.  state (optional) - state that we expected to see. |
| Request body: (Delete this if there is no body content for a request) | |
| {      name: string;      state: string;      age: number;      dateOfCreation: Date;  } | |
| Responses: | |
| 200 Ok | Successfully updated something with provided ID. Returns content of something with provided ID. |
| 404 Not Found | There is no thing with provided ID |
| 400 Bad Request | Required parameter name was not provided |
| 505 Internal Server Error | Something went wrong on the server |
| Response body on success: (Note delete this if your body is empty) | |
| {      name: string;      state: string;      age: number;      dateOfCreation: Date;  } | |

You don’t need to think about how to implement authorization or authentication right now. Also, your API should return JSON if it needs to return any data in the body, you can pick a media type, but it is not required for this task, the response content can be as simple as it can be.

Please make sure that responses of your endpoints give a user all the information for the next steps. E.g., if I fetch information regarding books on a shelf, I should receive all the needed information regarding books so that I could do operations with them, for instance, move a book onto different shelves.

When you end with your API, please upload it to a GIT repository and share it with your mentor.

**Assessment checklist:**

1. Verify that every of the business needs described in the task can be performed with help of designed API.
2. Every parameter should be documented.