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### How to run :

I used redis-py for the lab, so my work require :

- A running redis server ;

```
redis-server
```

- The redis-py python package ;

```
pip install redis
```

- Run the single python file ;

```
python3 Redis_PubSub.py
```

I also used the packages tkinter, os, random and string but they are part of the usual python installation.

### How to use :

I made a simple GUI for this lab, with three main tabs, navigable with the **Tabs** menu in the upper left. Any user is at the same time, a publisher and a subscriber.

In **Tabs/Pub-Sub** you publish books by filling the five text boxes and hitting the Pub button. You also can sub/unsub to channels.

- ISBN number → Any number
- Title → No requirement
- Author → No requirement
- Number of copies → Any number
- Book description → Any words separated by a space

The book is stored with his ISBN as the key and title, author and copies as field. It will expire after one hour, no longer borrowable.

The ISBN of the book will be published on all the channels specified in the book description. The author name is also used as a key word, allowing to listen to all publication of some author.

**Tabs/Messages received** list the messages received. Only the ISBN are sent in the channels but more data is gathered on the subscriber side with the ISBN

In **Tabs/Borrow-return** , you can input the ISBN of a book to borrow it if there are copies remaining. The borrowed book will be listed below and can be returned by clicking their button. Borrowing and returning a book refresh to one hour his TTL Returning an already expired book has no effect expect removing it from the list

Messages received, channels subbed and book borrowed are all stocked with redis lists or sets, without TTL. Upon quitting the GUI with **Tabs/Quit** the books are all returned and the user messages and channels are cleared.

Example :

Redis Pub/Sub

Tabs

## Welcome to Pub/Sub

ISBN number: 45 Title: Les misérables Author: Victor Hugo Number of copies: 5 Book description: France livre

Channels to sub:

Sub

Pub

You are currently subbed to:

films Unsub

France Unsub

In this example I already subbed to two channels (films and France) and I am about to publish a book. Since France is in the description of the book, I will receive a message from this channel, automatically opening the messages tab as below.

Redis Pub/Sub

Tabs

## You received:

From channel France : isbn: 45, Title: Les misérables, Author: Victor Hugo

Knowing the ISBN of "Les misérables" (not the real one) I borrowed copies until I got told that there is no book left. They can be returned by clicking their respective "Return" button.

