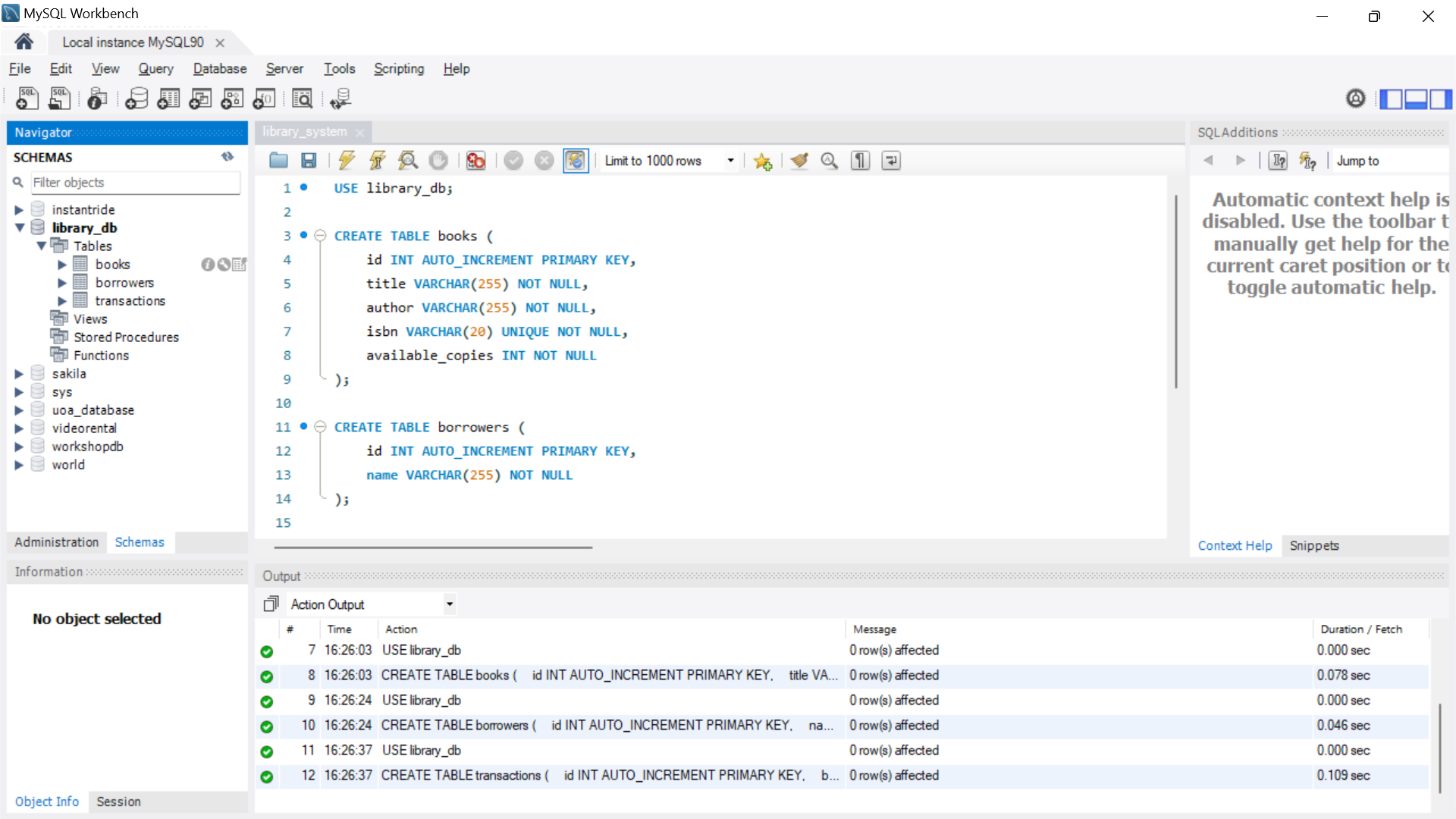
**Module 3 assignment**

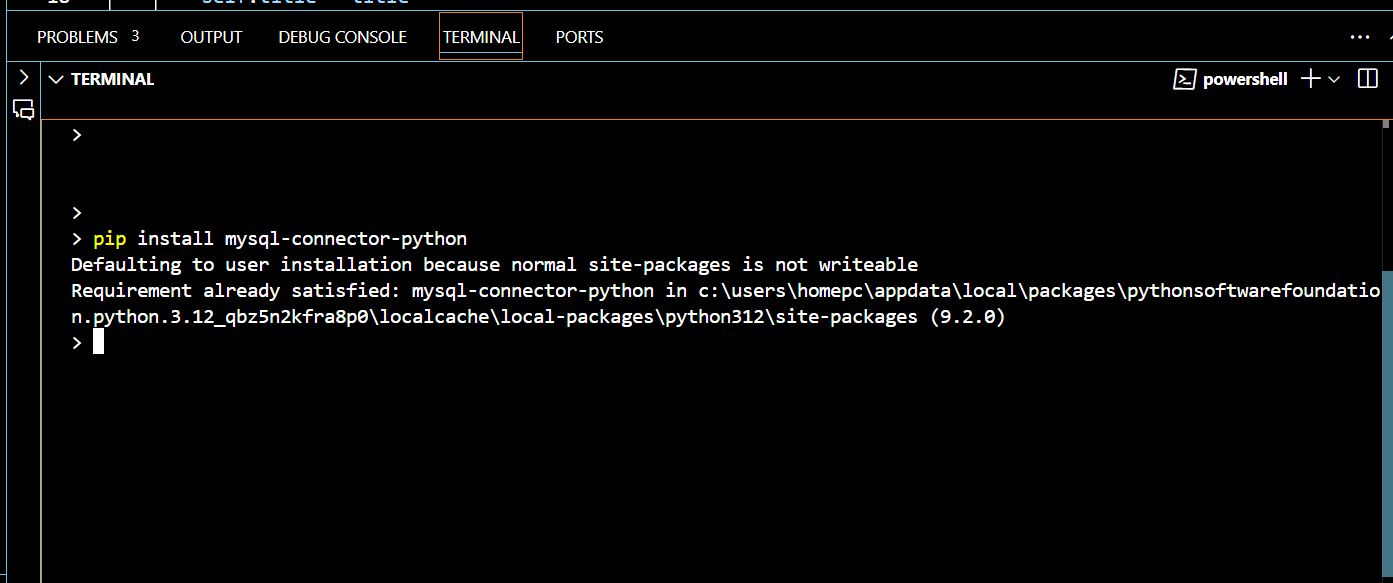
## Database creation

Began by creating a library system database in MySQL Workbench with the tables: books, borrowers and transactions since I will be using MySQL for this project’s database



## Code implementation

Next, connected the created database in models.py and created the models for book and borrower. Then installed MySQL connector to connect the backend functionality with the database. Imported it in the models.py

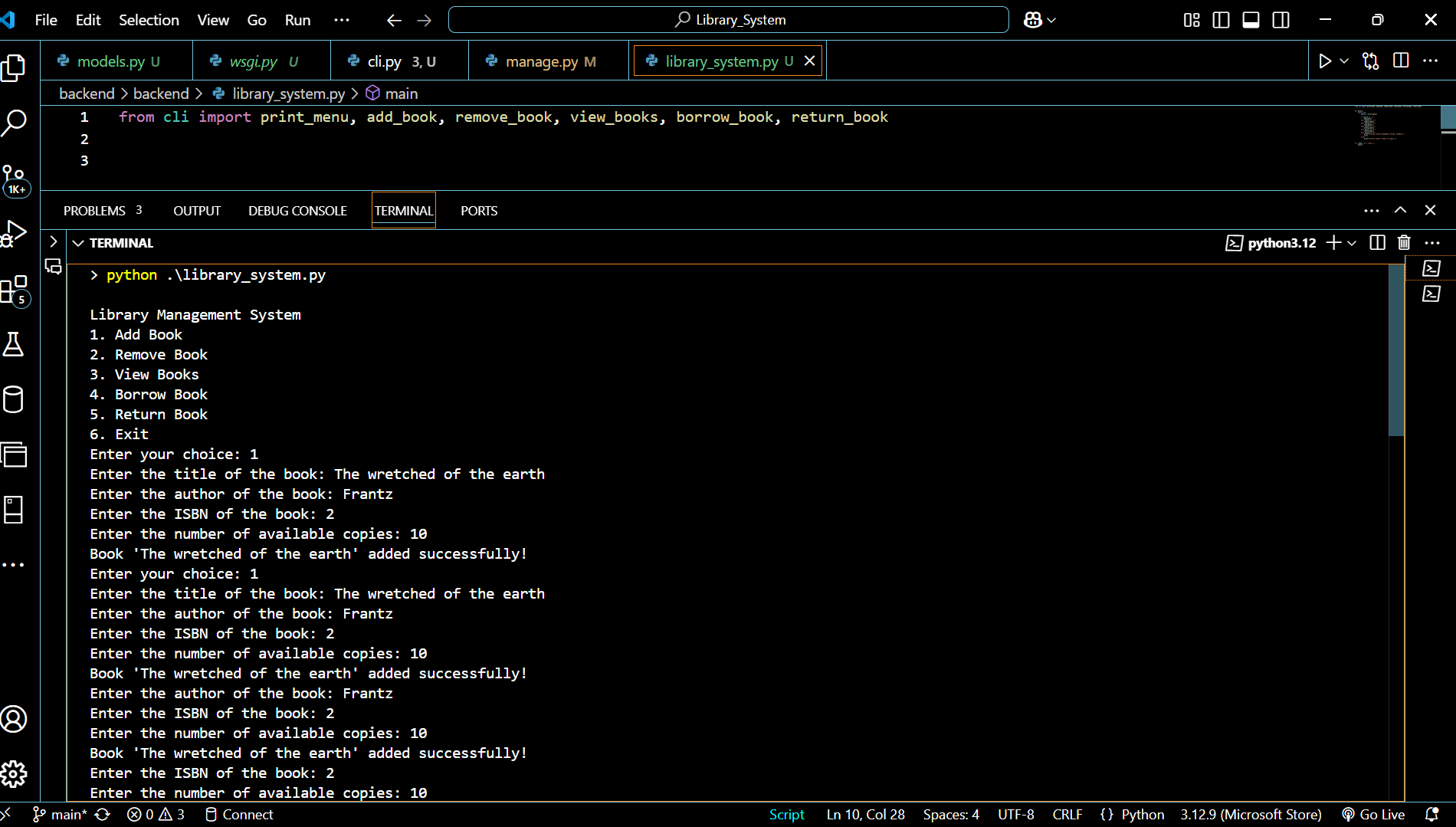


The other files include:

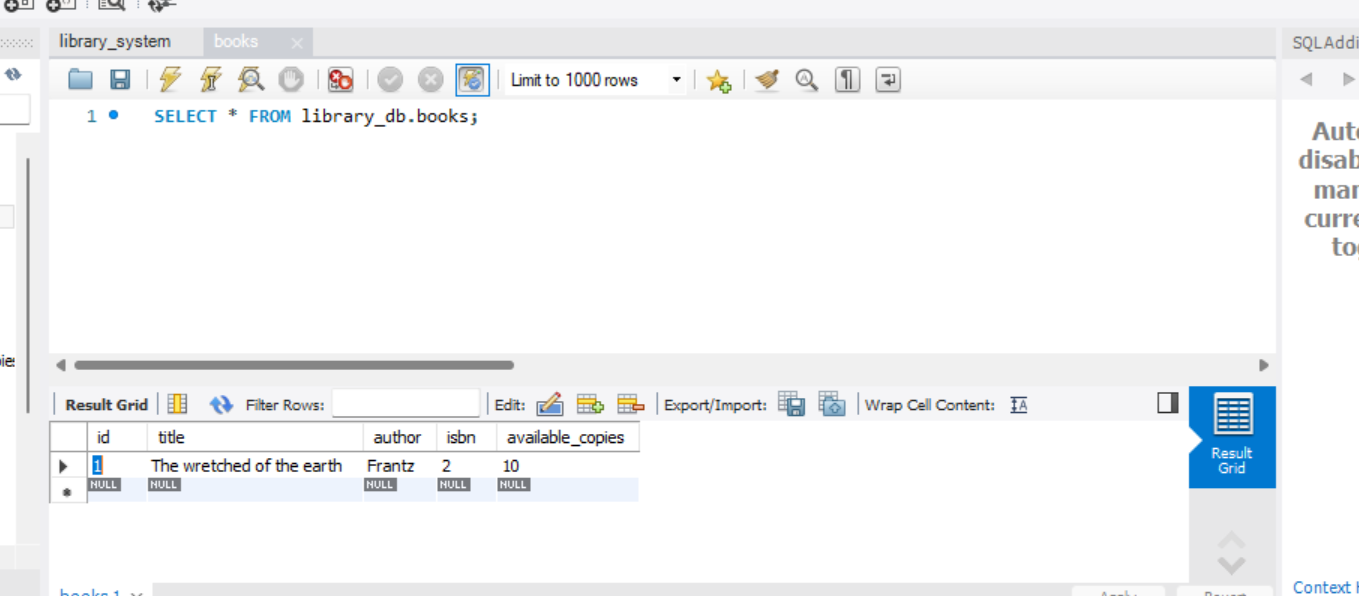
* **cli.py**: contains the menu and logic for interaction with the user via the terminal.
* **library\_system.py**: The program’s entry point and it calls functions from cli.py and models.py to make the system work.

## Testing the system

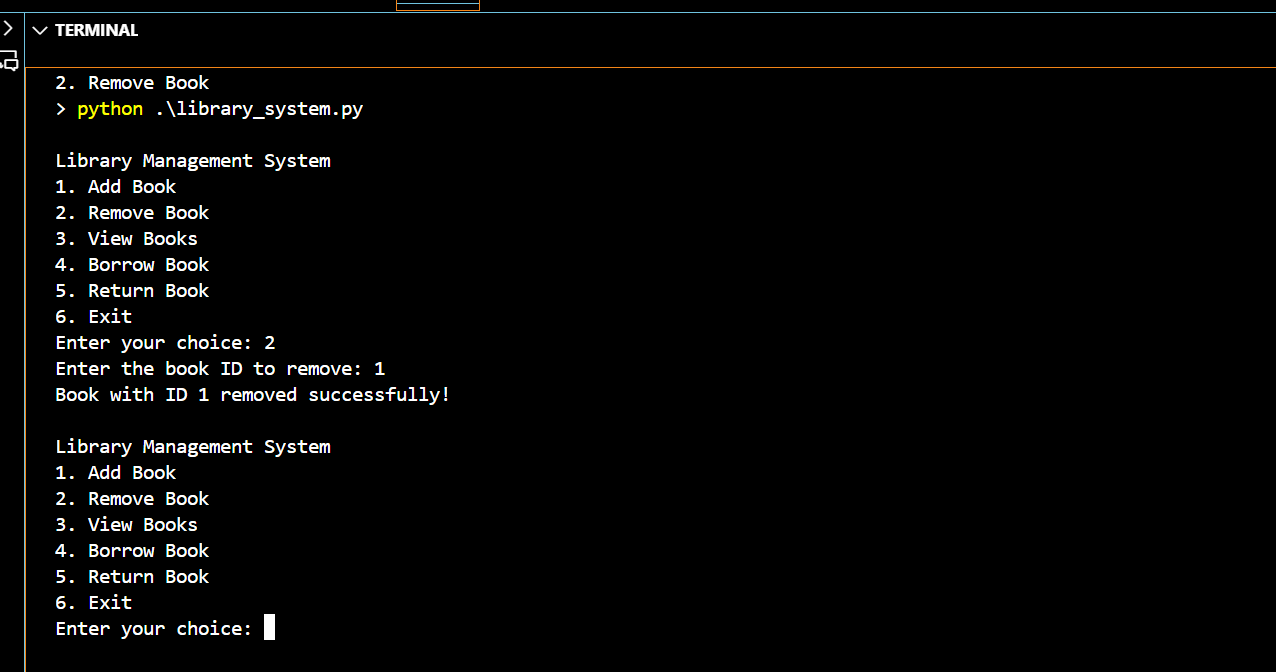
### Book addition



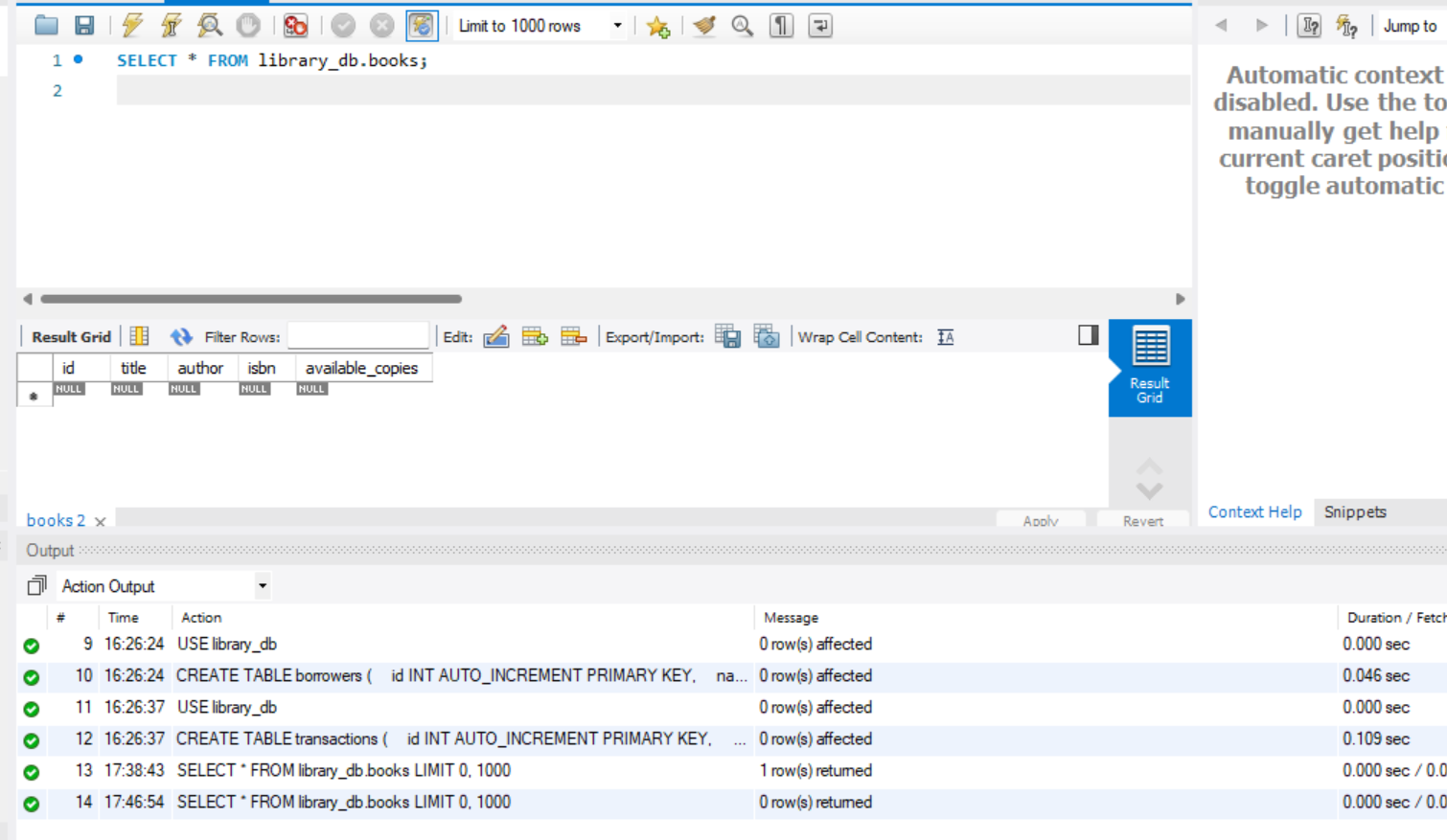
Tested with the book “wretched of the earth” by entering its details and on submit it is successfully updated in the database. Confirmed this in the database:



### Book removal

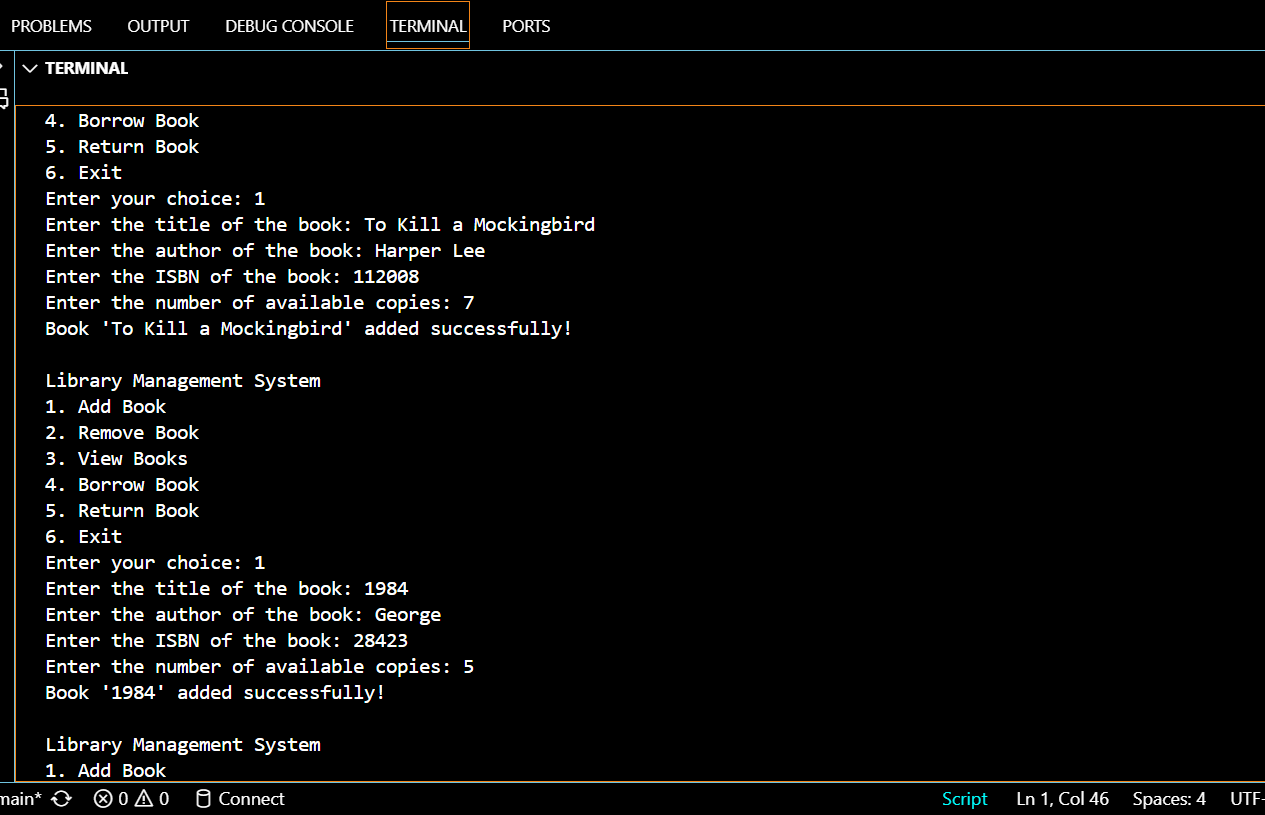


Book removed successfully. Confirmed on the database:



Returns empty table, since the book record was removed.

Added a few more books into the database, to test lending out (borrowing to users) and returning of books.



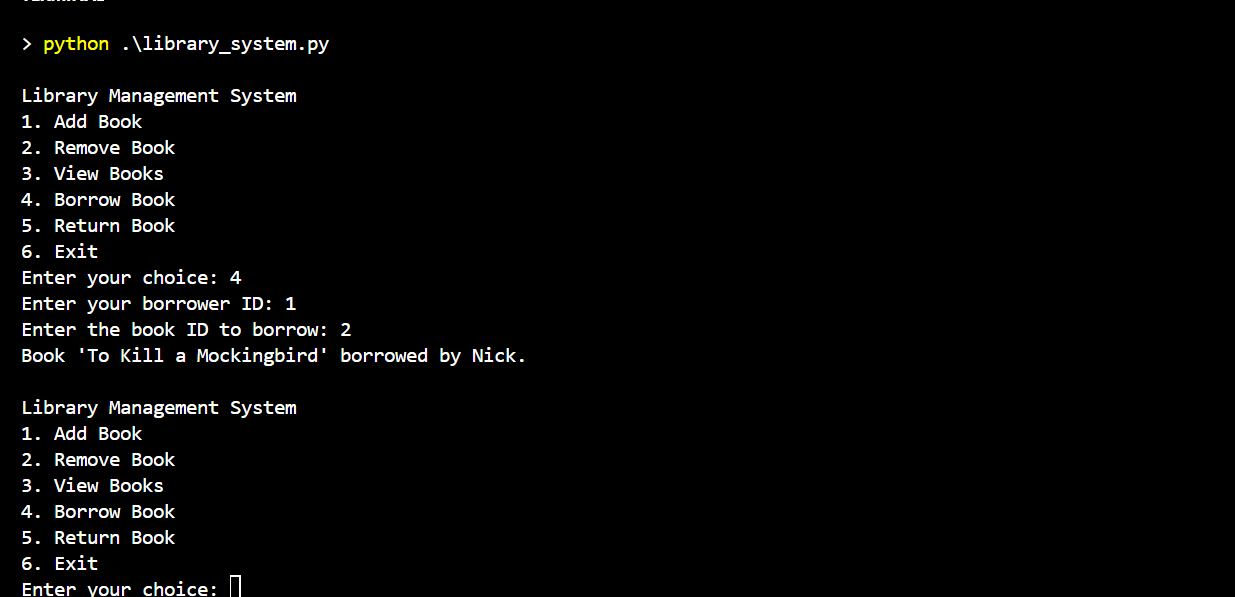
### View books



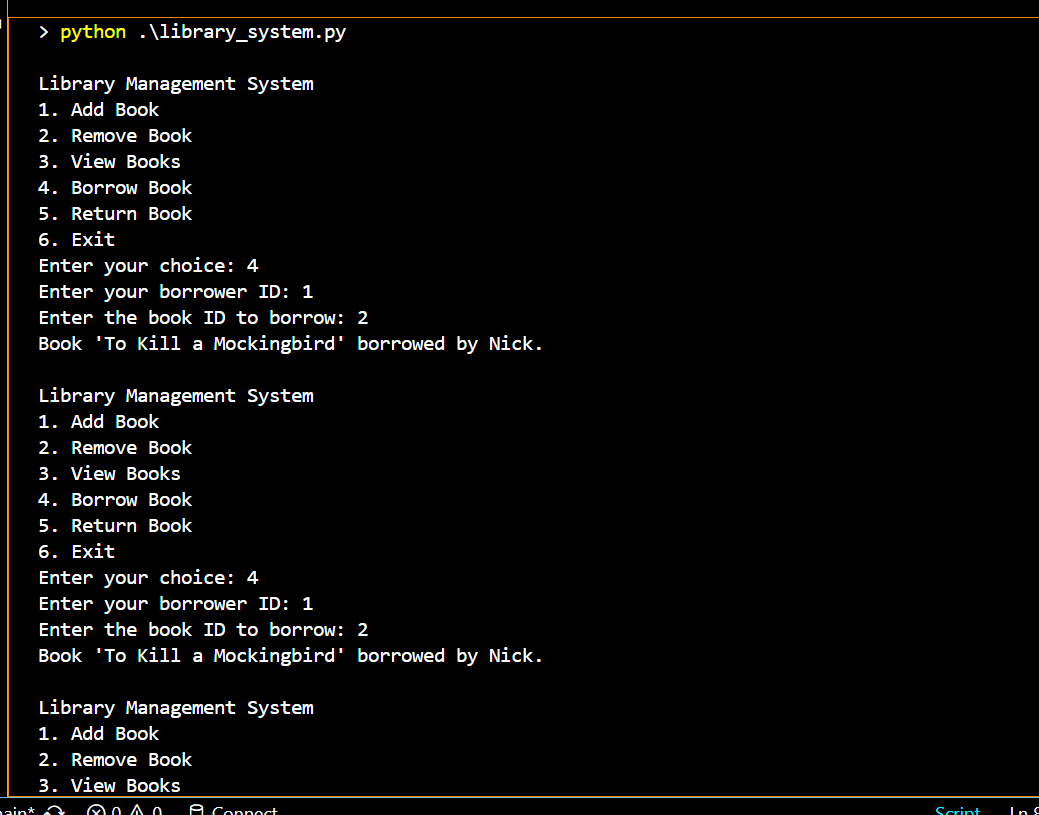
Since “The wretched of the Earth” I had earlier on created to test the addition and deletion had occupied ID1 on the table, the other books began at ID2.

### Borrow book

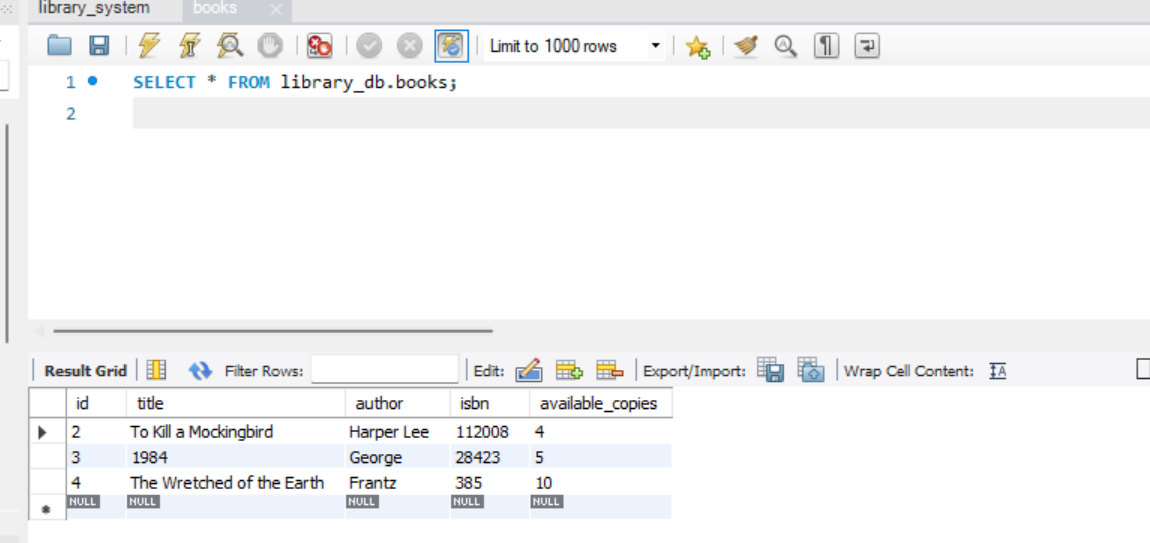
Created a borrower “Nick” in database whose ID became 1 and used it to test book borrowing.



Successfully lends the book to Nick and then updates the number of copies in database



**Records’ update:**



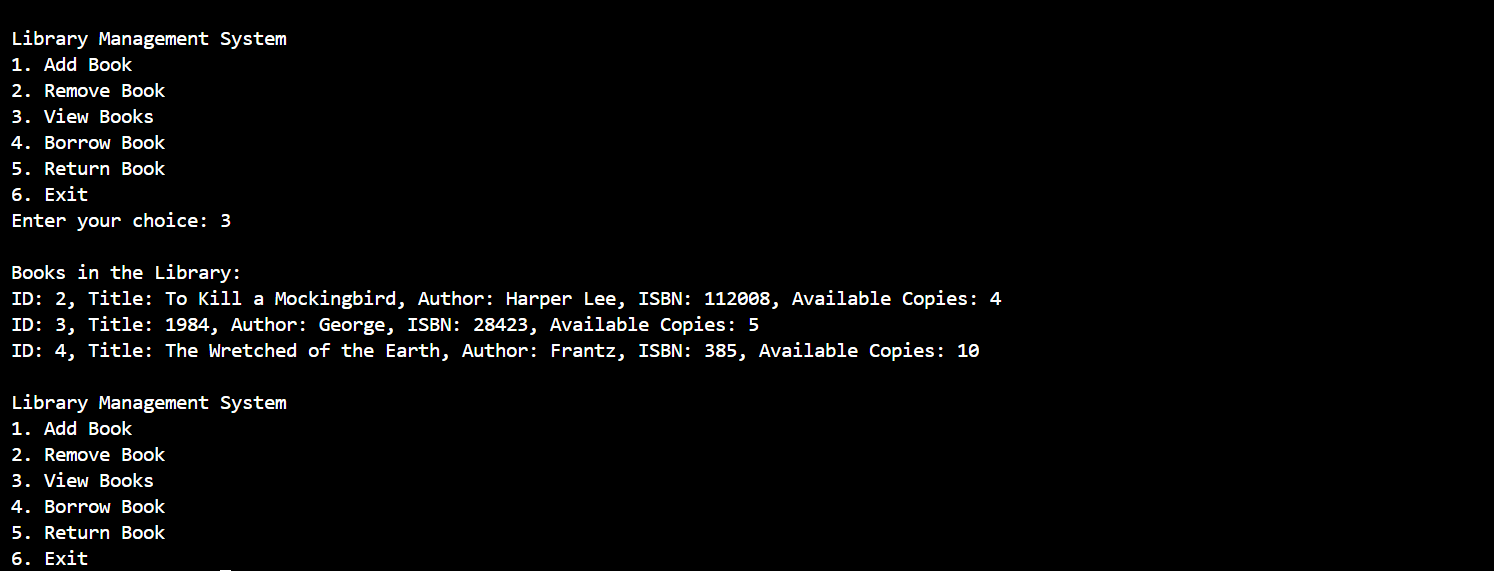
NB: Updates by -1 per borrow, in this case since I performed three trials to test it, it updates to 4 from 7. More precise tests below.

what if the borrower ID does not exist in the table?

When the borrower ID does not exist in the borrower table, the system prompts for the user’s name and then updates the database with the ID and name of the borrower and then proceeds to lend him or her the book.

**Test:**

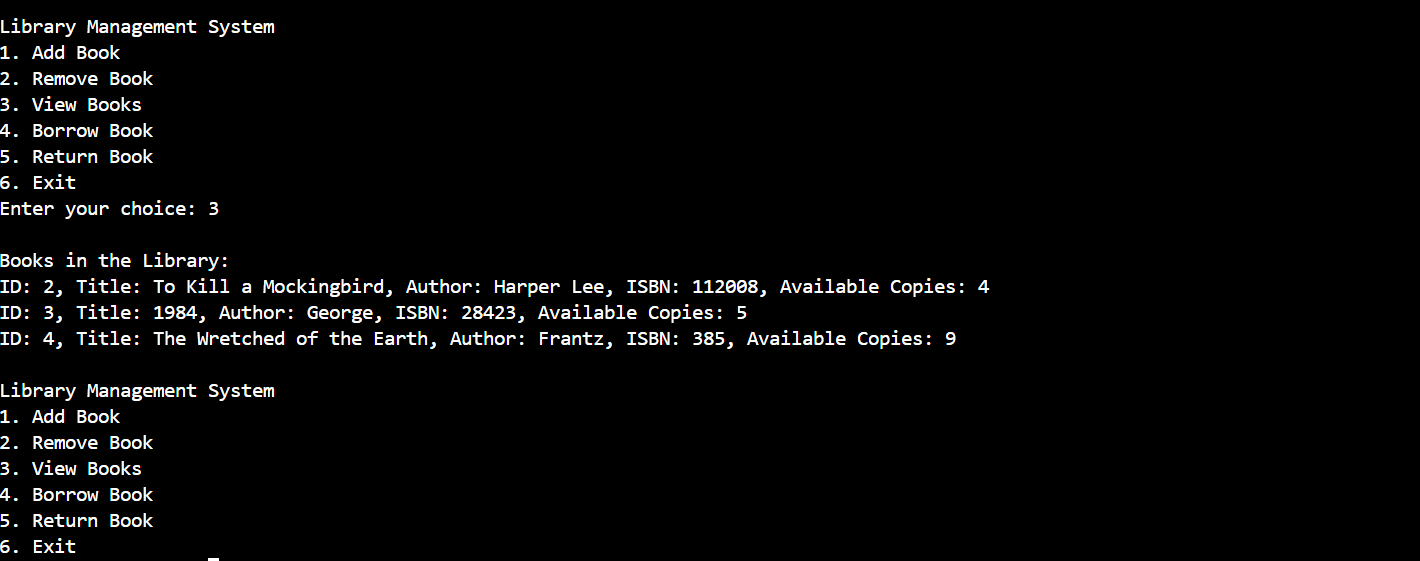
Before lending to a new user:





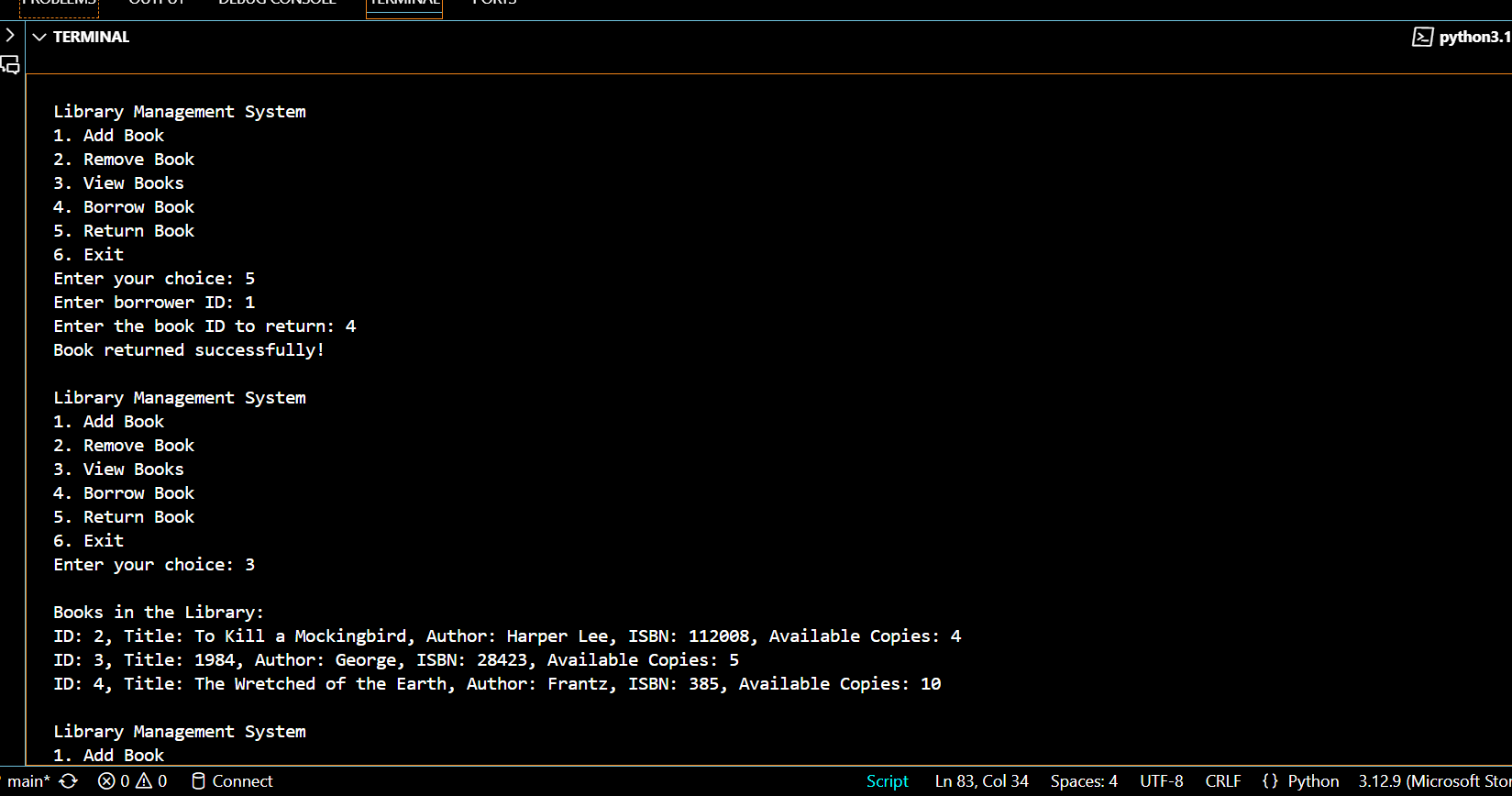
New borrower (Nickolas Shtayn) created and the book is lent to them

After borrowing the book:



Copies updates to 9, from 10.

### Return book



When the borrower (Nickolas created above on the borrow), returns the borrowed book, it updates the record of the books back to 10, indicating successful return of the book.